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"Managing Business Opportunities in Global Uncertainties"

Editors:

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“Managing Business Opportunities in Global Uncertainties”

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Preface

We are very pleased to introduce the proceedings of the first International Conference on Management in Emerging Markets.

The first International Conference on Management in Emerging Markets (ICMEM) has been successfully completed on 10th-12th August 2016 in Bali. ICMEM 2016 was organised by SBM ITB in collaboration with Universiti Utara Malaysia and Naresuan University (Thailand).



ICMEM 2016 is an international scientific conference which promotes contemporary research and development in the field of management and business. The conference aims at providing a forum for discussion and exchanges of ideas, thoughts, knowledge, methodologies, and practices of the discipline of management for businesses, governments, and investors on how to best manage uncertainties in emerging countries. The recent challenge of the emerging markets not only call for new approaches but also the investigation and development of management discipline based on changes in practices and expectations from diverse stakeholders surrounding business and public organizations. With the theme of "Managing Business Opportunities in Global Uncertainties", ICMEM 2016 selected more than 200 research and more than 140 papers were successfully presented in the event.

Dean of the Asian Development Bank Institute, Prof. Naoyuki Yoshino, was present as a guest speaker and gave a presentation on "Financial Infrastructure for Sustainable Growth in Asia" where he elaborated on the current region economic condition and the future business and economic growth opportunities of emerging markets such as Indonesia. On the second day, Prof. Rezaul Kabir from University of Twente, Ibu Sri Safitri, MTE (Senior Advisor, Chief of Digital & Strategic Portfolio Office, PT Telkom Indonesia), and Prof. Togar M. Simatupang (SBM ITB) provided presentation on "Digital Economy in Emerging Markets." After that, the event was immediately followed by another discussion session on "Management Education in Emerging Markets" delivered by Prof. Markus Freiburghaus (University of Applied Sciences and Arts Northwestern Switzerland), Dr. Evan Lau Poh Hock (University Malaysia Sarawak), and Dr. Reza Ashari Nasution (SBM ITB). In addition, there were paralel sessions of presentation which explores more than 140 research results that were divided into nine streams, namely: (1) Sustainable Technology Management; (2) Knowledge Management and Learning Organization; (3) Operations Management, Service and Performance; (4) Marketing, Business Strategy, and Ethics; (5) Investment, Finance and Risk Management; (6) Economic, Banking, and Accounting; (7) Strategic Decision Making and Negotiation; (8) Human Capital Management; and (9) Entrepreneurship. The 31 papers in this Proceedings volume provide an excellent overview of the topics presented and will be invaluable for all in the research field.

The ICMEM 2016 conference then closed by a gala dinner for all participants and speakers. On that occasion, there were also a speech delivered by Prof. Kuntoro Mankusubroto (UKP4 and former Chief Minister of Mines and Energy Indonesia) who is also the co-founder of SBM ITB, on the topic of "Managing Business Opportunities in Global Uncertainties – Decision Analysis

and Strategic Negotiation”.

Finally, we would like to thank our sponsors, steering committee, organizing committee, reviewers and all contributors for their important contribution to the successful completion of ICMEM 2016 and in this Proceedings volume. International Conference on Management in Emerging Markets is planned to become an annual event to provide research results from academics that could be beneficial for businesses, governments, and society. We hope that ICMEM 2017 will be as stimulating as ICMEM 2016 and are looking forward to your future significant contribution.

Best Regards,

Conference Chair

Prof. Togar M. Simatupang

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The 1st International Conference on Management in Emerging Markets (ICMEM 2016)

The Influence of Bank Specific Variables and Macroeconomics Factors to Liquidity Coverage Ratio of 19 Commercial Banks in Indonesia in Period of 2008-2014

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Abstract

Liquidity is important to be maintained by bank as too high liquidity implies that the bank cannot optimize the assets to generate income while the too low liquidity maintained by bank will result in high possibility of insolvency. The optimal number of liquidity is stated in Basel III Document which will be calculated by using LCR (Liquidity Coverage Ratio) as the comparison of High Quality Liquid Asset with Net Cash Outflow. This paper aims to analyze the impact of bank specific and macroeconomics variables toward LCR of 19 commercial banks in Indonesia in the period of 2008-2014 by furthermore giving recommendation for banks to reach minimum LCR. The bank specific variables include bank size, current asset quality, special mention asset quality, substandard asset quality, doubtful asset quality, and loss asset quality while the external variables are inflation rate and exchange rate. The data will be gathered from 19 commercial banks, which are limited to banks with above 5 trillion rupiahs core capital in Indonesia. It will be processed by using panel data regression through EViews Software to examine the effect of those determinants to LCR. As the result, bank size, special mention asset quality, loss asset quality, and exchange rate have negative significant effect to LCR while inflation rate and substandard asset quality have positive significant effect to LCR. Current asset quality and doubtful asset quality have negative but no significant effect to LCR.

Keywords: Indonesia; Liquidity Coverage Ratio; Bank Specific Variables; Exchange Rate; Inflation Rate; Basel III, Panel Data

1. Introduction

Bank plays an important role as an intermediary between party with excess fund and party with shortage of fund. There are some actions to be considered by bank due to some risks that may lead to bankruptcy and bank run. Bank run happens when customers discredit the bank in which they put their money and force to withdraw those funds while the bank does not have adequate money of that withdrawal. To minimize the potential of loss because of such risks, Basel Committee on Banking Supervision (BCBS) regulates Basel Accord to reduce the risk as banks conduct their functions and activities. Basel Accord I regulates minimum capital needed by bank to compensate credit risk (risk caused by debtors who fail to fulfil their obligation of the credit agreement), called CAR (Capital Adequacy Ratio). The minimum capital stated in Basel Accord I is 8% towards the risk weighted assets. Nevertheless, some frameworks in Basel I have shown the irrelevancy with condition in that time. Then, BCBS released Basel II that emphasizes three pillars to complete the infirmity of Basel I. First pillar regulates the minimum capital requirement that involved operational risk, second pillar states the supervisory review process, and the last pillar regulates about market discipline. Global crisis in period 2007-2008 proved that Basel II still has some limitations regarding liquidity to protect bank from financial distress. Afterwards, BCBS attached the new Basel in

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document of *Basel III: Global Regulatory Framework for More Resilient Banks and Banking Systems*” that regulates 2 topics, which are Improvement of Global Capital Framework and Introduction of Global Liquidity Standard (Liquidity Coverage Ratio (LCR), Net Stable Funding Ratio (NSFR), and Monitoring Tools).

This research has an intention in quarrying deeper about the Global Liquidity Standard, especially the LCR. LCR becomes tool to prepare the flexibility of liquidity risk profile of bank by having sufficient HQLA (High Quality Liquid Asset) for short term horizon of one month after crisis happened. Liquidity becomes an important thing to be adequately maintained to achieve best profitability for banks. Too high liquidity implies that the bank cannot optimize its assets to generate income while too low liquidity maintained by bank will result in high possibility of insolvency. The optimal number of liquidity is regulated by in Basel III Document through the comparison of High Quality Liquid Asset with Net Cash Outflow. Based on author calculation by using data on balance sheet from Official Website of Financial Services Authority of Indonesia, unfortunately the average LCR of banks in Indonesia (2008-2014) is only 31.84% (see table 1) and does not achieve the minimum LCR stated in Basel III Document, which is 100%. Therefore, it attracts the curiosity of author to find the relationship and significant variables between some bank specific and macroeconomics variables toward LCR, so banks in Indonesia can achieve the minimum amount of LCR to avoid liquidity risk caused by financial and economic distress, especially in converting the sufficient amount of liquidity needs for short term horizon. This study uses 5 earning assets qualities one by one (current asset quality, special mention asset quality, substandard asset quality, doubtful asset quality, and loss asset quality) as five of many independent variables that differentiate this study to previous studies about determinants of LCR.

Table 1. The LCR of Business Group of Commercial Banks (Bank BUKU) 3 & 4 and The Average LCR

Number	Bank	LCR	Number	Bank	LCR	Number	Bank	LCR
1	Mandiri	41.03%	8	Danamon	28.06%	15	DBS Indonesia	26.63%
2	BRI	31.55%	9	Maybank Indonesia	28.63%	16	Sumitomo Mitsui Indonesia	29.51%
3	BCA	41.78%	10	BTN	28.28%	17	Mizuho Indonesia	39.94%
4	BNI	36.58%	11	OCBC NISP	31.28%	18	UOB	24.55%
5	CIMB Niaga	25.01%	12	BJB	35.35%	19	BTPN	29.85%
6	Permata	25.00%	13	MEGA	44.35%			
7	Panin	32.11%	14	Bukopin	25.36%			Average = 31.84%

Source: own calculation based on data from official website of Financial Services Authority of Indonesia

2. Literature Review

Bank Based on Core Capital

Based on Bank Indonesia Regulation Number 14/26/PBI/2012, commercial bank based on its business groups (BUKU) are classified into 4 groups by taking into account the core capital (*Tier 1 Capital*):

- BUKU 1: banks with core capital of less than Rp1.000.000.000.000,00 (one trillion Rupiah)
- BUKU 2: banks with core capital of Rp1.000.000.000.000,00 (one trillion Rupiah) to less than Rp5.000.000.000.000,00 (five trillion Rupiah)
- BUKU 3: banks with core capital of Rp5.000.000.000.000,00 (five trillion Rupiah) to less than Rp30.000.000.000.000,00 (thirty trillion Rupiah)
- BUKU 4: banks with core capital of equal to or more than Rp30.000.000.000.000,00 (thirty trillion Rupiah)

LCR (Liquidity Coverage Ratio)

LCR is tool to prepare the flexibility of liquidity risk profile of bank by having sufficient HQLA one month after crisis happened. LCR is the comparison between HQLA and the net cash outflow. HQLA

consists of all asset that can be converted easily and immediately without any or small diminishing value while the net cash outflow consists of short term liabilities due within 30 days calendar (Financial Services Authority of Indonesia Regulation Number 42/POJK.03/2015). The HQLA involves high quality asset in level 1, level 2A, and level 2B. Total net cash outflow will be derived from total third party fund (deposits, saving accounts, and demand deposits).

Bank Specific Variables

2.3.1. Bank Size (LnSize)

Size of bank can be viewed as total asset of bank. Based on Bank Indonesia Regulation Number 7/2/PBI/2005 on article 1, total asset of bank involved earning assets and non earning assets. Earning assets are assets that can generate income for bank, which are loan, securities, bond, placement on other banks, acceptance bill, reverse repurchase agreement (repo), and derivative bill. Non-earning assets are asset that cannot produce income and have potency of loss, which are office building, abandoned property, interbank account, and suspense account. Size of bank can be calculated as logarithm of total asset. Loan as one of the main part of bank's assets has probability of loss called non performing loan (NPL) that requires more liquidity to cover such loss. Nevertheless, some reasons related to large bank and liquidity show some logic framework of thinking since larger banks see themselves as "too big to fail" (Vodova, 2013) and get more support and political connections than smaller banks get (Bunda & Desquilbet, 2009). The term "too big to fail" in banking industry relates to some vital banks that have essential roles in certain country's economy as if they go bankrupt, there would be horrible condition of the economy of that country. Therefore Central Bank as Lender of Last Resort will support and give financial helps for those kinds of bank to avoid bad economic condition, so large banks do not have to increase the liquidity. Vodova (2013) and Choon, et al (2013) found that total assets have negative implication to bank liquidity as the term "too big to fail" applies.

2.3.2. Current Asset Quality (CTEA)

Based on Decree of The Board of Managing Directors of Bank Indonesia No.31/147/KEP/DIR dated November 12, 1998, current asset quality refers to earning assets with no retardation of principal and interest payment. Current asset quality will be compared to total earning assets to become current asset quality ratio. In his research, Sudirman (2014) used asset quality as one of the independent variable by using ratio between impaired loans and equity and found that the greater the impaired (non performing) loan, the higher the liquidity amount or in other words, impaired loan has significant positive effect to liquidity of bank. Impaired or non performing loan includes substandard, doubtful, and loss loan. Choon, et al (2013) also conducted study that used non performing loan as one of the independent variable that resulted in positive significant effect to bank liquidity. So, current asset quality which has inverse quality than impaired loan is expected to have significant negative effect to bank liquidity.

2.3.3. Special Mention Asset Quality (SMTEA)

Special mention asset quality consists of earning assets with less than 3 months retardation of principal and interest payment. Special mention asset quality ratio can be derived from comparison between special mention asset quality with total earning assets. Sudirman (2014) used ratio between impaired loans and equity and found that impaired loan has significant positive effect to liquidity of bank. Choon, et al (2013) used non performing loan as one of the independent variable that results in positive significant effect to bank liquidity. Special mention asset quality which has better quality than impaired loan is expected to have significant negative effect to bank liquidity.

2.3.4. Substandard Asset Quality (SSTEa)

Substandard asset quality involves earning assets with more than 3 months and less than 180 days retardation of principal and interest payment. It is included as non performing loan. Substandard asset quality ratio is comparison between substandard asset quality and total earning assets. Sudirman (2014) and Choon, et al (2013) used non performing loan as one of the independent variable that resulted in positive significant effect to bank liquidity.

2.3.5. Doubtful Asset Quality (DTEA)

Based on Decree of The Board of Managing Directors of Bank Indonesia No.31/147/KEP/DIR dated November 12, 1998, DTEA includes earning assets with more than 6 months and less than 270 days retardation of principal and interest payment. Comparison between doubtful asset quality with total earning assets will be doubtful asset quality ratio. It is categorized of non performing loan (NPL). NPL itself has been used by Sudirman (2014) and Choon, et al (2013) as one of the independent variable that resulted in positive significant effect to bank liquidity.

2.3.6. Loss Asset Quality (LTEA)

According to Decree of The Board of Managing Directors of Bank Indonesia No. 31/147/KEP/DIR dated November 12, 1998, LTEA is defined as earning assets with more than 270 days retardation of principal and interest payment. LTEA can be obtained through the comparison between loss asset quality and total earning assets. It is grouped as non performing loan. Sudirman (2014) and Choon, et al (2013) used non performing loan as one of the independent variable and found that loss asset quality has positive significant effect to bank liquidity.

Macroeconomic Variables

2.4.1. Inflation Rate (INFLR)

Inflation is the event of increasing price of goods and services as a whole when the same amount of money can buy fewer number of goods or services. High level of inflation will lower the value of the rupiah that results in low purchasing power of people. Some previous researches used inflation rate as one of the independent variable to be assessed. Researches conducted by Moussa (2015), Vodova (2013), Sudirman (2014), and Bunda & Desquilbet (2009) showed that inflation rate has significant positive effect to liquidity of bank while El Mehdi (2013) found that inflation rate has negative influence to bank liquidity.

2.4.2. Exchange Rate (EXC)

Exchange rate is the domestic currency value with regard to another currency. If exchange rate of rupiah increases, it will result in high purchasing power of people as the value of rupiah also increases. Lovin (2013) showed that exchange rate has positive consequence to interbank deposits as a measure of bank liquidity. Bunda & Desquilbet (2009) specified that exchange rate in one country has positive significant effect toward liquidity when the country applies pure floats exchange rate regime. It also applies in Indonesia that has pure Floating Exchange Rate System as its exchange rate regime. In pure Floating Exchange Rate System, exchange rate changes by depending on the foreign exchange mechanism without government intervention.

3. Methodology

Data Collection

Author uses explanatory and verification analysis method to find the relationship and significant variables (bank specific and macroeconomics variables) towards LCR. Author uses panel data (combination of cross section and time series data) as well as linear regression analysis.

3.1.1. Research Samples

The research samples are banks of BUKU 3 and 4.

Table 2. List of Sample Banks Based on Tier 1 Capital on 31st December 2014

No.	Bank Name	Code	BUKU	Core Capital in Rupiah	No.	Bank Name	Code	BUKU	Core Capital in Rupiah
1	BRI	BBRI	4	82,108,763	11	BTPN	BTPN	3	10,198,894
2	Mandiri	BMRI	4	79,256,403	12	UOB Indonesia	BBIA	3	9,008,427
3	BCA	BBCA	4	64,436,051	13	DBS Indonesia	BDDBS	3	7,030,370
4	BNI	BBNI	4	47,618,199	14	MEGA	MEGA	3	6,132,239
5	CIMB Niaga	BNGA	3	26,118,777	15	Mizuho Indonesia	BMZU	3	5,952,607
6	Danamon	BDMN	3	24,151,235	16	BJBR	BJBR	3	5,834,860
7	OCBC NISP	NISP	3	14,073,843	17	Bukopin	BBKP	3	5,760,098
8	Permata	BNLI	3	13,016,021	18	Sumitomo Mitsui Indonesia	BSUM	3	5,634,060
9	Maybank Indonesia	BNII	3	12,145,493	19	Panin	PNBN	3	5,270,844
10	BTN	BBTN	3	11,141,296					

Source: own calculation based on data from official website of Financial Services Authority of Indonesia

3.1.2. Independent and Dependent Variables

There are two variables utilized in this research, which are dependent variable and independent variables. LCR as dependent variable is used to represent the liquidity of bank while the independent variables are divided into two large groups. First are bank specific variables which include bank size, current asset quality, special mention asset quality, substandard asset quality, doubtful asset quality, and loss asset quality while the second group consists of inflation rate and exchange rate. Data for bank specific variables are based on the secondary data in form of Bank BUKU 3 and 4 financial reports in period of 2008 until 2014 through Official Website of Financial Services Authority of Indonesia (OJK). The macroeconomics data are gathered through Bank Indonesia Official Website.

Research Model and Research Paradigm

There is one regression model in this research and will be named liquidity model:

$$LCR_{it} = \beta_0 + \beta_1 LnSize_{it} + \beta_2 CTEA_{it} + \beta_3 SMTEA_{it} + \beta_4 SSTE_{it} + \beta_5 DTEA_{it} + \beta_6 LTEA_{it} + \beta_7 INFLR_{it} + \beta_8 EXC_{it} + e \quad (1)$$

Liquidity model is chosen to find the relationship between some bank specific and macroeconomics variables toward LCR as well as the significant variables. Therefore, bank can adjust the amount of significant variables to achieve minimum amount of LCR, so they can avoid liquidity risk caused by financial and economic distress, especially in Indonesia where banks have not yet achieved the minimum LCR regulated.

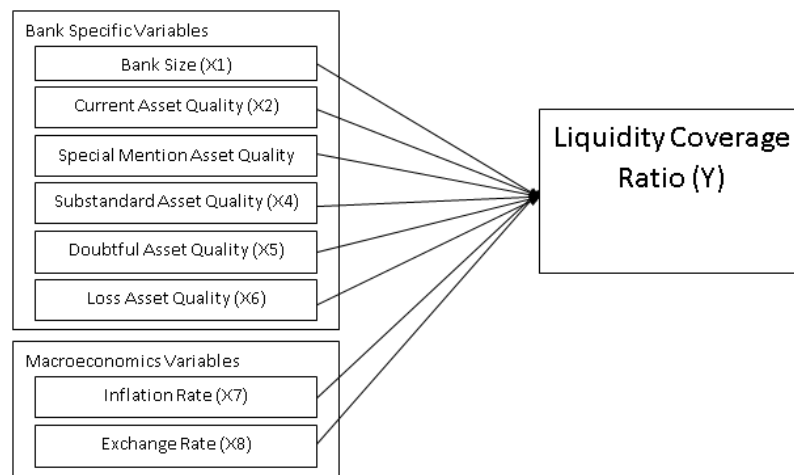


Fig. 1. Research Paradigm

Research Hypotheses

- H1: Bank specific variable size (X1) has significant negative effect to Liquidity Coverage Ratio (LCR)
- H2: Bank specific variable current asset quality (X2) has significant negative effect to Liquidity Coverage Ratio (LCR)
- H3: Bank specific variable special mention asset quality (X3) has significant negative effect to Liquidity Coverage Ratio (LCR)
- H4: Bank specific variable substandard asset quality (X4) has significant positive effect to Liquidity Coverage Ratio (LCR)
- H5: Bank specific variable doubtful asset quality (X5) has significant positive effect to Liquidity Coverage Ratio (LCR)
- H6: Bank specific variable loss asset quality (X6) has significant positive effect to Liquidity Coverage Ratio (LCR)
- H7: Bank specific variable inflation rate (X7) has significant positive effect to Liquidity Coverage Ratio (LCR)
- H8: Bank specific variable exchange rate (X8) has significant positive effect to Liquidity Coverage Ratio (LCR)

BLUE (Best Linier Unbiased Estimator) Test

There are some tests to be fulfilled to ensure that the simple linear regression equation is correct for doing estimation, named BLUE Test or Classical Linear Assumption Test. All tests will be conducted by using Eviews Software, which are:

- Multicollinearity Test

Too many variables included in the model will increase the possibility of multicollinearity to happen as it will generate higher probability of the existence of relationship among variables (Gujarati, 2004). Thus, the Multicollinearity test aims to define the correlation between the dependent variables in regression model. One of the method to detect the multicollinearity is by using pair wise correlation. If the pair wise correlation coefficient among two variables results in more than 0.8, then multicollinearity happens.

- Heteroskedasticity Test

The disturbance that make the value of residual variance becomes different will lead to heteroskedasticity (Gujarati, 2004). This research uses White General Heteroskedasticity Test to check heteroskedasticity. In Eviews, the heteroskedasticity is defined to be existed or not through Obs*R-squared value with hypothesis of:

H0: Homoskedasticity
H1 :Heteroskedasticity

If Obs*R-squared has value of less than the significant level, then heteroskedasticity exists. In reverse, if the Obs*R-squared has value of more than the significant level, then homoscedasticity exists.

- Autocorrelation Test

Autocorrelation is the correlation among members in series of observation in specific horizon or space. It is good for regression model not to have autocorrelation in the model (Gujarati,2004). The most common used test is Durbin-Watson d Test or comparison between Obs*R-squared and significant level (if the Obs*R-squared value is higher than significant level, it means there is no autocorrelation).

- Normality Test

Normality Test is conducted to know whether the residual value is distributed normally or not. Residual value is the difference between the expected value with the value of the actual data. Eviews will use Jarque–Bera (JB) Test of Normality for testing whether the model is distributed normally. JB value then will be compared with chi square value. In Jarque–Bera (JB) Test of Normality, there are two hypotheses:

H0: Residual Value is distributed normally
H1 :Residual Value is not distributed normally

Testing Criterion: H0 is accepted if result of Jarque-Bera is less than chi square value (means that residual value is distributed normally).

Regression Analysis

Regression analysis is used to explore the relationship or the dependency between one dependent variable (Y variable) with one or many independent variables (X variables).

There are three methods to estimate panel data regression (Ajija, et.al.(2011)):

- Pooled Least Square (PLS)
- Fixed Effect (FE)
- Random Effect (RE)

First, there will be test to see the appropriateness of the model, whether to use PLS or FE. The test is conducted by using Likelihood Test with hypotheses:

H0 : Regression model is appropriate with PLS

H1 : Regression model is appropriate with FE

After that, there will be one more test to see if the model is appropriate with FE or RE by using Hausman Test with hypotheses:

H0 : Regression model is appropriate with RE

H1 : Regression model is appropriate with FE

3.5.1. Coefficient of Determination

Coefficient of determination (R^2) is the “goodness of fit” of regression line. The range value of R^2 is between 0 and 1 with lower value means that there is small number of independent variables that are successfully explained (or correlated) to the dependent variable.

3.5.2. T-Test

T-test examines whether there is a significant relationship between the dependent variable and independent variable one by one. T-test can be done by comparing p-value of each independent variable with significant value (Gujarati, 2004) (Ajija, 2011) (Hair, 2009). The hypotheses are:

H0 : There is no significant effect between independent variable and dependent variables one by one

H1 : There is significant effect between independent variable and dependent variables one by one

Testing criterion:

If p-value is higher than significant level, accept H0 and reject H1

If p-value is lower than significant level, reject H0 and accept H1

3.5.3. F-Test

F-test will define whether there is a significant relationship between the dependent variable and independent variable at once by controlling other independent variable. F-test is conducted by comparing the Prob (F-statistic) with significant level value. The hypotheses are:

H0 : There is no significant effect between independent variable and dependent variable at once

H1 : There is significant effect between independent variable and dependent variable at once

Testing criterion:

If Prob (F-statistic) is lower than F table, reject H0 and accept H1

If Prob (F-statistic) is higher than F table, accept H0 and reject H1

4. Findings

BLUE Test

4.1.1. Multicollinearity

Pair wise correlation table in EViews Software shows no variable with correlation coefficient which is more than 0.8, thus there is no multicollinearity between variables. The result 1.000000 means that the correlation is between the same variables.

Table 3. Result of Multicollinearity Test

	LCR	CTEA	DTEA	EXC	INFLR	LNSIZE	LTEA	SMTEA	SSTEA
LCR	1.000000	0.155195	-0.24693	-0.01535	0.112677	0.127106	-0.18858	-0.12548	-0.00634
CTEA	0.155195	1.000000	-0.57563	0.10883	0.044134	-0.12542	-0.61542	-0.93286	-0.45391
DTEA	-0.24693	-0.57563	1.000000	-0.16142	-0.10964	0.18015	0.545646	0.522201	0.358436
EXC	-0.01535	0.10883	-0.16142	1.000000	0.506493	0.107117	-0.0649	-0.04713	-0.25034
INFLR	0.112677	0.044134	-0.10964	0.506493	1.000000	-0.02565	0.031436	0.022973	-0.04793
LNSIZE	0.127106	-0.12542	0.18015	0.107117	-0.02565	1.000000	0.422616	0.180652	-0.23294
LTEA	-0.18858	-0.61542	0.545646	-0.0649	0.031436	0.422616	1.000000	0.593117	0.102567
SMTEA	-0.12548	-0.93286	0.522201	-0.04713	0.022973	0.180652	0.593117	1.000000	0.360187
SSTEA	-0.00634	-0.45391	0.358436	-0.25034	-0.04793	-0.23294	0.102567	0.360187	1.000000

4.1.2. Heteroscedasticity Test

White Test in EViews Software indicates that the Obs*R-squared value is 321.1611 which is more than significant level (0.05). Therefore it means that there is no heteroscedasticity in the regression model.

Table 4. Result of Heteroscedasticity Test

F-statistic	8.884013	Prob. F(44,1548)	0.0000
Obs*R-squared	321.1611	Prob. Chi-Square(44)	0.0000
Scaled explained SS	512.7763	Prob. Chi-Square(44)	0.0000

4.1.3. Autocorrelation Test

The result of Durbin Watson (DW) statistic is 1.984005 and if it is compared to Durbin Watson Table (T=1600, K=9), it is located in $d_u < DW < 2$, thus there is no autocorrelation (see table 6). The decision of the existence of autocorrelation can also be detected by using Obs*R-squared value. The Obs*R-squared value is resulting in 1245.308 which exceeds the significant level of 0.05. It results in the same decision that there is no autocorrelation.

Table 5. Breusch-Godfrey Serial Correlation LM Test

F-statistic	2833.079	Prob. F(2,1582)	0.0000
Obs*R-squared	1245.308	Prob. Chi-Square(2)	0.0000

Table 6. Autocorrelation Identification Table

Durbin Statistic	Watson (DW)	Decision
$4-dL < DW < 4$		Negative autocorrelation exists
$4-dU < DW < 4-dL$		No accurate decision
$2 < DW < 4-dU$		No autocorrelation
$dU < DW < 2$		No autocorrelation
$dL < DW < dU$		No accurate decision
$0 < DW < dL$		Positive autocorrelation exists

4.1.4. Normality Test

Based on the result, the Jarque Bera is 180.7293 which is less than 1074.679 (chi square value of 0.05 significant level), then accept H_0 that indicates that the residual of the model is normally distributed.

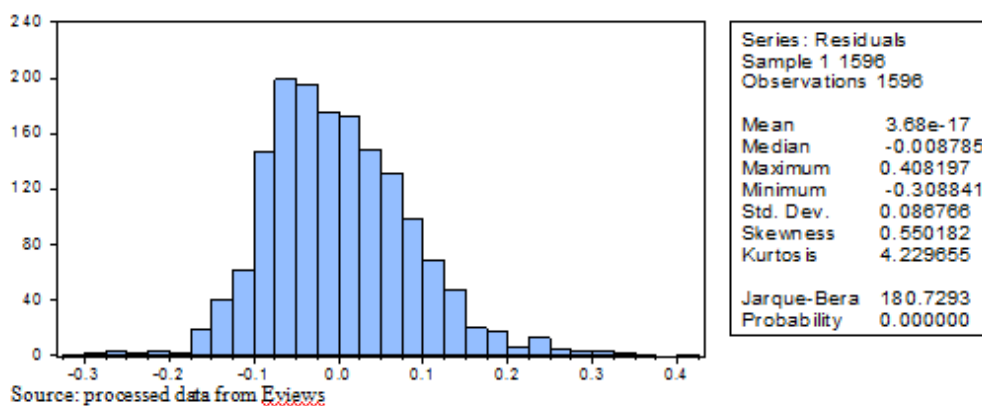


Fig. 2. Result of Normality Test

Regression Analysis Using Eight Independent Variables

After all BLUE Tests are completed and fulfilled, author will do some tests to determine which approach between Pooled Least Square, Fixed Effect, or Random Effect would be appropriate for the regression analysis. All tests will be conducted by using EViews Software and the result shows that the most appropriate method is Fixed Effect.

Table 7. Result of Regression Analysis of Eight Independent Variables Using Fixed Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.655686	0.245782	2.667747	0.0077
CTEA	-0.026228	0.205928	-0.127367	0.8987
DTEA	-1.509400	1.607321	-0.939078	0.3478
EXC	-0.196887	0.113144	-1.740149	0.0820
INFLR	1.877374	0.210990	8.897923	0.0000
LNSIZE	-0.020936	0.007699	-2.719275	0.0066
LTEA	-2.574827	0.712543	-3.613576	0.0003
SMTEA	-1.283669	0.289397	-4.435664	0.0000
SSTEA	7.389794	1.823142	4.053328	0.0001
Effects Specification				
Cross-section fixed (dummy variables)				
Weighted Statistics				
R-squared	0.535695	Mean dependent var	0.373108	
Adjusted R-squared	0.527986	S.D. dependent var	0.120908	
S.E. of regression	0.069804	Sum squared resid	7.630523	
F-statistic	69.49167	Durbin-Watson stat	0.355118	
Prob(F-statistic)	0.000000			
Unweighted Statistics				

R-squared	0.456266	Mean dependent var	0.318390
Sum squared resid	7.814753	Durbin-Watson stat	0.281602

The result of regression model by using eight independent variables is:

$$LCR = 0.655686 - 0.026228 * CTEA - 1.509400 * DTEA - 0.196887 * EXC + 1.877374 * INFLR - 0.020936 * LnSize - 2.574827 * LTEA - 1.283669 * SMTEA + 7.389794 * SSTE A + e \quad (2)$$

4.2.1. Coefficient of Determination

The value of R-squared of weighted statistics is 0.535695 or 53.57%. It means that independent variables can explain 53.57% of the dependent variable, which is LCR. The remains 46.43% are defined by other variables.

4.2.2. T-Test

T-test examines whether there is a significant relationship between the dependent variable and independent variable one by one by comparing p-value with significant level. If p-value is lower than significant level, then there is a significant effect of independent variable to dependent variable. To determine the negative or positive effect, author refers to the sign of each independent variable, shown by the coefficient. LnSize (Bank Size), LTEA (Loss Asset Quality), and SMTEA (Special Mention Asset Quality) have negative effect to LCR on 0.01 significant levels while EXC (Exchange Rate) has negative effect to LCR on 0.1 significant levels. INFLR (Inflation Rate) and SSTE A (Substandard Asset Quality) have positive effect to LCR on 0.01 significant levels. CTEA (Current Asset Quality) and DTEA (Doubtful Asset Quality) have negative but insignificant effect to LCR.

4.2.3. F-Test

Prob (F-statistic) of the regression model is 0.000000 which is less than the significant level of 0.05, thus reject H0 and accept H1. It means that there is significant relationship between the dependent variable and independent variable at once.

The regression result indicates some insignificant independent variables. The next regression model will remove CTEA (Current Asset Quality) and DTEA (Doubtful Asset Quality) as the insignificant variables from previous regression model, thus the next regression model will have six independent variables.

4.3. Regression Analysis Using Six Independent Variables

Table 8. Result of Regression Analysis of Six Independent Variables Using Fixed Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.619931	0.145617	4.257282	0.0000
EXC	-0.193167	0.112898	-1.710990	0.0873
INFLR	1.903935	0.203723	9.345684	0.0000
LNSIZE	-0.020550	0.007667	-2.680252	0.0074
LTEA	-2.831268	0.639440	-4.427733	0.0000
SMTEA	-1.275486	0.167445	-7.617355	0.0000
SSTE A	7.355963	1.745230	4.214897	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
Weighted Statistics				
R-squared	0.535403	Mean dependent var	0.373098	

Adjusted R-squared	0.528292	S.D. dependent var	0.120950
S.E. of regression	0.069773	Sum squared resid	7.633398
F-statistic	75.29041	Durbin-Watson stat	0.354686
Prob(F-statistic)	0.000000		
Unweighted Statistics			
R-squared	0.456429	Mean dependent var	0.318390
Sum squared resid	7.812404	Durbin-Watson stat	0.281546

The result of regression model by using six independent variables is:

$$LCR = 0.619931 - 0.193167*EXC + 1.903935*INFLR - 0.020550*LnSize - 2.831268*LTEA - 1.275486*SMTEA + 7.355963*SSTEa + e \quad (3)$$

4.3.1. Coefficient of Determination

The value of weighted statistics R-squared is 0.535403 or 53.54%. It means that independent variables can define 53.54% of the dependent variable (LCR) while the remains 46.46% are explained by other variables.

4.3.2. T-Test

T-test determines whether there is a significant relationship between the dependent variable and independent variable one by one by comparing p-value with significant level. If p-value is lower than significant level, then there is a significant effect of independent variable to dependent variable. LnSize (Bank Size), LTEA (Loss Asset Quality), and SMTEA (Special Mention Asset Quality) have negative effect to LCR on 0.01 significant levels while EXC (Exchange Rate) has negative effect to LCR on 0.1 significant levels. INFLR (Inflation Rate) and SSTEa (Substandard Asset Quality) have positive effect to LCR on 0.01 significant levels.

4.3.3. F-Test

Prob (F-statistic) of the regression model is 0.000000 which is less than the significant level of 0.05 that means that there is significant relationship between the dependent variable and independent variable at once.

4.4. Regression Analysis Result

4.4.1. Bank Size (LnSize)

Bank size refers to total asset of bank and it has negative significant effect to LCR (it is the same with hypothesis). It is supported by previous research conducted by Vodova (2013) and Choon, et al (2013) which shows that bank size has negative significant effect to bank liquidity. LnSize has probability of 0.0074 which is less than 0.05 and coefficient of -0.0206. It means that every increasing of one point in LnSize, the LCR will drop down by 0.0206 points, by holding other variables constant. This negative effect can be explained as banks performed a passive plan on confronting liquidity problems. Banks will see themselves as “too big to fail” and they will depend on interbank market and liquidity support from central bank. Central bank as Lender of Last Resort can give financial aid to commercial banks which face financial difficulties by giving loan to prevent the case of “too big to fail”. It is good for bank to have high amount of asset in form of earning assets in order to generate more income. Nevertheless, at certain level, too high number of assets can give disadvantage for bank, especially if the assets are mostly composed by non earning assets.

4.4.2. Special Mention Asset Quality (SMTEA)

SMTEA refers to earning assets with less than 3 months retardation of principal and interest payment. SMTEA has significant influence with coefficient of -1.2755 to LCR and it is the same with hypothesis.

Every point increasing in SMTEA will diminish the LCR by 1.2755 points. Although the debtor will not pay the principal and interest on time, but there is a high indication of the loan to be fully paid (in less than 3 months), so bank does not have to be worry. It is better for bank to keep the SMTEA in high amount compared to SSTEAs, DTEAs, and LTEAs but smaller than CTEAs by assessing every candidate of debtor carefully through 5C's principle (Character, Capacity, Capital, Condition of Economy, and Collateral), thus bank can lessen the amount of LCR and allocate the funds for other loan.

4.4.3. Substandard Asset Quality (SSTEAs)

Substandard Asset Quality includes earning assets with more than 3 months and less than 180 days retardation of principal and interest payment. SSTEAs has significant effect and coefficient of 7.3560 to LCR. The result is the same with hypothesis. It demonstrates that every point gained in SSTEAs, the LCR will go up for 7.3560 points. Bank will feel anxious if there is high number of SSTEAs as the payment of principal and interest will be delayed and there will be higher possibility of debtor not to pay the principal and interest if it is compared to SMTEAs. Therefore, bank should keep the amount of SSTEAs low as it is categorized as non performing asset by selectively analyzed the candidate of debtor by using 5C's.

4.4.4. Loss Asset Quality (LTEAs)

Loan Asset Quality involves earning assets with more than 270 days retardation of principal and interest payment. Result shows that LTEAs has significant effect to LCR with coefficient of -2.8313. It results in different interpretation with hypothesis that states LTEAs has significant positive effect to LCR. When the amount of LTEAs increases for one point, the LCR will be declined by 2.8313 points. If the amount of LTEAs gets higher, bank should add the number of its liquidity because bank will face the delayed payment of principal and interest. Nevertheless, the amount of LTEAs is usually very small (only 1%) compared to total earning assets. Therefore it would be better for banks to allocate their money to other loan. So, it is better for banks to keep the alteration of LTEAs amount in small numbers by using 5C'S principle to evaluate the candidate of debtor.

4.4.5. Inflation Rate (INFLR)

Inflation is the event of increasing price of goods and services as a whole when the same amount of money can buy fewer number of goods or services. INFLR has significant effect to LCR and has coefficient of 1.9039. Every one point gaining in INFLR will increase the LCR for 1.9039 points. High level of inflation will lower the value of the rupiah itself and will result in low purchasing power of people. Cost and price of goods and services will raise that makes the ability of debtor to pay loan become diminished. As debtor faces the difficulty to pay credits, there will be more NPL exist that will require more liquidity of banks. So, the high level of inflation is the indication for management of bank to tighten the process of distributing loan to prevent high amount of NPL.

4.4.6. Exchange Rate (EXC)

Exchange rate is the domestic currency value with regard to another currency. According to the result, EXC is significant with coefficient of -0.1932, so if the amount of EXC is got higher by one point, then the LCR will be reduced by 0.1932, by holding other variables constant. It is different with the hypothesis that states the significant positive effect of exchange rate to LCR. If exchange rate of rupiah increases, it will result in high purchasing power of people as the value of rupiah also increases. When there are huge number of material imports used by domestic companies to produce goods and services, the cost and price will be lower and the sales will grow. As the result, the debtor capacity to pay loan will also raise while the amount of NPL will decrease. Therefore, banks need less liquidity. In reverse, if the exchange rate of rupiah decreases, the purchasing power of people will be also decreased. When domestic companies use huge number of material imports to produce goods and services, the cost and price will be higher and the sales will go down. Therefore, there will be high number of NPL and bank require more liquidity. In that case, bank should conduct selective process based on 5C's principle to evaluate candidate of debtor.

5. Summary and Conclusion

Liquidity becomes an important thing to be maintained to achieve best profitability for banks. Too high liquidity implies that the bank cannot optimize the assets it has to generate income while the too low liquidity maintained by bank will result in high possibility of insolvency. The optimal number of liquidity is regulated in Basel III Document which will be calculated by using LCR (Liquidity Coverage Ratio) as the comparison of High Quality Liquid Asset with Net Cash Outflow. Furthermore, in Indonesia banks have not yet achieved the minimum LCR regulated, so it is interesting to find out which variables have significant effect to LCR thus bank can modify the amount of significant variables to achieve the minimum liquidity. The samples used in this research are 19 commercial banks in Indonesia which are categorized as bank BUKU 3 and 4 in period of 2008-2014. Author uses panel data and linear regression analysis to scrutinize the effect of bank specific variables, which are Bank Size (LnSize), Current Asset Quality (CTEA), Special Mention Asset Quality (SMTEA), Substandard Asset Quality (SSTEa), Doubtful Asset Quality (DTEA), and Loss Asset Quality (LTEA) as well as macroeconomics variables, which are Inflation Rate (INFLR) and Exchange Rate (EXC) toward LCR. Author uses OLS method to estimate the regression model and input the data to be processed by EViews Software. As the result LnSize, SMTEA, LTEA, and EXC have negative significant effect to LCR while INFLR and SSTEa have positive significant effect to LCR. CTEA and DTEA have negative but insignificant effect to LCR.

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The Determinant of Herfindahl-Hirschman Index and Bank Specific Variables for Loan to Deposit Ratio (Case Study: 19 Big Banks in Indonesia Periode 2008-2014)

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Abstract

Bank activities that distribute funds to productive economic sector have a positive impact on investment growth, business expansion, and public consuming. Studies of bank intermediary are important to ensure that bank have been able to serve its function and maintain a balance between liquidity level, and profitability as well as the fulfillment of capital requirements. Loan to Deposit Ratio (LDR) indicates bank as a financial intermediary, it shows the relationship between third party funds and loans. Related to the issue above, the author examined the determinant of *Capital Adequacy Ratio (CAR)*, *Net Interest Margin (NIM)*, *Non Performing Loan (NPL)*, *Bank Size*, *Less Risky Liquid Asset*, *Risky Liquid Asset*, *Herfindahl-Hirschman Index (HHI)* towards LDR as the representative of bank as financial Intermediary, during the period of 2008-2014. The research used multi-linear regression and EViews as the statistical tool. Research limitation was by using only 19 banks that have capital above 5 trillion, which dominate the bank industry by 75% in assets and classified in BUKU 3 and BUKU 4. The result will provide which variables that could affect bank's function as financial intermediary and offer a recommendation based on the research.

Keywords: Bank Managemet ; Financial Intermediary ; Loan to Deposit Ratio ; Measures of Concentration ; Herfindhal-Hirschman Index

1. Introduction

Banks hold 80% market share on financial industry. Reminding the importance in economic sector, there is an issue that must be considered and important to be studied is the bank function as financial intermediary. Currently, government has realised that to improve the economic growth requires a stimulant that comes from bank activities to create credit by lending money to a productive economic sector. Bank Management needs to maintain a balance between liquidity level, and profitability as well as the fulfillment of capital requirements. Furthermore, banks need to keep their soundness by keeping the level of liquidity to ensure that the bank can continue to serve its function and run their business activities. The main purpose of bank is therefore to collect the fund from public and convert them into credit. Largely sourced come from the lender that put their fund in bank in the form of demand deposits, savings deposits, and time deposits. Deposits from customer referred as the Third Party Fund (TPF) . The relationship between Third Party Fund and Credit is shown by Loan to Deposit Ratio. LDR shows the ratio to measure the composition of total loans compared to the amount of public funds that have been collected by the bank (Kashmir, 2007).

LDR as the ratio is an indicator to assess the functioning of intermediation, the bank soundness, and liquidity. The higher the loan portfolio using depositor funds, the intermediary function runs very well.

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Conversely, the low lending using Third party fund demonstrates intermediation that runs smoothly, because the fund is not channelled back to the public. Loan to deposit ratio is not directly stated in Bank Indonesia Regulation, but related to reserved requirement. Bank should maintain the level of LDR in order not to be too high or too low, therefore we need a set for LDR. Bank Indonesia, the central bank as a monetary authority sets a limit for LDR level 78%-92% in accordance with bank Indonesia Regulation No. 15/15/PBI/2013, bank's function as an financial intermediary in Indonesia is not optimally implemented because as stated by Siringoringo (2012) most of the funds are distributed to the public as consumption loans while investment loans' and working capital loans' growth are still not as high as consumption loans' growth.

Related to the issues above which are related to Indonesia banking industries condition and the previous research, the author wants to examine the determinant of Herfindahl-Hirschman index and banks specific variables to bank function as intermediary using the Loan the deposit ratio as the indicator, during the period of 2008-2014. The limitation of the research was object of only 19 banks with capital above 5 billion, which dominate the bank industry by 75% in assets and classified in BUKU (Business Activity Commercial Bank) 3 and BUKU 4. This paper arranged as follows, the first section is introduction including brief explanation about the research. Section 2 is about empirical theory that relates to the topic as framework of the analysis. Section 3 provides about stage to perform the research. In section 4 there will be a result of data calculation and analysis of the result. The last, section 5 will concern on answering the research question and will be concluded as the researcher's recommendation.

2. Literature Review

2.1. Bank

Based on Act number 7 in 1992, the definition of bank is a financial institution that raise fund from community in a form of savings and distribute them to community in order to improve the living standard. Later on the amended of Act number 10 in 1992, it is stated that *"Bank is a financial firm that raises funds from the public in the form of savings and distribute them back to public in the from of loans, credit, and others in the context to improve the living standards of people."*

In accordance to Bank Indonesia Regulation number 14/26/PBI/2012 regarding on bank's business activity and office network based on core capital, known as multiple licenses policy. Banks are classified by its core capital into four group, specifically: Business Activity Commercial Bank define as BUKU,

1. BUKU 1 is a basic banking service with core capital at between IDR 100 billion up to IDR 1 trillion.
2. BUKU 2 is a wider banking service activity and limited equity with core capital between IDR 1 trillion up to IDR 5 trillion.
3. BUKU 3 is having full of banking service activity and equity with core capital between IDR 5 trillion up to IDR 30 trillion.
4. BUKU 4 is having full of banking service activity and wider equity with core capital above IDR 30 trillion.

2.2. Bank as an Intermediary

Bank as a financial institution has intermediary function. The diagram above, describes the flow of bank activity as financial intermediary. It starts from bank offering financing product to customer or depositor with surplus fund, namely demand deposit, saving deposit, time deposit, etc. Funds that banks achieve from surplus from depositor will be distributed to deficit unit or borrowers as loan and credit.



Figure 1 Bank as Intermediary

The activities of bank include collecting funds circulating those funds, and provide other services. The cash flow in a bank is obtained from public and distributed back to public. The diagram above shows that people who deposit their money in the bank is known as depositor, and people who receive fund from bank is borrower. As the intermediary, bank collects fund in the form of current account, saving, deposit, later by this activity, the depositor will get interest in the form of bank retribution. Otherwise, bank distributes public's fund in term of Loan, and borrower have to pay for the interest of loan as a fee. Thus, bank function as financial intermediary could be supporting infrastructure to develop economy condition. (Kashmir, 2012)

2.3. Financial Ratio

Dependent Variables

LDR stands for Loan to Deposit Ratio. The implementation of bank's function as an intermediary is represented by Loan to deposit Ratio because the ratio is defines the relationship between loans distributed by banks and the funds collected from the third party, or known as third party funds. The formula of LDR is,

$$LDR = \frac{\text{Credit}}{\text{Third Party Funds}} \times 100\% \quad (1)$$

Independent Variables

CAR stands for Capital Adequacy Ratio. The ratio of Bank's capital used to protect depositors and promotes the stability and efficiency of financial system. Previous research from Ali (2004) said that public trust to bank are gained by the impression of bank stability performance created by itself. Thus, the author chose to use Capital Adequacy Ratio as an independent variable that affect bank function as intermediary. The formula of CAR is,

$$CAR : \frac{\text{Tier 1 Capital} + \text{Tier 2 Capital}}{\text{Risk weighted Exposures}} \times 100\% \quad (2)$$

NIM stands for Net Interest Margin, considered as a fee for bank obtained by circulating fund to society. The reason to choose NIM as independent variable is good performing and efficiency of bank as intermediary institution should give positive value of NIM. The formula of NIM is,

$$NIM = \frac{\text{Net Interest Income}}{\text{Average of Earning Assets}} \times 100\% \quad (3)$$

NPL stands for Non Performing Loan, Non Performing Loan shows the ability of bank to manage their credit default. The Author determined Non Performing Loan as independent variable as it can effect the risk of bank to run their function as financial intermediary. The formula of NPL is,

$$NPL = \frac{\text{Credit that are substANDARD, doubtful, and loss}}{\text{Total credit}} \times 100\% \quad (4)$$

LNSIZE stands for Bank Size, calculated by natural logarithm of bank's total asset.

LRLA stands for Less Risky Liquid Asset. The ratio represents the asset that can be easily converted into cash (Liquidated) at any moments without changes or decreasing the value itself.

The formula of LRLA is,

$$LRLA = \frac{GWM + SBI + SUN}{Total\ asset} \times 100\% \quad (5)$$

RLA stands for Risky Liquid Asset. The ratio represents the asset that can be easily converted into the cash (Liquidated) at any moments but there are probability in the value of asset that ought to be decreased, so it could be riskier.

The formula of LRLA is,

$$RLA = \frac{Placement\ in\ other\ bank + Acceptance\ bill + Reserved\ Repo}{Total\ asset} \times 100\% \quad (6)$$

2.4. Herfindahl-Hirschman Index

Herfindahl-Hirschman Index is known as the index that commonly be used to measure market concentration. In this research, it calculated by squaring the market share of third party fund related to Loan and Deposit Ratio. To analyse how each banks competing in banking industry, and assuming the value of result

HHITPF stands for Herfindahl-Hirschman Index of Third Party Funds. The author determined Herfindahl-Hirschman Index of Third Party Fund as independent variable because the market's concentration of third party fund should give positive effect for bank to deliver its function as intermediary.

The formula of HHITPF is,

$$Market\ Share = \frac{Total\ TPF\ Bank\ i}{Total\ TPF\ 19\ Banks} \quad (7)$$

$$HHI = s_1^2 + S_2^2 + S_3^2 + \dots + S_n^2 (S_n\ is\ market\ share\ of\ each\ month) \quad (8)$$

3. Methodology

3.1. Data collection

Data collection for this research, the author used secondary data obtained from Otoritas Jasa Keuangan (OJK) website and consisting of Balance Sheet, Income Statement, Commitment and Contingence reports, Loan Loss Provisioning reports, Productive Asset Quality reports, and Minimum Capital Adequacy Ratio reports. Sample for this research involves 19 big banks in Indonesia (both foreign exchange and non foreign exchange banks), classified in BUKU 3 and BUKU 4 that have capital above 5 trillion, during the period of 2008 until 2014. The object of this research, including bank specific variables and Herfindahl-Hirschman Index.

Table 1. List of Bank

Bank classified as BUKU 3		Bank classified as BUKU 4
CIMB NIAGA	MEGA	MANDIRI
Permata	Bukopin	BRI
ANZ Panin	DBS Indonesia	
Danamon	Sumitomo Mitsui Indonesia	BCA
Maybank Indonesia	Mizuho Indonesia	BNI
BTN	BTPN	
OCBC NISP	UOB	
BJB		

3.2. Data Analysis

The research involves two steps of analysis, the first one is analysing the determinant of bank function as financial intermediary using Loan the Deposit Ratio as indicator, the second examines the significant effect of independent variables to dependent variable. Based on theory and previous research, the author has selected bank specific variables correlated with Loan to Deposit Ratio, also using Herfindahl-Hirschman Index of third party fund to find which variables have significant effect to LDR as well as the relationship of those variables toward LDR. The diagram below will describe the paradigm of this research:

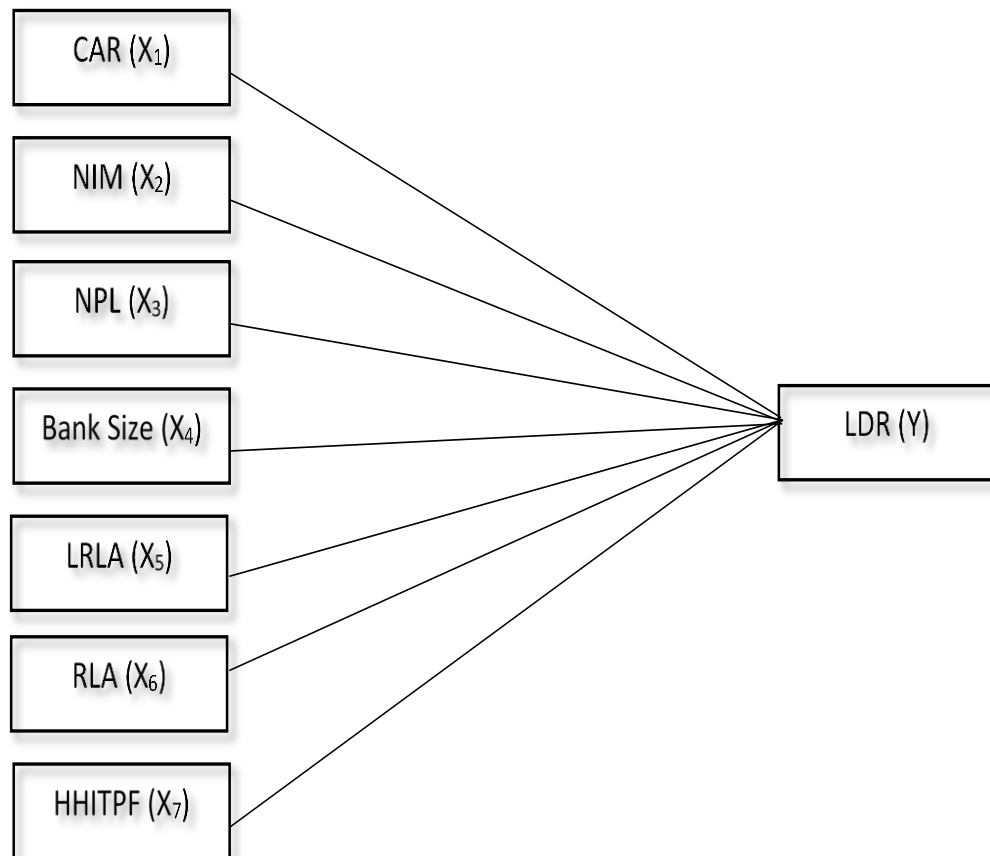


Figure 2 Paradigm of research

Based on the structural model, the LDR function in the proposed model become:

$$LDR = \beta_0 + \beta_1 CAR + \beta_2 NIM + \beta_3 NPL + \beta_4 \ln SIZE + \beta_5 LRLA + \beta_6 RLA + \beta_7 HHITPF + e \quad (9)$$

- LDR (Y) is dependent variable
- CAR (X₁) is independent variable
 - H₀ : β = 0, X₁ has no significant positive effect toward Y.
 - H₁ : β ≠ 0, X₁ has significant positive effect toward Y.
- NIM (X₂) is independent variable
 - H₀ : β = 0, X₂ has no significant positive effect toward Y.

$H_1 : \beta \neq 0$, X2 has significant positive effect toward Y.

- NPL (X3) is independent variable

$H_0 : \beta = 0$, X3 has no significant negative effect toward Y.

$H_1 : \beta \neq 0$, X3 has significant negative effect toward Y.

- Bank Size (X4) is independent variable

$H_0 : \beta = 0$, X4 has no significant positive effect toward Y.

$H_1 : \beta \neq 0$, X4 has significant positive effect toward Y.

- Less Risky Liquid Asset (X5) is independent variable

$H_0 : \beta = 0$, X5 has no significant negative effect toward Y.

$H_1 : \beta \neq 0$, X5 has significant negative effect toward Y.

- Risky Liquid Asset (X6) is independent variable

$H_0 : \beta = 0$, X6 has no significant negative effect toward Y.

$H_1 : \beta \neq 0$, X6 has significant negative effect toward Y.

- Herfindahl-Hirschman Index of Third Party Fund (X7) is independent variable

$H_0 : \beta = 0$, X7 has no significant positive effect toward Y.

$H_1 : \beta \neq 0$, X7 has significant positive effect toward Y.

4. The Findings

4.1. Classical Linear Assumption Test

Classical Linear Assumption test is needed to analyse linear regression. In order to have good assumption, the regression model should match with the characteristic of BLUE test (Best Linear Unbiased Estimate). The test consists of multicollinearity test, heteroscedasticity test, autocorrelation test, and normality test, through Eviews 6 program as the statistical tool. The data of regression model has to accomplish the assumption requirement in order to have an acceptable regression result.

4.1.1 Multicollinearity Test

In accordance to Pair-Wise correlation matrix there is no correlation value over 0.8, so by using Pair-Wise test, in this regression, the model indicates no multicollinearity. If there are any correlation value that over 0.8, the variable should be eliminated to fulfill the assumption test requirements.

4.1.2 Heteroscedasticity Test

Using white test to analyze the Heteroscedasticity. The result qualified for regression analysis if only it has constant var (ui), also known as homoscedasticity. In order to get the heteroscedasticity test, it is measured by comparing Obs*R-Square value with significant level (0.05). In this research, the Obs*R-square through LDR as dependent variable is 56.60577, it is indicated that there is homoscedasticity or no heteroscedasticity in this regression model.

4.1.3 Autocorrelation Test

In order to have an acceptable result, the regression model should not have autocorrelation. It uses the result of Obs*R-square value compared to the significant level. If the Obs*R-square exceeds the significant level, then there is no autocorrelation. It shows that Obs*R-square is 57.99857 which exceeds the significant level of 0.05. This concludes that there is no autocorrelation in this regression model.

4.1.4 Normality Test

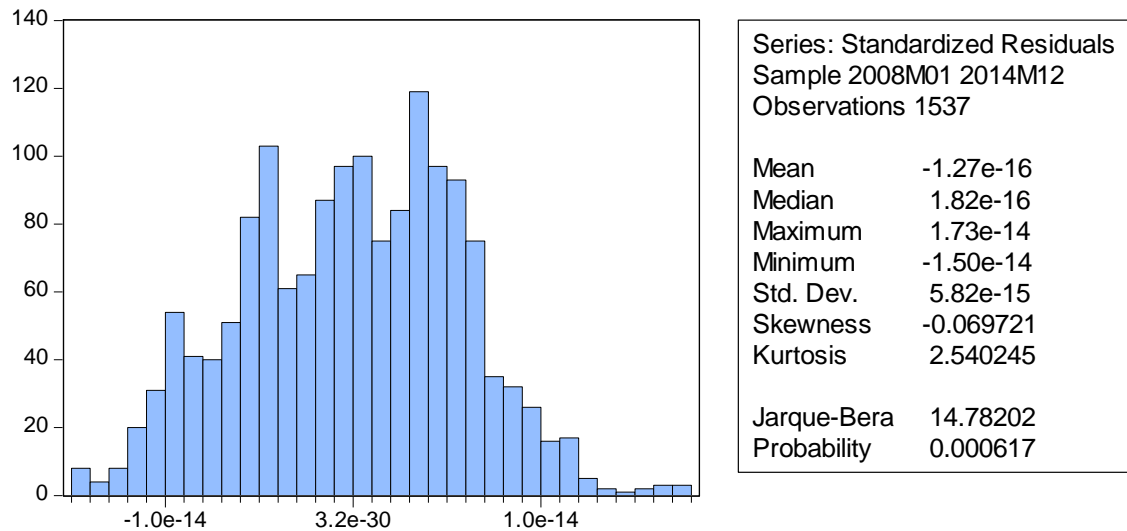


Figure 3 Normality test result

Regarding the result of normality test for the regression model, the value of Jarque-Bera is 14.78202, which exceeds chi square value, then the residual is normally distributed, while the probability value is 0.000617 which is less than significant value (0.05). Besides, consider the total observation is 1537 sample (including 19 big banks during the period of 2008 until 2014) make it classified into large sample size, so the central limit theory applies. In accordance with McClave and Benson (1982), when the sample size is greater than 30, the central limit theory applies and normality is assumed.

4.2. Regression Analysis Using Seven Independent Variables

After completing the blue test (Multicollinearity, Heteroscedasticity, Autocorellation, Normality) and it is qualified to continue regression analysis through several tests. The output estimation of the regression model gives the value of R-square for the coefficient of determination, value of p-value for each variable used for the T test, and value of F-statistic used for the F test.

$$LDR=1.792548 + 1.429715CAR + 0.406571NIM - 1.139035NPL + 0.003010LnSIZE - 2.412356LRLA - 0.625969RLA - 4.139007HHITPF + e \tag{10}$$

Table 2. Regression Analysis Using Seven Independent Variables using Fixed Effect

Dependent Variable: LDRSMT
 Method: Panel EGLS (Cross-section weights)
 Date: 06/09/16 Time: 20:35
 Sample: 2008M01 2014M12
 Periods included: 84
 Cross-sections included: 19
 Total panel (unbalanced) observations: 1537
 Use pre-specified GLS weights

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.792548	0.075215	23.83231	0.0000
CAR	1.429715	0.196260	-7.284789	0.0000
HHITPF	-4.139007	0.481123	8.602809	0.0000
LNSIZE	0.003010	0.004461	0.674749	0.4999
LRLA	-2.412356	0.059971	-40.22509	0.0000
NIM	0.406571	0.203558	-1.997320	0.0460
NPLR	-1.139035	0.374933	-3.037974	0.0024
RLA	-0.625969	0.104350	-5.998769	0.0000
Weighted Statistics				
R-squared	0.623804	Mean dependent var	2.289752	
Adjusted R-squared	0.622082	S.D. dependent var	1.552173	
S.E. of regression	0.231855	Sum squared resid	82.19388	
F-statistic	362.1957	Durbin-Watson stat	0.002790	
Prob(F-statistic)	0.000000			

4.2.1 Coefficient of Determination

Conducting the result of regression analysis through LDR as dependent variable, the value of r-squared is 0.623804. The result shows that independent variable can explain 62.38% while the rest 37.62% is explained with other variables.

4.2.2 T Test

T-test determines the significant level of each independent variable to the dependent variable by comparing the p-value and significant level (0.05). If the p-value exceeds significant level it means that the variable is not significant towards dependent variables. The result above shows that CAR (Capital Adequacy Ratio) and NIM (Net Interest Margin) have positive significant related to LDR. HHITPF (Herfindahl-Hirschman Index of Third Party Funds), LRLA (Less Risky Liquid Asset), NPL (Non Performing Loan), RLA (Risky Liquid Asset) significant negative relation to LDR, while LNSIZE (Bank Size) has positive but not significant relation to LDR.

4.3. Regression Analysis Using Three Independent

After eliminating other four independent variables, the regression model will consist of three independent variables.

$$LDR = 1.235363 + 2.651679NIM - 2.269063RLA - 3.319478HHITPF + e \quad (11)$$

Table 3. Regression Analysis Using Three Independent Variables using Fixed Effect

Dependent Variable: LDRSMT
Method: Panel EGLS (Cross-section weights)
Date: 06/10/16 Time: 15:14
Sample: 2008M01 2014M12
Periods included: 84
Cross-sections included: 19
Total panel (balanced) observations: 1596
Use pre-specified GLS weights

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.235363	0.013177	93.75137	0.0000

HHIDPK	-3.319478	0.225521	-14.71912	0.0000
NIM	2.651679	0.197012	-13.45947	0.0000
RLA	-2.269063	0.082264	-27.58287	0.0000
Weighted Statistics				
R-squared	0.454589	Mean dependent var	2.467917	
Adjusted R-squared	0.453561	S.D. dependent var	1.765339	
S.E. of regression	0.295771	Sum squared resid	139.2689	
F-statistic	442.2990	Durbin-Watson stat	0.002546	
Prob(F-statistic)	0.000000			

4.3.1 Coefficient of Determination

Conducting the result of regression analysis after eliminating variable and consist of three significant variables, the value of r-squared is 0.454589. The result shows that independent variable can explain 45.46% while the rest 54.54% is explained with other variables.

4.3.2 T Test

T-test determines the significant level of each independent variable to the dependent variable by comparing the p-value and significant level (0.05). If the p-value exceeds significant level it means that the variable is not significant towards dependent variables. The result after eliminating other four variables shows that NIM (Net Interest Margin) has positive significant relation to LDR. HHITPF (Herfindahl-Hirschman of Third Party Fund) and RLA (Risky Liquid Asset) negative significant relation to LDR.

5. Summary and Conclusion

After doing classical linear assumption test, then continued on regression analysis. m

This research also performed step-wise, it means that the most insignificant variables will be eliminated one by one in order to find the consistency of the significant variable. The result of regression analysis using three independent variables shows that NIM (Net Interest Margin) have positive significant relation to LDR. HHITPF (Herfindahl-Hirschman Index of Third Party Fund) and RLA (Risky Liquid Asset) negative significant relation to LDR.

The most significant variable that influences Loan to Deposit Ratio is Net Interest Margin, it has a positive significant result, the reason is the higher the number of NIM, the higher the profitability that gained by the bank from their activity namely distributed loan or credit to public and earn interest. So, the bank tends to collect and distribute more fund, in order to gain more profit. In short, bank should increase their ability to implemented the bank function as financial intermediary by focusing in maintaining the level of Loan to Deposit Ratio, if the banks do not distribute funds to public it could reduce the profit for the bank itself. Otherwise, if banks distribute too much credit to public it can lead to the liquidity problem. Bank as a financial intermediary holds the important role for economic growth.

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The Influence of Bank Specific Variables on NPL and the Implications of NPL, Exchange Rate, and Inflation Rate to Bank Profitability Performance (Case Study: 19 Foreign Exchange Commercial Banks in Indonesia Period 2008-2014)

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Abstract

The role of banking industry nowadays remains crucial and significant in developing economic of a country. Its intermediation functions of transferring funds from surplus units to deficit units can be said as an accelerator for economic growth. However, in implementing and supporting these functions, financial risks may not be avoided. Lately, it is known that credit risk still continued to be the number one risk for banking industry in Indonesia, as shown in the NPL ratio that was getting increased over the last two years. This problem actually has been expected will have an adverse impact to the bank's profit, and indeed it has reduced the Return On Assets as one of profitability proxy in banking. With this considerations, this research attempted to find out the determinants of both problems, NPL and ROA, sequentially in a different perspectives on 19 largest commercial banks in Indonesia.

Differs from previous studies, this research actually employs recursive research model, where the two regression models, NPL and ROA are investigated sequentially, and NPL has two roles at once in this research (being dependent variable for first model, and then being independent variable for the second model). For NPL model, the author uses 5 bank-specific variables as the independent variables that consist of: Bank Size, CAR, LDR, NIM, and OEOI. Then, the next model (ROA) will employ 3 independent variables which derived from credit risk and market risk perspectives, which are: NPL, Exchange Rate, and Inflation Rate.

The research uses secondary data that is obtained from the website of IFSA and BI, including balance sheet, income statement, and monthly financial report of 19 commercial banks in Indonesia that classified as BACB 3 and 4 over the period of 2008-2014. The analysis is performed using statistical methods, called multi linear regression that is based on Panel data to describe the effect among one dependent and more independent variables. There will be three outcomes in this analysis using EVIEWS 6.0 Program, which are coefficient of determination, t test, and f test. Coefficient of determination aims to measure the percentage or proportion of the independent variables toward the dependent variable as described in the regression model. T test describes the relation among each explanatory variable to its dependent variable. F test describes the explanatory variables as unity to explain its dependent variable. To obtain several variables that have significant effect to NPL and ROA, this research will use the 5% level of significant.

The result reveals that, for NPL model, NIM is being the most significant influence to NPL in positive relation. Bank Size and LDR are also significant but negative relation, while OEOI is significant positive to NPL. Furthermore, all independent variables are showing significant to ROA in the second model. NPL shows negative relation and being the most significant influence to ROA, while Exchange Rate and Inflation Rate are positive relation to ROA. The percentage of the independent variables toward the dependent variable in the first model (NPL) is shown at 65.22%, while the second model (ROA) is at 67.57%

Keywords: Bank specific variables; Non performing loans; Exchange rate; Inflation rate; Bank profitability

1. Introduction

This research found that during 2013-2015, the ratio of non performing loans and return on assets on 19 largest commercial banks in Indonesia were going badly. Return On Assets as one of profitability proxy in

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banking industry, should have a stable amount or even increased over the time. While for the non performing loans, it should be low to show that the banks have been good in maintaining their productive assets. But in fact, the NPL ratio is getting increased lately, and give an adverse impact to the bank's profit. With this considerations, this research attempted to find out the determinants of both problems, NPL and ROA, sequentially in a different perspectives.

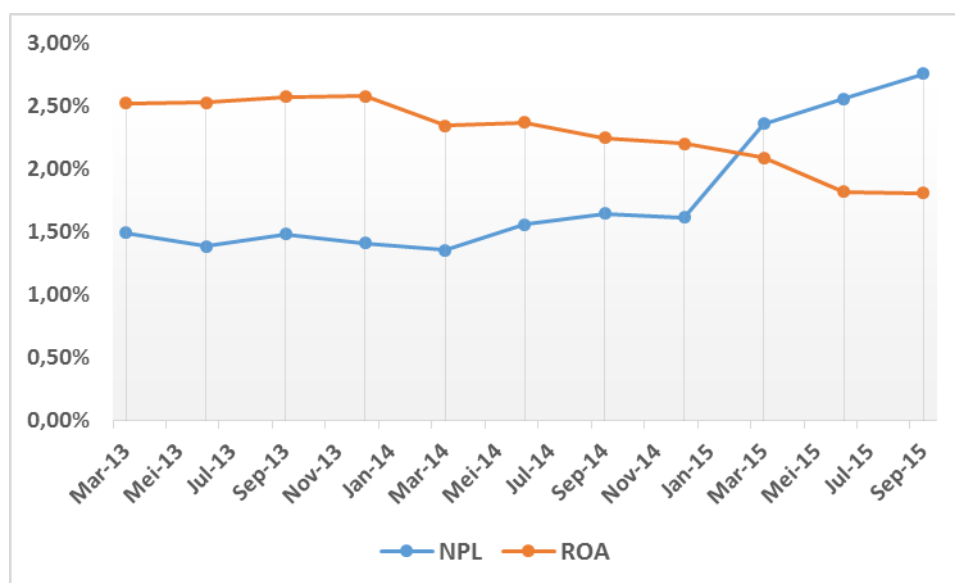


Figure 1. Trend of NPL and ROA in 19 Largest Banks in Indonesia during 2013-2015

Source: Quarterly financial report, OJK (calculated)

Credit risk, according to Indonesian Banking Survey 2015, continued to be the number one risk for bank industry. It is recognized as one of the oldest and very serious risk factors that have been facing by banks and all financial institutions from time to time. Credit risk that measured by NPL ratio, basically can occur due to many factors, however, the following research will be only focused on its internal perspectives. In many literatures, internal perspectives are usually referred to the bank-specific variables, and thus, the research will employ bank size, capital adequacy ratio, loan to deposit ratio, net interest margin, as well as operating efficiency. These selected variables are more frequently mentioned in the previous studies as the determinants of credit risk (NPL) and the consideration is also made because of the data availability.

Furthermore, research toward the determinants of Return On Assets (ROA) will be conducted based on two perspectives. The first, certainly is using the perspectives of credit risk, as it considered has an adverse impact to the ROA (see figure 1). Then, it will be combined with the market risk perspective, since both are being the two major risks that banks faces mostly, according to survey from BIS (Bank for International Settlement) that published on marketrealist.com (2014). Credit risk here will be measured by the Non Performing Loans ratio also, while the market risk will be described into two factors, which are exchange rate and inflation.

In addition, these two topics, the determinants of NPL and ROA, will be investigated on 19 largest commercial banks in Indonesia, as they belongs to *Domestic Systemically Important Bank (DSIB)*. Bank for International Settlements defines DSIB as “*the risk that the failure of a participant to meet its contractual obligations may in turn cause other participants to default with a chain reaction leading to broader financial difficulties.*” Moreover, the historical data that will be used in the research are within period of 2008-2014.

2. Literature Review

2.1 Bank Profitability

Profitability is being the main goal for all types of business. Without it, the business will not able to withstand with any negative shocks happened in the long-term. A profitable business has a capability to grant the owners with a big return on investment (Waweru & Kalani, 2009).

In banking industry, profit is defined as the bank's ability to generate more income than it costs.

Banking sector who are profitable and sound will be more able to survive against the negative shocks and give such a contribution to the financial stability (Athanasoglou, Brissimis and Delis, 2005). Countries who can successfully create a profitable banking system are having an exceptional ability in managing their financial distress very well. According to Athanasoglu et. al. (2005) and Aburime (2008), profit and efficiency are important for banks since it can highly contribute to the stability of overall financial system and also serve the country from any troubles. Alper and Anbar (2011) further mentioned that banking sector who can operate efficiently can boost the growth of economic, while the issue of credit risk can cause a systematic crisis. Tabari, Ahmadi and Emami (2013) have mentioned “the safety of banking system is depending on the profitability and capital adequacy of banks. Profitability is a parameter which shows management approach and competitive position of bank in market-based banking. This parameter helps the banks to tolerate some level of risk and support them against short-term problems.” It is also supported by Tan (2016), who stated that the more profit a bank can get, the more competitive they are in the market.

In many literature reviews, bank profitability is commonly measured by financial ratios such as return on asset (ROA), return on equity (ROE), and net interest margin (NIM). These ratios are different in its calculations. ROA is calculated as net profit divided by its total assets, while ROE is net profit divided by the shareholder's equity. NIM is reflecting the difference between interest expense and interest income divided by the total earning assets. However, this research will only employ ROA as the proxy of profitability, rather than ROE and NIM. Return On Asset is preferred in measuring bank profitability because it represents more about bank's efficiency in maintaining the capitals in order to acquire the assets and generate revenues from it (Desa, 2003). He also explained that assets have been a part of equity because acquiring the assets needs a combination of debts and equity as well. This also supported by Golin (2001) and Hudgins & Rose (2008) in their studies, who state that ROA is considered as the most important measures of banking profitability based on literatures.

$$ROA = \frac{\text{Net Income}}{\text{Total Assets}} \times 100\% \quad (1)$$

Empirical analysis finds that both bank-specific as well as macroeconomic factors are important determinants in the profitability of banks (Ross, Westerfield, Jordan, & Jaffe, 2007). Internal factors usually relates to the bank accounts, such as the balance sheet and profit-loss accounts, therefore it is also commonly known as bank-specific variables of profitability. The external factors actually are not directly related to the bank management, however it is describing the condition of the macroeconomic and industry environment which then can influence the overall performance of financial industry.

2.2 Non Performing Loans

Basically, lending activity in banking industry is not easy as it looks, because it could lead to a big problem, which is credit risk. The most important factor that represents credit risk performance is the level of non-performing loans (Lleshanaku, 2015). Central Bank of Indonesia (BI) classified loan as the NPL, if it has not been paid within 90 days or more past its due. Hennie (2003) defined NPLs as the loans which no longer generating income. It is calculated as the total loans included in the category of substandard, doubtful, and loss divided by the total loans.

$$NPL = \frac{(\text{Substandard} + \text{doubtful} + \text{loss})}{\text{Total Loans}} \times 100\% \quad (2)$$

Bad loans basically can occur due to many factors, whether it is coming from the internal banks, the external conditions, or because of the borrower's character (Dendawijaya, 2003). However, to make it easier, bank's management often use their financial reports to manage immediately this problem. The management typically uses the financial ratios, as they can provide lots of information to be explored. Manab et al. (2015) in his research of credit risk determinants in Malaysia, argued the same that “*One of the mostly used and generally accepted methods in managing credit risk is the default prediction model using financial ratios*”. In respond to this, there will be five financial ratios used in this research, which include bank size, capital adequacy, loan to deposit, net interest margin, and operating efficiency as the determinants of non performing loans. In many literatures, they also known as the bank-specific variables.

2.2.1. The Effect of Bank Size (LNSIZE) to the Non Performing Loans (NPL)

Bank size is commonly used to represent the total number of bank's assets. It is calculated using Natural Logarithm of the total assets. Many literatures have confirmed the relation between bank's assets with the credits issued. Logically, banks with big assets are likely to expand their lending activities since it can

provide more income to them. As the consequences, it will give more possibility to the loans becoming default and the number of bad debts will be more increased. Research from Syeda Zabeen Ahmed (2006), Loaded Dahl and Misra (2010), I Wayan Suwendra, Km.Suli Astrini and I Ketut (2014) are giving the same results, that the size of bank has a positive impact to the number of bad loans.

The different result is coming from the research of Sarat Dahl and Rajiv Ranjan (2003), that reveals a negative result between bank size and non performing loans. For this reason, they argued that “*The size of a company will affect its ability to bear risks that may arise due to a variety of situations faced by companies associated with its operations*”

2.2.2 The Effect of Capital Adequacy Ratio (CAR) to the Non Performing Loans (NPL)

In banking industry, capital adequacy ratio is being one of the crucial concept that often used to describe the bank’s capability in absorbing all their losses. The ratio is calculated by comparing the bank’s total capital with the risk weighted assets.

$$CAR = \frac{\text{Capital}}{\text{Risk Weighted Assets}} \times 100\% \quad (3)$$

In relation to the non performing loans, both are considered related to each other. Logically, if the banks are having a big amount of CAR, means that they have more financial resources to support the implementation of credit expansion. Therefore, CAR impacts the non performing loans in a positive direction (Soedarto, 2004). A similar result by Vatansever & Hepsen (2013), that CAR and NPL are related positively since the capital adequacy owned by the bank is only used to cover the bad debts incurred. So that, banks with high capital actually indicate that they have a big amount of NPL as well. Conversely, several studies reveals a negative relationship between both of them. For this reason, Das and Ghosh (2007) in their research explained that banks with a high CAR surely will be more capable to face all their financing risks, so that the problem of bad debts will be prevented as well. This result is also supported by Poetry & Sanrego (2011), that any increase in CAR will affect negatively to its NPL.

2.2.3 The Effect of Loan to Deposit Ratio (LDR) to the Non Performing Loans (NPL)

Bank’s liquidity according to Siamat (2005), refers to the capability of banks in fulfilling its obligations. It also shows that they have sufficient funds to meet any withdrawals, obligations which have matured, and fulfilling the demand for credit without delays (Dendawijaya, 2003). Bank’s liquidity can be measured by using Loan to Deposit Ratio (LDR). It is derived from the calculation of total credits granted divided by total funds received which include saving deposits, demand deposits, and time deposits. The ratio represents bank’s ability to pay back depositors withdrawals by using bank’s loans as the source of liquidity.

$$LDR = \frac{\text{Total Credit}}{\text{Third Party Funds (saving, demand, and time deposits)}} \times 100\% \quad (4)$$

In relation to the non performing loans, according to Dendawijaya (2005), both of them are related in a positive direction. She argued that a high LDR indicates the bank lends too much, and as the result, it may increase the opportunity of losses because some loans are not being repaid. A similar result done by Baskara and Novitayanti (2012) that the decrease in LDR will affect positively by the number of non performing loans.

2.2.4 The Effect of Net Interest Margin (NIM) to the Non Performing Loans (NPL)

Net Interest Margin is a ratio that measures the difference between interest income that generated by the bank and the number of interest expense (ex: deposit), relative to its earning assets. This ratio is also very helpful to monitor the profitability of lending and investing activities in banking industry for a certain period. According to Almilialia and Herdaningtyas (2005), NIM reflects the bank’s ability in mantaining their earning assets in order to generate more income.

$$NIM = \frac{\text{Net Interest Income}}{\text{Average Earning Assets}} \times 100\% \quad (5)$$

In relation to the non performing loans, according to Anugerah (2015), both of them are related in a negative direction. He argued that, a high amount of NIM will indicate that the bank is more effective in managing their earning assets in the form of credit, which in turn wil reduce the possibility of bank

becoming default. In the other hand, if the NIM shows decreased, there will be a tendency of non performing loans are getting increased. Under the rules of Bank Indonesia, the minimum amount of NIM is regulated in 6%.

In the contrary, several studies are giving such a different results, that NPL and NIM are related positively in the banking industry. For this reason, Rosyada (2015) in his research explained that, when the net interest income of bank increased, it will affect to the bank's profit as well as the number of credit. They will be more interested to expand the credits and as the consequences, the possibility of bad debts will be increased as well.

2.2.5 The Effect of Operating Efficiency (OEOI) to the Non Performing Loans (NPL)

Bank efficiency, according to Siamat (2005), describes the bank's ability in maintaining the operating expenses to its operating income. In this case, operating expenses are include all costs related to the bank's activities, such as foreign exchange cost, interest expense, depreciation costs, and labor costs. While operating income is related to the result of the bank's operations that has been really received, such as interest income, commission, fees, and foreign exchange income (Dendawijaya, 2003). To achieve a high level of efficiency, according to MacDonald and Koch (2003), is by increasing productivity, reducing the costs, and will result to the maximum output and more income.

$$\text{OEOI} = \frac{\text{Operating Expense}}{\text{Operating Income}} \times 100\% \quad (6)$$

In relation to the non performing loans, according to Podpiera and Weill (2008), both are related to each other in a positive direction. They argued that, a high level of OEOI is indicating that the bank is inefficient in maintaining their business. Poor performance of banks surely will lead to an increase in non performing loans. Moreover, when their operating expenses increased, the banks will increase the volume of loans to generate more income. As the results, more loans will boost the level of NPL also. This result is supported by Andriani (2015) in her research regarding the determinant of credit risk, that OEOI is related positively to NPL.

2.3 Exchange Rate

According to Demburg and McDougall (1980), exchange rate is defined as the domestic price towards the foreign currency that is determined by the market circumstances against the demand and supply of currencies, through exports and imports activities in the foreign exchange market. can be stated as administratively or by the market circumstances of supply and demand currencies by doing exports and imports activities in each market of exchange rate. The point from its definition is that they focus to the price concept that being the characteristic of exchange rate. Bodnar and Bartov (1994) argued that the impact of exchange rate's fluctuation in the long term is difficult to be ascertained, also the effectiveness of hedging for the future cash is slightly dubious. Moreover, according to Jhinghan (2003), the demand of currencies in a country is being one of crucial determinant for exchange rate. Manta (1999) added that, if currency's demand in a country is high, it will cause to the exchange rate appreciation, and so does the opposite. The rate can be floating or fixed in the foreign exchange market. Floating exchange rates are determined by the central bank of a country, while fixed exchange rates are determined based on the level of demand and supply in the market.

As a financial institution that also facilitates the international trade, bank actually can not be separated from the issue of exchange rate. It affects them as its involvement in the foreign exchange market. According to Febrina and Naomi (2009), there is a strong relationship between bank's profitability and exchange rate. Whether it is being appreciated or depreciated, the exchange rate will impact on existing bank's liabilities in the form of foreign currency at its maturity date. As the result, it will impact to the bank's profit margin if the bank did not anticipate it by doing hedging. Research of Arifin (2009) reveals a positive relation between both of them. He argued that, if the composition of bank's asset is dominated by the foreign currency, the increase in exchange rate will affect positively to the bank's profitability, as the dollar's currency is bounced up and the rupiahs is weakened. Isaac (2015) also has the same result. For this reason, he explained that when value of exchange rate increases, the banks will have to buy the foreign currency at loss, but actually, they will make a profit when the currency is sold. But if the rate reduced, the banks will be loss when it is sold, and get profits when the currency was purchased. The data of exchange rate in this research is derived from the calculation of the difference between Indonesia Exchange Rate (IEXC_{it}) and previous Indonesia Exchange Rate ($\text{IEXC}_{i(t-1)}$), then divided by the previous Indonesia Exchange Rate ($\text{IEXC}_{i(t-1)}$).

2.4 Inflation

Inflation is defined as the condition where a general prices of goods and services is increased, and resulting a fall in the purchasing power of currencies. Inflation occurred due to several factors, such as because of an imbalance demand and supply for money, production and distribution cost is changed, and the taxes for products is increased (Economic Times, 2016). When inflation occurs, the currency's value is reduced. It means that by using those currencies, now people can only buy less goods and services.

According to Revell (1979), the impact of inflation on bank's profit is depending on whether the rate of bank's salary and the expense of operating are getting increased faster than the inflation rate or not. It all depends on accuracy in predicting the possibility of future inflation that allows bank manage its operating cost. In line with this, Perry (1992) also argued that when the inflation is well-anticipated by the management of bank, it is giving a more chance for the adjustment of interest rate, so that the revenues will increase faster than its costs, and as the result, it will lead to a higher economic profits.

3. Methodology

3.1 Data collection

All datas for this research belongs to secondary data, which mostly are obtained from website of Bank Indonesia as well as IFSA (Indonesian Financial Services Authority). It includes monthly financial reports from 15 banks (BUKU 3) and 4 banks (BUKU 4) in the period of Jan 2008-Dec 2014. Sample of this research is selected based on particular purpose or specific criteria (purposive sample), such as:

1. The total population of foreign exchange bank in Indonesia is 90 banks, which consist of state-owned banks, regional development banks, joint venture banks, and foreign bank branch. This research would employ only foreign exchange banks who already have capital equal to or greater than Rp 5 trillion as of December 31, 2015 (they also include as group of BUKU 3 and BUKU 4). In addition, it doesn't include the foreign bank branch such as CitiBank and Bank of Tokyo Mitshubishi.
2. Then, there are 19 banks that would be the sample of this research, they are: Bank Mandiri, Bank BRI, Bank BCA, Bank BNI, Bank CIMB Niaga, Bank Permata, Bank Panin, Bank Danamon, Bank International Indonesia, Bank BTN, Bank OCBC-NISP, Bank Jabar Banten, Bank Mega, Bank Bukopin, Bank DBS Indonesia, Bank Sumitomo Indonesia, Bank Mizuho Indonesia, Bank UOB, and Bank BTPN.
3. This research covers the 7 years period from January 2008 until December 2014. Thus, the total number of observation is 1.596.

3.2 Data analysis

Before doing the regression, it must be firstly tested by Classical Linear Assumption Test. This particular test aims to know whether the data is fullfiling the requirement of BLUE test or not. BLUE is an abbreviation of Best Linear Unbiased Estimator, which consists of normality test, heteroscedasticity test, autocorrelation test, and multicollinearity test. The data for regression model have to get through these tests firstly, in order to have a proper regression result. The test will be checked out through Eviews 6 Program.

As mentioned before, this research will consist of two research models. The first one is NPL Model that uses non performing loans as the dependent variable for bank size, capital adequacy, net interest margin, loan to deposit, and operating efficiency. The second is ROA Model that employs return on assets as the dependent variable for non performing loans, exchange rate, and inflation. As can be seen, non performing loans has two roles at once in this research. They act as the dependent variable for the first model, however, they become an independent variable also for the second model. This kind of research is often referred to as a **recursive models**, where the value of non performing loans in ROA Model is obtained from the result of the first model (NPL Model). To describe it more clearly, below is shown the proposed model for this research

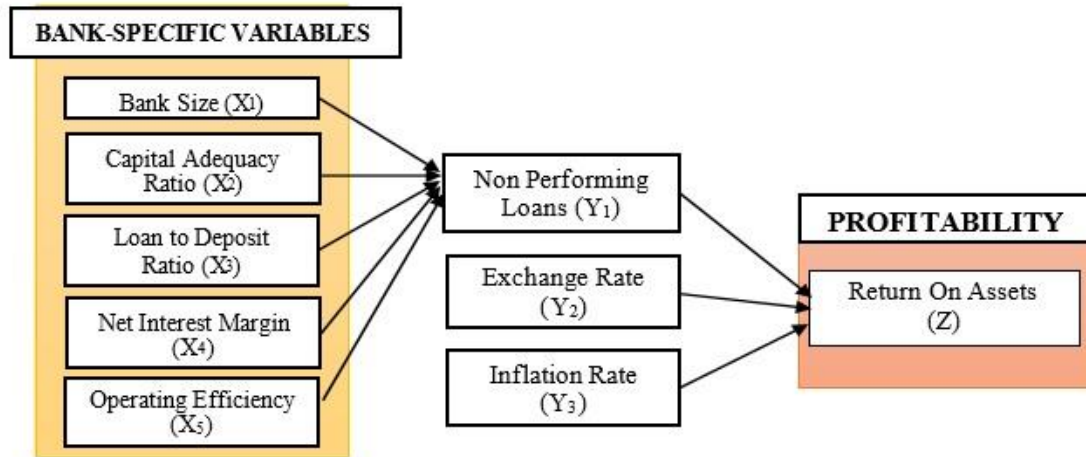


Figure 2. Proposed Model for the Research

The equations for each model will be described as below:

I. Equation of NPL Model

$$NPLR_{it} = \beta_0 + \beta_1 \text{LnSize}_{it} + \beta_2 \text{CAR}_{it} + \beta_3 \text{LDR}_{it} + \beta_4 \text{NIM}_{it} + \beta_5 \text{OEOI}_{it} + \varepsilon \quad (7)$$

Hypothesis:

NPL (Y_1) is dependent variable

Bank Size (X_1) is independent variable

$H_0 : \beta = 0$, X_1 has no significant positive effect to Y_1

$H_1 : \beta \neq 0$, X_1 has significant positive effect to Y_1

CAR (X_2) is independent variable

$H_0 : \beta = 0$, X_2 has no significant positive effect to Y_1

$H_1 : \beta \neq 0$, X_2 has significant positive effect to Y_1

LDR (X_3) is independent variable

$H_0 : \beta = 0$, X_3 has no significant positive effect to Y_1

$H_1 : \beta \neq 0$, X_3 has significant positive effect to Y_1

NIM (X_4) is independent variable

$H_0 : \beta = 0$, X_4 has no significant negative effect to Y_1

$H_1 : \beta \neq 0$, X_4 has significant negative effect to Y_1

OEOI (X_5) is independent variable

$H_0 : \beta = 0$, X_5 has no significant positive effect to Y_1

$H_1 : \beta \neq 0$, X_5 has significant positive effect to Y_1

II. Equation of Profitability Model:

$$ROA_{it} = \beta_0 + \beta_1 \text{NPLR}_{it} + \beta_2 \text{EXCR}_{it} + \beta_3 \text{INFLR}_{it} + \varepsilon \quad (8)$$

Hypothesis:

ROA (Z) is dependent variable

NPL (Y_1) is independent variable

$H_0 : \beta = 0$, Y_1 has no significant negative effect to Z

$H_1 : \beta \neq 0$, Y_1 has significant negative effect to Z

Exchange Rate (Y_2) is independent variable

$H_0 : \beta = 0$, Y_2 has no significant positive effect to Z

$H_1 : \beta \neq 0$, Y_2 has significant positive effect to Z

Inflation (Y_3) is independent variable

$H_0 : \beta = 0$, Y_3 has no significant positive effect to Z

$H_1 : \beta \neq 0$, Y_3 has significant positive effect to Z

4. The Findings

4.1 NPL Model

The first section is conducting an analysis towards the determinant of non performing loans, using NPL as the dependent variable and bank-specific variables as the independent variables. There will be two steps in each section, which are testing the assumption and doing the regression analysis.

4.1.1 Classical linear assumption test

Normality Test

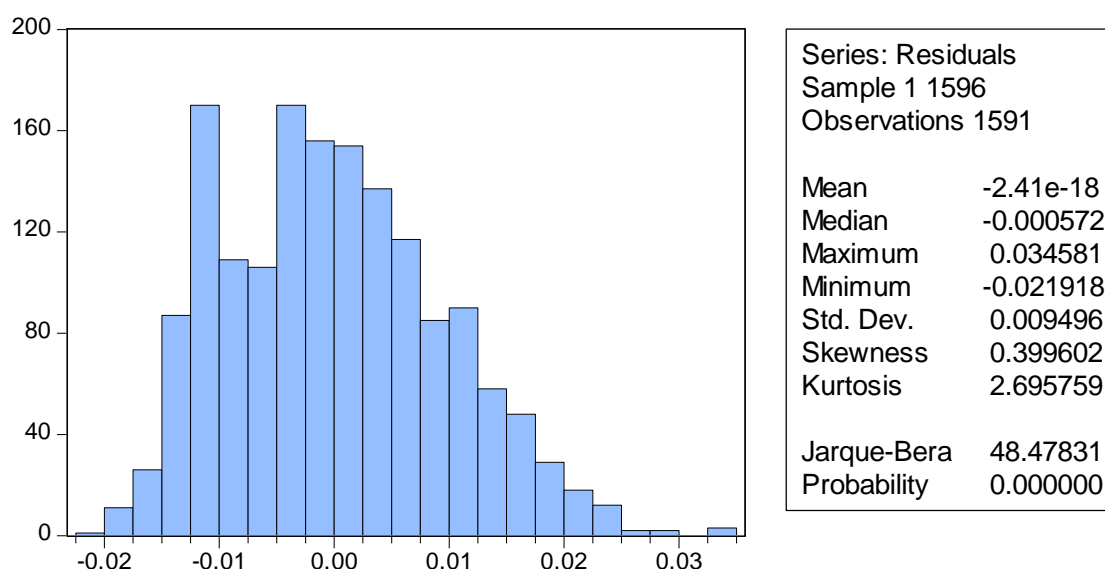


Figure 3. Normality Test for NPL Model

Based on the graphic above, it is shown that the Jarque-Bera value is at 48.47831. While the Chi-Square value is known at 1074.68 (it is obtained from the chi-square table, where the degree of freedom is at 1000 and the significant level is at 0.05). Since the Jarque-Bera value is less than the Chi-Square value, it means that the data has been normally distributed, or accept H_0 .

Heteroscedasticity Test

From the Heteroscedasticity Test, it is shown that the Obs*R-square is 49.12572 which exceeds the significant level of 0.05. This implies that heteroscedasticity problem doesn't exist in this model, or accept H_0 .

Autocorrelation Test

This test is done by comparing the Durbin-Watson statistic to the Durbin-Watson table. The Durbin-Watson statistic shown in the regression model is valued at 1.900784. At the other hand, by using significant level of 0.05, total sample of 1596, and 5 independent variables, the Durbin-Watson table shows: $d_L = 1.91154$, $d_U = 1.92407$, $4 - d_U = 2.07593$, and $4 - d_L = 2.08846$. Based on this, the value of 1.900784 is on the left side of d_L , which means there is significant positive autocorrelation within the regression model. However, according to *Praktikum Pelatihan Ekonometrika Bank Indonesia*, research that use panel data along with fixed effect model, may ignore the problem about autocorrelation.

Multicollinearity Test

This test is using Pair-wise test to indicate multicollinearity. If the result is greater than 0.8, it shows that there is multicollinearity and certain variable must be omitted in order to give a proper result in the regression analysis later. From this model, there is no value exceeding 0.8, thus, no multicollinearity happened within each variable.

4.1.2 Regression analysis result

$$NPLR = 0.052546 - 0.003175LNSIZE - 0.003936CAR - 0.004153LDR + 0.142217NIM + 0.026560OEOI \quad (9)$$

Table 1. Regression analysis of five independent variables using fixed effects

Dependent Variable: NPLR				
Method: Panel Least Squares				
Date: 06/15/16 Time: 10:27				
Sample: 2008M01 2014M12				
Periods included: 84				
Cross-sections included: 19				
Total panel (unbalanced) observations: 1591				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.052546	0.009568	5.491619	0.0000
LNSIZE	-0.003175	0.000482	-6.587705	0.0000
CAR	-0.003936	0.005294	-0.743455	0.4573
LDR	-0.004153	0.001072	-3.873584	0.0001
NIM	0.142217	0.018347	7.751615	0.0000
OEOI	0.026560	0.002223	11.94867	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.652351	Mean dependent var	0.018622	
Adjusted R-squared	0.647249	S.D. dependent var	0.010422	
S.E. of regression	0.006190	Akaike info criterion	-7.316893	
Sum squared resid	0.060035	Schwarz criterion	-7.235855	
Log likelihood	5844.588	Hannan-Quinn criter.	-7.286792	
F-statistic	127.8446	Durbin-Watson stat	0.254977	
Prob(F-statistic)	0.000000			

Coefficient of Determination

From the regression analysis result, it shows that the value of R-squared is 0.652351. This means that independent variables which consist of CAR, LNSIZE, NM, LDR, and OEOI can explain 65.23% of NPL as the dependent variable, while the rest (34.77%) is explained by another variables that haven't investigated yet in this research.

T Test

This test is used to determine the level of significance in each independent variable on its dependent variable. It is done by comparing the significance value with the p-value, in order to know which hypothesis is rejected and not rejected. By using 0.05 level of significance, the regression analysis above shows that NIM and OEOI have positive significant effect to NPL. While LNSIZE and LDR show a negative significant effect to NPL. The last, CAR has negative but don't have any significant effect to NPL.

F Test

This test is done by looking at the value of Prob (F-Statistic) in the result of regression model. The table above shows that the value of Prob (F-Statistic) is 0.000000, which is less than the significant level of 0.05. This implies that all independent variables within the model have simultaneously significant effect to the

dependent variable.

4.2 ROA Model

The outcome for ROA Model based on 5% level of significant indicates that all the independent variables, which included Inflation Rate, Non Performing Loans (NPL), and Exchange Rate, show significant influence to the Return On Assets. It is shown from their p-value which is less than the significant level of 0.05. This implies that banks should give more attention to these variables in order to keep the ROA ratio remains high and stable.

4.2.1 Classical linear assumption test

Normality Test

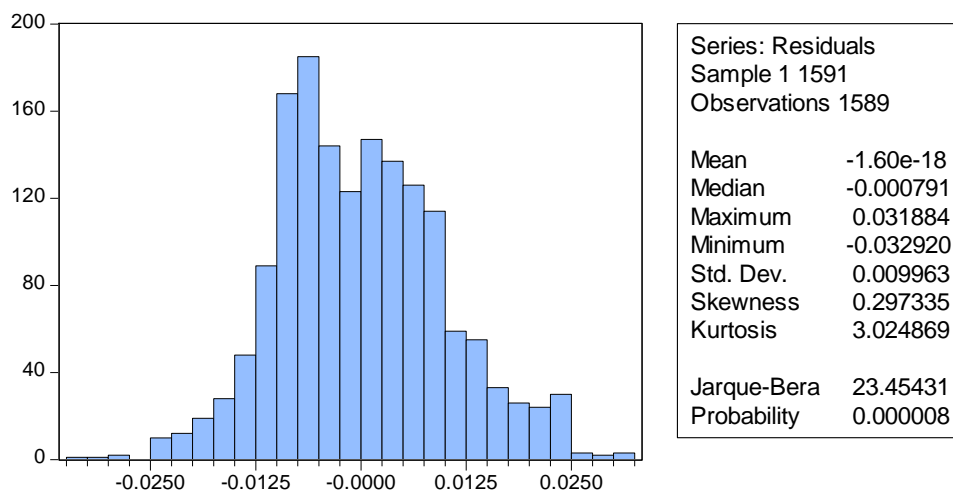


Figure 4. Normality Test for Profitability Model

Based on the graphic above, it is shown that the Jarque-Bera is valued at 23.45431. While the Chi-Square value is known at 1074.68 (it is obtained from the chi-square table, where the degree of freedom is at 1000 and the significant level is at 0.05). Since the Jarque-Bera value is less than the Chi-Square value, it means that the data has been normally distributed, or accept H_0 .

Heteroscedasticity Test

From the Heteroscedasticity Test, it is shown that the Obs*R-square is 62.54754 which exceeds the significant level of 0.05. This implies that heteroscedasticity problem doesn't exist in this model, or accept H_0 .

Autocorrelation Test

This test is done by comparing the Durbin-Watson statistic to the Durbin-Watson table. The Durbin-Watson statistic shown in the regression model is valued at 2.019567. At the other hand, by using significant level of 0.05, total sample of 1596, and 3 independent variables, the Durbin-Watson table shows: $d_L = 1.91405$, $d_u = 1.92156$, $4 - d_u = 2.07844$, and $4 - d_L = 2.08595$. Based on this, the value of 2.019567 is between d_u and $4 - d_u$, which means there is no significant autocorrelation within the regression model or accept H_0 .

Multicollinearity Test

This test is using Pair-wise test to indicate multicollinearity. If the result is greater than 0.8, it shows that there is multicollinearity and certain variable must be omitted in order to give a proper result in the regression analysis later. From this model, there is no value exceeding 0.8, thus, no multicollinearity happened within each variable.

4.2.2 Regression analysis result

$$ROA = 0.019884 - 5.162685EXC + 0.2783661INFLR - 0.619044NPLR \quad (10)$$

Table 2. Regression analysis of three independent variables using fixed effects

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.024933	0.001894	13.16739	0.0000
EXCR	0.368489	0.065099	5.660450	0.0000
INFLR	0.023644	0.007567	3.124797	0.0018
NPL	-0.509674	0.044582	-11.43216	0.0000

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.675757	Mean dependent var	0.024920
Adjusted R-squared	0.671412	S.D. dependent var	0.010706
S.E. of regression	0.006137	Akaike info criterion	-7.335144
Sum squared resid	0.059022	Schwarz criterion	-7.260783
Log likelihood	5849.772	Hannan-Quinn criter.	-7.307522
F-statistic	155.5143	Durbin-Watson stat	0.423433
Prob(F-statistic)	0.000000		

Coefficient of Determination

From the regression analysis result, it shows that the value of R-squared is 0.675757. This means that independent variables which consist of NPLR, INFLR, and EXC can explain 67.57% of ROA as the dependent variable, while the rest (32.43%) is explained by another variables that haven't investigated yet in this research.

T Test

This test is used to determine the level of significance in each independent variable on its dependent variable. It is done by comparing the significance value with the p-value, in order to know which hypothesis is rejected and not rejected. By using 0.05 level of significance, the regression analysis above shows that EXC and INFLR have positive significant effect to ROA. While NPL shows negative significant to ROA.

F Test

This test is done by looking at the value of Prob (F-Statistic) in the result of regression model. The table above shows that the value of Prob (F-Statistic) is 0.000000, which is less than the significant level of 0.05. This implies that all independent variables within the model have simultaneously significant effect to the dependent variable.

5. Conclusion and Recommendation

5.1 Conclusion

For NPL model, bank-specific variables that consist of Bank Size (LNSIZE), Loan to Deposit Ratio (LDR), Net Interest Margin (NIM), and Operating Efficiency (OEOI) reveal a consistency relation to the Non Performing Loans (NPL) through the 5% level of significant. LDR and LNSIZE show negative significant to NPL, while NIM and OEOI show positive significant to NPL. It is also known that NIM

being the most significant variable to NPL, that can increase the dependent variable up to 0.141835 unit for every 1 unit increment of NIM. Basically, the role of NIM is reflecting the bank's function as an intermediation services. It demonstrates how banks earn interests from their customer's deposit. As the result shows positive significant to NPL, it means that banks today typically do not mind to lend their entire funds as they have more profit, whereas it can lead to the higher level of NPL.

For ROA model, variables of Non Performing Loans (NPL), Exchange Rate (EXCR), and Inflation Rate (INFLR) are giving a consistency relation to the Return On Assets (ROA) through the 5% level of significant. NPL shows negative significant to ROA, while EXCR and INFLR show positive significant to ROA. It is also known that NPL being the most significant variable to ROA, that can reduce the dependent variable up to 0.509674 unit for every 1 unit increment of NPL. This actually implies that the level of ROA in Indonesian banking industry is highly influenced by the internal factor, rather than the external condition. This happens because in many scenarios, an increase of non performing loans will force the banks to bring out much more provisions, that as the result will hurt its profitability very rapidly.

5.2 Recommendation

As the Net Interest Margin (NIM) is being the most significant effect to Non Performing Loans (NPL) in positive relation, it is suggested that banks today should be more careful and efficient in investing their funds. If the amount remains increased, it does not mean that the entire funds should be invested in credits. They can be more wisely to choose another investments that able to generate more profitable income, instead of distributing it into loans.

In other scenario, NPL is also known as the most significant variable in reducing the level of Return On Assets (ROA). So, it is suggested that banks today should be more focused in improving their credit quality, rather than pushing credit growth and raising its profitability. Because higher non performing loans will lead to higher loss provisions and also lower profit. This is supported by the statement from Wisnubroto (2015) on TheJakartaPost website that *"Banks that will perform better, with more stable long term performances will be those that are able to maintain their asset quality and liquidity, sustain margins and also increase fee-based income"*.

Then, for further researches, the author recommends to add more variables, so that it can increase the ability of each regression model in defining the relation among dependent and independent variables. It is also suggested to employ more variables as the proxy of bank profitability, such as ROE and NIM, as it can generate more specific results. Beside that, other macroeconomic factors is very recommended to describe the profitability of banks, for example GDP and Interest Rates, as it is used in the research of Jamal, Karim and Hamidi (2012). Extending the research period will also be good to evaluate the condition of banks in Indonesia more accurate. Further research can also employ the different sample of banks. For example, investigating this topic in each classification of banks in Indonesia, as it can generate more specific results. It is very suggested to include Islamic Banking, since Islamic bank in Indonesia is expected to grow over the years. Actually, this comparison is needed in order to learn the difference in each business of banks. It is possible that the result of the significant variables will be different in each classification of them.

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The Influence of Bank Specific Variables and Exchange Rate on Capital Adequacy Ratio in 19 Commercial Banks in Indonesia (Case Study: Period 2008-2014)

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Abstract

To create a healthy banking system, and also to have the ability to compete globally, banks are required to prepare a certain amount of capital, measured by Capital Adequacy Ratio (CAR), to ensure that banks can handle risk exposures. The regulation regarding minimum capital requirement is designed to ensure that banks maintain sufficient capital for the risks they have. By doing this, the government has lower the risk of a bank going default, thus creating more stable economy and building trust over banking industry in individuals and business entities. The 19 Indonesian commercial banks that become the object of this research are the banks that have at least 5 trillion Rupiah as its core equity (categorized as BUKU 3 or BUKU 4). The failure of one of these banks will contribute greatly to the instability of Indonesian banking system. This study aims to study and analyze the influence of several bank specific variables and Rupiah exchange rate on Capital Adequacy Ratio (CAR). The study applied panel data regression model. The Capital Adequacy Ratio (CAR) of 19 commercial banks in Indonesia for period 2008 to 2014 is affected by Bank's size (LNSIZE), less risky liquid assets (LRLA), risky liquid assets (RLA), external funding ratio (EFR), non-performing loan ratio (NPLR), operating expense to operating income (OEOI), return on assets (ROA), return on equity (ROE), and Rupiah exchange rate (EXC). Certain variables are proven to have significant influence towards capital adequacy. The result shows that there are some variables that effect CAR significantly: LNSIZE, LRLA, RLA, OEOI, ROA, and ROE; while EFR, NPLR, and EXC do not affect CAR significantly. The result of this research is expected to increase understanding of capital adequacy of Indonesian commercial banks.

Keywords: Capital Adequacy Ratio; Bank Specific Variables; Exchange Rate; Panel Data; Commercial Bank; Indonesia

1. Introduction

Commercial banks have a vital role in the economy of a country, and in some cases, for other countries as well. At the macroeconomic level, bank is the main institution that transmits monetary policy, and at the microeconomic level, for individuals and businesses, bank is a major source of financing (Koch & Mac Donald, 2000).

Bearing such high and vital role in the economy, commercial banks are required to have a good performance. Poor performance in banking can lead to a bank failure and thus causing economic growth slowdown.

Bank failure is more impactful than the failure of other types of businesses. Bank has interconnectedness, and it is fragile. Failure of one bank can have a great impact in the economy, and may possibly result in the failure of other banks. Typically, commercial bank (and any other types of bank) has become a subject of rigid policy and regulation (Kaufman, 1996).

In Indonesia, banks and any other financial institutions are under supervision, regulation, and protection of Otoritas Jasa Keuangan (OJK) or Indonesia's Financial Services Authority. Bank's regulations and supervisions in Indonesia are integrated in a system promoted and organized by OJK. OJK also conducts its regulatory and supervisory duties also over capital markets and non-bank financial industry sectors.

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To create a healthy banking system, and also to have the ability to compete globally, banks are required to prepare a certain amount of capital, measured by Capital Adequacy Ratio (CAR), to ensure that banks can handle risk exposures. CAR is a measure of the amount a bank's capital expressed as a percentage of its risk-weighted assets. CAR has the role as the promoter of stability and efficiency of banking institutions.

The latest published regulation about CAR in Indonesia is BI's regulation (PBI) No. 15/12/PBI/2013 about Mandatory Minimum Capital Requirements for commercial banks. The regulation requires commercial banks to provide minimum capital corresponding to their risk profile. The requirement is calculated using CAR, where banks with risk profile-1 need to meet 8% on their CAR, banks with risk profile-2 need to meet 9%, banks with risk profile-3 need to meet 10%-11%, and banks with risk profile-4 or risk profile-5 need to meet 11%-14% on their CAR (Bank Indonesia, 2013).

The significance of capital adequacy on banking industry calls for more in-depth research about the ratio that determines the capital adequacy, which is Capital Adequacy Ratio (CAR). This research analyses bank specific variables and one external variable that become the factor influencing CAR in 19 commercial banks in Indonesia. The objective of this research is to acquire comprehension of the implication of bank specific variables and Rupiah exchange rate to capital adequacy.

1. Theoretical Foundations

1.1. Capital Adequacy Ratio

Capital Adequacy Ratio (CAR), or sometimes known as Capital-to-Risk Weighted Assets (CRAR), is a measure of bank's capital in the percentage of bank's risk weighted assets.

$$CAR = \frac{\textit{Tier 1 Capital} + \textit{Tier 2 Capital}}{\textit{Risk Weighted Assets}} \quad (1)$$

CAR protects depositors and enhance the stability of banking and financial systems in a country, or perhaps, globally. CAR is a significant and critical measure which needs serious monitoring. High CAR guarantees that banks have enough cushions to absorb losses before becoming insolvent. Having low CAR means that depositors have higher risk of losing their money in that particular bank.

There are two components of capital in calculating CAR. Core capital (tier-1 capital) is the core measure of bank's financial strength. Core capital can absorb losses without any requirements for the bank to stop operating, and it is constantly available to cushion losses. Core capital includes paid in capital (common and preferred stocks), disclosed capital reserves, net income for the year, and innovative capital instruments (Aspal & Nazneem, 2014).

Supplementary capital (tier-2 capital) is the second measure of bank's financial strength. It absorb losses when the bank goes liquidated, thus providing less protection to the depositors. When the bank is liquidated, depositors' funds have higher priority than the bank's capital. It is also used to absorb losses in the case that core capital has been completely depleted. Supplementary capital includes assets revaluation reserves, undisclosed reserves, general provisions, general loan loss reserves, long-term holding of equity securities, subordinated long term debts, and hybrid capital instruments (Aspal & Nazneem, 2014).

When calculating CAR, all assets of the bank are evaluated and weighted based on their respective degree of risk. Riskier assets like non-performing loans have higher degree of risk than safer assets like government bonds. Then, the risk-weighted assets become the divisor to the core and supplementary capital. In Indonesia, risk weighted assets are calculated using existing standards regulated in Bank Indonesia's circular letter (SE BI No. 13/6/DPNP/2011).

Generally, banks with higher CAR are considered as safer and more likely to fulfil its financial obligations. Banks with higher CAR means either that the banks have higher capital or have higher assets with higher quality.

Several studies have been done in observing the determinants of CAR outside of Indonesia. El-Ansary & Hafez (2015) conducted a study that examines the determinants of CAR in Egyptian banks. The study result shows that in the period of 2003 to 2013, liquidity (positively), bank size (negatively), and management qualities (positively) are the most significant variables. The other positively significant variable is ROA, while the negatively significant variable is provision to total loans.

Other researchers like Mekonnen (2015), which conducted a study that examines the determinants of CAR in Ethiopian banks for the year 2004 to 2013, found out that ROA, deposit ratio, and bank size are positively significant, while ROE and net interest margin are negatively significant toward CAR. Bokhari and Ali (2013) studied Pakistan banks from 2005 to 2009 and revealed that share of deposits in liabilities and ROE are the negatively significant variables in determining CAR. Büyükşalvarcı and Abdioğlu (2011)

studied Turkish banks from 2006 to 2010. Their research indicates that loans, ROE, and leverage have negatively significant effect towards CAR, while loan loss reserve and ROA have positively significant effect towards CAR.

From Indonesia, Raharjo et al. (2014) studied the determinants of CAR on state-owned banks in Indonesia for the period of 2004-2012, and the result shows that bank size (negatively), equity to total liabilities ratio (positively), non-performing loan (positively), and interest rate risk (negatively) are significant variables in determining CAR.

1.2. Bank Specific Variables

1.2.1. Bank Size

This variable measures the size of the bank measured by its total assets using natural logarithm. The size of the bank will impact the management in managing the bank. Bank's assets include earning assets and non-earning assets. Earning assets generate income (loan, securities, bonds, placement on other banks, acceptance bill, reverse repo, and derivatives), while non-earning assets do not generate income and might be exposed to the risk of value decreasing (offices, real estates, interbank accounts, and suspense accounts).

1.2.2. Less Risky Liquid Assets to Total Assets

This variable is determined as Less Risky Liquid Assets to Total Assets. Less risky liquid assets can be liquidated (converted into cash) at any time without decreasing its value. It includes cash and placement in Bank Indonesia which includes Statutory Reserve Requirements (*Giro Wajib Minimum*), Bank Indonesia Certificate (*Sertifikat Bank Indonesia*), and Indonesian Treasury Bond (*Surat Utang Negara*).

$$LRLA = \frac{GWM + SBI + SUN}{Total Assets} \quad (2)$$

1.2.3. Risky Liquid Assets to Total Assets

This variable is determined as Risky Liquid Assets to Total Assets. Risky liquid assets can be liquidated (converted into cash) at any time with probability of decreasing its value. It includes placements in other banks, acceptance bill, and reverse repo.

$$RLA = \frac{Placements\ in\ Other\ Banks + Acceptance\ Bill + Reverse\ Repo}{Total Assets} \quad (3)$$

1.2.4. External Funding Ratio

This variable is determined as Third Party Funds to Total Assets. It gives an overview of the bank's ability to gather external funds to fund the assets. Third Party Funds consists of time deposits, saving deposits, and demand deposits.

$$EFR = \frac{Third\ Party\ Funds}{Total Assets} \quad (4)$$

1.2.5. Non-Performing Loan Ratio

This variable is determined as Non-Performing Loan to Total Loan. It gives an overview of the bank's ability in managing loan assets. Loan's quality is divided into five categories: pass, special mention, substandard, doubtful, and loss loan. Non-Performing Loan includes the loans in substandard, doubtful, and loss loan categories. This variable is a proxy of bank's credit risk.

$$NPLR = \frac{Substandard\ Loans + Doubtful\ Loans + Loss\ Loans}{Total Loans} \quad (5)$$

1.2.6. Operating Expenses to Operating Income

This variable is determined as Operating Expense to Operating Income. It measures the efficiency of the

bank in its operational activity. Higher level of this ratio indicates inefficiency in the operational activity. This variable is a proxy of bank's operational risk.

$$OEI = \frac{\text{Operating Expense}}{\text{Operating Income}} \tag{6}$$

1.2.7. Return on Assets

This variable is determined as Net Income before Tax to Average Total Assets. It indicates the effectivity of the bank to generate earning considering its available assets. Return on Assets is also known as Return on Investment.

$$ROA = \frac{\text{Net Income before Tax}}{\text{Average Total Assets}} \tag{7}$$

1.2.8. Return on Equity

This variable is determined as Net Income after Tax to Average Total Equity. It indicates the effectivity of the bank to generate earning considering the equity given, or the amount of money that shareholders have invested. Return on Equity is also known as Return on Net Worth.

$$ROE = \frac{\text{Net Income after Tax}}{\text{Average Total Equity}} \tag{8}$$

1.3. Rupiah Exchange Rate

The variable is determined as the exchange rate of Rupiah, which US Dollar becomes the base currency. Banks are exposed to exchange rate fluctuations, since they do activities that are directly related to foreign currency. Holding more assets in the form of foreign currency will make this risk bigger, therefore, may cause losses and need more cushions for the loss absorption. This variable is a proxy of bank's market risk.

1.4. Research Framework

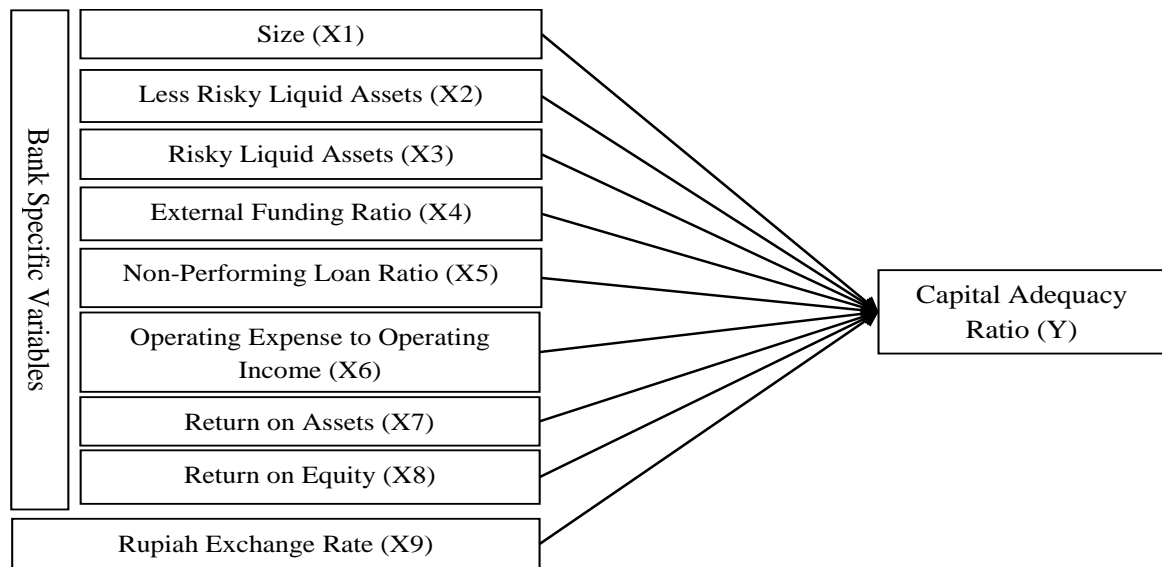


Fig. 1. Research Paradigm

The author has selected the bank specific variables and an external variable that are consistent with capital adequacy definition. Based on the structural model, the Capital Adequacy Ratio (CAR) function is:

$$CAR_{it} = \beta_0 + \beta_1 LNSIZE_{it} + \beta_2 LRLA_{it} + \beta_3 RLATA_{it} + \beta_4 EFR_{it} + \beta_5 NPLR_{it} + \beta_6 OEI_{it} + \beta_7 ROA_{it} + \beta_8 ROE_{it}$$

$$+ \beta_9 \text{EXCR}_{it} + e \quad (9)$$

1.5. Hypothesis

Based on the research framework which is built consistent with the theoretical foundation, the hypotheses of this research are:

- H₁: LNSIZE has significant negative effect toward CAR.
- H₂: LRLA has significant positive effect toward CAR.
- H₃: RLATA has significant negative effect toward CAR.
- H₄: EFR has significant negative effect toward CAR.
- H₅: NPLR has significant negative effect toward CAR.
- H₆: OEOI has significant negative effect toward CAR.
- H₇: ROA has significant positive effect toward CAR.
- H₈: ROE has significant negative effect toward CAR.
- H₉: EXCR has significant positive effect toward CAR.

These hypotheses are then tested with regression estimator.

2. Research Methodology

2.1. Data Collection

2.1.1. Type of Data and Research Period

The data used in this research is panel data which combines time series (comparing one object in certain period) data and cross sectional (many objects in one time) data.

The data used in this research are secondary data of the sample banks, gathered from the monthly bank publication reports from the official website of OJK (Otoritas Jasa Keuangan). The reports consist of Balance Sheet, Income Statement, Commitment and Contingence, Loan Loss Provisioning, Productive Assets Quality, and Capital Adequacy Ratio reports. The period of the financial reports gathered are from 2008 until 2014.

2.1.2. Research Objects

The objects of this research are bank specific variables and an external variable. The bank specific variables includes banks' size, economic scale, less risky liquid assets, risky liquid assets, external funding ratio, non-performing loan ratio, operating expense to operating income, return on assets, return on equity, and loan loss provisions to total loan. The external variable is Rupiah exchange rate.

2.1.3. Research Samples and Population

The population of this research is all foreign exchange banks in Indonesia. In the beginning of 2015, there are 21 banks, which two of them are foreign banks' branches (Bank Citibank and Bank of Tokyo-Mitsubishi). The samples used in this research are the banks with core capital more than Rp 5 trillion (BUKU III or BUKU IV) in the beginning of 2015, which has the status of legal entity in Indonesia (does not include the two branches of foreign banks).

The banks that are used as samples are: Bank Mandiri, Bank Rakyat Indonesia, Bank Central Asia, Bank Negara Indonesia, Bank CIMB Niaga, Bank Permata, Bank ANZ Panin, Bank Danamon, Bank Maybank Indonesia, Bank Tabungan Negara, Bank OCBC NISP, Bank BJB, Bank MEGA, Bank Bukopin, Bank DBS Indonesia, Bank Sumitomo Mitsui, Bank Mizuho Indonesia, Bank Tabungan Pensiunan Nasional, and Bank UOB.

2.2. Data Analysis Methodology

2.2.1. Classical Linear Regression Assumption Test

2.2.1.1. *Multicollinearity Test*

Regression model must not have Multicollinearity between its variables; therefore, the Multicollinearity test is done. The Multicollinearity test defines the correlation between independent variables in the regression model. When Multicollinearity exists in high level, the regression coefficients of the independent variables are more likely to be indeterminate and their standard errors are more likely to be large (Gujarati, 2004). If there is Multicollinearity between two variables, one of it must be rejected in the data analysis.

2.2.1.2. *Heteroscedasticity Test*

One of the assumptions in classical linear regression is homoscedasticity. Homoscedasticity exists when there is a consistency among residual variance. Heteroscedasticity, in the other hand, exists when there is a disturbance that makes the value of residual variance becomes different (Gujarati, 2004). There are several tests for detecting heteroscedasticity. This research uses the White General Heteroscedasticity Test. This test does not depend on normality assumption and is a common test for detecting heteroscedasticity. It detects heteroscedasticity from the p-value $\text{Obs} \cdot \text{R-square}$. Homoscedasticity exists when the p-value $\text{Obs} \cdot \text{R-square}$'s value is higher than the significant level, and heteroscedasticity exists when the value is lower than the significant level.

2.2.1.3. *Autocorrelation Test*

Autocorrelation means as correlation between members of series of observations ordered in time and space. Classical linear regression model assumes that autocorrelation does not exist in the disturbance (Gujarati, 2004). It means that the model assumes that the disturbance term related to one observation is not influenced by the disturbance term related to other any observation. There are several tests for detecting autocorrelation, while this research uses one of them which is the Durbin-Watson d Test.

2.2.1.4. *Normality Test*

One of the assumptions in classical linear regression is that the error term must have a normal distribution. Good regression model has a residual value that is normally distributed (Gujarati, 2004). There are several tests for defining the normality of the variables. This research uses Jarque-Bera Test of Normality for testing whether the residual value is distributed normally or not. Jarque-Bera is distributed as a chi-square statistic. The residual value is distributed normally when the result of Jarque-Bera is less than the chi square value. The probability value in the normality test can also determine that the residual value is distributed normally when it exceeds the significant level.

2.2.2. *Regression Analysis*

Regression analysis is done after all the assumptions are fulfilled. Regression analysis is done to define the relationship between one dependent variable with one or many independent variables (Gujarati, 2004). When the independent variable is more than one, then it is called multiple regression analysis, while when the independent variable is only one, it is called simple regression analysis.

2.2.2.1. *Coefficient of Determination*

Coefficient of determination, or R^2 , measures the goodness of fit of the regression model. The bigger the R^2 means that the independent variables correlate more to the dependent variable. The value of R^2 may ranges between zero to one, while R^2 of one means that the independent variables perfectly explain the dependent variable, and R^2 of zero means that the independent variables do not correlate at all to the dependent variable.

2.2.2.2. *T Test*

To determine the significance of each independent variable to the dependent variable, this research uses T test. T test is done by comparing p-value of T test score with the significance level. If p-value is lower than the significance level, then there is a significant effect between the particular independent variable to the dependent variable.

2.2.2.3. F Test

F test measures the joint significance of all independent variables to the dependent variable by controlling other independent variables. F test also determines the significance of the regression model. F test is done by comparing the p-value of the F-statistic with the significance level. When the p-value of F-statistic is lower than the significance level, then there is a significant effect between all independent variable (jointly) to the dependent variable.

3. Data Analysis

3.1. Classical Linear Regression Assumption Test Result

3.1.1. Multicollinearity Test

Table 1. Multicollinearity Test Result

	CAR	EFR	EXC	LNSIZE	LRLA	NPLR	OEOI	ROE	ROA	RLA
CAR	1	-0.392198	-0.004915	-0.498549	-0.181026	-0.256611	-0.307773	0.238698	-0.18345	0.131965
EFR	-0.392198	1	-0.021094	0.339033	0.449171	0.138318	0.263759	-0.009535	0.344179	-0.14701
EXC	-0.004915	-0.021094	1	0.017351	-0.025595	-0.035532	-0.020475	0.006077	-0.01253	-0.01798
LNSIZE	-0.498549	0.339033	0.017351	1	0.342824	0.114225	-0.086666	0.212591	0.370694	-0.07621
LRLA	-0.181026	0.449171	-0.025595	0.342824	1	-0.026038	-0.004562	0.089966	0.345943	-0.18273
NPLR	-0.256611	0.138318	-0.035532	0.114225	-0.026038	1	0.36001	-0.313721	-0.1436	-0.12089
OEOI	-0.307773	0.263759	-0.020475	-0.086666	-0.004562	0.36001	1	-0.681414	-0.40557	-0.17029
ROE	0.238698	-0.009535	0.006077	0.212591	0.089966	-0.313721	-0.681414	1	0.781425	-1.53E-03
ROA	-0.183454	0.344179	-0.012529	0.370694	0.345943	-0.143604	-0.405565	0.781425	1.00E+00	-0.10366
RLA	0.131965	-0.147011	-0.017981	-0.076214	-0.18273	-0.12089	-0.170289	-0.001526	-0.10366	1

When the correlation value of one variable to another variable is higher than 0.8, then, it is said that those two variables are correlated to each other. The Multicollinearity Test of this research shows that there is no correlation between each of the 10 variables in this research, since there is no correlation value that is higher than 0.8.

3.1.2. Heteroscedasticity Test

Table 2. Heteroscedasticity Test Result

F-statistic	18.69054	Prob. F(9,1574)	0
Obs*R-squared	628.7899	Prob. Chi-Square(9)	0
Scaled explained SS	3297.705	Prob. Chi-Square(9)	0

The Obs*R-squared of the data is 628.7899, which is higher than the significant level value of 0.05, which means that there is no heteroscedasticity in this regression model.

3.1.3. Autocorrelation Test

Table 3. Autocorrelation Test Result

R-squared	0.79886	Mean dependent var	-6E-17
Adjusted R-squared	0.797446	S.D. dependent var	0.038312
S.E. of regression	0.017243	Akaike info criterion	-5.27525
Sum squared resid	0.465302	Schwarz criterion	-5.23444
Log likelihood	4171.537	Hannan-Quinn criter.	-5.26009
F-statistic	565.0597	Durbin-Watson stat	1.949351
Prob(F-statistic)	0		

The Durbin-Watson stat of this research is 1.949351. From the Durbin-Watson critical values, we know that $dU = 1.929$, and $dL = 1.9065$. The Durbin-Watson stat is between the dU and $(4 - dU)$. This means, the test states that there is no autocorrelation, positive or negative.

3.1.4. Normality Test

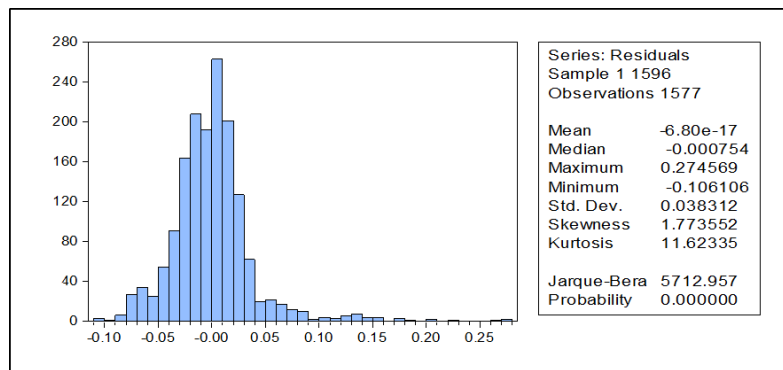


Fig. 2. Normality Test Result

From the Normality Test, it is shown that the residual value of this research is not distributed normally. The probability value, 0.000000, is less than the significant level of 0.05, while the Jarque-Bera value itself is high, valued at 5,712.957. The chi-square critical value is unknown due to the large sample size. This research has the total of 1596 observations (19 banks with 7 years of monthly period observations). However, when the sample size is large, the central limit theory applies. This theory states that the methods would be similar, as if the population itself were normally distributed, when evaluating probabilities related with the values of a test statistic. When the sample size is large enough (sample sizes greater than 30), the central limit theory applies and normality is assumed (McClave & Benson, 1982).

3.2. Regression Analysis Result

Table 4. Regression Estimation Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.73449	0.038729	18.96479	0.0000***
EFR	0.015397	0.010019	1.536802	0.1245
EXCR	-0.000228	0.003798	-0.060004	0.9522
LNSIZE	-0.0328	0.001701	-19.2822	0.0000***
LRLA	0.195203	0.014397	13.55904	0.0000***
OEOI	-0.031843	0.013146	-2.422305	0.0155**
NPLR	-0.055645	0.100912	-0.551425	0.5814
RLATA	0.150623	0.022501	6.694186	0.0000***
ROA	3.796773	0.201316	18.85976	0.0000***
ROE	-0.50528	0.020693	-24.41749	0.0000***
Weighted Statistics				
R-squared	0.488253	Mean dependent var	0.014647	
Adjusted R-squared	0.485314	S.D. dependent var	0.035262	
S.E. of regression	0.025295	Sum squared resid	1.002602	
F-statistic	166.118	Durbin-Watson stat	0.345626	
Prob(F-statistic)	0			
Unweighted Statistics				
R-squared	0.527333	Mean dependent var	0.182052	
Sum squared resid	2.628553	Durbin-Watson stat	0.131831	

The regression analysis was done using cross-section random effects method. From the result, the regression model of this research is:

$$\text{CAR} = 0.73449 - 0.000228 \cdot \text{EXCR} + 0.015397 \cdot \text{EFR} - 0.0328 \cdot \text{LNSIZE} + 0.195203 \cdot \text{LRLA} - 0.031843 \cdot \text{OEOI} - 0.055645 \cdot \text{NPLR} + 0.150623 \cdot \text{RLATA} + 3.796773 \cdot \text{ROA} - 0.50528 \cdot \text{ROE} + \epsilon \quad (10)$$

3.2.1. Coefficient of Determination

The regression estimation result shows that the value of R-squared (weighted and adjusted) is 0.485314, which means that the independent variables explain 48.53% of the dependent variable, the Capital Adequacy Ratio. The rest, 51.47%, is explained by other factors outside this research.

3.2.2. T Test

The regression estimation result shows that there are 6 independent variables (bank size, Less Risky Liquid Assets to Total Assets, Risky Liquid Assets, Operating Expenses to Operating Income, Return on Assets, and Return on Equity) that have significant relationship to the dependent variable, Capital Adequacy Ratio. There are also 3 independent variables (External Funding Ratio, Non-Performing Loan Ratio, and Rupiah Exchange Rate) that have insignificant relationship to Capital Adequacy Ratio.

3.2.3. F Test

The regression estimation result shows that all 9 independent variables (bank size, Less Risky Liquid Assets to Total Assets, Risky Liquid Assets, External Funding Ratio, Non-Performing Loan Ratio, Operating Expenses to Operating Income, Return on Assets, Return on Equity, and Rupiah Exchange Rate) are jointly significant to the dependent variable (Capital Adequacy Ratio), since the p-value of F-statistic is 0.000000 when the significance level is 0.05.

3.3. Result Analysis

This research also aims to see the relation between each independent variable to the dependent variable. The significance can be seen from the p-value of each independent variable, and when it is lower than the significance level of 0.05, it means that the independent variable has significant effect toward the dependent variable. To decide whether they are positively or negatively correlated, the author sees the coefficient of each independent variable.

3.3.1. Bank Size (LNSIZE)

The regression estimation result shows that bank size has significant effect on bank's Capital Adequacy Ratio. The result also shows that when bank size increase by one; Capital Adequacy Ratio will decrease by 0.0328. The relation between two variables is negative, which means the bigger the bank's asset, the lower the bank's Capital Adequacy Ratio. This means that the H1 is accepted. This finding is incoherent with the finding of Mekonnen (2015), and Raharjo et al. (2014). The result is coherent because Capital Adequacy Ratio is a measure of bank's capital in the percentage of bank's risk weighted assets. The bigger the bank's size, measured by its assets, the lower the Capital Adequacy Ratio will be, since it will lessen the proportion of equity in the ratio. Banks with bigger size also have an easier access to gather funds from deposits rather than depending on equity, thus the bigger the bank's assets, the higher the bank's risk.

3.3.2. Less Risky Liquid Assets to Total Assets (LRLA)

The result shows that Less Risky Liquid Assets to Total Assets has positively significant effect toward Capital Adequacy Ratio. It shows that when Less Risky Liquid Assets to Total Assets increase by one, Capital Adequacy Ratio will increase by 0.195203. The result accepts the H1. The higher the proportion of Less Risky Liquid Assets to Total Assets in Total Assets will decrease the overall risk-weighted assets, which is the divisor of the Capital Adequacy Ratio. The higher the Less Risky Liquid Assets to Total Assets means that the bank has higher liquidity, and has more capability to fulfill the obligation of paying the short-term liabilities. High liquidity will make the bank safer from incurring losses, which means it will conserve the capital. The result shows that Less Risky Liquid Assets has positively significant effect toward Capital Adequacy Ratio. It shows that each amount of Less Risky Liquid Assets contribute to Capital Adequacy Ratio for 0.1910. The result accepts the H2. The higher the proportion of Less Risky Liquid Assets in Total Assets will decrease the overall risk-weighted assets, which is the divisor of the Capital

Adequacy Ratio. The higher the Less Risky Liquid Assets means that the bank has higher liquidity, and has more capability to fulfill the obligation of paying the short-term liabilities. High liquidity will make the bank safer from incurring losses, which means it will conserve the capital.

3.3.3. *Risky Liquid Assets to Total Assets (RLATA)*

The result shows that Risky Liquid Assets to Total Assets has positively significant effect toward Capital Adequacy Ratio. The coefficient of this variable is 0.150623, which means that when Risky Liquid Assets to Total Assets increase by one, Capital Adequacy Ratio will increase by that amount. It rejects the H1, since the relation of the two variables is positive. Possession of higher risk assets will surely decrease the Capital Adequacy Ratio; however, this research has proven that since it is liquid assets, the nature of its function is proven to be quite similar as the less risky ones. The coefficient is still lower than the Less Risky Liquid Assets to Total Assets, which means that the riskier liquid assets contribute less than the less risky ones.

3.3.4. *External Funding Ratio (EFR)*

The regression estimation result shows that External Funding Ratio is positively insignificant toward Capital Adequacy Ratio. The coefficient of this variable is 0.015397. It proves that external funding in the form of deposits, and bank's ability on gathering it to fund the assets, does not have a significant effect on Capital Adequacy Ratio. This result rejects the H1, since it is insignificant and has opposite relation. Mekonnen (2015) finds that External Funding Ratio has positive relation toward Capital Adequacy Ratio. But, his research shows that the relation is significant. The hypothesis was constructed based on the basic thinking that bigger deposits will lead to bigger financial obligation of the bank. The variable is the proxy of liquidity risk. Adding deposits will increase the liquidity risk, and thus will decrease Capital Adequacy Ratio. Though, from the result, this hypothesis is rejected, since it is insignificant toward Capital Adequacy Ratio, and the relation is positive.

3.3.5. *Non-Performing Loan Ratio (NPLR)*

The result shows that Non-Performing Loan Ratio has negatively insignificant effect toward Capital Adequacy Ratio. It rejects the H1. The result also shows that when Non-Performing Loan Ratio increases by one, Capital Adequacy Ratio will decrease by 0.055645. This finding is incoherent with the finding of Raharjo et al. (2014), because they discover that Non-Performing Loan has positively significant effect towards Capital Adequacy Ratio. His research subject, though, is state-owned banks in Indonesia, which are tightly supported by the government. The hypothesis was constructed based on the basic thinking that the bigger the credit risk exposure of losses caused by bad debts, the lower the Capital Adequacy Ratio will be. Although the relation is negative, the result shows that Non-Performing Loan Ratio has no significant effect toward the Capital Adequacy Ratio. Further research is needed to find the appropriate measure to become the proxy of bank's credit risk in its relation to Capital Adequacy Ratio.

3.3.6. *Operating Expenses to Operating Income (OEI)*

The regression estimation result shows that Operating Expenses to Operating Income has negatively significant effect toward Capital Adequacy Ratio. The result also shows that when Operating Expenses to Operating Income increases by one, Capital Adequacy Ratio will decrease by -0.031843. The result accepts the H1. Operating Expenses to Operating Income is a proxy of bank's operational risk. The bigger the ratio, the bigger the operational risk. Bigger operational risk will lead to lower Capital Adequacy Ratio.

3.3.7. *Return on Assets (ROA)*

The result shows that Return on Assets has positively significant effect toward Capital Adequacy Ratio. The coefficient of this variable is 3.796773; it means that when Return on Assets increases by one, Capital Adequacy Ratio will increase in that amount. It accepts the H1. El-Ansary & Hafez (2015), Mekonnen (2015), and Büyüksalvarcı and Abdioğlu (2011) have coherent findings. ROA measures the effectivity of the bank to generate earning considering its available assets. Higher bank's capability in generating income given by its assets will lead to bigger the Capital Adequacy Ratio.

3.3.8. Return on Equity (ROE)

The regression estimation result shows that Return on Equity has significant effect on bank's Capital Adequacy Ratio. The result also shows that when Return on Equity increases by one, Capital Adequacy Ratio will decrease by 0.50528. The relation between two variables is negative, which means the bigger the Return on Equity, the lower the bank's Capital Adequacy Ratio, and that H1 is accepted. This finding is coherent with the finding of Bokhari and Ali (2013) in Pakistan, Mekonnen (2015) in Ethiopia, and Büyükşalvarcı and Abdioğlu (2011). Return on Equity measures the effectivity of the bank in generating earnings with the equity given, when Capital Adequacy Ratio considers equity as the numerator since it measures the amount of available capital in regards of bank's risk weighted assets.

3.3.9. Rupiah Exchange Rate (EXCR)

The result shows that Rupiah Exchange Rate has negatively insignificant effect toward Capital Adequacy Ratio. It rejects the H1. The result also shows that when Rupiah Exchange Rate increases by one (Rupiah become stronger), Capital Adequacy Ratio will decrease by 0.000228. The hypothesis was constructed based on the basic thinking that the bigger the market risk, the lower the Capital Adequacy Ratio will be. Banks are exposed to exchange rate fluctuations, since they do activities that are directly related to foreign currency. From the result, the hypothesis is rejected. It is proven that Rupiah Exchange Rate is not a significant factor for Capital Adequacy Ratio. Since there was no other research that studies Rupiah Exchange Rate, or perhaps, any other foreign currency's exchange rate, this founding is notable. The exposure of market risk in relation to bank's assets in foreign currency's form is not significant.

4. Conclusion and Recommendation

The objective of this research is to acquire comprehension of the implication of bank specific variables (Bank Size, Less Risky Liquid Assets to Total Assets, Risky Liquid Assets to Total Assets, External Funding Ratio, Non-Performing Loan Ratio, Operating Expenses to Operating Income, Return on Assets, and Return on Equity) and Rupiah exchange rate to Capital Adequacy Ratio in BUKU III and BUKU IV commercial banks in Indonesia in the period 2008-2014.

After doing the regression estimation, it can be concluded that of all nine (9) independent variables that are used in this research, six (6) are significant. The result shows that Less Risky Liquid Assets to Total Assets, Risky Liquid Assets to Total Assets, and Return on Assets have significant positive effect toward Capital Adequacy Ratio. Bank Size, Operating Expenses to Operating Income, and Return on Equity, in the other hand, have significant negative effect toward Capital Adequacy Ratio. The others variables: External Funding Ratio, Non-Performing Loan Ratio, and Rupiah Exchange Rate have insignificant effect toward Capital Adequacy Ratio.

From the hypothesis, the author also concludes that five (5) independent variables significances and relations toward Capital Adequacy Ratio are proven to reject the null hypothesis. The independent variables are Bank Size, Less Risky Liquid Assets to Total Assets, Operating Expenses to Operating Income, Return on Assets, and Return on Equity. The other four (4) independent variables significances and relations toward Capital Adequacy Ratio are proven to accept the null hypothesis. The independent variables are Risky Liquid Assets to Total Assets (opposite relationship), External Funding Ratio (insignificant and opposite relationship), Non-Performing Loan Ratio (insignificant), and Rupiah Exchange Rate (insignificant and opposite relationship).

From the regression estimation, it can also be concluded that Return on Assets is the independent variable that has largest positive coefficient in this regression model (3.796773). In the other hand, Return on Equity has the largest negative coefficient in this regression model (-0.50528). Both are the most significant independent variables in this research.

In this research, it can be concluded that the regression model proposed can explain Capital Adequacy Ratio by 48.53%. The remaining 51.47% is explained by other factors outside this research. For future research, the author suggests to include more variables in order to explore deeper for enhancing the understanding of Capital Adequacy Ratio. Longer research time period is also recommended in order to depict Indonesian banking condition more accurate.

For further research, the author also recommends to expand the research sample. This research uses only 19 commercial banks, which are the largest commercial banks in Indonesia, which are the only banks allowed running their business using foreign currency. These banks are called foreign exchange banks. They are selected in this research because the author intends to study the significance and relation of

Rupiah Exchange Rate toward Capital Adequacy Ratio. When not including Rupiah Exchange Rate, the sample may include other banks.

The author recommends bank managers and decision makers to put more consideration on this research's result. This research gives a more in-depth comprehension about capital adequacy in banking industry. The Indonesian government can also refer to this research in constructing suitable regulation about minimum capital adequacy ratio.

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The Relation between Financial Education and Investment Decisions: Case of Indonesia's Early Investors

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Abstract

Behavioral finance is a psychology-based theory to explain the anomalies of investor's decision. In making a decision, there is some uncertainty occur and influence the decision. Investors have a preference in deciding the uncertain outcome. Judgment under uncertainty is called the Expected Utility Theory. Later on, Kahneman and Tversky (1979) develop the Prospect Theory, which filled the gap of the expected utility theory. Prospect Theory stated that investors would make decisions based on gain or loss instead of the outcome. A study conducted by Katarachia and Konstatinidis (2013) shows the application of behavioral finance especially bias in financial education. The objective of the research is to determine whether a financial student in Greece, who are involve in stock market activity, performing irrational behavioral in making a decision when being faced with difficulty or student still able performing rational behavioral. Irrational behavioral shows from that investor performing bias including risk aversion, loss aversion, mental accounting, time discounting, the framing effect, overconfidence, gambler's fallacy, herding, cognitive reflection and hindsight bias.

This study is the research gap from the previews research because similar research has not being conducted in Indonesia. The goal of this paper is to explore whether the financial education background support investors in Indonesia to make a rational decision when being faced with a dilemma. It also from previous research differs by extending the scope. Indonesia has three class major in High School: science, social and language. A researcher wants to explore the relevancy of investor's High School's major background and education background on their investing decision. This research will use primary data will be obtained from an online questionnaire given to investors in Indonesia. Also, this research will also elaborate the data analysis using logistic regression analysis. The expected result from this research is that although investors in Indonesia already had financial education, they still misled to make an irrational decision and shows biases behaviors in their decision when facing financial dilemmas.

Keywords: behavioral finance, prospect theory, financial education

1. Introduction

Behavioral finance breaks through the paradigm of traditional finance. Traditional finance stated that market is being efficient with investors are making decisions based by aiming profit maximization using the utility. But in reality, during making a decision there is some uncertainty occur and influence the decision because there is no such perfect information. Therefore, behavioral finance is a psychology-based theory to explain the anomalies of investor's decision. It Emotion may lead investors choices and decision under uncertainty circumstances. Later on, Kahneman and Tversky (1979) develop the Prospect Theory, which filled the gap of the expected utility theory. Prospect Theory stated that investors make this irrational decision based on gain or loss instead of the outcome. Investors tend to analyze these events using a large proportion of personal judgment and emotion, which will lead investors to perform anomaly behavior.

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This theory is being developed and enriched by many researchers. One of the researches was conducted by Katarachia and Konstantinidis (2013) to find out whether a financial student in Greece performing irrational behavior. This study is the research gap of Katarachia and Konstantinidis. Based on another literature review, similar research has not been conducted in Indonesia. This study also wants to explore whether the investors in Indonesia are performing an irrational behavior or not. It also intends to explore whether this High School background has a relation with the investor. High School education in Indonesia is divided into three majors: Science, Social, and Language. There are some biases that will be identified: risk aversion, loss aversion, mental accounting, time discounting, the framing effect, overconfidence, gambler's fallacy, herding, cognitive reflection and hindsight bias. This study also wants to know which sector of bias that has the strongest influence on investors' decision.

Financial education has a strong relation with financial literacy. O.E.C.D. (2005) stated that Financial Education is a process where investors are increasing their ability to understand financial concepts through the information that may develop the investors' skill to be more capable of implementing and defining financial risk and opportunity. The knowledge of finance, usually called as Financial Literacy is important for investors because the lack of financial literacy could bring investors into the less favorable decision. One of the media to obtain this financial literacy is through education. Education could be divided into formal education and informal education. Formal education that was being observed in this research consists of High School Degree, Diploma, Bachelor's Degree, Master's Degree and Doctorate.

This study wants to explore whether investors that already had financial education still perform the irrational or bias behavior. There were researches by Mandell and Klein (2009) about The Impact of Financial Literacy Education on Subsequent Financial Behavior that stated the students or investors that took financial education didn't have better financial behavior compared to those who had not taken the course. This study also wants to explore whether the same finding will also appear in Indonesia, especially investors' decision in Indonesia bond market.

2. Literature Review

2.1. Behavioral finance

The initial development of behavioral finance is started from a journal by Selden in 1912 called "Psychology of the Stock Market." It was written upon the belief that prices' movements on exchanges are dependent to a very considerable degree on the mental attitude of investing and trading activity. Daniel Kahneman and Amos Tversky are other researchers who have been very influential in the behavioral finance field. In 1973 they introduced the availability heuristics: "a judgmental heuristic in which a person evaluates the frequency of classes of the probability of events". Later in 1974 they define the three heuristics that occurs when investors are making judgments under uncertain event: representative, availability, anchoring, and adjustment. In 1979, Kahneman and Tversky against the expected utility theory by Bernoulli (1738) with their new paper called the Prospect Theory. Prospect Theory stated that investors' decisions were determined not by the final output but based on the potential value of loss and gains they could obtain. People evaluate the potential value of loss and gains using heuristics that could lead them to bias decision. In 1981, they introduced principle which is called framing effect. It predicts similar outcome pattern of investors which is that people are more loss-averse rather than risk-averse because the loss is associated with bigger pain rather than pleasure achieved from an equivalent gain.

Risk aversion: a concept in psychology, economics, and finance based on the behavioral of the investor when being faced with uncertainty to attempt and reduce that uncertainty. Risk-averse investor tends to dislike risk so they will avoid high-risk stocks and choose lower risk stocks. Black and Dowd (2011) stated that the higher number of risk aversion investors, the higher unemployment be and reduces potential output.

Loss aversion: the opposite of risk aversion. It's a psychological concept under uncertainty which investors have the tendency of becoming more sensitive to a loss instead of gain. It was stated previously in the Prospect Theory.

Mental accounting: a theory that stated individuals make several choices into different accounts without having the ability to identify the account interaction while making decisions. Thaler (2008) also stated that

a set of cognitive operations that usually implemented by individuals or household to help them organized and evaluate their financial activities.

Time is discounting: sometimes called time preference, was tendency on discounting desired result in the future so the value in the future was consider to be less valuable than the same result now. It creates investors' preference to have tendency of making investment in a product with earlier return rather than later. The fact is that long-term investment could give higher return compared to short-term investment.

The framing effect: another bias that shows same options that being presented differently will alter investors' decisions. The framing effect could also be stated as manipulating the information presented in another form that could affect investor judgment and decision making. Investors also have tendency to select inconsistent choices, depending on whether the question is framed to concentrate on losses or gains (Pious, 1933)

Overconfidence: according to Nofsinger (2001), most of the time when investors were overconfidence, the emotion could provoke investor to underestimate risks, overestimate the knowledge, and exaggerate the ability to control events. It was also supported by Krueger and Wright (2001) who said that people can overestimate their skills or performance about objective, operational criteria. It also involves arrogant attitudes towards colleagues and investors also toward the stock market.

Gamble's fallacy: the belief that in the random process there is the probability of occurrence another outcome with bigger results in the future. In fact, intuition about behavior in the random event could reveal less benefit event that occurs.

Herding: the behavior that came out from human needs of herds and influencing their decision making. This behavioral mostly affects by psychological tendency performed and owned by human beings, especially in the event of that gives danger signal. According to Aiexakis and Xanthakis (2008) herding also could be considered as a human defensive mechanism.

Cognitive Reflection: the human mind is consist of two system which is the spontaneous one and non-spontaneous. The spontaneous process doesn't require much attention and it is the system that gives a fast response of what first come to mind when dealing with the problem. Meanwhile, according to Shane (2005) the non-spontaneous process requires more effort and happen slower but using logic. Cognitive reflection is an interaction between spontaneous ways of thinking with logical or planned thinking.

Hindsight bias: according Fischhoff (1997), it was bias that occurs when new information incorporated immediately with known knowledge. Soon, this information was correlated with investors' ability to forecast events that had already occurred. The fact was that an event could not be actually predicted before it happens.

2.2. Financial Education

Every investor know that one of the challenges to maximize wealth is made the right decision based on the information and skill they have. One of the media to obtain this information is through financial educations. O.E.C.D (2005) stated that financial education is a process of investors in order to increase their financial literacy through several input such as financial information, instruction, or even financial advice to be associated with their skills in order to become more conscious. In this case, investors are hoping to be more aware of risks and opportunities to help them during make decisions and know where to seek help to improve their financial well-being and protection.

The beliefs of some policy makers is that financial education could reduce or overcome the impact of poor decision making that caused from lack of financial literacy. Several studies state that financial education helps investors to improve their financial investment decisions. It was stated by Chan and Stevens (2004) and Mastrobuoni (2009) that the higher or more knowledge about pension systems and social security obtained by a person, it has a positive relation with retirement decisions. It is also supported by Statent et al. (2002) that came up with findings that there are investors that manage to reduce and overcome their debt through attending credit counseling program that take place for three years. The program was also believed to improve investors' card handling. Hirad and Zorn (2001) also support financial education that gives positive investment decisions with the terms of individuals that had credit counseling before an attempt to buy a house had smaller credit rate instead of other who didn't have to counsel. Also, Hilgert et

al. (2003) through his research of the Survey of Consumers Finances found out that financial knowledge has a positive relationship with financial behavior.

The interesting point is that although some policy makers believe the positive correlation between financial education and financial behavior. There is also another evidence that shows the impact from lack of attention about financial education. It did not appear that financial education has a positive relationship with financial behavior. Mandell and Schmid Klein (2009) stated that those who already had financial course did not have better financial performance financially compared to those who had not. This situation happened because those who had the course did not improved themselves and implement their knowledge into action in the future and it made them to not performing better than those who did not take the course. Another supporting findings by Lusardi (2008) stated that financial education did not give positive effect to financial literature. Investors had not been able to find out more effective methods yet for obtaining information.

3. Methodology

3.1. Data

The data will be collected through an online questionnaire posted on a website <http://cmil-sbmitb.net/> that could be accessed by all internet user in Indonesia. Questionnaire's content was taken from previous research of Katarachia and Konstantinidis (2013) to seek investors' bias behavioral and demography information. The answer from the questionnaire will be scored to determine the bias that the investors' performing. The responded of this research are Indonesian investors within any investment type. The investor doesn't have to have any investing experience previously. A targeted investor may also come from any different age, gender, occupation, ethnic, etc. The primary demography data of this research is only focusing on the investor's education background including high school background and last education concentrate in Indonesia. This research was expecting to gain at least 100 investors filling the questionnaire to answer the entire research question.

3.2 Analysis Method

Descriptive statistic implemented to give the big picture of the demography profile of the respondent through chart or graph. It is important to know about the respondent's profile. These demography data will be containing respondents' gender, age range, domicile, ethnic, investment experience, occupation, income, marital status, high school and education background.

For this research, the categorical variable treated as dummy. Then, simple logit regression is implemented to predict the effect of dependent variable which is investor behavior (Y) that occur because of the independent variable which is education background (X) happened. During regression, another demography factor such as gender, age, marital status, domicile, ethnic, high school background and education degree will be engaged to enrich the data. Logit regression is a binary regression model where the dependent variable is categorical. The category in this research is biased behavioral or unbiased behavioral. It measures the relationship of dependent variable (categorical) with one or more independent variables by estimating probabilities through logistic function. For this research, logit regression is implemented to predict the effect of dependent variable which is investor behavior (Y) that occur because of the independent variable which is education background (X) happened. Moreover, it was also conducted to determine the value of the dependent variable with the assumption that independent variable value will decline or raise.

Logit Regression Model could be defined as:

$$P(Y_i = 1 | X_i) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \varepsilon \quad (1)$$

where:

X_1 = demography data of gender

X_2 = demography data of age

X_3 = demography data of marital status

X_4 = demography data of ethnicity

X_5 = demography data of domicile

X_6 = demography data of high school major

X_7 = demography data of last education degree

X_8 = demography data of last education major

Besides logit regression, T-test will also be applied to determine and compare whether two groups of data are the same or not. In this case, it will be the comparison between investors that obtained financial education and investors that did not get financial education. The t-test is implemented to test the hypothesis with the independent variables. The significant value will be determined to trough the result of the regression model. This significant value will also become the determination of which variables that can reject H_0 . If the significant variable value is less than 0.05, H_0 will be rejected.

4. Result

4.1. Data

This research's data is still ongoing and will be improved. Currently, this study was able to gain 90 respondents who complete the questionnaire. The amount of respondent is still growing, and the data will be updated. Below is the table that portrayed the demography data of the respondent:

Table 4.1. Respondent's demography profile.

	Category	Percentage
Gender	Male	56%
	Female	44%
Age	17-22 years	73%
	23-28 years	15%
	28-32 years	3%
	33-38 years	5%
	>38 years	4%
Income per month (Rp)	0-5 million	77%
	5 - 10 million	11%
	10 -15 million	3%
	15 – 25 million	3%
	>25 million	6%
Domicile	Bandung	57%
	Jakarta	29%
	Others	14%
Ethnic	Tionghoa	53%
	Sunda	10%
	Java	23%
	Batak	5%
	Others	9%
Marital Status	Single	91%
	Married	9%
Occupation	Student	25%
	College student	40%
	Banking worker	8%
	Non-banking worker	11%
	Entrepreneur	7%
	Others	9%
High School Background	IPA	64%
	IPS	29%
	Others	7%
Last Education Degree	High School	47%
	S1	48%
	D1/D3	3%
	Others	2%
Last Education Major	Economic	9%
	Management	10%
	Computer	8%
	Engineering	8%
	High School - Science	31%
	High School - Social	18%
	Others	16%

4.1. Regression

Logit regression was conducted using Matlab application to determine whether investors in Indonesia are rational or not. It was also implemented to determine the relation of demography profile (X) with investor’s investing decision (Y).

Table 4.2. Table of data’s coefficient and standard deviation of each bias sector

	Risk Aversion	Mental Accounting	Time Discounting	Framing Effect	Overconfidence	Gamblers Fallacy	Herd Behavior	Cognitive Reflection	Hindsight Bias
Male	-0.7086*	0.6036*	2.2926**	-0.3986*	-0.285530*	-0.1777*	0.2444*	0.4421*	0.001660
	(0.0572)	(0.0548)	(0.4566)	(0.0522)	(0.075446)	(0.0572)	(0.0539)	(0.0557)	(0.515213)
Age	-0.7375**	0.1984**	0.3167*	-0.0576**	-0.027858**	0.0995**	-0.1079**	-0.2764**	-0.646082
	(0.0453)	(0.0333)	(0.0552)	(0.0306)	(0.043063)	(0.0453)	(0.0333)	(0.0317)	(0.294069)
Single	-47348	0.0603	0.0813**	0.6569	-0.235049	0.8652	1.8378	-1.0074	-0.857599
	(0.2385)	(0.1352)	(0.0305)	(0.1303)	(0.182241)	(0.2385)	(0.1578)	(0.1312)	(1.2445)
Suku	-0.0435**	-0.0859**	0.2037	-0.0362**	-0.015935	0.0339**	0.1551**	-0.1268**	-0.138787
	(0.0114)	(0.0111)	(0.1290)	(0.0106)	(0.015521)	(0.0114)	(0.0113)	(0.0115)	(0.10599)
Domisili	-0.2077**	0.2885**	0.2227**	-0.1209**	-0.095706***	0.1171***	0.6580***	0.0889***	-0.001699
	(0.0371)	(0.0333)	(0.0123)	(0.0354)	(0.046544)	(0.0371)	(0.0362)	(0.0336)	(0.317841)
IPA	0.6175	-1.6160	-0.1818**	0.0215*	0.172982	-0.0177	1.7985	-1.2272	0.748671
	(0.1010)	(0.1267)	(0.0335)	(0.0977)	(0.143095)	(0.1010)	(0.1245)	(0.1228)	(0.977175)
IPS	-0.5772	-1.6731	-1.0012	-1.0899	0.279508	1.3369	2.2450	-0.1929	0.386962
	(0.1089)	(0.1319)	(0.1001)	(0.1081)	(0.153898)	(0.1089)	(0.1298)	(0.1339)	(1.050948)
Last education	0.1851**	0.8899**	-1.5378	0.0169**	0.051420*	-0.3472**	-0.1523**	-0.4478**	0.493281
	(0.0435)	(0.0441)	(0.1095)	(0.0410)	(0.059445)	(0.04350)	(0.0436)	(0.0461)	(0.405942)
Last major	0.5263***	0.5117***	-0.2665	0.8720***	-0.225763**	0.0145	-0.1194*	0.5183***	0.405731
	(0.0695)	(0.0671)	(0.0429)	(0.0687)	(0.094972)	(0.0695)	(0.0669)	(0.0694)	(0.648553)

*significant at 10% ** significant at 5% *** significant at 1%

4.3. Analysis

4.3.1. Risk Aversion

The male has a lower probability of having risk aversion compared to a woman. The male has a tendency of thinking by using logic instead of emotion. Risk aversion may cause by loss aversion. Mainly, the male has an optimistic perception when facing risk. By gaining more age, investors has a lower probability of performing risk aversion. By getting older, an elder investor could be said as a wiser person due to their experience compared the youngster. Unmarried investors have a lower probability of having risk aversion that resulted from loss aversion compared to married investors. Investors who took Science major in High School has a bigger tendency of performing risk aversion to those who took Social major in High School has a lower probability. It seems that the science class taught the student to think systematically and consider the trade-off of their decision. Therefore science student has the bigger impression to loss and caused risk aversion. Lower education’s degree creates a higher probability of the appearance of risk aversion. Also, that student who took financial education has a greater likelihood of risk aversion. Since financial education student had already gained the financial literacy, it is possible for them to emphasize more to loss and risk.

4.3.2. Mental Accounting

Compared to a woman, the male has a higher probability of performing mental accounting. By gaining more age, investors has a higher chance of performing mental accounting. Elder people has more saving compared to younger one since they have more needs that they must handle. It seems that by getting older that investors have to track their financial needs even further. Both investors who took Science or Social major in High School has a higher probability of performing mental accounting. It could be seen that both of them have segmented their needs into accounts and the literacy gain from high school education didn’t prevent investors from mental accounting. Also, lower degree of last education level creates a higher probability of the appearance of mental accounting. While that investor who obtained financial education

has higher chance of performing mental accounting compared to those who were not. Seems that knowing more about financial aspect caused investors to be more aware of keeping up with their financial needs. It occurred because investors that already had financial education also learned about financial management and they wanted to arrange their money efficiently. Putting money into accounts is one of the most common methods to organize money.

4.3.3. Time Discounting

It could be found that male prefers short-term decision compared to a woman, the, therefore, the male has a higher probability of performing time discounting. Also, woman mindset is more into details and has a tendency to think about future needs. By gaining more age, investors has a higher probability of time discounting. Getting older means the shorter life that investors have. There is no reason to think too much about future needs since they are already getting too close to that future. Both investors who took Science or Social major in High School creates a lower tendency of performing risk time discounting. A science student in Indonesia was taught to solve the long mathematic equation, sometimes manually. They were not used to work instantly. While for social major, they were aware of the uncertain future since most of since they have the tendency of having planner mindset instead of the executor. Therefore, literacy gained through both High School major was playing a significant role for an investor to realize their future needs. A lower degree of last education creates a lower probability of the appearance of time discounting. While someone gained higher and higher education, it may cause them to become a plan to reduce the uncertainty of their future needs.

4.3.4. Framing Effect

The male has lower probability affected by framing effect compared to a woman. The male has an easy way of thinking compared to a woman. Female are mostly being suspicious, complex and lack of confident compared to male. Therefore female are likely to think more instead of male. Meanwhile, by gaining more age, investors has a lower probability of caught in framing effect. Unmarried investors have higher probability affected by framing effect compared to married investors. Investors who took Science major in High School has a higher tendency of experiencing framing effect to investors who took Social major has a lower tendency. A lower degree of last education creates a higher probability of the appearance of framing effect. It seems that investors' deduction are more cautious after gaining higher education degree. But those who took financial education has a higher probability of performing the framing effect. It may be caused by different emphasize that was given by these investors. The focus of those who already obtained financial literacy dominated by minimizing risk during uncertainty and cause misled on gathering information.

4.3.5. Overconfidence

For overconfidence bias, it was interpreted using OLS since logit regression could not interpret the data that close to singular. The male has a lower probability of overconfidence compared to a woman. The woman was known as more sensitive and not confident with herself. An easy illustration of this case, the most woman is not confident with their appearance and often complain about it. They might say they were fat while the fact was not so. Meanwhile, age creates a lower probability of overconfidence. By getting old, the human is regressing back mentally and physically. Fresh ideas mostly came from the young while the old stuck in their old way. This circumstance might affect the investor to be less confident. Unmarried investors have a lower probability of being overconfidence compared to married investors. Investors who took Science or Social major in High School has a higher tendency of performing overconfidence attitude although investors who took Science major has slightly lower probability. A lower degree of last education creates a higher probability of the appearance of overconfidence. Financial major students have a lower probability of overconfidence. They were more aware of the unexpected market, and they have to be caution.

4.3.6. Gamblers' Fallacy

The male has a lower probability of gambling compared to a woman. Like what had been mentioned before, the man had a tendency to think by logic while the woman has the tendency to think of emotions. By getting older, investors has a higher probability of to gamble. Since elder investors' lifetime was decreasing but they still have a lot of money. Definitely, they would love to gamble and dare to take more risk. Unmarried investors have a higher probability to gamble compared to married investors. Being single means less burden from dependent since investors only spend their money for their self. Investors who took Science major in High School has a lower tendency of performing gambling attitude while investors who took Social major has very high tendency to gamble. Most of the people's point of view towards high school major, science student have the tendency of having more guts in breaking rules, against the teacher, and known have a higher tendency of overconfident compared to science student. Therefore it is possible for them to have a higher probability of performing gambling. A lower degree of last education creates a lower probability of gambling. Most of the time, a person can get a better job through a higher level of education. The good job gives a good salary, and those who had more money would have more guts to gamble.

4.3.7. Herd Behavior

Compared to a woman, the male has a higher probability of being influenced by the herd. It was quite surprising result since male were not bound to herd as much as female. For example, boys usually don't go to the toilet in a group of girls. By getting older, investors has a lower probability of to be influenced by the herd. It seemed that investor becomes more independent and confident with their choice by getting older. Same goes to unmarried investors; they have a lower probability to be influenced by herd compared to married investors. Unmarried investors have a tendency of being individual. Therefore herding could not give much impact compared to the married investors. Investors who took Science Major has a higher probability of herding but those who took Social Major has an even higher chance. The social student is less individualistic than science student because science required personal concentration to solve scientific problems. A lower degree of last education level creates a lower probability of the herding behavior. Financial education major creates a lower probability of the appearance of herding behavior. It seems that financial literacy helps the investor to avoid herding behavior, but the degree of education itself doesn't help the investor. In Indonesia, the higher degree of education, the amount of group assignment is also increasing. The student also required to be less independent from lecturer and they respond it with having more time with a study group.

4.3.8. Cognitive Reflection

The male has a higher probability of performing cognitive reflection. Male look at a problem in general while woman pays more attention to the problem's detail. By looking in general only, it may cause deduction spontaneously. By getting older, investors has a lower probability of being influenced by cognitive reflection task. Older people are more mature and think of the problem more logical. Unmarried investors have lower chance to be affected by cognitive reflection task compared to married investors. The unmarried investor's way of thinking is using logic since they didn't have to think too much about others. The level of stress gained was less compared to married investors. It might help the investor to prevent emotional impulse. Investors who took Science during High School education has a lower probability of cognitive reflection to occur. Science student was used to thinking rationally to solve the mathematical or scientific problem. A lower degree of last education creates a lower probability of the appearance of cognitive reflection. Meanwhile, those investors who had financial education background has a higher probability of performing cognitive reflection. It seemed financial literacy or the increase of education's degree attach them to implement their knowledge agilely and might cause the spontaneous system occur during making decision,

4.3.9. Hindsight bias

Hindsight bias is a problem that related to the financial world in many various situations. 33 out of 90 (36,7%) ended up with an answer on the scale where they are convinced or confident that they could

predict the crisis would happen. The fact is that there is no certainty of the future. Moreover, there were 6,7% that gives an absolute answer that they can predict the crisis. The respondent feels that they need to interpret the unknown events. This situation is one of the impacts of overconfident investors. The only aspect that significant to hindsight bias is age. Older investors have lower probability of performing hindsight bias. It seems that the increase of age also increases investors' experience. This past event could give the effect that future event is, without doubt, unpredictable. Investors could prove that their deduction and prediction when they were younger, could not predict the uncertain future. Therefore older investors are performing less hindsight bias.

4.4. Hypothesis testing

Hypothesis testing was applied using the SPSS program. The data were using comparative means of the one-sample statistic. This research wants to know whether financial education is significant to investor bias behavioral. There was nine bias sector applied in this comparative section. The result shows that significant level of all type of bias is below 0.05. Therefore financial education is significant to investor's bias behavioral.

Table 4.3. T-test result for financial education comparison

No	Type of Bias	Result	Financial Education Mean	Non-financial Education Mean
1	Risk aversion	Significant	0,5152	0,5965
2	Mental accounting	Significant	0,6061	0,5088
3	Time discounting	Significant	0,3684	0,3030
4	Framing effect	Significant	0,4545	0,3860
5	Overconfidence	Significant	0,7576	0,9123
6	Gamblers fallacy	Significant	0,8182	0,6491
7	Herd behavior	Significant	0,5758	0,4386
8	Cognitive Reflection	Significant	0,7576	0,5614
9	Hindsight bias	Significant	5,2121	5,0702

The table above is showing the comparison of investors who obtained financial education and no. The result shows that financial education and non-financial education's mean are significant to all bias sector. The means comparison between the two categories is very close. Therefore, all of the H_0 were rejected. From this findings, it could be seen that education differences could give different exposure. Financial education reduces investors' irrational behavior in risk aversion bias and overconfidence. While in another bias aspect, it seems that financial education gives a higher probability for an investor to perform the irrational behavior.

Table 4.4. T-test result for high school background comparison

No	Type of Bias	Result	Science-Major Mean	Social-Major Mean
1	Risk aversion	Significant	0,6379	0,4231
2	Mental accounting	Significant	0,5000	0,5769
3	Time discounting	Significant	0,3793	0,2308
4	Framing effect	Significant	0,4310	0,3462
5	Overconfidence	Significant	0,8794	0,8462
6	Gamblers fallacy	Significant	0,6379	0,8846
7	Herd behavior	Significant	0,4655	0,6154
8	Cognitive Reflection	Significant	0,5345	0,8077
9	Hindsight bias	Significant	5,1552	5,1154

Indonesia basic high school education majors are Science and Social. The result from mean comparison of both major shows that high school background is significant to all bias type. The average in several bias types was slightly different, but they are still significant. Same goes for the difference between science major and social major. All H_0 were rejected.

The findings from both tables only refer to formal education measurement. There are other sources of knowledge that might be obtained by investors such as from seminar, course, etc. Investors also could be self-taught learner since these days information are spread widely through the internet. Online websites and blogs could be found in a large amount and provide free information for investors.

5. Conclusion

According to the research, the answer to the first research question is that investors in Indonesia were proved performing bias of irrational behavior. Emotion and psychological aspect are playing a role to investor's decision making. Not all bias type were experienced by every investor, but there are some of the bias that appeared in every investor's decision. The most frequent bias is overconfidence. Having overconfidence does not mean that investors are having higher levels of success in achieving goals.

Second, financial education does not play significant role for investors. The data from regression showed that education major level only significant in several biases such as risk aversion, mental accounting, time discounting, gambler's fallacy, and cognitive reflection. Meanwhile, financial education only matters in several biases such as risk aversion, mental accounting, framing effect, over confidence, herd behavior, and cognitive reflection. It seems that's by getting formal financial education investors provides bigger emphasizes to risks and tend to perform more irrational compared to those who didn't take formal financial education. It could also be that student implements the financial literacy itself poorly, so they were misled by emotion and psychological aspect during making decision. The high school background of science and social major also doesn't appear to be always necessary for reducing investor from performing bias behavioral. The data also was proved by neither the investors has science or social major, both major are significant to several biases. From hypothesis testing, financial education also significant to investors' irrational behavior in risk aversion bias and overconfidence. While in another bias aspect, it seems that financial education gives a higher probability for an investor to perform the irrational behavior.

This study only measure investor's formal education. In the future, it should also consider that there is a possibility that investors received more information or knowledge that increase their financial literacy through informal education such as seminar, course, etc. Self-taught learning through books, websites, or magazines could be another source of knowledge for investors. It seems that formal education itself was not able to be the only criterion.

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The Optimal Basket Currency Arrangement for Indonesia

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Abstract

Exchange rate regime is a system in which country used to manage its currency in relation to other currencies and the foreign exchange market. There are two major types of exchange rate regimes such as floating system and pegged system. Many countries, including Indonesia adopted the free-float system since it is believed as the best regime for absorbing external economic shocks. However, some economists argued that a moderate exchange rate regime, such as currency basket system, is a better approach for achieving the government's goals. The research aims to provide an arrangement for optimal basket weights of Indonesian currency basket to minimize GDP fluctuation. A simple theoretical model was used as the first step to measure appropriate weight of external currencies to put in the basket. In this model, the basket currencies are assumed to have a three-way interdependent relationship by including Rupiah as the home currency along with Yen and US Dollar as external currencies in the basket. The result shows that there is a gap between the actual and expected weight of currencies. Furthermore, we found that currency basket system is superior in maintaining the volatility of Indonesian GDP rather than the current free-float system.

Keywords: Exchange rate; Currency Basket; Currency; GDP

1. Introduction

The exchange rate regimes adopted by Indonesia have been changing for three times since 1970. In 1964, based on Law No.32/1964, Indonesia adopted fixed exchange rate as the very first regime with the rate of RP 250 per USD. During the fixed rate system, the overvalued occurred due to high volatility in foreign currency market. This led to the decision of doing devaluation by Indonesia government as much as three times. The first devaluation was made in April 17th 1970 from RP 250 per USD to RP 378 per USD. The second devaluation was made in August 23rd 1971, the rupiah to USD was about RP 415 per USD and the last devaluation was made in November 15th 1978 with the exchange rate to RP 625 per USD. By the end of the devaluation, the government could not hold the fixed regime for long and decided to change the exchange rate system to managed floating by using a basket of currencies from some major trading partners at the time. Although the use of basket currencies, the share of US Dollar was still dominant thus, the regime was not very effective. This regime was last from 1978 to 1997. Under this regime, the government could take control by intervening if the value was over or under the targeted rate.

The Asia crisis and currency turmoil of Thai Bath in the mid of 1997 distressed the Indonesia rupiah and led to the decision of changing the regime to Free-Floating Exchange Rate. The regime was believed to be the best way in securing Indonesia reserve since the loss from intervening by the authorities at that time according to Yagci, 2001.

Nevertheless, the adoption of floating exchange rate, the management of reserved currencies was not directly reflecting the trading pattern. It can be seen from the gap analysis between actual reserved currencies and the expected reserved currencies based on trading values shown in Figure 1.

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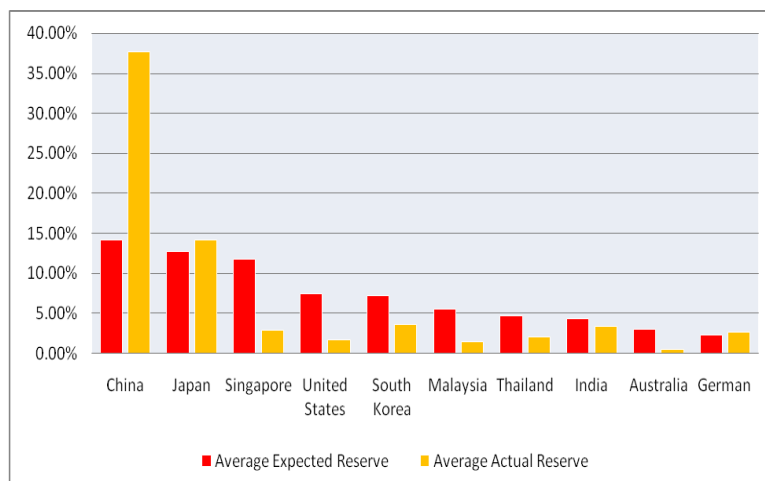


Figure 1: Indonesia Top 10 Trading Partners for 2010-2013

Average expected reserve is derived from reserve proportion of trading pattern whereas; the average actual reserve is obtained from current foreign exchange reserve held by Central Bank (BI).

The gap shows that for the 10 major trading partners for the year 2010-2013, the reserved of country's currencies are not equal with the trading flow. The practice of this system is highly affecting the stability of local currency (Rupiah) since the demand and supply of external currencies would be very sensitive due to reserved creation.

The objective of this paper is to simulate the optimal shares, suppose there are only two currencies in the basket namely, US Dollar and Japan Yen. Those currencies are remained as the major currencies used in trading for Indonesia. To conduct this research, we firstly create the theoretical model of three-way interdependent relationship currencies and measure the weight. Next, we simulate the optimal shares for the theoretical model. And finally, to prove the new model, we also simulate the effect on GDP volatility.

The main findings of this research are the US Dollar is still the major currency used for reserved and followed by the Japan Yen in the basket currency. The used of basket currency as the regime, contributes to lowering the GDP volatility by 49%. Since one of the government objectives is to reduce GDP volatility, it is highly suggested that Indonesia should adopt the basket currency regime in order to managing the shares and minimize external economic shock.

The paper is structured as follows: Section 2 reviews on exchange rate regime, Indonesia trading partners, free-float regime and basket currency regime. In Section 3, we derive a theoretical model that describes the optimal shares in the currency basket. In Section 4, the simulation of theoretical model will be conducted to find the optimal proportion of each share. In Section 5, the GDP volatility testing will be added to compare the current and proposed regime in lowering fluctuation. Conclusion and recommendation of the research will be provided in Section 6.

2. Literature Review

2.1 Exchange Rate Regime

The literature for an optimal exchange rate policy has constantly been developed by the economists, especially for developing countries since it is believed that they have to be very cautious in adopting the exchange rate regime. In the 1990s, it was so popular for developing and emerging countries to fully peg the exchange rate against a strong currency. Mostly, some countries decided to peg the domestic currency to US Dollar as it is believed as the strongest currency. However, in the mid of 1997, the Asian financial crisis led to the recommendation of either fully floating regimes or hard pegs. This is well known as bipolar prescription (Ghost and Ostry 2009). The bipolar prescription falsified the adoption of former intermediate regimes, such as crawling arrangements or managed floats, since those were not advised as the leading economists, such as Obstfeld and Rogoff (1995), argued that they made countries more vulnerable crisis. For most emerging markets, they often adopted the manage float regime. However, in the case of crisis, the

spare of 15% bands in manage float will be leaked and the effect would be the same as under the fixed rate system. The selection of an exchange rate regime has been at the centre of the debate in international macroeconomics for a long time. Indonesia was then started to adapt the free float regime in 1998 until recent and the rupiah, as a local currency was being freely floated following the market mechanism.

2.2 Indonesia Trading Partners

The exchange rates play a vital role in a country's level of trade. Many factors determine exchange rates, and all are related to the trading relationship between two countries. As the data gathered from the Observatory of Economic Complexity (OEC), Indonesia is the 25th largest export economy in the world and the 79th most complex economy according to the Economic Complexity Index (ECI). In 2014, Indonesia exported \$197 Billion and imported \$178 Billion, resulting in a positive trade balance of \$19.4 Billion. In 2014, the GDP of Indonesia was \$888 Billion and its GDP per capita was \$10.5 Thousand. Indonesia's main export markets will be China, Japan and Singapore. Together these countries will be accounted for 41% of total exports in 2017 (ING International Trade Study, 2012). The trading pattern should determine the optimal reserved currencies as the payment method. In practice, the current free float exchange rate regime made the reserved currencies does not reflecting the trading pattern and led to unstable rupiah as the local currency.

2.3 Free-Float Regime

A free-float exchange rate regime is a flexible exchange rate system, determined in the market freely by demand and supply of foreign and domestic currency. The monetary authority does not intervene in the foreign exchange market. Monetary policy is independent of the exchange rate regime and can be used freely to steer the local economy (Yagci, 2001). There are some advantages and disadvantages of free-float regime. According to Latter (1996), there is no obligation on for the central bank to intervene. In which, the reserved of nations would not be used any longer for adjusting the exchange rate and simply let the market to get adjusted by itself. If the markets operate efficiently and the rate floats freely, there would be no opportunities to gain profit for speculators at the expense of the central bank. However, if the market is not run perfectly or seldom run efficiently, there will be a risk of overshooting. Another difficulty is the uncertainty level of exchange rate makes the planning and pricing issues in businesses. Therefore, some of the entities used to insure and hedge against uncertainty through derivatives market such as forward, future or option.

For some considerations, the decision taken at the 1997 crisis by the Indonesian monetary authority is to shift the exchange rate regime from manage floating to freely floating. The decision leads to the Trilemma (also known as impossible trinity), in which by adapting the free-float regime, a monetary authority cannot pursue three different objectives simultaneously, i.e. a fixed exchange rate, the free movement of capital, and an independent monetary policy. Under this regime, the Indonesia monetary authority should forego one of the three objectives, which is fixed exchange rate and focusing on the free flow of capital movement as well as the independent monetary policy.

2.4 Basket Currency Regime

Despite the arguments against pegged regimes, the IMF defined another most prominent exchange rate regime for developing countries such as a currency basket regime that bases its value on a portfolio of other currencies with different weights (Duttgupta et al. 2005). The basket is formed from the currencies of major trading or financial partners and weights reflect the geographical distribution of trade, services, or capital flows. A basket currency is sometimes also called soft-peg policy since the value of the currency is pegged on several major currencies instead of just one.

Another research by Yoshino et al. (2004) explained the advantages and disadvantages of opted the basket currency regime. There will be two positive aspects. First, the exchange rate fluctuations are typically lower than a hard-peg since the exchange rate risk is more dispersed. Second, the weights in the basket may be used as an additional policy tool to achieve a given exchange rate objective. Pegging to a basket of currencies also has the advantage of reducing the transmission of external shocks to the domestic

economy and tempering the exchange rate's exposure to the potentially erratic movements of a single currency (Duttagupta 2005).

3. Theoretical Model

Following Yoshino (2004) and Heble et.al (2015), in this theoretical model, the authors create the three-way interdependent relationship using the assumption that the currency basket consists only two external currencies, namely the US Dollar and the Yen as the external currencies and the Rupiah as the home currency. The US Dollar representing the rest of the world used for exchange currency, the Yen representing Japan as our main trading partner and the Rupiah represent the currency of Indonesia as the home.

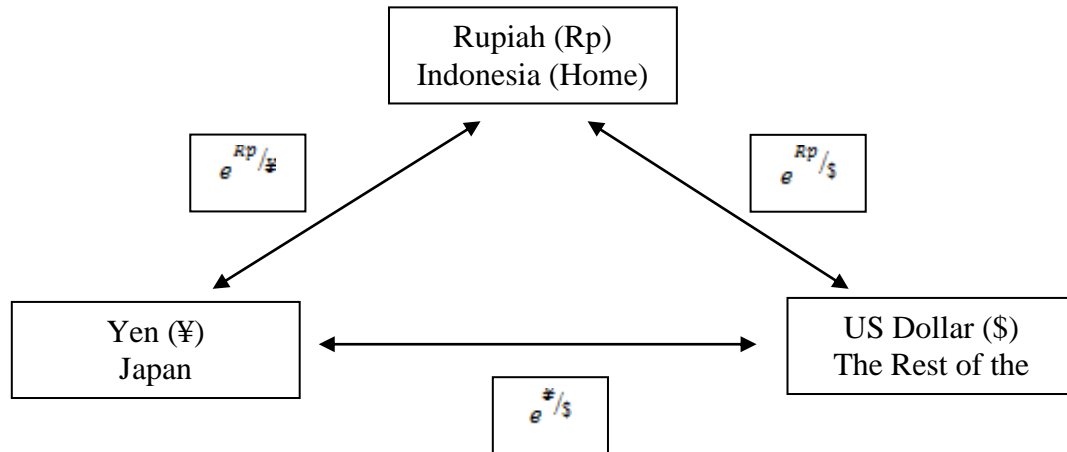


Figure 2: Tripartite Exchange Rate Relationship Chart

Let $e^{Rp/\$}$, $e^{Rp/¥}$, and $e^{¥/\$}$ denote the exchange rate of the Rupiah (Indonesia) against the US Dollar (The rest of the world), the Rupiah against the Yen (Japan), and the Yen against the US Dollar. Since one of the three exchange rates is not independent, the Rupiah-US Dollar can be expressed as:

$$e^{Rp/\$} = e^{Rp/¥} + e^{¥/\$} \quad (1)$$

The authors assume that the monetary authority would adjust money supply by intervening in the foreign exchange market to maintain the value of the basket at a constant level θ . If v is the weight of the US Dollar and $(1-v)$ is the weight of the Yen in the basket, then the value of the basket can be described as follow:

$$v e^{Rp/\$} + (1-v) e^{Rp/¥} = \theta \quad (2)$$

Inserting equation (1) and (2), the equation would be:

$$e^{Rp/\$} = \theta + (1-v) e^{¥/\$} \quad (3)$$

$$e^{Rp/¥} = \theta - v e^{¥/\$} \quad (4)$$

The main objective of Indonesia government is to maintain the GDP volatility. The function can be written as:

$$\text{Min}(y - \bar{y})^2 \quad (5)$$

The GDP fluctuations are a function of the deviation of the interest rate (R), government spending (G), and the current account (CA) from the initial expected target (denotes by \bar{r} , \bar{G} , and \bar{CA}). The fluctuations in the current account (CA) come from the fluctuation of GDP (represents the fluctuation of domestic demand and production capability), exchange rates in terms of the US Dollar, the Yen, and demand from the rest of the world.

$$(y - \bar{y}) = C_0 + C_1 (r - \bar{r}) + C_2 (G - \bar{G}) + C_3 (CA - \bar{CA}) \tag{6}$$

$$(CA - \bar{CA}) = A_0 + A_1 (y - \bar{y}) + A_2 \left(e^{Rp/\$} - \bar{e}^{Rp/\$} \right) + A_3 \left(e^{Rp/¥} - \bar{e}^{Rp/¥} \right) + A_4 (Yw - \bar{Yw}) \tag{7}$$

To solve the first order condition $\frac{\partial (y - \bar{y})^2}{\partial v} = 0$, the result for optimal weight of US Dollar in the basket will be as follow:

$$v = \frac{C_0' + C_1'(r - \bar{r}) + C_2'(G - \bar{G})}{C_3' \times k} + \frac{[A_0 + A_4 (Yw - \bar{Yw}) + \theta (A_2 + A_3) - A_2 \left(e^{Rp/\$} - \bar{e}^{Rp/\$} \right) - A_3 e^{Rp/¥}]}{k} \tag{8}$$

Where

$$C_0' = \frac{C_0}{1 - C_3 A_1}$$

$$C_1' = \frac{C_1}{1 - C_3 A_1}$$

$$C_2' = \frac{C_2}{1 - C_3 A_1}$$

$$C_3' = \frac{C_3}{1 - C_3 A_1}$$

$$k = (A_2 + A_3) e^{Rp/\$}$$

4. Simulation of Theoretical Optimal Shares

In this section, the authors will conduct the simulation to support the theoretical model derived from previous section to determine the optimal shares of external currencies in the currency basket of Indonesia. But before doing the comprehensive calculations, the authors former made an adjustment for the level of monetary authority in intervening the currencies market to maintain the value in basket (θ), the formula for θ can be expressed as:

$$v e^{Rp/\$} + (1 - v) e^{Rp/¥} = \theta \tag{9}$$

$$\theta = adj v \cdot e^{Rp/\$} + adj (1 - v) \cdot e^{Rp/¥} \tag{10}$$

By using the actual reserved currencies from the period of 2010 – 2013 and the above formula, the value of $adj v$, $adj(1 - v)$, $e^{Rp/\$}$, $e^{Rp/¥}$ and θ are as follow:

$adj v$	0.7355
$adj (1 - v)$	0.2645
$e^{Rp/\$}$	-9.1449
$e^{Rp/¥}$	-4.1721
θ	-7.9724

Source: Author's calculations

After finding the value of θ , the next step is to calculate the optimal shares of each currency. The data required was gathered from the World Development Indicators (2016) Database and ADB Outlook (2016) for Indonesia for the period of 1998 to 2014. The data collected started from 1998 because the free float regime was adopted in the mid of 1997. The data collected was the GDP, nominal interest rate, government expenditure, balance of trade, world GDP, the average exchange rate value of the Rupiah to the Yen, and the average exchange rate value of the Rupiah to the US Dollar. The exchange rate variables were then converted into their logarithmic form and using the Hodrick- Prescott filter to smoothening in order to find the expected value. The simulations were then run using E-Views software with the two-stage least squares regression to find the deviation of Gross Domestic Product and Current Account (equation 6 and 7). After doing the simulations, the author will then estimate v value as the optimal weight of US Dollar and $(1 - v)$

as the optimal weight of Yen by including former calculation results into ν formula (equation 8).

Table 2: Coefficients of Two-Stage Least Squares Regression of Deviation of Interest Rate, of Government Spending, and of Current Account on Deviation of Gross Domestic Product of Indonesia.

	Indonesia
$(r - \bar{r})$	-3.46E+12 (-1.5000)
$(G - \bar{G})$	2.1915* (1.9506)
$(CA - \bar{CA})$	-0.0048 *** (-4.0576)
R^2	0.6329

Source: Author's Calculations

Table 3: Coefficients of Two-Stage Least Squares Regression of Deviation of Gross Domestic Product, of Rupiah to US Dollar Exchange Rate, of Rupiah to Japan Yen Exchange Rate, and of World Gross Domestic Product on Deviation of Indonesia.

	Indonesia
$(Y - \bar{Y})$	-129.8768 *** (-5.7178)
$(e^{Rp/\$} - \bar{e}^{Rp/\$})$	9.88E+16 *** (3.0691)
$(e^{Rp/¥} - \bar{e}^{Rp/¥})$	-7.53E+16 ** (-2.9173)
$(Y_w - \bar{Y}_w)$	1216.392 (1.1521)
R^2	0.8029

Source: Author's Calculations

In ν , weight of US Dollar, the authors also including the proportion of Renmimbi as the China currency, since the Yuan is still pegged into US Dollar and China has becoming our major trading partner. The result of the estimated values of Basket Currencies in Indonesia is shown in Table 4.

Table 4: Estimated Values of Basket Currency in Indonesia.

	Indonesia	
θ	-7.9724	
Year	ν for US Dollar	$(1 - \nu)$ for Yen
1998	0.8569	0.1431
1999	0.7564	0.2436
2000	0.7184	0.2816
2001	0.8049	0.1951
2002	0.8294	0.1706
2003	0.7781	0.2219
2004	0.7364	0.2636
2005	0.7587	0.2413
2006	0.8130	0.1870
2007	0.8362	0.1638

2008	0.7576	0.2424
2009	0.6990	0.3010
2010	0.6638	0.3362
2011	0.6000	0.4000
2012	0.6085	0.3915
2013	0.7699	0.2301
2014	0.8321	0.1679

Source: Author's Calculations

The simulation result showed that starting from 1999, the dominant reserve currency should be the US Dollar with the proportion exceeding 70% and Japan Yen up to 30%. The US Dollar has become the main reserved in 2009 after the 2008 financial crisis, but then following by the optimal share adjustment of Yen. By 2013, the trend tends to have the shares of 80% in US Dollar and 20% in Japan Yen.

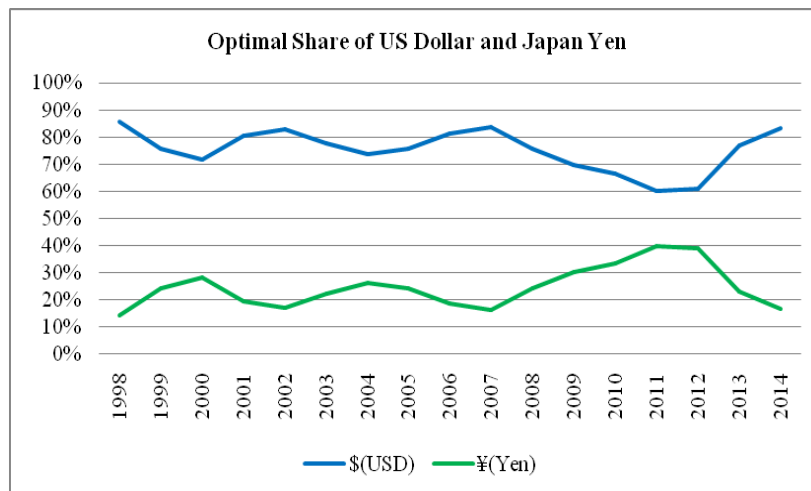


Figure 3: The Optimal Share of US Dollar and Japan Yen

5. GDP Volatility Testing

After conducting the optimal share, the authors conduct the GDP volatility testing in order to ensure the effectiveness of the basket currency system towards the GDP. Using the Standard Deviation, the authors can measure the GDP volatility. The lower the Standard Deviation, the less volatile it would be. The result of GDP volatility testing is shown below.

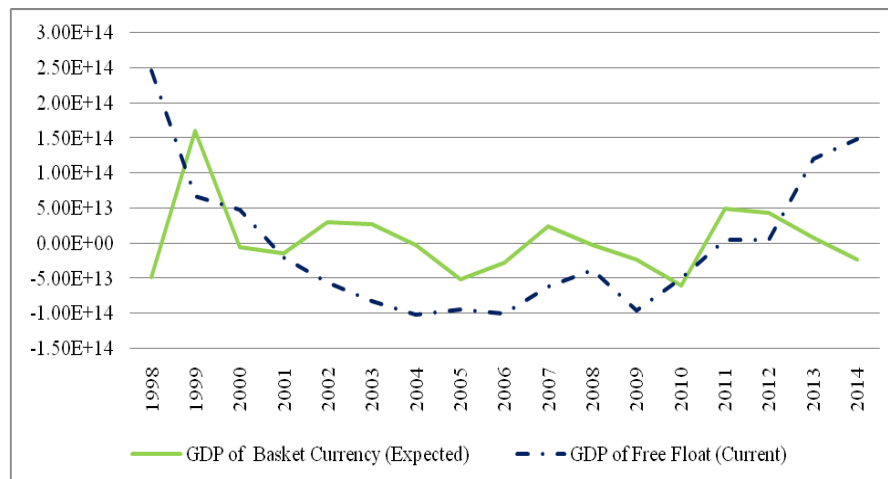


Figure 4: The GDP volatility testing for free float and basket currency regimes

The actual range of GDP volatility using the current free-float regime is 2.50E+14 to -1.00E+14. If the government implement the proposed basket currency regime, the range would be 1.50E+14 to -5.00E+13. It can be seen that the proposed basket currency model can reduce by 49% of the GDP volatility compared to current free-float regime.

6. Conclusion

Using the model introduced by Yoshino et al. (2004), the authors derived a theoretical model to analyze the optimal share for basket currency for Indonesia. Since the Indonesia major trading partners are China and Japan, the optimal shares calculated are limited for US Dollar and Japan Yen, as Renmimbi is still peg to US Dollar. The aim of this research is to minimize the GDP volatility by using the basket currency regime. The result shows that the US Dollar is still the major currency used for reserved and followed by the Japan Yen in the basket currency. The GDP volatility testing is also conducted to simulate the GDP fluctuation of the current regime (free-float) and proposed regime (basket currency). The result shows that GDP can be lowering by 49% if the country adopted the basket currency regime.

Overall, the simulation results highly suggested Indonesia to adopt the basket currency regime instead of free float in order to stabilize the GDP fluctuations and also to absorb the external economic shocks by diversify the risk on the currencies portfolio. In addition to the recommendation from the author, the Indonesia monetary authority can extend the model of basket currencies by including more currencies into the basket that reflecting the trading pattern between Indonesia and trading partners.

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Financial Performance Analysis with RBBR Approach PT. Bank Tabungan Negara, Tbk. Compared with Other State-Owned Banks

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Abstract

This research is aimed to describe the performance of PT. Bank Tabungan Negara which is based on risk approach method called Risk-Based Bank Rating (RBBR). This research uses applied research, specifically descriptive research with a quantitative approach. This research uses secondary data which is obtained from the official website namely www.idx.co.id. Analysis of the data used is RBBR analysis. RBBR consists of Risk assessment profile, Good Corporate Governance (GCG), earning and capital. Risk profile consists eight types of risk, however in this research only credit risk and liquidity risk that will be measured. Credit risk will be measured by NPL (Non-Performing Loan, while Liquidity risk will be measured by LDR (Loan to Deposit Ratio), GCG will be measured by composite rankings that is known from Banks' Annual Report, earning will be measured by Return on Assets (ROA and Net Interest Margin (NIM), and capital will be measured by CAR. This research was conducted on PT. Bank Tabungan Negara, Tbk. in 2011-2015 and PT. Bank Negara Indonesia, Tbk, PT. Bank Mandiri, Tbk, and PT. Bank Rakyat Indonesia Tbk in 2015. Based on the analysis by using Risk-Based Bank Rating Approach, over 5 periods risk profile of Bank BTN assessed by the NPL and LDR had been never reached the best condition. In 2013-2015, the weakness of Bank BTN was not only in the risk profile, but also in terms of GCG. In 2014 was the worst year for Bank BTN during the fifth period, ROA at the time also deteriorated. Bank BTN performed the worst LDR and ROA between the State-Owned Banks in the five recent periods. While in term of NPL, Bank BTN was being the worst also but in 2012 until 2015. Bank BTN also performed the worst of NIM and CAR in 2014 and 2015. Bank BRI was being the best almost in every periode in term of NPL, GCG, ROA, and NIM.

Key words: RBBR approach, Risk profile, Good Corporate Governance, Earning, and Capital.

1. Introduction

In Indonesia, banks are needed by the community. People use the bank as a place to save money, make transactions, transfer money, and invest. People can invest in the form of deposits, bonds, and mutual funds to increase their wealth. People keep their money in the banks because they can feel safe and get enough return without having to move the money. In addition, people also use the services of borrowing money very well. By the presence of the banks, people's needs can be completed.

According to its ownership, there are five types of bank in Indonesia, including state owned Bank (SOE), privately owned national bank (BUMS), cooperative owned bank, foreign owned banks, and bank proprietary blend. State owned banks that are belong to the government, among others; PT. Bank Rakyat Indonesia Tbk (BANK BRI), PT. Bank Negara Indonesia Tbk. (BNI), PT. Bank Tabungan Negara Tbk. (Bank BTN), and PT. Bank Mandiri Tbk. (Bank Mandiri). The Economic conditions of Indonesia in 2015 has weakened. The weakness of economic conditions was followed by weakening banking conditions in Indonesia. However, Indonesian banks still have high asset, these are the 10 largest banks by assets in Indonesia:

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1	Bank Mandiri IDR 905,76 trillion
2	BANK BRI IDR 802,30 trillion
3	BCA IDR 584,44 trillion
4	BANK BNI IDR 456,46 trillion
5	Bank CIMB Niaga IDR 244,28 trillion
6	Bank Danamon IDR 195,01 trillion
7	Bank Permata IDR 194,49 trillion
8	Bank Panin IDR 182,23 trillion
9	Bank BTN IDR 166,04 trillion
10	Bank Maybank Indonesia IDR 53,92 trillion

Bank Mandiri, BANK BRI, Bank BNI and Bank BTN are state owned bank. The four banks are managed to have assets above IDR 100 trillion. However, Bank Mandiri, BANK BRI, and Bank BNI were in the top 5 assets. Besides that, Bank BTN is the only one of government-owned bank that did not make the top five banks with the largest asset.

In addition, Bank BTN was also the only one bank which did not get Indonesia Banking Awards in 2015 by Tempo Group that was based on their performance in 2014. Bank Mandiri and Bank BNI got 3 banking awards, those got Digital Service award, The Most Reliable Bank, and The Most Efficient Bank. Bank BRI also got Indonesia Banking Awards although less than Bank Mandiri and Bank BNI. Bank BRI got Indonesia Banking Awards in Digital Service and The Most Efficient Bank. While, one of Bank BTN's mission is to "Improve competitive advantage through innovative product development, strategic network-based services and the latest technology" and Bank BTN has ever gotten "The Most Efficiency Bank 2014" by Bank Indonesia based on the performance in 2013. It means that Bank BTN's decreased in 2014 and Bank BTN did not reach one of its mission.

Based on the explanation above, it can be seen that Bank BTN has the worst credibility compared to other state-owned. The good banking system is measured by the performance of the bank's financial health. The healthy financial performance in the last five years can lead to get customers and shareholders trust.

Bank BTN has a core business in providing mortgage. Bank BTN provides primary needs of human which is home, subsidized housing for society with low income. Bank BTN which is The Pioneer of KPR in Indonesia dominates KPR Financing in Indonesia. In 2015, Bank BTN put 89.90% of its total financing in KPR. Bank BTN is over focused in housing finance. In the fourth quarter of 2015, the growth of the mortgage portfolio is going slowly, it is only 1.17%, while the previous quarter recorded 1.76% growth in mortgages. If Bank BTN is too much focus on a business and the business is going badly, it can greatly affect the Bank BTN. Thus, we need to look at their financial condition and other possible prospects for the bank.

This research has been design to measure financial performance of PT. Bank Tabungan Negara, Tbk. compared with other state-owned bank through Risk Based Bank Rating (RBBR) Approach for 2011-2015. The state-owned banks have been analyzed from four aspects : 1) Risk assessment profile, 2) Good Corporate Governance (GCG), 3) Earning and 4) capital.

The sample has been taken from the last five years and other state-owned banks because in The Business Cycle After Keynes : A Contemporary Analysis said that after war, For a long period business cycle theory addressed itself to explanation of cycles of approximate length 3-5 year" and to determine how good Bank BTN compared other state-owned banks.

2. Literature Review

There are many techniques for measuring financial performance, which are financial ratio analysis, trend analysis, CAMEL and CAMELS rating, and RBBR. Other authors have analyzed banks financial performance, but different banks, technique or different years.

Jayati Mandasari (2015) in her research compared the financial performance among Indonesia state-owned banks in 2012 and 2013 by using RGEC approach. The research used six variables, they are NPL, LDR, GCG, ROA, NIM, and CAR. The research concluded that NPL condition in Indonesia state-owned banks were good, their LDR were quite liquid, GCG, ROA, and CAR were good. However, BTN had the worst NPL compared to other state-owned banks although it was still under 5%. Bank BTN also has been the worst liquidity performance among state-owned banks. Beside that, Bank BTN had the worst Good Corporate Governance among state-owned banks, although it was still under the requirement which is 3,5%.

Dr Ahmed Arif Almazari (2012) analyzed the financial performance of the Jordanian Arab commercial bank for the financial year 2000-2009. The author used the DuPont system of financial analysis which was based on return on equity model. The research analyzed the financial performance of the banks from three different dimensions; 1) net profit margin, 2) total asset turnover, and 3) the equity multiplier. The research revealed the following facts; 1) the financial performance of the Jordanian Arab bank was steady and represent low volatility in the return on equity; 2) Its net profit margin and total asset turnover were stable during 2001-2009, and 3) the equity multiplier exhibited stable from 2001 until 2005, and then declined in 2006-2009 which was referred that the bank was underutilization on debt to finance its assets.

Nurul and Sri Utiyati (2013) undertook a research on PT. Bank Negara Indonesia, Tbk and PT. Bank Internasional Indonesia, Tbk for the period 2007-2011. The authors used financial ratio for the research. In their research, liquidity, profitability, and solvability Ratio were taken as the variables. Liquidity ratio was reflected by Quick ratio, Banking Ratio, Loan to Deposit ratio and Loan to Asset Ratio. Profitability ratio was reflected by Return on Asset, Return on Equity, and Net Profit Margin. Solvability ratio was reflected by Primary ratio, Capital ratio, and capital adequacy ratio. The ratio of liquidity, profitability, and solvability of PT. Bank Negara Indonesia, Tbk, and PT. Bank Internasional Indonesia, Tbk were good, both banks were in the standard that have been set by Bank Indonesia.

Alizatul F., M. Saifi, and Zahro Z.A. (2015) investigated the performance of Indonesia state-owned banks during the period 2011-2013. Risk Based Bank Rating Approach was used to find out the state of risk profile, good corporate governance (GCG), earning, and capital. Non Performing Loan (NPL), Interest rate risk (IRR), and Loan to Deposit Ratio represented the risk profile. Return on Asset and Net Interest Margin represented earning condition. Capital Adequacy Ratio represented the capital. The study asserted that the average NPL of state-owned banks was under 5%, the average of IRR was 107,01%, and the average LDR was 112,97%. High allocation third-parties funds for loans caused the high LDR. However, GCG, earning, and capital condition of state-owned banks were in good conditions.

3. Methodology

This study used Risk based-bank rating approach to analyze the performance of Bank BTN compared to other state-owned banks. RBBR approach is bank health assessment based on Bank Indonesia Circular Letter No. 13/24 / DPNP dated October 25, 2011. This approach uses four factors which are risk profile, Good Corporate Governance, Earning, and Capital. Since the enactment of this Bank Indonesia Circular Letter No. 13/24 / DPNP dated October 25, 2011, Bank Indonesia Circular Letter No. 6/23 / DPNP dated May 31, 2004 concerning the Rating System for Commercial Banks based on CAMELS ratio is revoked and declared invalid.

The financial performance assessment which has been frequently used for research is CAMEL or CAMELS method. However, according to Wirnkar and Tanko (2008) research, there is no one factor in camels sufficient to describe the bank's performance. The other study by Bayu Aji Permana (2012) concluded that CAMELS ratings method can not provide an outcome that refers to one vote for an assessment of factors that have resulted in a different interpretation. While, the RBBR approach which uses RGEC approach is more concerned to bank's management quality that affects to income and capital factor.

3.1. Data collection

Data Collection is a step in finding and gathering the data. To reach the objective, this research uses quantitative data which is secondary data. The data is earned from official website namely <http://www.idx.co.id/>. In this research, the data that will be required to collect are the annual reports of Bank BTN as the main company in 2011-2015 and the annual reports of the comparison banks in 2015. The comparison banks are Bank Mandiri, Bank BNI, and Bank BRI. The applied methods to collect data for this research are:

1. Library research : This method is applied to acquire knowledge about the problems and the issues that are being achieved.
2. Web research : This method is applied to acquire the data for the financial ratios acquired from the financial reports of banks from the Indonesia stock exchange's website.

3.2. Data processing and analysis

Risk-Based Bank Rating Approach uses RGEC factors which consists of Risk Profile, Good Corporate Governance (GCG), Earning, and Capital. In this research, the data are analyzed by using rating based on Bank Indonesia circular letter and mean as a benchmark.

Risk Profile assess 8 types of risks, including: credit risk, market risk, operational risk, the risk of a liquidity, legal risk, strategic risk, compliance risk, and reputation risk. However, this study only measures credit risk and liquidity risk due to these risks are the major risks for banks as the intermediary. In addition, "The risk of major concern is the credit risk, and liquidity risk, and operational risk," said Samuel which was quoted as saying by Investor Daily. Unfortunately, there is no available data which is quantitative data for operational risk, it makes the study only analyzes credit and liquidity risk for risk profile.

NPL (non-performing loan) ratio measures how much the percentage of non-performing loans is owned by the bank. NPL ratio describes the credit risk of the bank. The smaller percentage of this ratio shows the better bank's performance in arranging the loans.

$$NPL \text{ ratio} = \frac{\text{Non - performing loans}}{\text{Total loans}} \quad (1)$$

Table 1. NPL ratio rating

Rating	Criteria	Information
1	<2%	very healthy
2	2%-5%	Healthy
3	5%-8%	Healthy enough
4	8%-12%	Less healthy
5	≥ 12%	Unhealthy

Source : SE BI No.6/23/DPNP 2004

Loan to Deposit Ratio (LDR) shows the the ability of credit extended by the bank in balancing with bank's liabilities in meeting the demand for third parties who want to withdraw their money.

$$LDR = \frac{\text{Total Loans}}{\text{Total Deposits}} \times 100\% \quad (2)$$

Table 2. LDR rating

Rating	Criteria	Information
1	≤ 75%	very healthy
2	75%-85%	Healthy
3	85%-100%	Healthy enough
4	100%-120%	Less healthy
5	>120%	Unhealthy

Source : SE BI No.6/23/DPNP 2004

GCG is a system for evaluating the performance of banks in terms of management and accountability in accordance with the regulatory framework. The evaluation of GCG is based on governance structure, governance process, and governance outcomes.

Table 3. GCG composit rating

Composit Rating	Information
1	Excellent
2	Good
3	Average
4	Below average
5	Poor

Source : SE BI No.6/23/DPNP 2004

Earnings or profitability is one of RGEC factors that measure the ability of banks in generating profits to increase capital within a certain period. The ratio of earnings used in this study are ROA (Return on

Assets), and NIM (Net Interest Margin).

Gitman and Zutter (2012:81) said that return on asset often called *return on investment (ROI)*. From calculating ROA, we can know the effectiveness of the bank to generate profits with its available assets. Below is the formula to calculate ROA:

$$ROA = \frac{\textit{Profit before tax}}{\textit{Total Assets}} \times 100\% \quad (3)$$

Table 4. ROA ratio rating

Rating	Composit Criteria	Information
1	> 1,5%	very healthy
2	1,25 < ROA ≤ 1,5%	Healthy
3	0,5% < ROA ≤ 1,25%	Healthy enough
4	0% < ROA ≤ 0,5%	Less healthy
5	ROA ≤ 0%	Unhealthy

Source : SE BI No.6/23/DPNP 2004

NIM measures the effectiveness of using its earning asset in generating revenue of net interest. Below is the way to find NIM:

$$\textit{Net Interest Margin} = \frac{\textit{Interest returns} - \textit{Interest expense}}{\textit{Average Earning Assets}} \times 100\% \quad (4)$$

Table 5. NIM composit rating

Rating	Composit Criteria	Information
1	NIM > 3%	very healthy
2	2% < NIM ≤ 3%	Healthy
3	1,5% < NIM ≤ 2%	Healthy enough
4	1% < NIM ≤ 1,5%	Less healthy
5	NIM ≤ 1%	Unhealthy

Source : SE BI No.6/23/DPNP 2004

CAR (Capital Adequacy Ratio) is the ratio of capital that shows the bank's ability to provide funds for business development purposes as well as to accommodate the possibility of the risk of loss resulting from the bank's operations. Below is the formula for calculating CAR for konventional bank:

$$CAR_{\textit{Konventional Bank}} = \frac{\textit{Capital}}{\textit{Risk Weighted Assets}} \times 100\% \quad (5)$$

Table 6. CAR composit rating

Rating	Composit Criteria	Information
1	CAR ≥ 12%	very healthy
2	9% ≤ CAR < 12%	Healthy
3	8% ≤ CAR < 9%	Healthy enough
4	6% < CAR < 8%	Less healthy
5	CAR ≤ 6%	Unhealthy

Source : SE BI No.6/23/DPNP 2004

4. Result and Analysis

4.1. RGEC analysis

Table in the above shows that the NPL state-owned banks in 2015 was between 2% -5%, so that NPL state-owned banks in 2015 got predicate "HEALTHY" and composit rating 2. However, PT. Bank Tabungan Negara, Tbk. had the highest NPL ratio compared to other state-owned banks. It means that PT. Bank Tabungan Negara, Tbk. was the worst credit management because of having the highest credit risk between state-owned banks.

Table 8. NPL ratio and LDR for PT. Bank Tabungan Negara, Tbk. in 2011-2015 and other state-owned banks in 2015

Banks and the periode	Risk Profile		GCG	Earnings		Capital	
	NPL	LDR		ROA	NIM	CAR	
Bank BTN	2011	2,75%	102,50%	1	2,03%	5,76%	15,03%
	2012	4,09%	100,90%	1	1,94%	5,83%	17,69%
	2013	4,05%	104,42%	3	1,79%	5,44%	18,13%
	2014	4,01%	108,61%	2	1,14%	4,47%	14,64%
	2015	3,42%	108,78%	2	1,61%	4,87%	16,97%
Bank Mandiri in 2015	2,29%	87,05%	1	3,15%	5,90%	17,99%	
Bank BNI in 2015	2,67%	87,80%	2	2,60%	6,40%	19,50%	
Bank BRI in 2015	2,10%	92,11%	1	4,19%	8,13%	20,59%	

Source : state-owned banks annual report

Based on the data above, during five periods NPL ratio of PT. Bank Tabungan Negara, Tbk. awarded "HEALTHY" because it is between 2% -5%. HEALTHY predicate or second ranked means that the possibility of losses faced by the Bank in terms of inherent risk is low and the quality of risk management is adequate.

PT. Bank Tabungan Negara, Tbk. weakness caused the bank is getting second rating in the growing number of Non-performing loans especially in bad debts. Increasing in bad debts is caused by credit expansion without strict screening against the debtor. The second cause is the high interest rates offered by PT. Bank Tabungan Negara, Tbk. This is supported by the data in 2015 which is claimed that the decline in lending rates to below the average lending rates of state-owned bank in 2015 and it was followed by a decline in NPL ratio PT. State Savings Bank, Tbk.

From the data in the table, it can be seen that PT. Bank Tabungan Negara, Tbk. had the largest LDR and PT. Bank Tabungan Negara, Tbk. was being the only state-owned banks were categorized as "LESS HEALTHY". While, other state-owned banks entered into rating 3 which predicate is "HEALTHY ENOUGH". It shows that PT. Bank Tabungan Negara, Tbk. had the worst liquidity performance. However, its annual report explained that despite having high LDR, PT. Bank Tabungan Negara, Tbk. has liquid adequate tools in Bank Indonesia and other banks also securities.

By comparing LDR condition in 5 years, it can be analyzed that LDR of PT. Bank Tabungan Negara, Tbk. increased from 2012 to 2014. Through the above graphs and data, its LDR was always more than 100% since 2011. Thus, PT. Bank Tabungan Negara, Tbk. regularly in fourth rank or category "LESS HEALTHY" in terms of LDR. It reflects that the low capacity of the number of deposits can cover outstanding loans so the banks should use call money to cover the shortfall. High LDR describes the liquidation risk of PT. Bank Tabungan Negara, Tbk. was very high. It could be affected to the debtor. The debtor will be worried because credits earned at any time will be withdrawn to fulfill the demands of third parties. Credit expansion is likely to be the cause of high number of LDR.

Based on c the data above, in 2015, PT. Bank Tabungan Negara, Tbk. was not the worst in GCG. Its GCG composite rating was 2 or "GOOD". The predicate reflects that management of PT. Bank Tabungan Negara, Tbk. had made the implementation of Good Corporate Governance well in general. PT. Bank Tabungan Negara, Tbk. in complied the principles of GCG. The weaknesses of PT. Bank Tabungan Negara, Tbk in implementing corporate governance principles did not significantly affect to the bank management and the bank could handle with a normal action

While, GCG position of PT. Bank Tabungan Negara, Tbk. in 2011 and 2012 successfully achieved "EXCELLENT" predicate. However, in 2013, PT. Bank Tabungan Negara, Tbk. appeared in decreasing 2 levels, PT. Bank Tabungan Negara, Tbk. got "AVERAGE" predicate for GCG.

This was happened because in that year there were problems in the governance structure, governance processes, and governance outcomes in PT. Bank Tabungan Negara, Tbk. In terms of governance structure, PT. Bank Tabungan Negara, Tbk. can not meet the composition of the Board of Commissioners and Committee under the provisions in force, thus super division of directors had not run optimally. In the governance process had identified three fundamental issues, including the implementation of the loan restructuring process not in accordance with the provisions and their weaknesses in the implementation of information technology loan restructuring, Coordination among the three pillars of the controls (Internal

Audit, Compliance, and Risk Management) was not optimal, and Roles active Board of Directors and the Board of Commissioners and committees under it had not run optimally. In 2014 and 2015, its GCG position was better although not as good as in 2011 and 2012. In the last 2 years, PT. Bank Tabungan Negara, Tbk. got "GOOD" predicate.

In 2015, the entire state-owned banks awarded as "VERY HEALTHY" for ROA because ROA which achieved by each bank is above 1.5%. "Very Healthy" illustrates that income before tax earned by state-owned banks had exceeded the target and could support the growth of bank capital itself. This predicate also illustrates that core earnings as the main source of profitability is very stable and dominates a profit. With a very adequate profit, state-owned banks have a very high profit prospects in the future. However, based on the graph above, PT. Bank Tabungan Negara, Tbk. obtained the smallest ROA compared to another state and close to the position of "less healthy".

The year of 2011 was the best period for PT. Bank Tabungan Negara, Tbk over the ROA during the last five periods. However, ROA of PT. Bank Tabungan Negara, Tbk. moved lower since 2012 until 2014 and obtained predicate of "HEALTHY". Declining ROA in 2014 due to no growth in income before tax expense in 2014, even a decline in income before tax expense amounted to 26.23%. While, the declining income before tax expense is caused by no changing in the interest rates mortgage loans both subsidized and non-subsidized also increasing cost of fund. In 2015 ROA of PT. Bank Tabungan Negara, Tbk could increase the ratio by 0.47%, thus the predicate on ROA becae "VERY HEALTHY". It shows that the bank's ability in asset management increased because the bank is able to increase the revenue and reduce the costs.

In 2015, Net Interest Margin of all state-owned banks were above 3%, it made the state-owned banks got rank 1 or predicate "VERY HEALTHY". This predicate reflects that the productive assets owned by banks are very stable and capable in supporting generating net interest income. The ratio of NIM which is very healthy is more likely to increase the profits.

During the 5 most recent periods, NIM of the bank declined in 2013 and 2014. The declining of NIM is caused by the rising cost of funds and impairment loss. However, NIM acquired by PT. Bank Tabungan Negara, Tbk. always awarded "VERY HEALTHY" due the ratio was always more than 3%. This reflects that the PT. Bank Tabungan Negara, Tbk. had used the productive assets effectively, efficiently, and maximum in operating activities so the bank could generate in higher net interest income.

Based on these graphs, PT. Bank Rakyat Indonesia, Tbk. had the highest CAR among state-owned banks, with a value of 21.39% PT. Bank Tabungan Negara, Tbk. obtains the lowest CAR, 16.97%. Although the CAR of PT. Bank Tabungan Negara, Tbk. CAR was the lowest, but the ratio was still above 12%. If CAR-owned bank more than equal to 12%, automatically the value was included in the category of "VERY HEALTHY". In the period from 2015, the entire state-owned banks had CAR more than 12%. This indicates that all state-owned banks included in the top 1 or predicate "VERY HEALTHY" for CAR. "VERY HEALTHY" reflects that all state-owned banks have adequate capital so the bank is very capable of anticipating the risks that will occur in the operational activities. Adequate amount of capital reflect that the capital is permanent and able to absorb losses that will occur. The capital can also help the development of the business conducted by the bank in the future. State-owned banks had been doing very well in managing the capital.

CAR obtained PT. Bank Tabungan Negara, Tbk. was always above 12%. Although in 2014 there was a decreasing in CAR, PT. Bank Tabungan Negara, Tbk. were still able to maintain its performance to not to be under than 12%. Over the last five periods PT. Bank Tabungan Negara, Tbk. got predicate "VERY HEALTHY" for CAR. This condition describes that PT. Bank Tabungan Negara, Tbk. can manage their capital properly and able to face the risks or disadvantages and capable in sustaining the growth.

5. Conclusion and Recommendation

Based on the analysis by using Risk-Based Bank Rating Approach, over 5 periods risk profile of Bank BTN assessed by the NPL and LDR had been never reached the best condition. High credit risk due to the expansion of loans and high lending rates. Expansion of loans also affected the risk of a liquidity owned by Bank BTN. The high loans led to a third party quite hard to liquidation. In 2013-2015, the weakness of Bank BTN was not only in the risk profile, but also in terms of GCG. Governance structure, process, and outcomes were not optimal due to the low self-assessment of GCG, especially in 2013. In 2014 was the worst year for Bank BTN during the fifth period, ROA at the time also deteriorated. It was because of the rising cost of funds and the absence of changing in the interest rates on housing loans good credit of subsidized and non-subsidized.

Based on the analysis of RBBR factors, Bank BTN performed the worst LDR and ROA between the State-Owned Banks in the five recent periods. While in term of NPL, Bank BTN was being the worst also but in 2012 until 2015. Bank BTN also performed the worst of NIM and CAR in 2014 and 2015. Bank BRI was being the best almost in every periode in term of NPL, GCG, ROA, and NIM. While, NIM, and CAR of Bank BTN were still in category of "VERY HEALTHY" in 2011-2015.

There are three recommendations for Bank BTN; First, related with NPL, LDR, ROA, and NIM, expansion loans strongly advised to continue to increase the total assets owned (in order to achieve target in 2017) and net intrest income. The higher total assets of the bank's performance is getting better. However, the total third party funds must be greater than the total loan loans, it is aimed to facilitate the liquidation so it can reduce the liquidity risk. Beside that, the expansion loan should give low interest rates especially on mortgages either in subsidized or non-subsidized in order to compete with the other State-Owned Banks, increasing revenue, and improving credit smoothly. Second, in term of GCG, governance structure already updated and furnished in January 2016 was expected to work optimally. Bank BTN suggested to make stricter standardization for performance assessment of existing employees in the governance structure and apply governance culture very well so that it can work optimally and maximum to produce the best outcome governance. Third, in term of ROA, Bank BTN should increase its profit first in order to strengthen its capital.

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The Impact of Financial Ratio, Market Capitalization, and Beta on the Return of LQ45 Stocks

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Abstract

The Indonesian stock market is reflected by IHSG growth as high as 4493.01% from its opening date on 10th August 1982 (Rp100) to 31st December 2015 (Rp4593.01). Despite this growth, the same is not true for its listed members. For this reason, further analysis is required to determine the variables that affect stock return. In this paper, financial ratios (liquidity ratio, leverage ratio, asset turnover ratio, profitability ratio, and market ratio), market capitalization, and unsystematic risk (beta) are used to determine their impact on stock return. The sample in this research are non financial entities listed in LQ45 Index from 2011 to 2015. The author has selected the LQ45 Index because it covers at least 70% of the market capitalization in Indonesia stock exchange. This research found empirical evidence that price to book value and market capitalization have positive and significant relationship to stock return while total asset turnover has negative and significant relationship to stock return in LQ45 stocks.

Keywords: Financial ratios, market capitalization, unsystematic risk, stock return, LQ45

1. Introduction

Share or stock is an important instrument in financial area. For corporations, it provides them with the equity needed for expansion. For investors, it gives them the potential for a high return. The IHSG grew by 4493.01% from its opening date on 10 August 1982 (Rp100) to 31 December 2015 (Rp4593.01).

This research seeks to determine the relationship between financial ratios (return on equity, total asset turnover, debt to equity ratio, quick ratio, and price to book value), company size (market capitalization), and unsystematic risk (beta) toward stock returns. The sample selected in this research is non-bank companies that are regularly listed in LQ45 index from 2011 to 2015.

The result from this research is useful for companies and investors. The finding of this research shows which financial indicators drive stock return. Thus, companies and investors can put the drivers into consideration to maximize shareholders' value.

2. Literature Review

Past researchers have studied the relationship between financial ratios, market size, and unsystematic risk to stock return across the globe. In Indonesia Dhika Febrianov (2014) studied the relationship between return on assets (ROA), earning per share (EPS), price earning ratio (PER), price to book value (PBV), debt to equity ratio (DER) and stock return of company listed in LQ45 index and determined that EPS, PER and PBV significantly affect stock return. Khusnul Khotimah and Isrochmani Murtaqi (2015) studied the effect of quick ratio, total asset turnover, and book to market ratio to stock return in food and beverage subsector in Indonesia and find out that quick ratio has significant and negative relationship to stock return while total asset turnover and book to market ratio has a positive and significant effect to stock return.

Still in Indonesia, Dwi Martani et al (2009) studied the effect of financial ratios, firm size and cash flow from operating activities on stock return. The result shows that net profit margin, return on equity and price

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to book value have positive and significant relationship to stock return while total asset turnover has a negative and significant relationship to stock return. Siti Murniati (2016) studied the effect of capital structure and company size, and profitability on stock return. The research found out that debt to equity ratio, total asset, and return on equity have positive and significant impact to stock return while debt to asset ratio has a negative and significant impact to stock return.

In Thailand Pinrade Petcharabul and Suppanunta Romprasert (2014) found that return on equity and price to earning ratio positively and significantly related to stock return, while debt to equity ratio, current ratio, and inventory turnover have no significant effect to stock return in Technology industry in Thailand. In Amman, Jordania, Adnan Gharaibeh (2014) studied the effect of capital structure and liquidity ratio to stock return and find out that liquidity ratio has a negative and significant impact to stock return.

Pettengil et al (1995) studied the relationship between beta and return and found empirical evidence of positive tradeoff between beta and return from their research. Fama and French (1992) found empirical evidence that market capitalization has negative effect on stock return while book to market ratio has positive effect on stock return. Chaibi et al (2015) found empirical evidence in Russel 3000 index that market capitalization has positive impact on stock return. Most notably, Fama and French (1992) found empirical evidence that market capitalization has negative effect on stock return while book to market ratio has positive effect on stock return

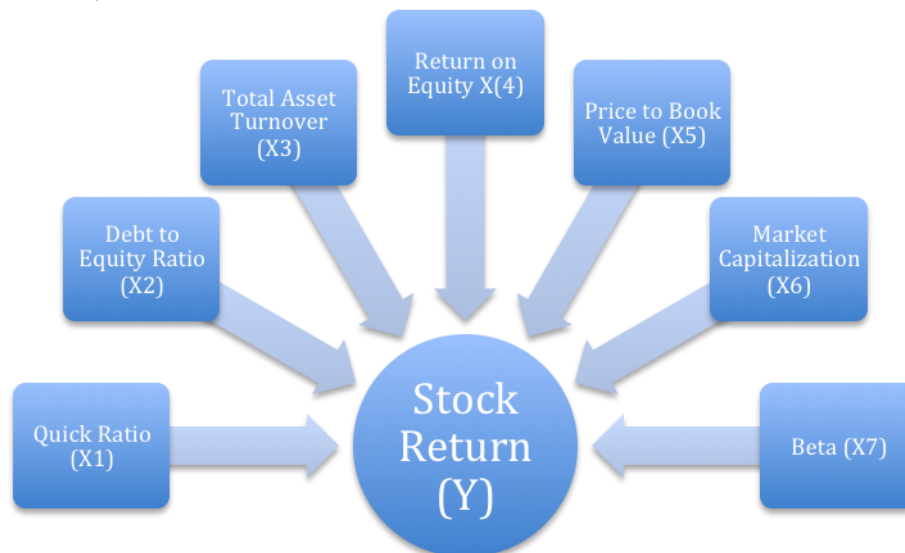
3. Methodology

3.1. Data and Variable Tested

Data used in this research is from the income statement, the balance sheet, and the stock price of 18 non-financial entities listed in LQ45 from 2011 to 2015. The dependent variable is that of stock return, while the independent variables are quick ratio, debt to equity ratio, total asset turnover, return on equity, price to book value, market capitalization, and beta.

3.2. Data Analysis

The authors use SPSS 22 to conduct statistical analysis in order to determine the relationship between dependent and independent variable. The statistical analysis used in this research are assumption test (normality test, autocorrelation test, heteroskedasticity test and multicollinearity test) and hypothesis test (R^2 test, T-Test, F-Test). The framework used in this research is as follow:



$$Y = C + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_6X_6 + B_7X_7 \quad (1)$$

Where Y = Stock Return

C = Constant Value

B = Independent Variable Coefficient

X = Independent Variable

4. Data Analysis and Findings

4.1. Assumption Test

Assumption testing is required prior to conducting hypothesis testing. Assumption testing comprise normality, autocorrelation, multicollinearity, and heteroscedasticity tests. These tests are to make sure that the data's residual variable is normally distributed, as well as having no autocorrelation, multicollinearity, and heteroscedasticity problem.

The first assumption test is normality test. This test is used to determine if the residual value of the variable is normally distributed. In this research, normality test will be using Kolmogorov-Smirnov test. Normality test is passed if the significant value is greater than alpha 5%.

Table 1: Tests of Normality

	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig.
Unstandardized Residual	.055	85	.200*

In this test since the significant value is greater than 5%, therefore the test of normality assumption was passed.

The second assumption test is that of autocorrelation in the residual value. There is no autocorrelation problem if the Durbin Watson value is higher than dU and lower than 4- dU. The dU for k (number of independent variables) = 7, n = 85, and alpha = 5% is 1.83. Thus the Durbin-Watson value must between 1.83 and 2.17. Since the Durbin-Watson is in between dU and 4-dU, than the autocorrelation test is passed.

Table 2 Test of Autocorrelation

Model	Std. Error of the Estimate	Durbin-Watson
1	,22733	1,932

The third assumption test is multicollinearity test. The purpose of this test is to determine the presence of correlation among the independent variable. The assumption is that a good regression model does not have multicollinearity. The authors used the Variance Inflation Factor (VIF). If VIF value is below 10, then there is no multicollinearity. Since all VIF is below 10, therefore no multicollinearity problem is present.

Table 3 Test of Multicollinearity

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	QR	.610	1.639
	DER	.558	1.791
	TAT	.435	2.296
	ROE	.508	1.969
	PBV	.498	2.009
	MCAP	.812	1.231
	BETA	.889	1.125

The last assumption test is heteroscedasticity test. To determine the presence of heteroscedasticity, the authors use scatterplot diagram. If the diagram does not show any pattern, then there is no heteroscedasticity.

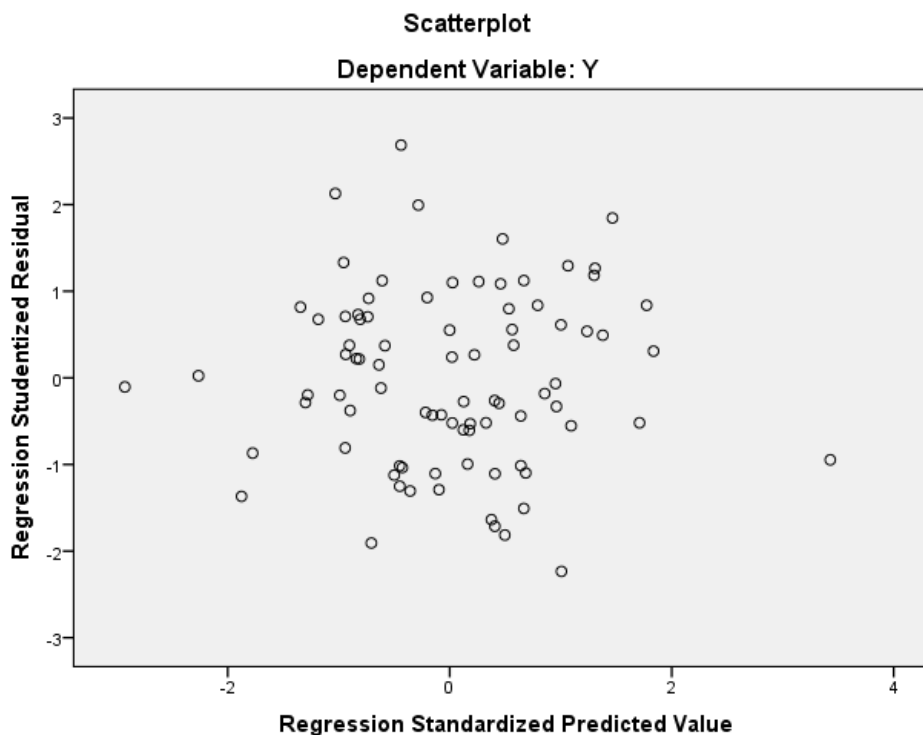


Figure 1 Scatterplot Diagram

The absence of a pattern in the above diagram shows that there is no heteroscedasticity present.

4.2. Hypothesis Testing

In the hypothesis testing, the author will test the coefficient of determination (R^2), F test and T test. The first test is coefficient of determination. This is to determine how well the model can predict the dependent variable.

Table 4: R^2 Analysis

Model	R	R Square	Adjusted R Square
1	.654 ^a	.427	.375

The result shows that the model can predict stock return by 42.7%. The other 57.3% is other variables which are not considered in this paper.

The F Test is designed to determine whether all independent variables in the model simultaneously have a significant effect on dependent variable. The method used by the authors is analysis of variance (ANOVA). All independent variables in the model simultaneously have significant effect to dependent variable if the significant value is below the alpha 5%.

Table 5: ANOVA F Test

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.878	7	.411	8.211	.000 ^b
	Residual	3.855	77	.050		
	Total	6.733	84			

The result shows that computed significant value is below alpha 5%, thus all independent variables simultaneously affect stock return.

The T Test is designed to determine the significance of each independent variable to the dependent variable. In this paper, since the authors use 5% of alpha, then significant relationship occurs when the T significant value is below alpha <5%.

Table 6: T Test

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	-2.143	1.002		-2.139	.036
	QR	-.027	.024	-.125	-1.132	.261
	DER	-.023	.083	-.031	-.272	.786
	TAT	-.244	.093	-.343	-2.625	.010
	ROE	-.058	.375	-.019	-.155	.877
	PBV	.120	.021	.704	5.759	.000
	MCAP	.066	.032	.197	2.061	.043
	BETA	-.021	.037	-.052	-.567	.573

5. Discussion and Analysis

Quick Ratio

With a coefficient value of -0.027 and significance value of 0.261, the quick ratio does not have a significant impact on stock return at 5% alpha. This contrasts with the finding of Khotimah and Murtaqi (2015) Gharaibeh (2014) but in line with the finding of Martani (2009) and Petchrabul and Romprasert (2014). The explanations of the insignificance value can be analyzed from the purpose of the quick ratio itself. Quick ratio measures the liquidity of a firm, its ability firm to meet its short-term obligation by using its non-inventory items in current asset. Ross, Westerfield, and Jordan (2013) stated that liquidity ratios are particularly interesting to short-term investors. They also state that current assets and liabilities can do change rapidly, so today's amounts may not be a reliable guide to the future. Therefore, the insignificance relationship between quick ratio and stock return is logical.

Debt to Equity Ratio

With coefficient value of -0.023 and significance value of 0.786, debt to equity ratio has no significant impact towards stock return since the significance value is above alpha 0.05. This is in line with the finding from research by Dhika Febrianov (2014), Petchrabul and Romprasert (2014), Gharaibeh (2014), and Martani et al (2009) but contrast with the finding of Murniati (2016). This can be explained by the nature of the ratio itself. Debt to equity ratio is calculated by dividing total debt to total equity. It shows the capital structure of the company. Different companies have a different optimal capital structure, thus making the target of debt to equity ratio differ from company to company. Some companies need to reduce it to meet its

optimal capital structure while other need to increase the ratio. For this reason, this ratio this ratio does not explain the variation of stock returns since the change in this ratio can have different impact on different companies.

Total Asset Turnover

With a coefficient value of -0.244 and a significance value of 0.010, total asset turnover has negative and significant impact on stock return. This is in line with the finding of Martani et al (2009) but contrast to the finding of Khotimah and Murtaqi (2015). Total asset turnover measures the ability of company in generating sales by utilizing its total asset. Looking at the definition of the ratio itself, the logical relationship between it and stock return should be positive, because the higher the total asset turnover ratio means better performance by the company. However, the multiple linear regression calculation shows otherwise. In their research, Martani et al (2009) explains that the negative relationship between total asset turnover and stock return might be caused by big firms domination on high stock return, where big firms usually cannot increase their total asset turnover easily. It is applicable to the situation in this research. Since the companies studied in this research are all big firms with high market capitalization, it is hard to increase their total asset turnover ratio significantly. To increase their sales, big firms may have to make bigger investment on their total asset, thus decreasing the total asset turnover ratio even though the sales is increased.

Return on Equity

With a coefficient value of -0.058 and significance value of 0.877, return on equity does not have a significant impact toward stock returns since the significance value is above alpha 0.05. This is contrast with the finding of Murniati (2016), Pethrabul and Romprasert (2014) and Martani et al (2009). Return on equity measures the net profit generated by operating activities to the book value of equity. In a glance, it seems as the most straightforward and relatable ratio that can be compared to stock return. But if we look on closely, there are explanations that can cause the insignificant impact of this ratio to stock return. Firstly, the insignificance of ROE to stock return can be explained since ROE is based on book value, not market value. As Ross, Westerfield, and Jordan (2013) stated that it would be inappropriate to compare the result of return on asset and return on equity to interest rate observed in the financial market. Secondly, from DuPont analysis, we know that high ROE does not always caused by high profitability, but can be caused by over leverage also.

Price to Book Value

With coefficient value of 0.120 and significance value of 0.000, price to book value has a positive and significant impact toward stock return. This result is in line with the finding from Dhika Febrianov (2014) and Khotimah and Murtaqi (2015), and Martani et al (2009). Price to book value compares market value per share with the companies' book value per share. A high price to book value ratio (above 1) means that the company is successfully creating value for its shareholder while low value (below one) means the company is not creating value for its shareholder. Therefore, a higher price to book value ratio will give a higher return to shareholders.

Market Capitalization

With coefficient value of 0.066 and significance value of 0.043, market capitalization has a positive and significant impact toward stock return. This means that companies with higher market capitalization tend to give higher return compare to companies with lower market capitalization. This finding is in line with the finding of Chaibi et al (2015) but contrasts to Fama and French (1992) finding. Market capitalization measures the size of the firms' equity in the market, by multiplying its share with its market price. In theory larger companies are more diverse and benefit from improved financial structure (Chaibi et al, 2015). Firms with big market capitalization also usually has big market share and strong organizational culture. This can explain why market capitalization has positive relationship with stock return, since it is fundamentally stronger.

Beta

With coefficient value of -0.021 and significance value of 0.573, beta does not have a significant impact toward stock return. This supported the results from research by Chaibi et al (2015) and Fama and French (1992) but contrasts to the finding of Pettengil et al (1995). Beta measures the sensitivity of a stock to the market index. The higher the beta means that the stock is more sensitive to the market price movement, thus more risky. The insignificant value of beta may derived from the fact that beta is not sole explanatory variable used to explain return in this model. Pettengil et al (1995) defend the explanatory of beta toward stock return by comparing only beta to stock return, while when other factors included such as book to market and log natural of market equity by Fama and French (1992), beta loses its explanatory power. Another reason is that this research does not divide the period when it is in up or down period, since relationship between beta and return are usually conditional.

Multiple Linear Regression Equation

Based on the data processed the stock return in LQ45 index can be explained in the following equation model:

$$\text{Return} = -2.143 - 0.244 \text{ TAT} + 0.120 \text{ PBV} + 0.066 \text{ MCAP}$$

6. Conclusion and Recommendation

The main objective of this research is to determine factors affecting stock return in LQ45 Index. The research result and analysis shows that price to book value and market capitalization, have a significant and positive impact on stock return while total asset turnover has negative and significant impact to stock return. The other factors analysed in this research, which are debt to equity ratio, quick ratio, return on equity, and beta do not have a significant impact on stock return. With an R^2 of 0.427, this research exposes the possibility of other factors to be analysed in future research. Thus, the authors suggest that future analysis touch on other factors such as macroeconomic factors such as (GDP growth, inflation, and ease in doing business) as well as non-economic factors such as political risk and corruption index. For investors, to maximize their return, they should put emphasis on price to book value, market capitalization, and total asset turnover. For companies, since total asset turnover has a negative significant impact to stock return, they should put emphasis on that ratio, not by declining their sales, but rather by increasing their asset and, since price to book value has significant impact to stock return, they companies should follow pecking order theory in source of financing decision.

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Deal Sourcing and Value Enhancement through Synergy in Private Equity Firm, PT. Saratoga Investama Sedaya Tbk.

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Abstract

Private equity firms are competing with conglomerates and strategic buyers in sourcing for new investment. Conglomerate and strategic buyer acquire new businesses to expand their footprint and cross-breed synergies among their portfolio of companies.

Capital is now a commodity. Entrepreneurs are in quest of anything else the bidders are going to add. Price is not the single determinant, especially if the entrepreneurs are retaining some equity. They are going to watch out for the strengths of every single bidder. One of the most crucial matters they seek is the opportunity to synergize with the new investor.

Synergy may eliminate limitations of a company and leverage strengths of other companies at lower cost and shorter time as compared to acquiring the identical resources. Synergy demands the engagement and commitment of the whole organization, therein lies the challenge.

Saratoga does not have majority ownership in most of their investee companies. They concern without management control on their investee companies; they will not be able to make their investee companies collaborate to build synergy. To the contrary, this final project discovered that businesses are keen to work in close collaboration with anyone as long as the benefit gained outweigh the cost incurred. Companies will even collaborate with their competitors in unique opportunities.

The importance of synergy is not limited to deal sourcing only. Saratoga should avail themselves the opportunity to enhance the value of their investee companies through the creation of synergies, thereby extracting as much value as possible. Systematic coordination of synergy activities should be implemented to optimize the potential benefits of synergy.

Synergy should commence by identifying and communicating the benefits of individual synergy activity to pertinent parties. Saratoga and investee companies must set up a dedicated synergy coordination team within their company to serve as central point of contact and harmonization of synergy activities.

Keywords: Saratoga; Private Equity; Synergy Activities; Deal Sourcing; Value Enhancement

1. Introduction

In an interview with Asian Venture Capital Journal (2015), Sandiaga S. Uno, founder and ex-CEO of Saratoga acknowledge that conglomerate and strategic buyer exhibit a competitive advantage in deal sourcing because they can offer synergistic opportunities to the target company significantly better than ordinary private equity firm.

Synergy will facilitate Saratoga to source and win new investment deal because they can leverage on the resources of investee companies to discover prospective investment and to convince the entrepreneurs more effectively through the advantages of synergy e.g. value enhancement of investee companies. Private equity firms must avail themselves the opportunity to enhance the value of their existing investments through creating synergies and economies of scale thereby extracting as much value as achievable before

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exiting the market (Bee, T.K. & Chelliah, J., 2013).

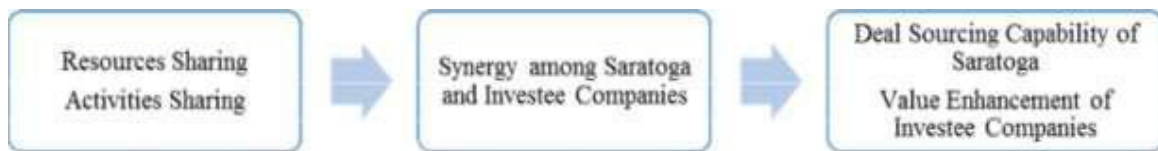


Fig. 1. Synergy contribution to deal sourcing capability and value enhancement

1.1. Company profile

PT. Saratoga Investama Sedaya Tbk (Saratoga) is a private equity firm established in 1998. Saratoga is a leading active Indonesian investment company with an exceptional reputation of profitable investments across key sectors of the Indonesian economy.

Saratoga offers an attractive risk-reward profile to investors in quest of exposure to the Indonesian economy, a country with extraordinary growth prospect. Collectively, Saratoga has a diverse portfolio of several key parameters e.g. small cap, early stage, growth stage, blue chip listed, natural resources, infrastructure, consumer, defensive, cyclical, public and private listed companies.

Saratoga investment strategy guides by three philosophical pillars, which permeate the entire investment screening, evaluation, and monitoring process. (1) Platforms. Saratoga views each investment strategically, not as a stand-alone investment, but as a platform for organic growth and future bolt-on acquisitions of companies operating in the same value chain. (2) Partnerships. Partnerships with existing business owners, global firms and international investors. (3) Value Creation. Saratoga investment portfolio mix consists of three broad categories, namely early stage companies, growth companies and blue chip listed companies.

1. Business issue

Entrepreneur seeks an investor for capital assistance and synergistic opportunity by offering minority or majority ownership of the company. Conglomerate and strategic buyer are key competitors to private equity firm in sourcing for new businesses to invest.

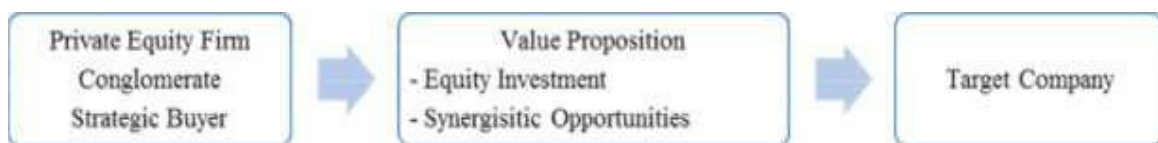


Fig. 2. Investment value proposition

"Strategic buyers can sometimes outbid private equity firm given the synergies they anticipate will achieve, largely because they can merge the target company with their existing operations and reap synergies immediately, typically unavailable to private equity firms" (By, I.S. 2012).

A private equity firm can enhance the value of investee companies by building synergies among portfolio companies. The search for synergies that will improve operating performance across portfolio companies signify a critical role in many companies' strategies, and in actual fact, frequently drives the acquisition agenda. "Procter &

Gamble is an example of a successful company that acquires businesses that exhibit strong synergies" (Barber F. and Goold M., 2007).

In the course of a personal interview with investor relations of Saratoga, Leona Karnali testified that, "There are limited synergy activities among Saratoga and investee companies because Saratoga does not have majority ownership in these firms. The larger and more successful investee companies work independently from Saratoga and other investee companies".

Although there are several ongoing synergy activities among Saratoga and investee companies, however, they are not obligated to synergize (Sandiaga S. Uno., Personal Interview, 14/01/2016). Leona Karnali acknowledges the potential benefits of synergy are not fully optimized yet and can be improved with proper synergy plan and coordinated activities.

2. Business Issue Exploration

2.1. Conceptual framework

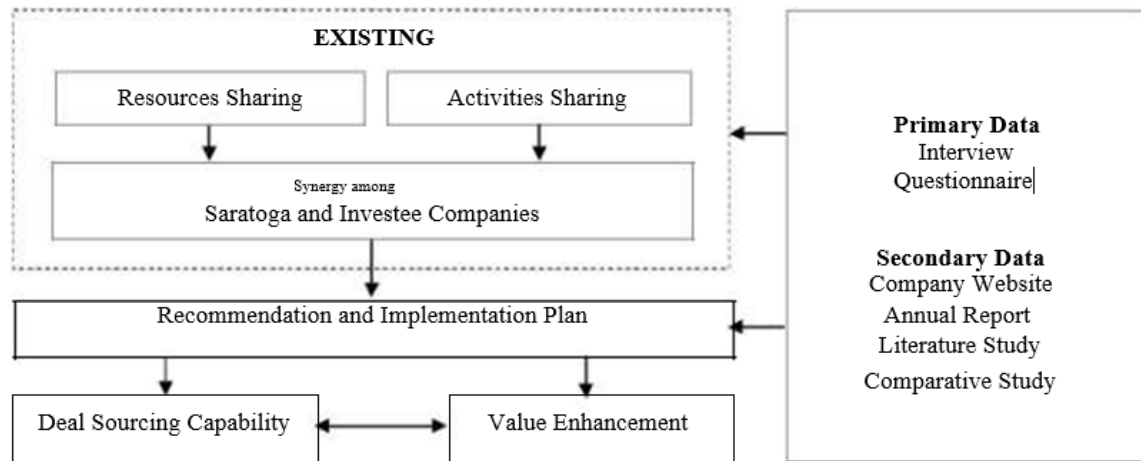


Fig. 3. Synergy improvement plan

2.2. Theoretical background

Single-business firms suffer from limited economies of scope and other disadvantages. Related diversifiers have advantages whereby they can convert underutilized assets and achieve economies of scope by sharing resources and activities along the value chain (Palich, L.E., Cardinal, L.B. & Miller, C.C., 2000).

One of the value enhancement strategies is creating synergies (Bee, T.K. & Chelliah, J., 2013). Private equity firm brings synergies, strategies, capital and core competencies in nurturing businesses growth (Gibbs, S., 2010). There is a full-time effort on enhancing the value of investee companies. "We ensure we have the right management in place. We also bring synergies and cross-border relationships." (Minney, T., 2011).

When the entrepreneurs hand over control of their company to a private equity firm, they are seeking for value protection and value enhancement. As a result, the ability to enhance the value of investee companies will also increase the deal sourcing capability of a private equity firm. Value enhancement is the centerpiece of a deal analysis (Lanes, K., Stewart, R. & Francis, S., 2001).

2.3. Research methodologies

Qualitative research will be employed to analyze current synergy activities and recommend synergy improvement plan for Saratoga and investee companies. Primary data collection conducted via interviews with Saratoga and investee companies are to learn about the current synergy activities among them e.g. resources sharing and activities sharing as well as their plan to improve synergy activities.

The researcher has assumption prior to interview concerning the normative responses by interviewees towards the open-ended questions, which in consequence will not collect satisfactory information to meet research objectives. The questionnaire is expected to stimulate interviewees' answers to gain in-depth insights toward the answer to every question. All questions come with a list of possible answers which may assist interviewees to recall the necessary information and structure their thought in more sequencing manner.

3. Business Solution

In a personal interview with Sandiaga Uno, he explained, "Even though there is no obligation for investee companies to collaborate, on the other hand, they could co-exist with other companies in the group. Saratoga simply provides access for investee companies to link up with each other, but does not insist on synergy activities execution among them" (2016).

There are several synergy activities conducted on an ad-hoc basis as those activities are exceptionally synergistic in nature. Leona Karnali agreed that, "We need to engage in a more coordinated synergy activities among Saratoga and investee companies" (2016). Agung Kusumo validates with a critical remark, "We are crafting synergy roadmap to leverage the group power" (2016).

3.1. *Current synergy activities*

Saratoga covers three sectors of investment. The first one is natural resources; the second one is infrastructure, and the third one is consumers. Unfortunately, these sectors are not synergistic in nature, even though they learned that infrastructure and natural resources are moderately relevant. Infrastructure and consumers have a certain connection as well.

Leona Karnali further added, "Since we are one family of Saratoga, thus we share expertise. Conversely, the synergy activities that we put into operation do not appeared formally managed. Henceforth, it becomes challenging to reveal the detail of existing synergy activities. For instance, there is no document or agreement between Adaro and Lintas Marga Sedaya vis-à-vis land acquisition assistance for a toll road. Yet, in reality, such synergy does exist".

For a conglomerate that acquired majority ownership of a company, public will instinctively recognize that their management control is centralized at the parent company. Thereby, the manifestation of synergy in the conglomerate is more obvious. Conglomerate pay more attention on synergy because they typically hold majority ownership of the company and wants to get involved in the operation (Veronica Jordan, Personal Interview, 26/02/2016).

Larger and more successful investee companies such as Tower Bersama and Adaro do not engage in synergy activities as they have their own system and network. According to Veronica Jordan, "In Tower Bersama, we run our business independently from other investee companies" (2016). As for small investee companies, they still need support from Saratoga. For instance, Saratoga can provide access to banks. Banks will weigh up shareholders' background in deciding the cost of loan for small investee companies.

Mitra Pinasthika Mustika (MPM) arguably attain the utmost benefit from synergy creation with other investee companies because all businesses need to purchase or rent cars and use insurance services. MPM's products and services can be employed for the mass market since they engage in the consumer automotive sector. Revenue generated by MPM from the transaction with other investee companies of Saratoga is still below 5% out of its total revenue. Agung Kusumo agrees, "If synergy activities are plan correctly and executed systematically, it will create new opportunities."

3.1.1. *Tangible resources sharing*

1. Raw material - Adaro supplies coal to Paiton Energy, one of Saratoga's new investment since 2015. Paiton has a coal steam generator located at the Paiton Power Plant complex in Probolinggo Regency, East Java. At the current coal price, Adaro is not able to mine existing reserves because of high production cost. Government subsidy in electricity will allow coal companies to survive, though not at record profit similar as before but at more utility base.

2. Vehicle - MPM rent operational cars to several other investee companies. As noted by Agung Kusumo, "There are other synergy activities that MPM can improve. We can supply heavy equipment to Adaro and operate cars for the entire investee companies of Saratoga. For heavy equipment, we must cultivate capability as currently our business is more towards passenger vehicles and small trucks". MPM can support Employee Car Ownership Program (COP) for all other investee companies.

3.1.2. *Intangible resources sharing*

Veronica Jordan admits, "Saratoga has a positive impact on Tower Bersama, especially on the intangible resources as compared with tangible resources. Saratoga has become a worthy partner of Tower Bersama".

1. Brand - Brand synergy depends on the brand strategy of each investee company. In term of branding, MPM prefers to be independent. MPM does not campaign itself as one of the investee companies of Saratoga because MPM will lose brand value if Saratoga withdraws from MPM.

2. Capability - Sandiaga Uno explained, "Saratoga cultivate on best practices to provide synergy to our investee companies because once the institution of knowledge is acquired, it becomes complimentary activities among the companies." For instance, when Lintas Marga Sedaya built a toll road, they apply the skill of land clearing from their mining company, Adaro.

3. Customer base - MPM take the initiatives to network with other investee companies. For instance, if MPM wishes to propose heavy equipment insurance or property insurance to Adaro, they will attempt to approach Adaro by themselves. If the outcome is not as expected, thenceforward they will solicit assistance from Saratoga to introduce them to Adaro.
4. Corporate governance - Saratoga launched the Corporate Governance Code as well as the Code of Conduct on 25 June 2014. Recognizing that Saratoga has exceptionally concerned vis-à-vis the importance of good corporate governance, investee companies should inevitably echo the identical value. Investee companies use Saratoga's Corporate Governance Policy and Code of Conduct as an initial reference and then customized the content according to their nature of business.
5. Human capital - Saratoga assigns its executives to work with investee companies, mainly at position require non-operating expertise, such as BOD, BOC, and CFO. This arrangement is to fill up temporary vacant position in investee companies, which is valuable for the executives for personal development.
6. Information - Saratoga is an active shareholder in MPM as many of its executives have extensive experience in automotive industry. If Saratoga does not have proficiency in a particular industry, they could not aid much in operation matter. They can provide assistance in other capacities to investee companies, such as introduce them to all prospective parties e.g. customers, business partners and potential acquisitions. Another information sharing by upper management of Saratoga and investee companies related to the vacant positions in their businesses and referral of potential candidates.
7. Reputation and trust - Founders of Saratoga, Edwin Soeryadjaya and Sandiaga S. Uno are distinguished and reputable business men in Indonesia. Saratoga's reputation aided Tower Bersama to gain credibility in the early days. Saratoga's trustworthy reputation facilitate small investee companies to attain lower cost of fund because they had never defaulted on any loan repayment. Investee companies of Saratoga are believed to be alike as they are backed by a robust shareholder.

Saratoga assists to introduce potential business partners and acquisition targets to MPM. They are familiar with Saratoga because Edwin Soeryadjaya is a prominent figure in the automotive industry. One of the main reasons they are eager to cooperate with MPM is because of Saratoga.

3.1.2. Activities sharing

1. Deal sourcing - Leona Karnali stated that, "When weighing up investment of a target company, we have less contemplation on the potential synergy among investee companies, especially if the investment is merely a minority stake and consequently no management control in the target company. Unlike conglomerate or strategic buyer, they invest in a company that can produce synergy for their portfolio of companies" (2016).

Investee companies enlarge Saratoga's network and access to new investment opportunities. Saratoga is a big investor in natural resources. Their exposure to the mining sector facilitates them to source for companies related to precious metals business such as minerals, gold, silver and copper.

2. Co-invest - Saratoga does not invest in a target company on its own, but always co-invest with other partners. Saratoga has a network of co-investors in Indonesia and other countries. Co-investors can bring capital, insights, and invaluable operating expertise into investee companies. Saratoga can also gain reciprocal access to more investment opportunities. Many investors co-invest with Saratoga due to trustworthy reputation and strong track record. For example, in Tower Bersama and Provident Agro, Saratoga co-invest with Provident Capital.
3. Advertisement - Saratoga sponsored congratulatory ad when MPM launched new showroom of Nissan. MPM similarly sponsored Lintas Marga Sedaya for the inauguration of new Cikampek – Palimanan toll road. Federal Mobil Lubricant, one of the business units of MPM, advertise along Cikampek – Palimanan toll road because there are massive traffics on the highway.
4. Business management - Saratoga sits on the boards of their investee companies to ensure good corporate governance. They frequently assign members of senior management team to work together with the management of investee companies.
5. Financing - Saratoga assists small investee companies in financing with bank by offering a corporate guarantee. As for large investee companies, the bank has minor consideration on the reputation of Saratoga

when they determine the cost of fund. Bank solely takes into account the business condition of the respective investee company e.g. EBITDA, collateral, and cash flow.

6. Capital market - Saratoga has extensive experience in taking companies public. They contribute in the IPO process of MPM e.g. compose the growth story in the prospectus document and participate in the roadshows. Investors become more fascinated with MPM because of Saratoga.

Saratoga's reputation is valuable when MPM issue a bond, even though there is no corporate guarantee by Saratoga on the bond. They regard Saratoga as a shareholder who owns 48% of MPM. They can appreciate Saratoga's contribution to MPM and active involvement in MPM's operation and business strategy.

7. Government relation - Saratoga uses their good rapport with the government to help out investee companies. For instance, Saratoga aid Adaro when they were struggling with government authorities on power plantation issue. Similarly, Saratoga helps Lintas Marga Sedaya on toll road dilemma with the regulator. They work in close collaboration with Tower Bersama to obtain mandatory permits.

According to Edwin Sas Goenarto, Development Director of a toll road company, Lintas Marga Sedaya, "Saratoga's strong networks and reputation in the country enabled investee companies to obtain regulatory permits, which made the project more feasible to work within the budget, schedule, and available resources. Saratoga played a paramount role in securing the funding syndication".

8. Intercompany transaction - Saratoga investment in electricity generating company, PT Batu Hitam Perkasa on

19 August 2015 was drawn in part to possible synergies and intercompany transaction with PT Adaro Energy Tbk. Saratoga's refinery in East Java is similarly one of the suppliers of fuel to their mining companies, and they trade on a competitive basis. MPM provide operational car leasing to Adaro and Tower Bersama at competitive market price. The current transaction value is relatively small.

9. Portfolio hedging - Saratoga invest in export-oriented companies. Saratoga's investment in PT Adaro Energy Tbk, PT Tri Wahana Universal, and PT Sinar Mentari Prima produce US Dollar income is one of the attempts to hedge against their US Dollar liabilities.

3.2. Recommendation

3.2.1. Deal sourcing recommendation



Fig. 4. Deal sourcing process

Lanes, K., Stewart, R. & Francis, S., suggest focusing early action plan on how to identify and exploit the deal's synergies as this forms the heart of a more comprehensive integration strategy as moving forward (2001).

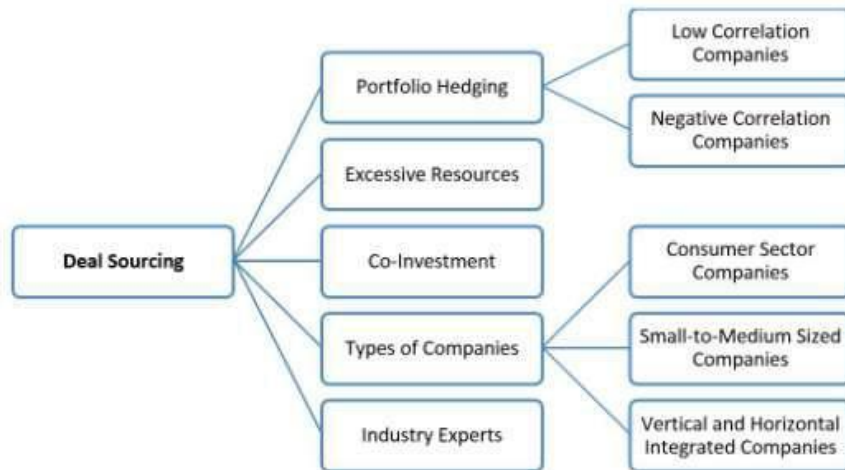


Fig. 5. Deal sourcing through synergy

1. Portfolio hedging - Saratoga should ensure the business risk posed by a target company has negative or low correlation with existing portfolio companies to reduce downward risk when the economic condition of a certain industry or in general is not in favor. Investment risk can be meaningfully mitigated through diversification across industries and geographies under the assumption of uncorrelated cycles, at least to some extent (Cornelius P., 2011).

2. Types of company - Based on interviews with Saratoga and investee companies revealed that there are three type of companies that could reap more benefits from being investee companies of Saratoga e.g. consumer sector companies, small-to-medium sized companies, and companies that can be integrated vertically and horizontally with existing investee companies. These type of companies are more synergistic in nature. Consequently, optimize the value creation opportunities.

Investee companies in consumers sector can sell their products and services to other investee companies and their stakeholders, such as suppliers, customers, and employees. Small-to-medium sized investee companies tend to gain more advantages than large investee companies. They can benefit from Saratoga's reputation, assistance in financing, cooperation with business partners and licenses application among many others. Once the investee company gets larger and more established, they will become more self-contained unless they are in consumers sector or can be integrated vertically or horizontally with other investee companies.

Vertically integrated investee companies can supply or procure goods and services to other investee companies within their supply chain. Horizontal acquisition is not effective if the purpose is to reduce the number of competitors and improve profit margin only because sooner or later new players will be attracted to the industry and pressurize the profit to previous normal level. Horizontal integration should only be pursued if it can alter at least one competitive landscape as stipulated in Porter's five forces, such as increase in barrier of entry, reduce bargaining power of suppliers and customers, reduce the threat of substitute products or services and reduce rivalry among existing competitors over certain estimated range of time horizon to justify the overall cost of integration.

3. Excessive resources - Firms might be prompted to diversify for efficiency reasons because the likelihood of controlling excess resources. Montgomery and Hariharan (1991) presents evidence that established firms do not expand randomly into a different industry but choose to enter into an industry in which they are able to exploit the resources controlled by them. Saratoga needs to identify excessive resources, especially the intangible resources, which will incur lower cost on every incremental consumption. Saratoga can figure out the suitable target companies for investment or use the excessive resources as the competitive advantage to convince the entrepreneur.

4. Co-Investment - Saratoga should co-invest with other private equity firms, strategic buyers and conglomerates to learn from them and expose to other industries or geographic. Leveraging the knowledge from co-existing allow Saratoga to have a stronger position on deal sourcing. As in the case of Temasek, they invest 10% of their portfolio in the third party managed funds to get deepen insights into new markets and to unlocked opportunities through co-investment (Temasek Review, 2015, p.27).

5. Industrial experts - Saratoga must gain insight from industrial experts to unlock the potential value of the target company. Industrial experts should be engaged since the early stage of deal sourcing. They can spend their time productively on deals that have a higher percentage of winning. Saratoga can develop a loose network of industrial experts with the assistance of investee companies. These outsiders are brought in on a contract basis. They might end up running the company.

Industrial experts can assist to source for proprietary deals and value-added acquisition idea. They can churn out exclusive opportunities by identifying the uniqueness and subsequently approach the target companies that are originally not available for investment by proposing synergistic opportunities. Industrial experts bring credibility to deal sourcing as well by demonstrating knowledge of the business. They will take part in due diligence and valuation of a target company to give Saratoga a leg up in the bidding war. Furthermore, they will make the debt raise somewhat easier as they exhibit the credibility to formulate a more concrete business plan.

6. Due diligence - The most superior private equity firm retain an in-house group of competent transaction specialists with proficient of developing internal planning and integration teams swiftly. The skills, experience, and insight of such synergy-focused specialists are invaluable (Ernst and Young, 2013). Saratoga needs to front-load much of the due diligence process. To the target company, that translates into greater certainty. Entrepreneurs are more focus to move forward with bidders that can respond fast and highly confident of closing the deal.



Fig. 6. Due diligence through synergy

7. Operational experts - Saratoga should seek out advice from operational experts as well to attain a different perspective regarding the target company. Unlike industrial expert, operational experts can bring in knowledge from other industries related to certain specific functions to identify growth opportunities. Those who embrace this new frontier of operational investing will be best positioned to identify opportunities, regardless of market forces, and continue to deliver impressive returns (Alvarez, N. & Jenkins, R., 2007).

8. Resources and activities - It is fundamental to identify the type of resources and activities, which could improve synergy among Saratoga and investee companies. Rubin (1973), argued that lumpy multiuse assets such as common customers, suppliers, or distribution systems could provide the incentive to expand or diversify into industries where those assets could be exploited. Stewart et al. (1984) also demonstrate a pattern of 'diversification' across industries that appears to be driven by the similarity of industry characteristics (such as R&D and advertising intensity).

9. Intrinsic value of synergy - In an article published by Ernst and Young in 2013, point out that "Synergy in most cases will not serve as a competitive advantage in perpetuity. Competitors in due course will imitate the new product or strategy. Revenue synergies in technology companies or pharmaceuticals may last earlier than those in slower-paced industries". When quantifying synergies, consideration ought to be accorded to the risk inherent in their realization, and the value ascribed to the anticipated synergies should be adjusted accordingly.

10. Record of synergy - In an auction, the bidder who can provide the best offer will grasp a higher chance to win the deal. If entrepreneur still retains some shares in the company, they need to know the synergistic opportunities offered by each bidder to enhance the value of their company in the future.

The performance of former and current synergy activities have to be tracked and recorded periodically following a well-defined, disciplined and transparent methodology. Throughout the negotiation process, Saratoga should convince the entrepreneur by relentlessly bringing unique principal perspective and emphasis on synergistic opportunities.

3.2.2. Value enhancement recommendation

Optimization of synergy can enhance the value of investee companies. Organization capital resources such as planning, controlling, and coordinating systems must be employed in synergy creation (Barney, 1991). Saratoga needs to express commitment to synergy creation, employ coordination mechanism to achieve synergy and show evidence of resources and activities sharing.

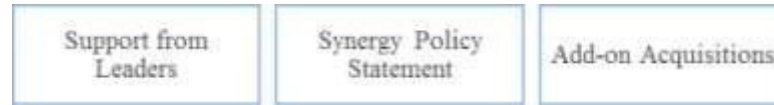


Fig. 7. Value enhancement at corporate level

1. Support from leaders - According to Kotter, “Successful transformation is 70 to 90 percent leadership and only 10 to 30 percent management” (1996, p.26). It is critical for organization leaders to demonstrate their commitment to the synergy building activities. In addition, they must have an insight of the operational obstacles, and display that they are working hard in support of their teams to pave the way for success at all levels. This is not a once a year event, but rather a consistent exercise that demonstrates sincerity, support, and care (Field S., 2012).
2. Synergy policy statement - There must be a detailed written synergy policy statement agreed by participated companies as a rule of conduct. The policy must spell out about agenda, coordination mechanism, role and responsibility, dispute resolution, other terms and conditions. The objectives are to optimize the benefit of synergy activities and prevent potential conflicts in the future.
3. Add-on Acquisitions - Platform companies benefited from the synergies provided by add-on acquisitions. Capitalizing upon these synergies can enhance its value through diversifying or expanding offerings, cost reduction and economies of scale (Greenfield, M., 2015).
4. Motivation - Employees must be motivated to carry out the synergy activities. Synergy activities will not last if any participant does not feel enthusiastic about the benefit of synergy. They must have a comprehensive understanding concerning the benefit and cost. The benefit and cost should be well described in qualitative and quantitative terms whenever possible. It must be communicated as such to increase the motivation of every participant.

There is no assurance that every one of the participants cares about the company’s synergy objective. A performance measurement system using Key Performance Indicator (KPI) assessment for each individual can help preserve the commitment and foster collaboration.



Fig. 8. Value enhancement at personal level

5. Communication and facility - Synergy represents arenas of sustained, focused, and rather intense interaction (Auster, 1992). They involve recurrent and regular engagements between the partners, a concentration on specified objectives, entail coordination, close contact, and mutual dependency (Gulati and Singh, 1998). Effective communication is essential to define objectives, establish leadership as well as role clarity throughout the synergy activities. Saratoga can cater an informal and formal platform for investee companies to engage bilaterally and actively link executives to explore opportunities to synergize. According to Anaeme (2009), “Resources and activities sharing in the digital age require real-time information”. Technology can be employed to manage information and synergy activities.

6. Joint goal - Having organized projects and joint goals may intensify and deepen the synergy activities. It allows access and co-development of new resources from other company's resources. Without common goal and direction, synergy activity will not produce the expected outcome regardless of energies spent on coordination, company visits, and meetings.

7. Workshop - Workshop is an indispensable channel for promoting lateral communication and enriching the stream of knowledge between companies. Saratoga should organize regular workshops for executives of Saratoga and investee companies. They can participate in an in-depth discussion and systematically exploit the synergies among the companies through resources and activities sharing.

8. Synergy coordination team - Saratoga and investee companies must set up a synergy coordination team or personnel within their company to serve as central point of contact and harmonization of synergy activities. It will enable communication and coordination with all parties a lot easier and faster. They have a duty to initiate the process, managing, scheduling and tracking the performance of the synergy activities to ensure successful implementation. The experience gained from synergy coordination allows the team to involve in the due diligence of targeted companies to identify synergistic opportunities and take part in the merger and acquisition process as well.



Fig. 9. Value enhancement through synergy strategy and execution

9. Strategic planning - Saratoga may assist investee companies in the preparation of strategic planning by employing case studies to collect many different ideas. Other investee companies possess diverse experience and skill should participate in the brainstorming sessions.

10. Map out pros and cons - Certain synergy activities could lead to more adverse impact than positive outcome for Saratoga or the investee company. There are cost and risk associated with every synergy activity. The common setback in synergy activity is the opportunity cost. Employees are distracted with their priorities, time, and effort, which may decrease productivity on the primary business operation and ultimately profitability of the company. Synergy activities that are overly complicated should be avoided. Some resources and activities could function better if remain in a silo.

11. Operational experts - Private equity firms should develop a pool of operational experts with specific functional know-how from their investee companies. Value enhancement can be achieved through operational managers who understand how to recognize hidden opportunities and execute performance improvement plans rapidly and efficiently (Alvarez, N. & Jenkins, R., 2007).

12. Market development - All suppliers and clients of investee companies are prospective customers of MPM. MPM can delve into logistic business or explore financing business provided there are investee companies become their customer base as starting point.

13. Synergy with co-investors - Co-invest with other private equity firms, conglomerates and strategic buyers in domestic and international markets will escalate the opportunities to enhance the value of investee companies. Investee companies of different parent companies can expand access to synergize for reciprocal gains.

14. Public relation - Saratoga's strong reputation can enhance the credibility of investee companies. Public and media relations activities aim to shape positive image through constructive corporate activities and strategic public communication. Credibility can improve the chance to form a partnership with other parties and recruit prominent talents, which might otherwise not possible.

15. Flexibility - Investee companies ought to be mindful that private equity firm has to withdraw from their companies to realize the investment profit. Agung Kusumo strikes a point, "MPM does not promote itself as an investee company of Saratoga because if Saratoga pulls out from MPM, as a consequence MPM will lose brand value".

4. Conclusion and Implementation Plan

4.1. Conclusion

Synergy may eliminate limitations of a company and leverage strengths of other companies at lower cost and shorter time as compared to acquiring the identical resources. Synergy demands the engagement and commitment of the whole organization, therein lies the challenge.

Companies are enthusiast to synergize with everyone, included their competitors. As long as the benefit outweigh the cost, it does not relevant whether Saratoga has merely minority ownership or lacking control over the management of investee companies.

Saratoga and investee companies need to coordinate synergy activities systematically with the objectives to increase the deal sourcing capability of Saratoga and enhance the value of investee companies.

4.2. Implementation plan

4.2.1. Urgent and important

1. Identify resources and activities - Saratoga and investee companies should identify their excessive tangible resources, intangible resources, and activities that can be shared with other companies. Subsequently document the detail facts with reference to respective resource and activity such as photograph, whereabouts, condition, cost, timetable, uniqueness and other important notes.

2. Identify potential benefits - It is challenging to make investee companies willing to synergize, in part because they do not recognize and appreciate the potential benefit of each synergy activity. Participants should fully understand the value of synergy at the company and individual level. Direct and indirect benefits should be estimated in the qualitative and quantitative term whenever possible.

3. Announce the synergy plan - Leaders of each investee company should notify their employees about the plan and benefits to synergize with other investee companies. A proper announcement will clear doubts and thus gain cooperation from their employees. There might be a necessity to tip off other stakeholders e.g. suppliers, customers, and business partners.

4. Formulate synergy policy statement - Synergy policy statement acts as a rule of engagement for the entire synergy activities among Saratoga and investee companies. It must spell out clearly with reference to the duties and responsibilities of synergy coordination team and other participants, timeline, record keeping policy, presentation format, performance tracking, communication policy, incentive system, intercompany transaction policy, and contingency plan among several others.

5. Setup synergy coordination team - Saratoga and investee companies should set up synergy coordination team at each of their company. The team comprises of existing employees as they have prior knowledge of the company and people. The team ideally consist of two personnel. The first person is in charge of administrative functions and the second person is in charge of coordination role.

6. Organize workshop - Create a list of scheduled workshops for departmental managers. Every workshop discusses on a specific subject such as real case study encountered by investee companies on the operational issue, best practices, IPO, financing, corporate governance, synergy activity, synergy coordination and beyond.

7. Design incentive system - Incentive system could preserve the discipline and determination of personnel carrying out the synergy activities. Performance grade of synergy activities should be incorporated in the individual Key Performance Indicator (KPI) periodic assessment. Employees must be conscious that there are carrot and stick attach to the implementation of synergy activities.

8. Create group communication platform - Create two groups of communication platform for (1) leaders and synergy coordination teams of Saratoga and investee companies and (2) synergy coordination team and managers of every department related to synergy activities within each investee company. The departmental managers act as central point of communication in their respective department.

There are numerous free digital communication tools. Operation manual on simple usage and troubleshooting coupled with training on each communication tool should be carried out to help the adoption of these tools and improve usage productivity.

4.2.2. Not urgent but important

1. Software application - Software application facilitates Saratoga and investee companies to identify, keep a record, organize as well as share resources and activities more efficient and effective. In view of the fact that investee companies move in and out of Saratoga's investment portfolio, therefore Saratoga must maintain the ownership title and administration control of the software.

2. Create network of executive - All executives of Saratoga and investee companies have considerable connections with many industrial experts, operational experts and businesses throughout their career journey. These businesses may well be possibly potential investment target for Saratoga or prospective acquisition target for the investee companies. Saratoga should construct a web of executive network to expose these multilayer relationships.

3. Develop network of industrial and operational experts - Industrial experts and operational experts are available within Saratoga and investee companies to a certain extent. Alternatively, they can be brought in from an external source. Industrial experts and operational experts can assist on deal sourcing, due diligence, valuation, structuring the deal or recruited to run the company. Operational experts can impart best practices based on their expertise in a particular work function. Operational experts from other industry can contribute an innovative perspective to the business.

4. Deploy industrial experts and operational experts - Deploy industrial experts and operational experts to all investee companies to conduct an assessment of the existing operation and formulate improvement plan.

5. Intercompany transaction - Establish mutual agreement on the terms and conditions of intercompany transaction among investee companies with the objective to provide access and information to bid competitively against other suppliers.

6. Ideas of synergy - Inspire everyone to submit their ideas in relation to synergy activities through an online platform. The ideas are not necessarily limited to their company or department or job scope. The ideas can be commented by others and evaluated by the synergy coordination team.

7. Create special project - There are resources that are presently not in the possession of investee companies but can be acquired by creating new business opportunities. For instance, if MPM desires to enter into a logistic business, they can kick off by offering related products and services e.g. truck, freight and warehousing to other investee companies by offering mutual benefit. Special project requires the collaborated companies to share costs and expertise of new resources to develop a new product, service or market. It requires in-depth discussion and trust to move forward.

8. Employee benefit scheme - Saratoga and investee companies can work out employee benefits scheme by cooperating with investee companies from consumer sector e.g. discount voucher on retail goods, car ownership program, insurance services, and many others.

9. Website - Saratoga can utilize its website to publish investee companies' brief profile and provide a link back to each investee company's website. This will enable more convenient access for the public to gather information about investee companies and most importantly could enhance the credibility of investee companies.

10. Joint press conference - Saratoga can organize a joint press conference together with all investee companies to exhibit solidarity and synergistic benefits of coexisting as a big family of Saratoga. This will generate a more substantial value for the entire group as compared with a separate press conference by Saratoga or individual investee companies.

11. Record of synergy activities - All synergy activities among Saratoga and investee companies must be properly tracked and documented. The research and interview with several investee companies in this final project can serve as a preliminary reference of ongoing synergy activities. All interviews with Saratoga and investee companies are scripted in the Appendix section.

12. List acquisition targets - Investee companies should have a good understanding of other companies related to their industry in vertical and horizontal sectors. They can contribute to generate an informative list of all potential target companies for acquisition.

13. Co-investment - Establish a team in Saratoga, which has a focus to approach other private equity firms, conglomerates and strategic buyers to co-invest in Indonesia and overseas. Saratoga could also invest in the third party managed fund to get exposure to new markets and investment opportunities. Saratoga can engage co-investors to apply similar synergy activities among all their investee companies to form a larger ecosystem and achieve more benefits from the synergy.

14. Devise company structure - Devise organization structure of investee companies to seamlessly integrate similar functions of other investee companies. For instance, collective procurement to certain extent alters the role and responsibility of purchasing department.

15. Prepare contingency plan - There is a probability that the synergy activities carry out by any investee companies may adversely drag down the reputation and operation of Saratoga and other investee companies. The contingency plan can be stated comprehensively in the synergy policy statement.

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Do Indonesian SOEs' Manager Actively Adjust Their Capital Structure towards the Optimum Target?

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Abstract

It is commonly found that Indonesia's listed SOEs have relatively high dividend payout ratio compared to typical private enterprises in order to fulfill the deficit of government's budget. This fact leads into a condition that SOEs may not put the priority to maximize public shareholder's value at the first place. If the mission of maximizing shareholders' value does not come at the first priority, it is suspected that the managers of SOEs do not care about optimal capital structure target. Recent research has found that Indonesia's listed SOEs adjust their leverage for as much as 45.65% toward the target. However, it is still unknown whether the speed is caused by the active adjustment intentionally done by the awareness of the managers or by passive adjustment which means that the managers do nothing regarding the leverage adjustment. This research uses unbalanced panel data of 14 non-financial Indonesia's listed SOEs from 2005 until 2015. The data are analyzed using the panel regression based on the partial leverage adjustment model which recognize the portion of active adjustment only. It is found that SOEs' managers are aware and do actively adjust the leverage toward the target with relatively slow adjustment speed as much as 16.26%. Furthermore, this research discovers the effect of several variables towards firm's leverage in the context of active leverage adjustment. It is found that lagged leverage, lagged cash flow, lagged non-debt tax shield, lagged firm size, and lagged asset intensity have significant effect on the firm's capital structure. This study contributes to the development of capital structure theory especially in the area of active leverage adjustment for the firms which has uncommon policy and characteristics. Particularly, this research can help the managers and the shareholders of Indonesia's listed SOEs to decide the direction of financing policy to get the benefit to maximize value of the firm.

Keywords: SOE, capital structure, leverage, active adjustment, speed of adjustment

1. Introduction

In the world of corporate finance, there are three big decisions every financial manager has to take: investment decision, dividend decision, and financing decision. If it is looked more closely on financing decision, this major decision is the one which can affect the balance sheet in term of firm's capital structure – the proportion of debt and equity used by the firm. Capital structure becomes one of significant issue in corporate finance because the different level of debt used by a firm will affect its cost of capital which can affect the value of the firm.

The further question regarding the financing decision is whether a firm is always aware and has an optimal capital structure target which will maximize its value. If a firm does, does the manager aware and keeping-in-mind to actively adjust its capital structure toward the target? What factors do affect the adjustment? How fast does the manager adjust the firm's capital structure? Most previous researches had found that firms do have capital structure target. However, the speed of adjustment towards the optimal capital structure is relatively slow. Flannery and Rangan (2006) found that most of firms will adjust for one-third of the gap between their actual and the target leverage each year. Faulkender, Flannery, Hankins, and Smith (2012), on their research which account for cash flow realization, discovered that a firm with high

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absolute leverage deviation from target and high absolute cash flow realization makes larger leverage adjustment compared to the firm with similar leverage deviation but with near-zero cash flow realization. It is found that a company will only decide to adjust its capital structure if only the benefit of adjustment exceeds the cost of adjustment (Fisher, Henkel, Zechner, 1998). The cost of adjustment not only depends on the explicit costs such as transaction cost. It also depends on firm's incentive to access capital market to adjust its leverage. If the benefit of adjusting leverage can offset the cost of adjustment, the firms will optimally adjust the capital structure (Faulkender et al., 2012).

Indonesian listed State Owned Enterprises (SOEs) are found to have different characters with the typical private enterprises. The majority shares which owned by the government makes the policies of the SOEs are somehow affected by the interest of the government. As an example, it is common for Indonesian SOEs to pay high amount of dividend at the first place before considering to finance its investment opportunity because of the demand for their majority shareholder, the government, regarding the deficit of government's budget. The amount of dividend paid usually affected by the needs of government to finance its budget plan's deficit without considering the development of the SOEs at the first place which will not benefit the public shareholders. It is common to find the SOEs' dividend payout ratio to be more than 50% which clearly indicates that the priority of having profitable investment opportunity to maximize shareholders' value does not come at the first place. If the maximization of shareholders' value does not become the first priority, it is suspected that the SOEs also do not prioritize to make adjustment for optimal capital structure.

In term of capital structure adjustment, there are the concept of active and passive adjustment. When the manager accrues the net income to the retained earnings for the firm, it will slightly affect the firm's capital structure. This action called as passive adjustment in which the manager does not have direct intention to modify the capital structure. However, when the manager decides to access capital market or paying dividend, this actions are categorized as active adjustment which intentionally modify the firm's capital structure (Faulkender et al., 2012). This research attempts to discover the nature of Indonesian listed SOEs' managers in active capital structure adjustment in term of what factors do affect the active capital structure adjustment which will be indicated by the firm's leverage level. Furthermore, this research will discover whether Indonesian listed SOEs have capital structure target and how quick do those SOEs actively adjust their leverage towards the target.

The practice of optimum capital structure adjustment in Indonesian listed SOEs was recently discovered. Wakhidi & Soekarno (2015), on their research on capital structure determinant and the speed of leverage adjustment has picked 14 of Indonesian listed SOEs since the IPO up until 2013 and discovered that the Indonesian SOEs adjust their leverage by closing 44.37% of the gap per year. However, it is still not known whether the adjustment imposed purely by the initiative of the managers to maximize the value of the firm or slightly imposed by the automatic effect of the firms' net income recognition each year. This research will continue the previous discovery to recognize the portion of active leverage adjustment speed and what factors affecting that adjustment in the case of Indonesian listed SOEs. This study will contribute to the development of capital structure theory especially in the area of active leverage adjustment for the firms which has uncommon policy and characteristics. Particularly, this research can help the managers and the shareholders of Indonesia's listed SOEs to decide the direction of financing policy to get the benefit to maximize value of the firm.

2. Theoretical Framework

The development of the theory of capital structure literature initiated by Modigliani and Miller (1958) which assumes perfect capital markets. Perfect capital market conditions that include no taxes, no transaction costs, individuals and companies can obtain a loan with the same interest rate. With these assumptions, Modigliani & Miller (1958) concluded that the value of the firm is independent of its capital structure (capital structure is irrelevant). Furthermore, Modigliani and Miller (1963) in subsequent study, they stated that if one important assumption is relaxed (tax condition) then the company started enjoying the benefits of having more debt as borrowing costs could reduce the tax payment obligations. They argue that the company can increase its value by increasing the level of debt (capital structure is relevant). With this model the optimal capital structure of the company is having 100% debt.

After the seminal research of Modigliani & Miller (1958 and 1963), there are a lot of capital structure research conducted to better understand the problems of optimal capital structure. MM proposition does not include the cost of bankruptcy and financial distress. Modification of the MM proposition by including the cost of bankruptcy and tax saving benefits / tax shield is known as static tradeoff theory. This theory states that there is a tradeoff between the benefits of having debt and the increasing of financial distress that may lead to bankruptcy.

Jensen and Meckling (1976) introduced the concept of agency costs which begins with identifying two kinds of conflicts that may occur in every public company. They are conflict between shareholders and managers as well as conflict between lenders and shareholders. The existence of debt may reduce the agency cost by having lenders closely supervise the company instead of shareholder.

Myers (1984) introduced the pecking order hypothesis. He argues that based on certain conditions, then issuing new equity may not be optimal for the company. Myers argues that internal capital is preferred more than external capital when companies need additional capital. He gives an explanation for why a company does not use debt as proposed by the trade-off theory. Titman and Wessels (1988) found that the higher the profits the lower the leverage will be and this result is consistent with the pecking order model. Rajan and Zingales (1995) with a sample of G7 countries also found similar facts.

Fama and French (2002) analyze dividend policy and capital structure in the context of the trade-off theory and the pecking order. They found that profitable companies will use less debt, which in this case supports the pecking order theory. Furthermore, Frank and Goyal (2003) reexamine the pecking order theory and found that internal funds are not sufficient to finance investments and companies also use equity financing.

Market timing theory to explain the behavior of companies trying to get additional equity if the stock price is relatively high. At a time when companies need external funds and stock price is high then most likely the company will sell shares rather than issuing debt. Market Timing Theory is introduced by Baker and Wurgler (2002). As is the case with the pecking order model, they argue that the company does not have a certain leverage targets.

Alti (2006) to test the market timing models and stated that market timing is important in explaining changes in short-term capital structure but has limitations in explaining long-term changes. He concluded that the policy of long-term capital structure of a company appears to be more consistent with a model of trade-offs.

Capital structure research lately evolved from static models towards research into dynamic models. In the static model, the capital structure of the company is always in the optimal point, while in the dynamic model allows the company leverage to fluctuate until the extreme point which prompted the company to adjust the leverage back. Dynamic capital structure research in general want to test the theory of trade-off. In general, the trade-off literature can be grouped into two models of the trade-offs of static and dynamic trade-off models. Both models imply there is an optimal capital structure that is a combination of debt and equity at a certain level which is considered to provide a minimum weighted average cost of capital. Thus the assumed corporate managers will attempt to adjust the company's capital structure to the optimal level. With a static model, the company's managers considered adjusting the capital structure towards the target in real time. However, the adjustment of capital structure in real-time to the optimal level would be unrealistic.

Huang and Ritter (2009) stated that how firms adjust their capital structure towards optimal targets becomes an important issue in the current capital structure research. Why companies do not adjust their capital structure towards the target in real time because of the adjustment costs as stated by Faulklender, Flannery, Hankins and Smith (2011). When adjustment costs are too high and exceeds the benefit of operating in the optimal capital structure, the company will make adjustments slowly implying that the pecking order theory is in force. If adjustments to the targets done quickly then this indicates the force of the trade-off theory. This is the essence of dynamic capital structure research, especially in relation to the speed of adjustment to the target capital structure.

The practice of capital structure in Indonesian SOEs had recently discovered by Wakhidi & Soekarno (2014). On his study with the subjects consisted of 14 non-financial Indonesian SOEs confirmed that Indonesian SOEs do have target capital structure which shows the consistency with trade-off theory. Wakhidi & Soekarno (2014) found that Indonesian SOEs adjust their capital structure towards the target for 44.37% per year. The variables which significantly affect the firm leverage are: lagged growth opportunity, lagged firm size, lagged non-debt tax shield, lagged liquidity and lagged leverage.

3. Research Methodology

This study will gather the financial ratio data from the 14 non-financial Indonesian listed SOEs from 2005 until 2015 as the research variables. Taking into account the purpose of the study and the unequal number of observations gathered from each firm, this research will utilize unbalanced panel data linear

regression technique. Furthermore, all data will be tested to pass the best linear unbiased estimator (BLUE) test across: normality, heteroskedasticity, autocorrelation, and multicollinearity. The chow and hausman test will also be conducted to determine whether it is more appropriate to use fixed effect or random effect regression model.

3.1. Research Subject and Variables

This study uses the data gathered from the audited financial statement of 14 non-financial Indonesian listed SOEs from 2005-2015 as the research subject. The study excluded financial SOEs because it has special regulation regarding the firm's capital structure. The complete research subjects used in this study are presented as follow:

Table 1. Research Subject

No	Company Name	Sector	IPO Date
1.	PT Indofarma Tbk (INAF)	Pharmacy	April 17, 2001
2.	PT Kimia Farma Tbk (KAEF)	Pharmacy	July 4, 2001
3.	PT Perusahaan Gas Negara Tbk (PGAS)	Energy	December 15, 2003
4.	PT Krakatau Steel Tbk (KRAS)	Metal	November 10, 2010
5.	PT Adhi Karya Tbk (ADHI)	Construction	March 18, 2004
6.	PT Pembangunan Perumahan Tbk (PTPP)	Construction	February 9, 2010
7.	PT Wijaya Karya Tbk (WIKA)	Construction	October 29, 2007
8.	PT Aneka Tambang Tbk (ANTM)	Mining	November 27, 1997
9.	PT Bukit Asam Tbk (PTBA)	Mining	December 23, 2002
10.	PT Timah Tbk (TINS)	Mining	October 19, 1995
11.	PT Semen Indonesia Tbk (SMGR)	Cement	July 8, 1991
12.	PT Jasa Marga Tbk (JSMR)	Transportation	November 12, 2007
13.	PT Garuda Indonesia (GIAA)	Transportation	February 11, 2011
14.	PT Telekomunikasi Indonesia (TLKM)	Telecommunication	November 14, 1995

Table 2. Research Variables

Variable	Concept	Indicator (Proxy)
Leverage (Wald, 1991)	The composition of firm's asset which represented by certain portion of debt and equity.	The ratio of long-term debt to total asset at time t.
Dividend Payout t-1 (Soekarno, 2015)	The amount of cash dividend paid to shareholders relative to the net income at time t-1.	The ratio of cash dividend t-1 to net income at time t-2.
Profitability t-1 (Faulkender, 2012)	The operating income generated by firm's asset at time t-1.	The ratio of operating income to total asset at time t-1.
Asset Intensity t-1 (Faulkender, 2012)	The measurement of how the density of firm's fix asset at time t-1.	The ratio of total fix assets to firm's total assets at time t-1.
Firm Size t-1 (Flannery, Rangan 2006)	The measurement which represent how big the firm is at time t-1.	The natural logarithm of firm's total assets at time t-1.
Growth Opportunity t-1 (Faulkender, 2012)	The expectation of how big the opportunity owned by a firm to grow at time t-1.	The ratio of book value of assets minus book value of equity plus market value of equity, to the book value of assets at time t-1.
Non-Debt Tax Shield t-1 (Flannery, Rangan, 2006)	The tax payment benefit occurred by non-debt interest factor at time t-1.	The ratio of depreciation expense to total assets at time t-1.

Liquidity t-1 (Faulkender, 2012)	The measurement of how liquid the firm is at time t-1.	The ratio of current assets to current liabilities at time t-1.
Cash Flow t-1 (Faulkender, 2012)	The amount of cash realized by a firm at time t-1.	The ratio of firm's net cash flow of the year to total assets at time t-1.
Leverage t-1 (adjusted) (Faulkender, 2012)	The composition of firm's asset which represented by certain portion of debt and equity which already been adjusted by the net income accrual at time t-1.	The ratio of long-term debt to total asset at time t-1 plus net income at time t.

3.2. Research Model

This study will utilize the model of dynamic capital structure to identify the factors that may affect the firms' leverage and the speed of active leverage adjustment. The dynamic capital structure regression model is formulated from the hypothesis that the optimum capital structure (target leverage) is not possible to be observed but it can be estimated by the the function of lagged determinant variables. The function of firm's target leverage is expressed below:

$$L_{i,t}^* = \beta x_{i,t-1} + e_{i,t} \quad (1)$$

$L_{i,t}^*$ = estimated optimal leverage target

β = determinant coefficient

$x_{i,t-1}$ = lagged capital structure determinant of firm i at specific time $t-1$. The variables of determinants are: dividend payout, profitability, asset intensity, firm size, government ownership, growth opportunity, non-debt tax shield, liquidity, and cash flow.

$e_{i,t}$ = random error of firm i at time t

Furthermore, identifying the speed of leverage adjustment (λ) means to observe how much a firm close the gap partially between its current leverage level and the target leverage of optimum capital structure per year. The general partial leverage adjustment model is presented below:

$$L_{i,t} - L_{i,t-1} = \frac{D_{i,t}}{A_{i,t}} - \frac{D_{i,t-1}}{A_{i,t-1}} = \lambda(L_{i,t}^* - L_{i,t-1}) + \varepsilon_{i,t} \quad (2)$$

where $D_{i,t}$ is the firm's long-term debt at time t , $A_{i,t}$ is the firm's outstanding book assets at time t , $L_{i,t}$ is contemporaneous leverage, $L_{i,t-1}$ is lagged leverage, and $L_{i,t}^*$ is the estimated target leverage ratio, given firm's capital structure determinant at $t-1$. From those equation, it will be known that the firms close the gap between its target leverage and the initial leverage at the rate of λ (in percent) per year. Thus, λ is clearly the indicator which will be called as the firm's "speed of capital structure adjustment" toward target.

In reality, the leverage the firm's leverage level can be changed even when the manager does not actively access capital market. Firm's leverage level will automatically be changed when the firm accrued its net income and increase its equity (passive adjustment). Thus, to discover the actual active adjustment done by the managers only, the portion of passive adjustment has to be eliminated. In order to identify the portion of active adjustment only, the model should be modified to already account the passive adjustment at variable of initial or contemporaneous leverage – the accrual of net income will be included. The model of firm's active leverage adjustment is expressed as follow:

$$L_{i,t} - L_{i,t-1}^p = \lambda(L_{i,t}^* - L_{i,t-1}^p) + e_{i,t} \quad (3)$$

where, $L_{i,t-1}^p = \frac{D_{i,t-1}}{A_{i,t-1} + NI_{i,t}}$

Then, by substituting equation (1) into equation (3), the active leverage adjustment model utilized by this study is expressed below:

$$L_{i,t} = (\lambda\beta)x_{i,t-1} + (1 - \lambda)L_{i,t-1}^p + e_{i,t} \quad (4)$$

$L_{i,t}$ = leverage of firm i at time t

$L_{i,t-1}^p$ = leverage of firm i at time $t-1$, which has excluded passive adjustment portion

λ = the speed of leverage adjustment

$D_{i,t-1}$ = total long-term debt of firm i at time $t-1$

$A_{i,t-1}$ = total assets of firm i at time $t-1$

$NI_{i,t}$ = Net income of firm i at time t

The role of lagged adjusted leverage on the model is very important in indicating the speed of capital structure adjustment. The value of (λ) will show the speed of active capital structure adjustment with the value between 0 and 1. Small (λ) will indicate that the firm does not have leverage target. Otherwise will indicate that the firm has leverage target and attempts to achieve the target by (λ) per year.

4. Results and Discussion

By utilizing the gathered variables and the model of active capital structure adjustment, the data processing output is presented below:

Table 3. Data Processing Output

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.238379	0.064872	-3.674632	0.0004
DIV_T1	0.009064	0.021762	0.416489	0.6779
PROF_T1	-0.036417	0.027448	-1.326729	0.1876
ASS_IN_T1	0.081788	0.032696	2.501500	0.0140
SIZE_T1	0.008482	0.002249	3.770932	0.0003
GROWTH_OP_T1	0.007842	0.005472	1.433192	0.1549
SHIELD_T1	-0.437118	0.113349	-3.856394	0.0002
LIQ_T1	-0.003008	0.003488	-0.862367	0.3905
CF_T1	0.081790	0.050721	1.612554	0.1100
LEV_PAS_T1	0.837385	0.057769	14.49547	0.0000
Effects Specification				
			S.D.	Rho
Cross-section random			0.000000	0.0000
Idiosyncratic random			0.040488	1.0000
Weighted Statistics				
R-squared	0.875569	Mean dependent var		0.164231
Adjusted R-squared	0.864371	S.D. dependent var		0.130851
S.E. of regression	0.048190	Sum squared resid		0.232226
F-statistic	78.18445	Durbin-Watson stat		2.487715
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.875569	Mean dependent var		0.164231
Sum squared resid	0.232226	Durbin-Watson stat		2.487715

The result of the regression had discovered the significant lagged determinant variables which affect the firms' capital structure (leverage) adjustment. It is found that lagged asset intensity, firm size, non-debt tax shield, and cash flow significantly affect the active capital structure adjustment of Indonesian SOEs. While the variable of lagged leverage will indicate the existence of firm's target capital structure and the speed of active capital structure adjustment. Furthermore, lagged dividend pay-out, profitability, growth opportunity, and liquidity are found to be insignificant in affecting the capital structure adjustment.

The lagged asset intensity indicates its significance in affecting capital structure adjustment. This result confirms that the higher proportion of fixed assets a firm have will leads to the higher leverage level. It is consistent with the result of Booth et al. (2001), Flannery & Rangan (2006), and Soekarno, Kitri, & Utomo (2015) which arrived at the similar result. This condition may be explained that Indonesian SOEs which has higher proportion of fix asset will have easier access to get debt financing because they have good condition of debt collateral. This result will further be confirmed by the variable of lagged firm size which will be explained in the next paragraph.

The lagged firm size which represented by the firm's total asset has also found to be significant in affecting active capital structure adjustment. Lagged firm size becomes significant towards active leverage level and consistent with Flannery & Rangan (2006), Fama & French (2002), and Rajan & Zingales (1995). This result shows that Indonesian SOEs which have the bigger size will tend to have more debt. This condition may appear because the bigger firm tend to have more diversified business line which also lower the risk of the firms perceived by the creditor. The bigger size also makes the firms easy to have their assets as debt collateral. Thus, the lagged firm size appears to be significant towards Indonesian SOEs active leverage adjustment in which bigger SOEs tend to adjust for higher leverage level.

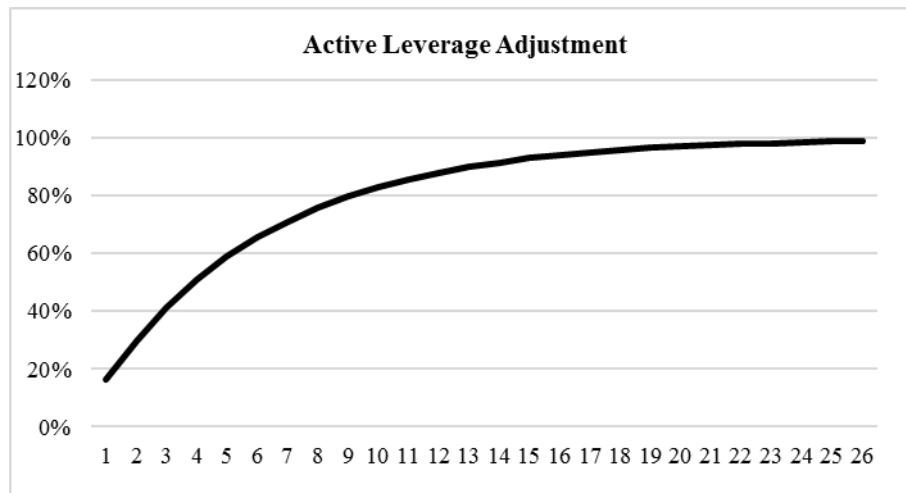
The lagged non-debt tax shield is found to be significant in this study. It means that depreciation, which is to be the proxy of non-debt tax shield, has significant influence on capital structure adjustment. This result is consistent with Flannery & Rangan (2006) who arrived at the same conclusion. Active capital structure adjustment will be done by considering its costs and benefits. The benefit of adjusting the gap between current leverage level and the optimum target level will impose the firm to have certain cost of adjustment. Furthermore, the optimum leverage level is achieved in order to operate at the lowest cost of capital by having debt tax shield. However, the similar benefit can appear because of the depreciation cost. When depreciation cost is calculated, it will reduce the tax payment which similar with the effect of having more debt. Thus, the firm which already feel enough to have tax benefit because of its depreciation cost will tend to not increase its leverage level. That is why the lagged non-debt tax shield shows significant negative effect towards the Indonesian SOEs active leverage adjustment.

Lagged cash flow shows the similar result in affecting capital structure with Faulkender et al. (2012). The higher cash flow will lead into the higher leverage level. This result can be explained by the relationship between cash flow realization and the cost of leverage adjustment. It is considered that a firm which has higher cash flow will get easier access and less cost to adjust its leverage. If the firm are under levered, it can slightly take additional debt if the cash flow realization is good which reflect the soundness of the firm. In the other hand, when the firm is over-levered, it can lower its leverage level by its cash flow realization included to retained earnings which will not incur additional cost by using this type of own internal fund.

Recalling the theory of partial leverage adjustment, firms are said to slightly adjust their leverage if the benefit of doing the adjustment exceed the cost of adjustment. Thus, the speed of capital structure adjustment will reflect the cost and benefit trade-off perceived by the firms in adjusting the leverage. Prior research conducted by Wakhidi and Soekarno (2014) had found that Indonesian SOEs adjust 44.37% of its leverage toward the target each year. However, that speed which seem relatively fast still represents the speed generated by passive and active adjustment - means that adjustment imposed by the firms' net income accrual is accounted. The model which has been modified to include firms' net income into the initial leverage had successfully discover the speed of adjustment generated by purely active leverage adjustment done by the SOEs managers. The speed of adjustment is shown on the coefficient of the lagged leverage variable. The coefficient of $1-\lambda$ stacked to the lagged leverage variable shows the value of 0.837385 which means that the value of λ or active adjustment speed is 0.162615 or 16.26%. This result clarify that it is only the small portion of leverage adjustment which imposed by the intention of SOEs managers, the rest are generated from the net income recognition.

Furthermore, by taking the formula used by Soekarno et al. (2015), the speed of active leverage adjustment can be expressed in term of year (see Appendix). Based on this equation, Indonesian SOEs require 25.94 years to reach target capital structure completely if only the active portion of adjustment

accounted. The visualization of this adjustment and the comparison with previous research on Indonesian SOEs is presented below:



The existence of the substantial value of the speed of adjustment which also indicates that Indonesian listed SOEs have a certain leverage target is relevant with several previous researches conducted which support trade-off theory. Graham & Harvey (2001) found that 81% of companies have leverage target or keeping-in-mind a certain leverage level in financing decision. Furthermore, Flannery & Rangan (2006) found that typical firms will close the gap for as much as 34.2% - 35.5% towards optimum target leverage.

Finally, this study concludes that Indonesian listed SOEs have leverage target and relevant with the trade-off theory that in the long-term, the firms will tend to achieve a certain capital structure or leverage level. However, the speed of active leverage adjustment by Indonesian listed SOEs is relatively slow if it is compared to the speed of typical firms in adjusting leverage. Most of the capital structure adjustment is imposed by the passive adjustment. It means that the managers' action to adjust firms' leverage is less than the impact imposed by net income accruals in affecting leverage.

By referring to the statement of Faulkender et al. (2012) which stated that a firm will adjust its leverage if the benefit exceeds the cost of doing so, there are two possibilities why Indonesian SOEs have slow speed of active leverage adjustment: it imposes lower benefit than expected for Indonesian SOEs to adjust leverage or the cost of adjusting leverage is too high. However, by the organization form which majority shares owned by the government, it seems that accessing capital market is not a big problem for Indonesian SOE. It should be easy for Indonesian listed SOEs to access capital market, particularly having debt from major local banks because the banks are also owned by the government. Therefore, the relatively slow active adjustment speed may be explained by the lower benefit in adjusting leverage than the expected in doing so. However, further study need to be conducted to discover the real reason behind the slowness of active leverage adjustment speed.

5. Conclusion

The result of this study had reconfirmed that Indonesian SOEs do have target capital structure which follow the trade-off theory. However, the speed of active capital structure adjustment done by the managers is relatively slow. Indonesian listed SOEs adjust the capital structure at the speed of 16.26% per year. This result indicates that the priority to get the maximum benefit from the optimum leverage does not become the significant priority for the SOEs managers. Accounting only the active adjustment speed, the target capital structure can be achieved completely within 25.94 years.

This result confirms that most of the adjustment found in the previous research are done by the passive adjustment, incurred by the net income recognition. Furthermore, this result also indicates that SOEs managers do not prioritize optimal capital structure adjustment. However, the cause of slow active adjustment may vary and needed to be discovered further. In this study, the variables that significantly affect the target capital structure are: lagged asset intensity, lagged firm size, lagged non-debt tax shield, lagged cash flow, and lagged leverage.

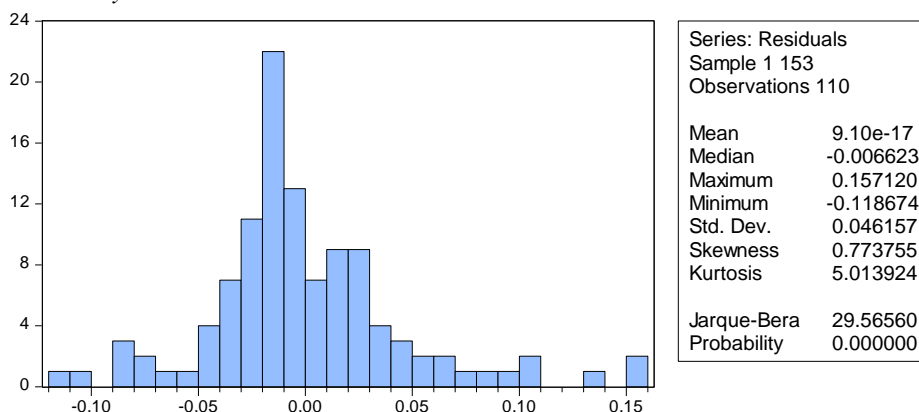
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Appendix A. Complete Data Processing Output

The complete results of data analysis using eViews 9 are presented below:

Normality Test



Autocorrelation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.741741	Prob. F(2,98)	0.0694
Obs*R-squared	5.828786	Prob. Chi-Square(2)	0.0542

Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	4.205097	(13,87)	0.0000
Cross-section Chi-square	53.632247	13	0.0000

Hausman Test

Test Summary	Chi-Sq.		
	Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	9	1.0000

Heterokedasticity Test

F-statistic	1.280623	Prob. F(9,100)	0.2568
Obs*R-squared	11.36795	Prob. Chi-Square(9)	0.2513
Scaled explained SS	14.00743	Prob. Chi-Square(9)	0.1221

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.015333	0.079658	-0.192483	0.8478
DIV_T1	0.009109	0.017487	0.520913	0.6036
PROF_T1	-0.038055	0.039230	-0.970041	0.3344
ASS_IN_T1	0.022981	0.025232	0.910797	0.3646
SIZE_T1	0.001297	0.002851	0.455084	0.6500
GROWTH_OP_T1	0.003838	0.004329	0.886680	0.3774
SHIELD_T1	-0.140392	0.134341	-1.045041	0.2985
LIQ_T1	-0.002248	0.002196	-1.023736	0.3084
CF_T1	0.033335	0.031908	1.044721	0.2987
LEV_PAS_T1	0.030302	0.038709	0.782809	0.4356
R-squared	0.103345	Mean dependent var		0.032731
Adjusted R-squared	0.022646	S.D. dependent var		0.032393
S.E. of regression	0.032025	Akaike info criterion		-3.958120
Sum squared resid	0.102557	Schwarz criterion		-3.712622
Log likelihood	227.6966	Hannan-Quinn criter.		-3.858544
F-statistic	1.280623	Durbin-Watson stat		1.534866
Prob(F-statistic)	0.256786			

Appendix B. Equation Derivation (Soekarno et al., 2015)

$$Y_1 = \lambda$$

$$Y_2 = \lambda + \lambda (Y^* - \lambda) = \lambda + \lambda(1 - \lambda) \quad ; Y^* = \text{Capital Structure Target} = 1$$

$$Y_{n+1} = Y_n + \lambda (1 - Y_n) \quad ; n \geq 1$$

$$= Y_n + \lambda - \lambda \cdot Y_n$$

$$= (1 - \lambda)Y_n + \lambda$$

$$= (1 - \lambda)((1 - \lambda)Y_{n-1} + \lambda) + \lambda$$

$$\begin{aligned}
 &= (1-\lambda)^2 Y_{n-1} + \lambda + \lambda(1-\lambda) \\
 &= (1-\lambda)^2((1-\lambda)Y_{n-2} + \lambda) + \lambda + \lambda(1-\lambda) \\
 &= (1-\lambda)^3 Y_{n-2} + \lambda + \lambda(1-\lambda) + \lambda(1-\lambda)^2 \\
 &\dots\dots\dots \text{and so on}
 \end{aligned}$$

Using Euler's elimination the equation can be simplified as follows:

$$\begin{aligned}
 Y_n &= \lambda + \lambda(1-\lambda) + \dots\dots\dots \lambda(1-\lambda)^{n-2} + \lambda(1-\lambda)^{n-1} \\
 (1-\lambda) Y_n &= \lambda(1-\lambda) + \dots\dots\dots + \lambda(1-\lambda)^{n-1} + \lambda(1-\lambda)^n
 \end{aligned}$$

$$\begin{aligned}
 (1-1+\lambda) Y_n &= \lambda - \lambda(1-\lambda)^n \\
 Y_n &= \frac{\lambda(1-(1-\lambda)^n)}{\lambda} \\
 Y_n &= 1 - (1-\lambda)^n \\
 (1-\lambda)^n &= 1 - Y_n \\
 n \log(1-\lambda) &= \log(1 - Y_n)
 \end{aligned}$$

so the final equation will be as follow:

$$n = \frac{\log(1-Y_n)}{\log(1-\lambda)}$$

This equation is used to calculate time needed to reach the capital structure target, where
 Y_n = capital tructure target
 λ = speed of adjustment to capital structure target

ICMEM

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The Impact of Non-Diversifiable Risk, Size Risk, Value Risk, and Information Risk on the Returns of LQ45 Stocks

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Abstract

This paper documents the findings made on the 4-Factor Model to determine the effect of non-diversifiable risk, size risk, value risk, and information risk on security returns.

The object of analysis is a panel data of 22 non-financial firms listed in LQ45 in the Indonesia Stock Exchange (IDX) in which active trading was continuously held on the security of those firms for the period of 2004 to 2008. The choice of actively traded LQ45 stocks assures that the panel data isolates the regression model to a sample set which gives emphasis on liquidity.

The statistical findings show that non-diversifiable risk as measured by β has no significant effect on security returns in the LQ45. Size risk, however, does have a significant and positive effect on security returns; this suggests a big firm effect in the LQ45 implying that high returns are generated from big market capitalization stocks. Likewise, the empirical evidence given in this study shows that value risk has an inverse relation to security returns by dint of the fact that the figure for market capitalization can be found in the denominator for the book-to-market ratio, the latter which is a measurement for value risk. This infers that firms with high book value relative to their market value do have low security returns. Lastly, the empirical evidence indicates that information risk has a significant and positive effect on security returns.

The 4-Factor Model underlines the viability of an active investment strategy in which the astute investor takes an active role in seeking out value-relevant information, and selects stocks with big market capitalization and low book-to-market. This takes into consideration that a big firm size effect is at work in the LQ45. It also takes into account the fact that, in the LQ45, value relevant information translates into high stock returns.

Key words: LQ45, 4-Factor Model, non-diversifiable risk, size risk, value risk, information risk, security returns, value-relevant information, big firm size effect.

1. Introduction

JSX Watch documented the positive dynamics happening across sectors in the Indonesia Stock Exchange (IDX) within the 2004-2008 window of this study. In the basic & chemical industry sector, PT Indocement Tbk (INTP) recorded net profit growth in 2005 thanks to a 7% rise in demand for cement in that year. In the infrastructure, utility, and transportation sector, PT Telkom Tbk (TLKM) experienced a 66.8% growth in market capitalization in 2005. In the miscellaneous sector which comprises automotive, textile, and footwear, Astra International (ASII) recorded a 36% revenue growth and a 29% increase in operating income for 2005. In 2007, the consumer goods sector had the least growth in security returns, 11.1%, but a growth nonetheless. This low growth was attributed to high inflation and an increasing fuel cost, thus reducing consumers' purchasing power. The property and real estate sector experienced a similar fate, where high financing charges made it difficult for consumers to take on housing loans, further reducing demand for property. But by 2007, Indonesia had become the largest crude palm oil (CPO)

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producer in the world, with Malaysia coming in second. The agriculture sector had by then generated a 115.39% growth in security returns for its investors on the back of a 59.46% increase in the price of CPO. Consequently, a 30% and a 52.08% growth in Index Harga Saham Gabungan (IHSG) were recorded by JSX Watch in years 2006 and 2007, respectively. It was only at the onset of the 2008 financial crisis that the IHSG went into a tailspin, recording an average negative growth of 11.57%

The firms mentioned above are those in the LQ45 category, which comprise blue chip companies having the biggest market capitalization and the highest value by transaction within the past 12 months. Thus the LQ45 represents shares marked by high trading value as well as by big market capitalization, indicating high liquidity. These companies, which became the movers and shakers of the IHSG within the 2004-2008 window of research, had strong fundamentals, generating healthy profits. Hence as fundamentals grew, so did investors' appetite to acquire these stocks, consequently raising share price, thereby enhancing returns for investors, thus adding to their wealth.

Fama and French (1992) developed a model in which size risk as measured by market capitalization, and value risk as measured by book-to-market, in combination with β as measurement for non-diversifiable risk were regressed to explain the variations in security returns. They posited that there was opportunity to reap high security returns by investing in small market capitalization stocks; likewise, by investing in high book-to-market stocks. In other words, they found empirical evidence to show that size risk had a negative impact on security returns, and that value risk had a positive impact on security returns. Thus, armed with these theories of risk and return, it would be reasonable to assume that the investing public would be keen to invest in small market capitalization stocks. However, the phenomenon was that, within the 2004-2008 research-window, the IHSG had strengthened on the back of share price growth of large market capitalization stocks. This provides anecdotal evidence that investors' preference ran towards large market capitalization stocks rather than those of the small market capitalization variety.

Easley, Kiefer, and O'Hara (1997) conceived of the terminology probability of information-based trade (PIN), in which the likelihood that private information is present in the trade process is measured using a conditional probability tree. In year 2000, Easley, Hvidkjaer, and O'Hara conducted a regression analysis in which they incorporated PIN into the Fama French 3-Factor Model, making it a 4-factor model. Their finding showed that PIN as a measure of information risk did indeed have a significant effect on security returns, and a positive one at that. Easley et al concluded their finding to say that "*stocks with higher probability of information-based trade require higher rates of return*", and that "*information affects asset pricing fundamentals*".

Therefore, in the context of the LQ45, the question arises as to whether size risk as measured by market capitalization does have an inverse relation to security returns, and whether value risk as measured by book-to-market does have a positive relation to security returns. And similarly, whether non-diversifiable risk and information risk serve to explain the variations in security returns.

2. Literature Review

The Capital Asset Pricing Model (CAPM) put forward by Sharpe (1964), Lintner (1965) and Black (1972), was the first to model risk as a downside of returns. The concept stipulates that non-diversifiable risk is the only significant risk of an asset, and that β as a measure of non-diversifiable risk has a positive effect on security returns; in other words the higher the β , the greater is the propensity of a security to exactly mimic the market; thus with higher β comes increasing security returns as well as greater risk. This gives an investor an opportunity to attain security returns equal to or greater than the market, at the same time that he runs the risk of going bust with the market.

The CAPM was strongly challenged in that the assumptions were deemed too restrictive, making it impractical in a real-world setting. By assuming only a single period in investing, the CAPM disregards the period subsequent thereof. By taking out income taxes and transaction costs, as well as by designating a risk-free rate for all borrowing and lending, its setting becomes surreal. Lastly, Roll (1977) offered his own criticism of the CAPM, contending that the assumption made of a stock index as a proxy for market portfolio was too limiting. Roll argued that an index might not be reflective of a true market portfolio and that to find a perfect covariance between the returns of a security in question and market returns, all securities and not just those traded publicly should be included.

In their paper entitled “The Cross Section of Expected Stock Security returns”, Fama and French (1992) formulated the Fama-French 3-factor model to overcome a major shortcoming of the CAPM, which was that a single variable would explain the variations in security returns. The Fama-French 3-factor model comprises the following explanatory variables; non-diversifiable risk, size risk, and value risk as measured by β , market capitalization and book-to-market, respectively.

β is a measure of non-diversifiable risk i.e. systematic risk. Market (i.e. systematic) risk cannot be diversified away; in other words, even with diversification, a portfolio will always contain market risk. However, in sharp contrast to the empirical evidence given by Sharpe, Lintner and Black in the CAPM, the Fama-French 3-Factor Model found that β did not have a significant relation to security returns; in their words, that “ β does not seem to help explain the cross-section of average security returns” and that it had “no explanatory powers” over security returns.

Market capitalization is the product of market price per share multiplied by number of shares outstanding. Through empirical testing, Fama and French showed that on average, the security returns of firms with low market capitalization were higher than those for firms with high market capitalization. In the words of Fama and French, “size on average has a negative premium in the cross-section of security returns”. (p 447) And according to Berk (1995), “relatively bigger firms have relatively higher market values”. This suggests that relatively smaller firms have relatively lower market values. Berk went on to say that “a firm with a low market value is more likely to be riskier than a firm with a high market value”. Investors require higher security returns to compensate for the additional risk. Consequently, when taken in the context of a regression model, market capitalization is said to have a negative effect on security returns. In other words, is the lower the market capitalization, the higher are the security returns.

Book-to-market is the product of book value of equity divided by market value of equity, whereby market equity signifies market capitalization. The book-to-market signals distress; in other words, the higher the book-to-market ratio, the higher is the firm’s distress; therefore the higher are the security returns expected by investors of said firm. In the words of Fama and French “book-to-market equity on average has a positive premium in the cross section of security returns”. When taken in the context of a regression model, book-to-market is said to have a positive relation to security returns. In other words, the higher the book-to-market, the higher should the security returns be.

Based on the above description, the Fama-French 3-factor model is depicted below:

$$R_{i,t} = \alpha_0 + \alpha_{\alpha 1} \beta_{i,t} + \alpha_{\alpha 2} \text{market capitalization}_{i,t} + \alpha_3 \text{book to market}_{i,t} + u_{i,t} \quad (1)$$

Bhatnagar and Ramlogan (2007) dubbed the 3-Factor Model a “real-world application” of the CAPM, and conducted a comparative study of the two models for stocks listed in the FTSE 100. They quoted the opinion voiced by Fama and French on the CAPM that, “the attraction of the CAPM is that it offers powerful and intuitively pleasing predictions about how to measure risk and the relation between expected return and risk. Unfortunately, the empirical record of the model is poor – poor enough to invalidate the way it is used in applications”. Strong words indeed, this writer may add.

The regression made by Bhatnagar and Ramlogan on the 3-Factor Model showed a big firm effect whereby “higher cap stocks produce higher than average security returns than lower cap stocks in the UK market. This result challenges the Fama-French small firm effect finding for the US Market” (Bhatnagar and Ramlogan) Their findings on the book-to-market ratio, however, were consistent with that of Fama and French, namely that book-to-market affects positively on security returns at the FTSE 100. Bhatnagar and Ramlogan called it “a value premium effect”.

In making a comparison between the two models, Bhatnagar and Ramlogan found CAPM to have a lower R-square to that of the 3-Factor Model, making the latter a superior instrument with which to explain variations in security returns. Their finding “shows deteriorating evidence for the CAPM’s ability to fully explain the market security returns of the UK market.”

An early study on information risk was conducted by Copeland and Galai (1983), who constructed a model to explain how information would have an impact on the market maker’s bid-ask spread. They explained that “the objective of a risk neutral dealer (i.e. market maker) is to choose the bid-ask spread which maximizes his profit”. Copeland and Galai then concluded that they “... find that NASDAQ dealers

(i.e. market makers) tend to acquire shares when prices fall and sell when prices rise; also that dealer inventories tend to increase on days prior to price declines and decrease prior to price rises. This type of dealer behavior is consistent with our supposition that dealers suffer losses to informed traders...” Consequently, the more a market maker believes that informed investors are present, the wider he will set his bid-ask spread. However, the market maker must not set his bid-ask spread too wide, otherwise he will lose an opportunity to do business with the uninformed investors. Alternatively, if the market maker sets his bid-ask spread too narrow, the risk of his incurring a loss from trading with the informed investors will be that much greater.

According to Easley and O’Hara (1987), the market maker must be resourceful in building a portfolio of securities for his inventory. Although he is trading with both the informed and the uninformed investor, he does not know which of the two parties he is dealing with at any given time. Therefore, the market maker must find a proxy in which to account for the presence of informed investors. This is where the bid-ask spread enters the picture. The more the market maker believes that he is dealing with an informed investor, the wider he will set his bid-ask spread. By minimizing the bid (i.e. buy) price and maximizing the ask (i.e. sell) price, the market maker is guarding against a possible loss due to private information that the informed investor has access to, but that the market maker does not. Thus, the market maker sets the size of the spread in response to how he interprets the proportion of informed investors in the market. The higher the probability of informed investors, the higher the risk to the market maker, and the higher the bid-ask spread that the latter requires. In other words, the study made by Easley and O’Hara showed that information risk had a positive effect on the bid-ask spread.

Heidle and Huang (1999) state that *“too much information asymmetry would destroy a market”*. They validated the Easley and O’Hara (1987) model that a bid-ask spread is influenced by the probability of trading with an informed investor. Heidle and Huang went one step further by conducting a study to determine whether on average the bid-ask spread in an auction market differed from that in a dealer market. As they described it, at NYSE and AMEX, small orders are processed through the electronic Designated Order Turnaround (DOT) system; while large orders are placed directly through the specialists (i.e. dealers who are each assigned a specific inventory of a stock or of multiple stocks). Thus the specialist can easily identify the informed investors, since the latter are those whom the specialist assumes to have placed the large orders. Heidle and Hung cited the finding made by Glosten and Milgrom (1985) in which *“the specialist is willing to trade with informed traders since he or she is able to offset the losses with gains from subsequent trade with uninformed traders”*.

Alternatively, at NASDAQ where orders are all taken electronically, informed and uninformed investors are not so easily identified. Consequently, the broker responsible for taking the order would be working within a higher level of uncertainty. In this regard, Heidle and Hung cite the finding made by Ho and Stoll (1983) that *“this results in a higher spread in a dealer market relative to an auction market”*.

The NYSE and American Stock Exchange (AMEX) are auction markets in which specialists (i.e. dealers who are each assigned a specific inventory of a stock, or of multiple stocks) are market makers. NASDAQ on the other hand, is a dealer market in which non-specialists (i.e. dealers having no specialist status) are market makers because they hold inventory, but are not assigned a specific set of inventory (Heidle and Huang, 1999). Heidle and Hung concluded that the difference between an auction market and a dealer market was in the degree of information asymmetry between the two market structures, such that the greater the information asymmetry, the greater the uncertainty of there being informed investors present, the higher the probability of trading with informed investors, the higher the likelihood that the market maker would lose to informed investors, thus the wider that the market maker would set his bid-ask spread.

Omar and Mutairi (2010) conducted a study on whether or not private information was present in the Kuwait Stock Exchange. Omar and Mutairi surmised that stock security returns would proxy for the capital gain generated not only by uninformed investors, but also by informed investors. Their paper concluded that, given the empirical evidence, there was indication that insider information was *“relatively dominant”* in the Kuwait Stock Exchange (Omar and Mutairi).

Given the mostly positive feedback given to private information, Benos and Jochev (2007) gave evidence to the contrary; they tested the hypothesis that information-based trade would be higher subsequent to a firm’s earnings announcement date; what they found was that *“information-based trade*

does not significantly change before and after earnings announcement dates". They cautioned that this may render probability of information-based trade ineffective as an explanatory variable to security returns.

At a more mundane level, Francioni et al (2007) defined investors who possess private information as those "who further process information so as to gain insights that are not immediately available to others". Benos and Jochev (2007) described informed investors as "(those) having superior information and/or above-average skills, such as analysts". Lastly, Omar and Mutairi (2010) quoted Hong and Stein (1999) as saying that the investing public is divided into two groups; those who have private information, the so-called news-watchers, and those who don't, the latter who are the momentum investors. According to Hong and Stein (1999), news-watchers rely on private information to predict future share price, whereas momentum investors, who generally do not have access to private information, will look to the share prices of past and present to forecast the future. In describing the news-watchers, Hong and Stein called their decision-making process "informationally stimulated".

This writer would like to use the terminology 'private information' and 'informativeness' interchangeably, in which the former can be defined as the latter. In other words, private information is the enhanced informativeness that can be acquired by someone with more acumen than most in ferreting out value-relevant information.

It was Easley, Kiefer, and O'Hara (1997) who first coined the phrase probability of information-based trade (PIN), in which the likelihood that private information is present in the trade process is measured using a conditional probability tree. In year 2000, Easley, Hvidkjaer, and O'Hara published a paper in which they incorporated PIN to the Fama-French model, making it a 4-factor model. Using data from NYSE, Easley et al found that probability of information-based trade as a measure of information risk did indeed have a significant effect on security returns, and a positive one at that. The formula for the 4-factor model is shown below.

$$R_{i,t} = \alpha_0 + \alpha_1 \beta_{i,t} + \alpha_2 \text{market capitalization}_{i,t} + \alpha_3 \text{book to market}_{i,t} + \alpha_4 \text{PIN}_{i,t} + u_{i,t} \quad (2)$$

Where:

$$R_t = \ln \left(\frac{C_t}{C_{t-1}} \right) \quad c = \text{closing price}$$

$$\beta_{i,t} = \frac{\text{cov}(r_{i,t}, r_{M,t})}{\text{var}(r_{M,t})}$$

$$\text{Market capitalization} = (\text{Price per share} \times \text{number of shares outstanding})$$

$$\text{Book - to - market} = \frac{\text{Book value of Equity}}{(\text{Price per share} \times \text{number of shares outstanding})}$$

$$\text{PIN} = \frac{\alpha \mu}{\alpha \mu + \varepsilon_B + \varepsilon_S}$$

$$u_{i,t} = \text{error term of stock } i \text{ at time } t$$

Easley, Hvidkjaer, and O'Hara (1997) described the conditional probability tree as follows. At the onset of an observation period, an information event may (α) or may not occur ($1 - \alpha$). In other words, there is probability α that an informed investor will receive private information, hence the information event. Conditional upon α occurring, there is a probability of signal Low (δ) i.e. of bad news, and a probability of signal High ($1 - \delta$) i.e. of good news. With the arrival of bad news δ , an informed trader will sell at probability μ and will not trade at probability ($1 - \mu$); conversely, with the arrival of good news ($1 - \delta$), an informed trader will buy at probability μ and will not trade at probability ($1 - \mu$). In sum, at signal Low an informed investor will sell at probability μ , and at signal High the informed investor will buy at probability μ ; thus the parameter μ becomes a proxy for the arrival of private information.

Benos and Jochev (2007) gave a more straight-forward explanation of the premise that goes into explaining the probability of informed trade. They stated that when an informed investor receives good news, s/he will place more 'buy' than 'sell' orders. The opposite is true when an informed investor receives bad news.

Back to the Easley et al conditional probability tree, at either signal Low or signal High, a posterior probability will surface, namely that either the informed investor will be the sole trader, or that both the informed and the uninformed investor (i.e. liquidity investor) will trade. Upon both of these posterior

probabilities, the uninformed trader (i.e. liquidity trader) will sell or buy with a probability of $\frac{1}{2}\epsilon$, or will not trade at all with a probability of $\frac{1}{2}(1 - \epsilon)$. The 50% probability was set arbitrarily by Easley for the reason that, with informed traders present, it would be to the uninformed trader's best advantage not to trade if she were trading for speculative reasons. On the other hand, there will be some uninformed traders who would be trading for non-speculative reasons. Hence the 50% probability was set to take into account the varying motivations of the uninformed investor. Should there be no information event, informed investors will refrain from trade, leaving only the liquidity traders either to buy ($\frac{1}{2}\epsilon$), sell ($\frac{1}{2}\epsilon$) or to refrain from trading $\frac{1}{2}(1 - \epsilon)$.

For the trade process to work, the assumptions must be made that the market maker is risk neutral and competitive. Under these conditions, the market maker will set a bid and ask price equal to the security's intrinsic value.

But how do we as researchers get into the mind of the market maker? The conditional probability tree is one way to infer the probability of actions taken by the informed and the uninformed investors at any given time. Another method that Easley et al used was an estimation model using a log likelihood function to estimate Probability of Information-Based Trade (PIN).

In determining PIN, it was first necessary to arrive at the parameters ϵ , α , and μ , which in turn required that the number of Buys (B), Sells (S), and No-Trades (N) for each of the companies in the panel data for each year within the 5-year research window be captured. To this end, JSXDTH was used. JSXDTH is a comprehensive database of the Indonesia Stock Exchange which contains among others, quotes, trades and volume at each time-tick. The following data was extracted from the JSXDTH database: Entry Date, Entry Time, and Buying or Selling Order. It is worth noting that Entry Time reflects independent transactions occurring to the second, which, when compiled annually, sums up to thousands of transactions. The Entry Time was used to discern the persistence of trade. This is a replication of the Easley (2005) paper in which a 5-minute interval between individual transactions was arbitrarily put in place as a ceiling to indicate the presence of trade. Hence, transactions that had occurred within a 5-minute interval were designated as 'trade' at either a Buy or a Sell, whereas intervals occurring beyond the 5-minute interval ceiling were designated as 'no-trade'. Next, the 'Buying or Selling Order' column was drawn upon to glean information on number of Buys as well as number of Sells. The following, that of PT Adhi Karya Tbk (ADHI) for fiscal year 2008, illustrates the process involved in arriving at the number of BUYS, SELLS, and NO-TRADES.

For Buys or Sells, transactions that had occurred within a 5-minute interval were designated as 'trade' at either a Buy or a Sell, whereas the intervals occurring beyond the 5-minute ceiling were designated as 'no-trade'.

Number of Buys was acquired by adding the number of 'Bs' in the 'BuySell' column. To this end, the following Excel formula was used [=COUNTIF(BuySell:BuySell, "B")]. A similar tact was used to seek the number of Sells using the Excel formula [=COUNTIF(BuySell:BuySell, "S")].

To arrive at a cut-off point between 'Trade' and 'No-Trade', Easley's formulas was followed, in which "the total number of no-trades outcomes in a trading day is the total number of 5-minute intervals in which no transaction occurred; in other words we define a no-trade outcome if at least five minutes has elapsed since the last transaction." Furthermore, the five minutes which was set arbitrarily by Easley "seemed long enough to exclude market frictions, while being short enough to be informative".

To compute the number of No-Trades, a slightly more convoluted approach was used. To this end, the EntryTime column in JSXDTH was employed. A new column was then created entitled 'Interval between Transactions'.

$$\text{Interval between Transactions} = \text{EntryTime}_t - \text{EntryTime}_{t-1} \quad (3)$$

(As an example, one column read 0:00:03; a result of the difference between EntryTime at time t of 09:10:04 and EntryTime at time t-1 of 09:10:01). Yet another column was created entitled 'Trade or No Trade' by using the following Excel formula:

$$[= \text{IF } \$\text{INTERVAL BETWEEN TRANSACTIONS} \geq 0:05:00, \text{"no trade"}, \text{"trade"}] \quad (4)$$

Table 1 High Frequency Intra-Day Data for ADHI

Stock Cod	Order Number	Entry Date	Entry Time	Buy/Sell	Price	Quantity	Interval between Transactions	Trade or No Trade
ADHI	142279171	1/2/08	09:10:00	S	1,400	250,000		
ADHI	142279355	1/2/08	09:10:00	S	1,430	5,000	0:00:00	trade
ADHI	142279181	1/2/08	09:10:00	S	1,420	250,000	0:00:00	trade
ADHI	142279678	1/2/08	09:10:01	S	1,430	250,000	0:00:01	trade
ADHI	142279572	1/2/08	09:10:01	S	1,410	250,000	0:00:00	trade
ADHI	142279459	1/2/08	09:10:01	S	1,650	2,500	0:00:00	trade
ADHI	142280446	1/2/08	09:10:04	S	1,530	50,000	0:00:03	trade
ADHI	142280556	1/2/08	09:10:05	S	1,430	50,000	0:00:01	trade
ADHI	142280902	1/2/08	09:10:06	S	1,560	250,000	0:00:01	trade
ADHI	142282025	1/2/08	09:10:11	S	1,400	500	0:00:05	trade
ADHI	142281891	1/2/08	09:10:11	S	1,630	150,000	0:00:00	trade
ADHI	142282650	1/2/08	09:10:15	B	1,320	2,500	0:00:04	trade
ADHI	142282626	1/2/08	09:10:15	S	1,420	10,000	0:00:00	trade
ADHI	142283098	1/2/08	09:10:19	S	1,430	25,000	0:00:04	trade
ADHI	142283570	1/2/08	09:10:25	S	1,410	150,000	0:00:06	trade
ADHI	142283630	1/2/08	09:10:26	S	1,400	2,500	0:00:01	trade
ADHI	142283593	1/2/08	09:10:26	S	1,400	25,000	0:00:00	trade
ADHI	142283705	1/2/08	09:10:27	S	1,450	1,500	0:00:01	trade
ADHI	142283702	1/2/08	09:10:27	S	1,460	25,000	0:00:00	trade
ADHI	142283839	1/2/08	09:10:29	S	1,600	2,000	0:00:02	trade
ADHI	142285004	1/2/08	09:11:00	B	1,330	5,000	0:00:31	trade
ADHI	142285147	1/2/08	09:11:08	S	1,500	5,000	0:00:08	trade
ADHI	142285145	1/2/08	09:11:08	S	1,480	5,000	0:00:00	trade
ADHI	142285141	1/2/08	09:11:08	S	1,440	5,000	0:00:00	trade
ADHI	142285140	1/2/08	09:11:08	S	1,430	5,000	0:00:00	trade
ADHI	142285194	1/2/08	09:11:11	B	1,360	1,000	0:00:03	trade
ADHI	142285196	1/2/08	09:11:11	B	1,350	1,000	0:00:00	trade
ADHI	142285275	1/2/08	09:11:16	B	1,360	5,000	0:00:05	trade
ADHI	142285618	1/2/08	09:11:40	S	1,490	200,000	0:00:24	trade
ADHI	142285635	1/2/08	09:11:42	S	1,400	15,000	0:00:02	trade
ADHI	142286117	1/2/08	09:13:03	S	1,460	25,000	0:01:21	trade
ADHI	142286353	1/2/08	09:13:57	S	1,370	27,500	0:00:54	trade
ADHI	142286822	1/2/08	09:15:44	S	1,750	25,000	0:01:47	trade
ADHI	142287180	1/2/08	09:17:24	S	1,670	17,000	0:01:40	trade
ADHI	142287275	1/2/08	09:17:56	S	1,550	10,000	0:00:32	trade
ADHI	142287363	1/2/08	09:18:22	S	1,420	10,000	0:00:26	trade
ADHI	142287898	1/2/08	09:21:13	S	1,500	50,000	0:02:51	trade
ADHI	142287928	1/2/08	09:21:21	S	1,400	10,000	0:00:08	trade
ADHI	142287930	1/2/08	09:21:22	S	1,380	22,500	0:00:01	trade
ADHI	142287974	1/2/08	09:21:33	S	1,500	25,000	0:00:11	trade
ADHI	142288078	1/2/08	09:22:03	B	1,350	15,000	0:00:30	trade
ADHI	142289042	1/2/08	09:30:01	S	1,450	25,000	0:07:58	no trade

0:05:00	
51,966	BUY
61,228	SELL
2,620	NO TRADE

Note:
Interval between Transactions=
[Entry Time at t] MINUS [Entry Time at (t-1)]
0:00:03 = 09:10:04 MINUS 09:10:01
trade = IF(0:00:03>=0:05:00, "no trade", "trade")

(source: The JSXDTH database combined with this writer's own data processing)

Lastly, the number of No-Trades was arbitrarily divided by two and subtracted from number of Buys and number of Sells, which had the objective of precluding any redundancies in these numbers.

With the number of Buys, the number of Sells, and the number of No-Trades in place, they were then plugged into the PIN formula.

To sum, PIN collates the parameters of the conditional probability tree of a typical trade process into a single formula, the latter which formalizes the extent that private information is embodied in security transactions. The parameters are ε , α , and μ . The basis for finding ε , α , and μ is a log likelihood function, in which the partial derivative is taken from this function in order to arrive at these parameters ε , α , and μ . Please note that the process of attaining them by way of taking the partial derivative from the log likelihood function is included in the *Appendix*, while the parameters themselves are shown below.

$$\varepsilon = \left(\frac{S+B}{S+B+N} \right) \quad (5)$$

$$\mu = \frac{1}{(1-2\varepsilon^{-1})} \quad (6)$$

$$\alpha = \frac{[(-f_4 g_3 - P f_3)(P k_2 + k_4 g_2)] - [(P f_2 - f_4 g_2)(-k_4 g_3)]}{[(P f_1 - f_4 g_1)(P k_2 + k_4 g_2)] - [(P f_2 - f_4 g_2)(P k_1 + k_4 g_1)]} \quad (7)$$

whereby:

$$P(\varepsilon, \mu) = (1 - \mu)^{(S+B+N)} (1 - \varepsilon)^N \left(\frac{1}{2} \right)^{(S+B)} \varepsilon^{(S+B)}$$

$$f_1(\varepsilon, \mu) = \left[\left[2\varepsilon^{-1} B \left(\frac{1}{(1-\mu)} \right)^2 \left(1 + \frac{2\mu}{(1-\mu)} \varepsilon^{-1} \right)^{(B-1)} \right] - \left[\left(\frac{1}{(1-\mu)} \right)^2 (S+B+N) \left(\frac{1}{(1-\mu)} \right)^{(S+B+N-1)} \right] \right]$$

$$f_2(\varepsilon, \mu) = \left[\left[2S\varepsilon^{-1} \left(\frac{1}{(1-\mu)} \right)^2 \left(1 + \frac{2\mu}{(1-\mu)} \varepsilon^{-1} \right)^{(S-1)} \right] - \left[2\varepsilon^{-1} B \left(\frac{1}{(1-\mu)} \right)^2 \left(1 + \frac{2\mu}{(1-\mu)} \varepsilon^{-1} \right)^{(B-1)} \right] \right]$$

$$\begin{aligned}
f_3(\varepsilon, \mu) &= \left[\left(\frac{1}{1-\mu} \right)^2 (S+B+N) \left(\frac{1}{1-\mu} \right)^{(S+B+N-1)} \right] \\
f_4 &= - \left[(S+B+N)(1-\mu)^{(S+B+N-1)} \left(\frac{\varepsilon}{2} \right)^{(S+B)} (1-\varepsilon)^N \right] \\
g_1 &= \left[\left(1 + \frac{2\mu}{1-\mu} \varepsilon^{-1} \right)^B - \left(\frac{1}{1-\mu} \right)^{(S+B+N)} \right] \\
g_2 &= \left[\left(1 + \frac{2\mu}{1-\mu} \varepsilon^{-1} \right)^S - \left(1 + \frac{2\mu}{1-\mu} \varepsilon^{-1} \right)^B \right] \\
g_3 &= \left[\left(\frac{1}{1-\mu} \right)^{(S+B+N)} \right] \\
k_1(\varepsilon, \mu) &= \left[-B\varepsilon^{-2} \left(\frac{2\mu}{1-\mu} \right) \left(1 + \frac{2\mu}{1-\mu} \varepsilon^{-1} \right)^{(B-1)} \right] \\
k_2(\varepsilon, \mu) &= \left[(B-S)\varepsilon^{-2} \left(\frac{2\mu}{1-\mu} \right) \left(1 + \frac{2\mu}{1-\mu} \varepsilon^{-1} \right)^{(S-1)} \right] \\
k_3 &= 0 \\
k_4(\varepsilon, \mu) &= \left[(1-\mu)^{(S+B+N)} \left(\frac{1}{2} \right)^{(S+B)} \left[[(S+B)\varepsilon^{(S+B-1)}(1-\varepsilon)^N] - [\varepsilon^{(S+B)} N(1-\varepsilon)^{(N-1)}] \right] \right]
\end{aligned}$$

(source of the above derivation: Drs. Sumanto MSc, FMIPA-ITB)

$$PIN = \frac{\alpha\mu}{\alpha\mu + \varepsilon_B + \varepsilon_S} \quad (8)$$

(source of the above PIN: Easley et al)

- α = probability that an information event occurs
- μ = probability that an informed trader trades due to an information event occurring.
- ε = probability that the uninformed trader trades. Unlike the informed trader, the uninformed trader will trade when there is an information event, and will trade even with no information event present. Also, the uninformed trader will trade when there is a high signal, and will trade even when there is a low signal.

Easley, Hvidkjaer and O'Hara (2000) inserted a disclaimer into the accuracy of the PIN as a measure of asymmetric information. In their words, “*these estimates are, by definition, unverifiable: information-based trading is not observable, and so our estimates could be artifacts of our estimating procedure, and not, as we claim, proxies for information*”. (p 18) This fact notwithstanding, Easley et al posited that the PIN served another purpose, which was as a way to portray security spread (equal to ask price minus bid price). In this regard, Easley et al contended that the PIN had achieved this objective; in their words “*As with any model, the proof lies in its predictive power. In particular, if our estimates are measuring asymmetric information, then one obvious test is to see how well they do in explaining a phenomenon known to be related to information: spreads*”. (p 19) Their regression analysis supported this relationship; in their words “*our model does a very good job of explaining actual spreads*”. Easley et al then went one step further by turning to asset returns; they stated that, “*Having established this link, we now turn to the deeper question of whether there is also a link between asset returns and information-based trading*”, the latter which, by the way, is the topic of this paper.

3. Source of Data

The panel data collected is secondary data of 22 companies listed in the LQ45 for fiscal years 2004 – 2008, providing a total of 110 units of observation overall. The data was taken from the following databases: DBSearch, OSIRIS, JSXDTH, and Pusat Referensi Pasar Modal (PRPM) Bursa Efek Indonesia. Tools utilized are computer hardware and software, as well as internet sources. For the minute-by-minute data for Buys, Sells, and No-Trades, the data was taken from the JSXDTH database. The fiscal year 2004 was designated as the starting point for this dissertation paper for the reason that, for many companies, data for the years prior to 2004 were not available on JSXDTH. As quoted from Easley et al, “*Longer sample*

periods enhance the ability to find statistically significant factors influencing returns". Hence, the mere five years designated for this dissertation paper may be a shortcoming in this writer's methodology. Nevertheless, the units of observation contained in the data passed the assumption testing of the Classical Normal Linear Regression Model, making the model a valid one with which to conduct hypothesis testing of the coefficient estimates.

As mentioned in chapter 1, the LQ45 comprises blue chip companies having the highest market capitalization and the highest value by transaction within the last 12 months. They also need to have been listed at Bursa Efek Indonesia at least 3 months prior. Thus the LQ45 represents shares marked by high trading value as well as high market capitalization, indicating high liquidity. Situngkir and Surya (2005) cited their observation that the most liquid securities in the Bursa Efek Indonesia were those with relatively high market capitalization. The reason was that firms having strong fundamentals were seen as less risky, making them more attractive to investors, which in turn encouraged investors to trade more actively in these stocks. The law of supply and demand then dictates that share price would climb, with a corresponding increase in market capitalization as well. These securities then became a barometer for other securities that were less liquid. On a slightly different note, Muranaga and Shimizu (1999) defined a liquid market as "*a market where a large volume of trades can be immediately executed with minimum effect on price*" in which immediate execution would result in lower uncertainty in trade.

Further selection of the panel data was conducted by replicating the Fama-French model, in that the data were those of non-financial firms. Fama and French had eliminated financial institutions (which included but were not limited to consumer banks, investment banks, insurance companies, and brokerage firms) from their study because the ratios used as performance indicators at financial institutions were interpreted differently from those of non-financial institutions. According to Fama French, "*we exclude financial firms because the high leverage that is normal for these firms probably does not have the same meaning as for nonfinancial firms, where high leverage more likely indicates distress*". Lee and Liu (2010) also used non-financial stocks in their study (p 18).

Next, the panel data of non-financial firms taken from the LQ45 were short-listed even further to encompass only those that were actively traded. The criteria for active trading were that: (1) these firms continued to make the LQ45 list within the research window of fiscal years 2004 through 2008, and (2) the firms had a low percentage of no-trades over trades. A percentage of no-trades over trades were computed by taking the ratio of the number of no-trades over those of trades. A ceiling of 16% for ratio of no-trades over trades was arbitrarily set whereby a percentage beyond the 16% ceiling suggests a high prevalence of no-trades and was therefore omitted from the panel data. As a case in point, PT Tempo Intimedia Tbk (TMPO) was excluded from the panel data due to the fact that, in 2008 alone, the company had 920 no-trades and 2,555 trades; making its percentage of no-trades over trades a whopping 36%. Compare this with PT Indosat Tbk (ISAT). In 2008, ISAT had 505,899 trades; with only 506 no-trades, ISAT's percentage of no-trades over trades for that year was a mere 0.1%. When taken as an average over the period of 2004 – 2008, ISAT's average no-trades was 1,259; the average of its trades (comprising Buys and Sells) was 317,595, and its percentage of no-trades over trades a mere 0.397%. It is worth noting that this is comparable to the choice of securities that Easley, Hvidkjaer, and O'Hara (2000, p 16) selected for their sample set, in which they excluded "*a stock in any year in which it did not have at least 60 days with quotes or trades, as we cannot estimate our trade model reliably for such trades*". Shown in Table 3.2 is the average percentage of no-trades over trades within the 2004-2008 window of research for each of the companies selected for the panel data. To sum, these 22 companies had one thing in common; a low percentage of no-trades over trades.

4 Data Analysis and Result

Except for the test of normality assumption, the other assumptions testing of the classical normal linear regression model have been met.

The regression model shows a non-normal distribution as shown below.

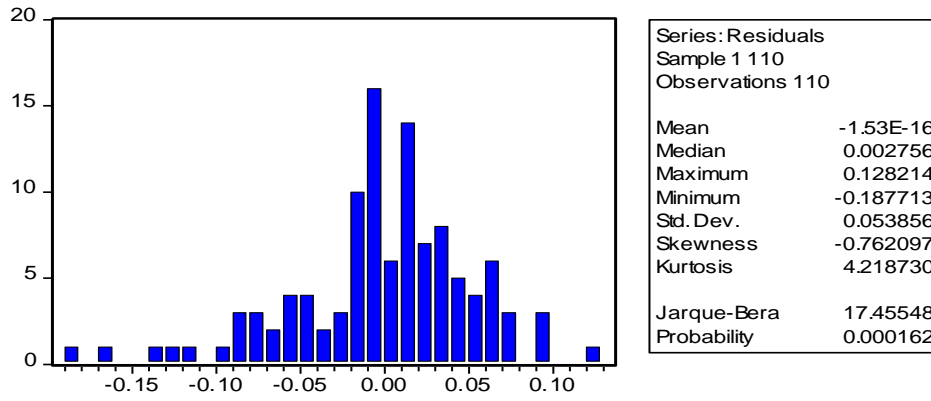


Figure 1 Test of Normality Combined with this Writer’s Own Data Processing

The above Jarque-Bera Test of Normality is read as follows: the Jarque-Bera statistics is 17.45548, and the probability of obtaining such a statistic under the normality assumption i.e. the p-value is 0.000162. Since 0.0162% is less than the 5% level of significance established for this regression analysis, the writer does not reject the alternate hypothesis H_1 that the error terms i.e. the residuals do not follow normal distributions; in other words, that the dataset is asymmetrical around the mean which points to outliers in the data. The residual graph below emphasizes this non-normality.

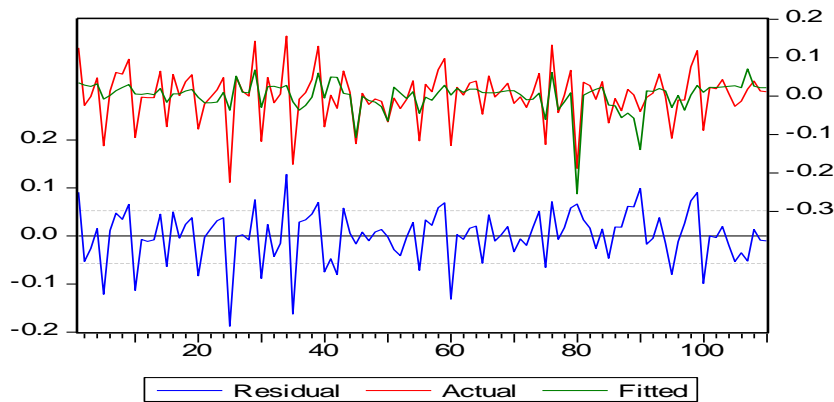


Figure 2 A Residual Graph Combined with this Writer’s Own Data Processing

As shown in the above residual graph, outliers were interspersed among the observations, causing non-normality in the residuals of those data. This problem was resolved by creating a dummy variable with the purpose of removing those observations that were outliers by making the residuals for those observations to equal zero. The dummy variable was given a value of zero for observations within the mean, and given a value of 1 for observations that were outliers. After inclusion of the dummy variable, the result of the Jarque-Bera Normality Test is shown below.

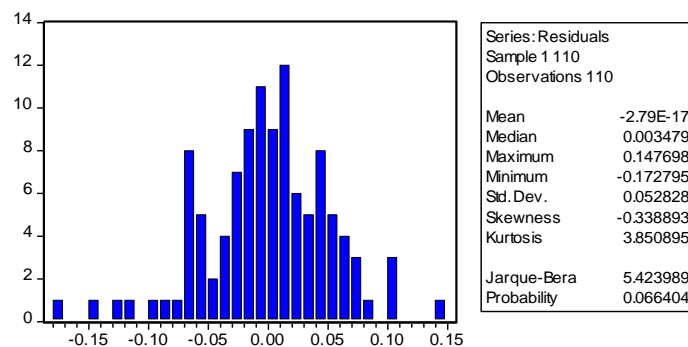


Figure 3 Test of Normality Combined with this Writer’s Own Data Processing

The above Jarque-Bera Test of Normality shows a p-value of 0.066404. Since 6.6404% is greater than the 5% level of significance, the writer does not reject the null hypothesis H_0 that the error terms i.e. the residuals are normally distributed.

Consequently, the writer now has a regression model in which a dummy variable is included. The result of the regression model is as follows:

$$Y = C + 0.001282*X_1 + 0.053749*X_2 - 0.046262*X_3 + 0.070473*X_4 - 0.053292*DUMMY \quad (9)$$

se (0.002656) (0.010785) (0.004111) (0.026363) (0.007411)

t (0.482612) (4.983507) (-11.25237) (2.673148) (-7.190719)

p (0.6302) (0.0000) (0.0000) (0.0085) (0.0000)

R-squared 0.757405

F-statistic 64.78367

Prob (F-statistic) 0.000000

Durbin-Watson stat 1.999339

Level of Significance: $\alpha = 5\%$ i.e. Significance Coefficient: $1 - \alpha = 95\%$

whereby:

$Y = \text{returns}$

$X_1 = \text{non - diversifiable risk as measured by } \beta$

$X_2 = \text{size risk as measured by market capitalization}$

$X_3 = \text{value risk as measured by book - to - market}$

$X_4 = \text{information risk as measured by PIN}$

Dummy = dummy variable

(source: this writer's own data processing)

The evidence given in the regression model shows that no significant relation is found between non-diversifiable risk and security returns. This is consistent with Fama and French in their finding on the cross section of security returns. Fama and French came to the conclusion that, albeit that non-diversifiable risk was a proxy for risk, "*stock risk is multidimensional*" in that other factors came into the picture, namely those of size risk and value risk as measured by market capitalization and book-to-market, respectively. According to Bodie, Kane, and Marcus (2008), this empirical evidence by Fama and French showed that "*size and value proxy for risks not fully captured by the CAPM beta*". Bodie et al added that "*..beta is not much use for explaining rates of return on firms' shares*".

This writer adheres to the rationale given by Fama and French; which is that, when β is combined with size and value into one regression model, variables other than β are significant in explaining the variations in security returns, while β is not.

The regression analysis in this study shows market capitalization to have a significant relation to security returns, but with a positive coefficient, the latter which is consistent with Easley et al; in their words "*we also find a significant and positive coefficient on size (t-value 9.57)*". However, this is not in line with Fama and French (1992). Fama and French (1992) found that the security returns on the small capitalization stocks at NASDAQ, Amex, and NYSE were on average higher compared to that of the big capitalization stocks. Or in Fama's words "*smaller stocks have higher average security returns*". They construed this to mean that size risk has a negative relation to security returns; in their words "*in multivariate tests, the negative relation between size and average security returns is robust to the inclusion of other variables*".

But it was also Fama and French who contradicted themselves when they stated that, "*firms with low market equity are more likely to have poor prospects, resulting in low stock prices and high book-to-market equity. Conversely, large stocks are more likely to be firms with stronger prospects, higher stock prices, lower book-to-market equity, and lower average security returns*". They added that "*small firms tend to have lower earnings on assets than big firms*". Fama and French then went on to say that these small firms suffered badly in the 1980-1982 US recession, such that they were unable to take advantage of the upturn in the US economy in the mid - to late 1980s. Fama and French then concluded by saying that "*the fact that small firms can suffer a long earnings depression that bypasses big firms suggests that size is associated with a common risk factor that might explain the negative relation between size and return.*"

This writer is of the opinion that the logical mindset pursued by Fama and French should have been of a positive relation between size and return, given that the weak fundamentals of these small firms rendered

them unattractive to investors, further depressing their share price.

At the risk of moving away from convention, this writer has found a positive relation between size risk and security returns. This infers that investors achieve high returns from big market capitalization stocks.

The empirical evidence for Indonesia given by Hardianto and Suherman, support the findings made by this writer. They found that, for big market capitalization stocks, the relations between security returns and market capitalization was positive. Bhatnagar and Ramlogan made a similar discovery in the FTSE 100, whereby *“higher cap stocks produce higher than average security returns than lower cap stocks in the UK market”*. Bhatnagar and Ramlogan called it a big firm effect. Situngkir and Surya (2005) observed that at the Indonesia Stock Exchange, the most liquid stocks are those with high market equity. By taking this train of thought one step further, one can infer that the stocks are liquid because investors trade in them for the reason that these stocks earn comparatively high returns for these investors. And because market equity is positively related to liquidity, therefore market equity is positively related to security returns. Hence, the evidence given by this writer is also consistent with that of Situngkir and Surya.

In sum, this writer’s regression analysis has given evidence of a positive (as opposed to a negative) relation between security returns and market capitalization. She is confident of her result because she is not alone, as shown by similar findings made by Hardianto and Suherman, by Bhatnagar and Ramlogan, and by Situngkir and Surya.

The regression analysis in this study shows value risk to have a significant relation to security returns, but with a negative coefficient, the latter which is inconsistent with the Fama French 3-Factor Model. Chan and Chen (1991) as well as Fama and French (1992), observed that the book-to-market equity ratio is a proxy for financial distress. Firms with low profitability were those with poor fundamentals, and thus would not be priced favorably by investors, such that the stock price might even become lower relative to the book value per share, although not necessarily so. Bodie, Kane and Marcus (2008) used the same logic, in that a drop in share price, perhaps due to the firm’s poor fundamentals, can and does result in said firm to fall in the category of a high book-to-market. Regardless, the higher is the book-to-market equity, the higher is the risk implied, and the higher is the security returns because *“they are penalized with higher costs of capital”* (Fama and French). The upshot of previous research is that there is a positive relation between security returns and book-to-market equity.

This writer’s findings are to the contrary, however. Insofar as value risk is concerned, this writer’s coefficient α_3 has a negative sign. “Market” is market price per share, while “book” is book value per share i.e. equity per share. Her rationale for this phenomenon is as follows; a low market price results in low security returns. Therefore the relation between market price per share and security returns should logically be a positive one. And since the variable used is that of book-to-market in which the market price is placed in the denominator, the conclusion would be that a high book-to-market causes low security returns. To sum, this writer’s empirical evidence shows that book-to-market has a negative effect on security returns. This writer believes that her logical mindset is better supported compared to that set forth by Fama French.

Furthermore, this writer is of a difference of opinion with the statement made by Fama and French to the effect that the reason for the positive relation between security returns and book-to-market was that *“the firms are penalized with higher costs of capital”*. This writer believes that a coherent flow should be in the opposite direction. In other words, a firm’s poor financial prospects would relegate said firm to a low credit rating and high cost of capital and high cost of debt. With high cost of debt comes low profit due to the high interest rate that the firm must bear. With low profit in the present, the projection for future profit would also be low, which in turn would impact negatively on the market price of the stock. Consequently, the firm’s stock would no longer be a viable means of investment on the part of investors, and the market price of the stock would decline even further. For this reason, low security returns would be a logical consequence to low market stock price, simply because security returns are computed by using stock price.

It can also be said that the negative sign for α_3 is consistent with the role of book-to-market as a counterpart to market capitalization. As market capitalization goes up, so too do security returns. And as book-to-market rises, security returns would fall; in other words, a high value risk causes low security returns. This implies that, for stocks in the LQ45, firms with high book value relative to their market value do have low security returns. By the same token, firms with low market values would result in low security returns; this is consistent with the positive sign for α_2 .

In their paper entitled “Migration”, Fama and French (2007) shed light on a major contributing factor for the negative relation between market capitalization and returns as well as the positive relation between book-to-market and returns. To this end, they grouped their panel data of NYSE, AMEX, and NASDAQ stocks across five categories:

B: Big – stocks with big market capitalization

S: Small – stocks with small market capitaliation

G: Growth – stocks with high price-to-book ratio i.e. low book-to-market ratio

N: Neutral – stocks with middle price-to-book i.e. middle book-to-market

V: Value – stocks with low price-to-book i.e. high book-to-market

Fama and French found that 86.8% of BG (big growth stocks) remained BG in the year subsequent to the portfolio formation, while only 60% of the SG (small growth stocks) remained in the SG portfolio. This suggests a wave of migration taking place across portfolios. Fama and French asserted that “...migration from small to big is much more likely than migration from big to small”. Since stocks that had migrated from small to big were located near the median in the panel data, these stocks had had high returns to begin with. Fama and French maintained that:

“Small stocks that become big have large positive returns and big stocks that become small have large negative returns. Because they are typically a tiny part of thestock portfolios, the (large negative) returns on big stocks that become small have little impact on the returns of these portfolios. In contrast, the combination of relatively large weights and (high) returns implies that small stocks that become big have a large impact on the returns of the....stock portfolios”.

Fama and French asserted that these acts of migration contributed to the negative relation between market capitalization and return as well as the positive relation between book-to-market and return. Some stocks that initially were of the small market capitalization variety having high book-to-market eventually improved their fundamentals such that they were able to migrate to big market capitalization with low book-to-market. Apparently, it was in this transition period between small and big market capitalization that Fama and French documented high positive returns for small market capitalization stocks and high book-to-market stocks. In the words of Fama French, “the size premium is due almost entirely to the extreme positive returns of small stocks that move to a big stock portfolio from one year to the next”. This writer believes that Fama and French’s migration theory supports her own empirical evidence. Rather than documenting the result within the transition period like Fama and French, this writer collected data after they had been categorized as LQ45 stocks. This is one reason why her regression model generated a positive, as opposed to a negative sign for the effect of size risk on security returns.

The empirical finding in this study of a positive sign in the coefficient for size risk and a negative sign in the coefficient for book-to-market may perhaps be better explained by the notion of economies of scale.

Economies of scale are the manner by which average cost decreases in the long run as output is increased. As an example, large-scale production can lower average cost; so too does automation, and mergers among firms. Economies of scale are illustrated by an average cost curve which slides downward from left to right as quantity produced is increased.

Economies of scale apply to stock markets as well. As pointed out by the Australia and New Zealand Financial Regulatory Committee (2011), stock markets that have relatively low market capitalization will generally have high transaction and trade execution costs, and “thus do not capture the economies of scale possible.” At the firm level, a higher cost of capital would thus be incurred, subsequently slowing down its recorded net profit, thus putting pressure to bear on its share price due to less than sterling profitability, thus relegating said firm to the category of a small capitalization stock.

Within the period of 2004 – 2008, the combined market capitalization of stocks that were listed at the Indonesia Stock Exchange, at US\$114 billion, was below that of other bourses in the Asia Pacific region, such as Thailand Stock Exchange at US\$147 billion, Kuala Lumpur Stock Exchange at US\$121 billion, Singapore Stock Exchange US\$295 billion, Taiwan Stock Exchange at US\$535 billion, and Hong Kong Stock Exchange at US\$1,247 billion (2005 data as quoted from JSX Watch). This implies both high cost of capital and low profit for the firms involved, subsequently causing share price to fall.

The line of reasoning exercised for value risk would be in exact opposite of that of size risk. This is

because in the book-to-market ratio which is the measure for value risk, the figure for market capitalization can be found in the denominator.

To sum, the negative relation between size risk and security returns, and likewise a positive relation between value risk and security returns as stated by Fama and French may not be applicable for stocks listed in the Indonesia Stock Exchange (IDX). This is because IDX has lower market capitalization relative to those of NYSE, AMEX, and NASDAQ, the last three which were the settings used by Fama and French in their 3-Factor Model. Using the notion of economies of scale, it can be inferred that the evidence of a positive relation between size value and security returns, and likewise the evidence of a negative relation between value risk and security returns at Bursa Efek Indonesia is well justified.

In the context of the extent that PIN is present in the Indonesia Stock Exchange, the histogram below charting the estimated PIN in the dataset for this study may give us a clue.

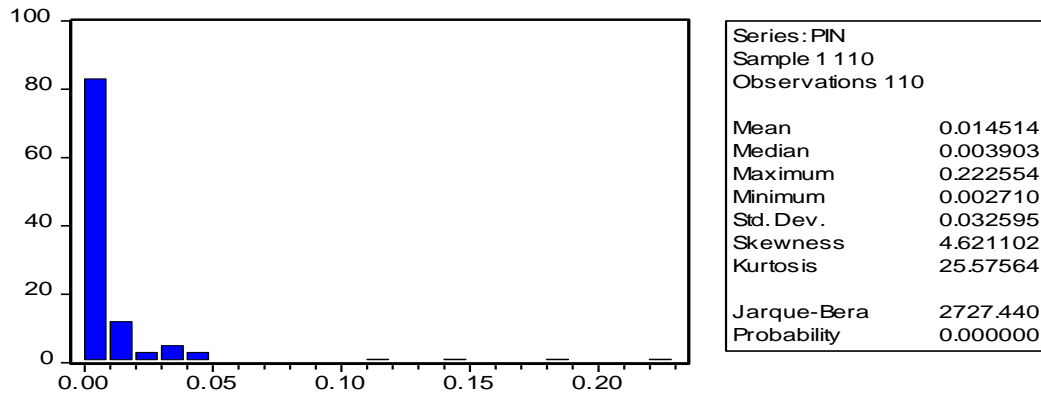


Figure 4 The Histogram for PIN for the Dataset in this Study

(source: this writer's data processing on EViews)

The above histogram for estimated PIN shows a 0.000000 probability for the Jarque-Bera which is lower than 0.05; suggesting that the data is not normally distributed. The average probability of informed trade is 0.014514, and varies from a minimum 0.002710 to a maximum of 0.222554. The standard deviation is 0.032595 which is 2.246 times higher than the average; implying a wide dispersion around the mean.

In their study on information-based trade in the Shanghai Stock Market, Copeland, Wong and Zeng (2007) found anecdotal evidence to show that *"the Chinese markets are hotbeds of insider trading, where well-connected traders prey on informationally-disadvantaged small investors"* and *"where access to information may be very unequal and rumors of insider trading are rife."* (p 5) But their histogram drew a different story with a 0.000000 p-value for the Jarque-Bera implying a non-normal distribution; an average PIN of 0.12; a minimum of 0.03; and a maximum of 0.78. Their standard deviation showed 0.055 which was a mere 0.46 times higher than the average, suggesting a narrow dispersion around the mean, or as they put it *"...with most firms clustered around the mean."* Copeland et al defended this inconsistency in the empirical evidence by saying that *"the PIN is a measure of the frequency of informed relative to uninformed trades. Hence, the unexpectedly low PIN estimate may simply reflect the fact that informed trading is swamped by the very high level of uninformed trades."*

In this regard, the statistical inferences made in this research study are not very unlike those of Copeland et al. For this reason, this writer would like to come to a similar conclusion to that of Copeland et al, namely that, albeit that informed trading is present di LQ45, many more trades are uninformed and to such a wide dispersion (i.e. at a standard deviation of 2.246) that it can be said that uninformed trading may be the rule rather than the exception at LQ45.

In the context of a regression analysis of information risk towards security returns, the statistical inference in this study shows information risk to have a significant and positive relation to security returns. This is consistent with Benos and Jochec (2007). This positive coefficient is also consistent with the empirical finding made by Easley dan O'Hara which showed that *"stocks with greater private information commands a risk premium"*. The significant and positive coefficient of 0.070473 for information risk is interpreted to mean that an increase of 1% in PIN would result in an increase of 0.070473% in security

returns; put another way, an increase of 10% in PIN would result in an increase of 0.70473% in security returns. This is comparable to the findings made by Easley, and O'Hara (2000); they found that an increase of 10% in PIN translated into an increase of 0.21% in security returns. Easley found this to be "economically meaningful and significant" and that "the risk of informed trading as captured by PIN is priced in the required returns of stock".

5. Suggestions

A suggestion for the investing public is to pursue an active investment strategy whereby the astute investor takes an active role in seeking out value-relevant information, and selects stocks with big market capitalization and low book-to-market. This takes into consideration the fact that a big firm size effect is at work in the LQ45. It also takes into account the fact that, in the LQ45, value-relevant information translates into high security returns.

A suggestion for other researchers may be to look into independent variables other than the four discussed in this study. Momentum and turnover taken within the context of Bursa Efek Indonesia are two additional explanatory variables that may hold interest. Momentum is defined as "the tendency of poorly performing stocks and well-performing stocks in one period to continue that abnormal performance in following periods" (Bodie, Kane, and Marcus, 2008). Further studies conducted by Fama and French had included these two variables.

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Woman Fund Managers and Socially Responsible Investment: The Case of Indonesia Market

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Abstract

Since the introduction of ethical and responsibility indexes in Indonesia market such as Jakarta Islamic Index in 2007 and SRI-KEHATI in 2009 it is expected that socially responsible investment in Indonesia has been developing. Our study focuses on the socially responsible investment growth in Indonesia by examining whether equity mutual funds in Indonesia invest in firms with high ethical and responsibility (social) performance from 2012 to 2013. We also relate this to whether the gender of fund managers determines the selection of portfolios with high social performance. This is motivated as previous studies have shown that woman directors improve the corporate social responsibility of the companies they manage and that woman fund manager has different risk preferences to man. Our results confirms this and showing that female fund managers tend to invest in companies with high social performance and most them are managing socially responsible equity funds.

Keywords: Ethical investment; Female fund manager; Gender; Indonesian mutual funds; Socially responsible investment

1. Introduction

In the past decade socially responsible investment has growth rapidly around the world. This is due to the raising concern on issues such as global warming, green companies, and ethical investment. However, the growth of socially responsible investment (SRI) in emerging markets such as in Indonesia is still very slow. Even though Islamic index benchmark has been established since 2007, as per January 2015 according to Otoritas Jasa Keuangan (2015) there are less than 100 (out of 912) of Islamic and social funds in Indonesia market. Therefore, this motivates us to examine whether investors may in fact invest in high socially responsible firms through conventional mutual funds. We will do this by measuring the social performance of all mutual funds based on the social performance of their holdings.

Previous research finds that women directors improve the corporate social responsibility of the company. This may due to they have better corporate governance, more concerns on the wealth of stakeholders, and employ non-financial performance such as innovation and social responsibility more in evaluating the performance of their firms compared to man directors (Bernardi dan Threadgill, 2010; Konrad dan Kramer, 2006; Rosener, 2003; Stephen et al., 2010; Stephenson, 2004). Research on mutual funds finds that fund manager characteristics such as age and degree could affect the mutual fund performance (Chevalier and Ellison, 1999). Women are also considered to have different risk preferences in managing their portfolio due to they have different risk profile and financial knowledge than men (Bliss and Potter, 2002; Dwyer et al., 2002; Luongo, 2011).

Therefore, we will examine whether fund manager characteristics such as gender specifically have association with the high social performance of mutual funds.

Our research has several objectives. First, using the measures of social performance suitable for Indonesian companies and the social performance score of companies calculated by Firmialy and Nainggolan (2015) we rate the social performance score of mutual funds in Indonesia market. Finally, we will examine the determinant of this social performance. Specifically, we will test whether fund manager's gender and other characteristics are associated with fund social performance.

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Our research will contribute to the thin literature on the socially responsible investment in Indonesia. Further, our study will provide suggestions to investors on socially responsible investment, and to policy makers on how to develop socially responsible portfolio in Indonesia.

The structure of the writing is organized as follows. Section 2 elaborates the development of our hypotheses. Data and research methods are outlined in Section 3. Section 4 provides the empirical results and analysis. Finally, Section 5 outlines the summary of the major findings and conclusions.

2. Development of Hypotheses

Prior research finds that women show different performance in a board of directors and different risk attitude in their investment decision than men. Women in board of directors are found to increase firms' reputation and financial performance (e.g. Bernardi et al., 2006; Rosener, 2003). Further, several studies find a positive relationship between number of women board members with charitable giving (Bernardi and Threadgill, 2010; Williams, 2003), CSR strength ratings (Bear et al., 2010), and disclosure level of CSR strategy (Fernandez-Feijoo et al., 2012). This can be explained by the differences between women and men in their biological, social behavior, and values (Broadbridge and Hearn, 2008; Martenson, 2008; Sealy and Singh, 2010). Align with this, Boulouta (2013) outline that the female stereotypical behavior such as more empathetic, caring, more socially sensitive and social oriented behavior has improved the CSR performance of their companies.

In investment setting, women are found to be more risk averse than men (e.g., Barber and Odean, 2001; Beckmann and Menkhoff, 2008; Jianakoplos and Bernasek, 1998). Barber and Odean (1999), using data for 35,000 households from 1991 to 1997, show that men invest in riskier portfolio than women. Also using a large survey data, Jianakoplos and Bernasek (1998) find that single women exhibit more financial risk averse than single men. After analyzing their holding investment, women invested less in risky assets than men (40 percent vs. 46 percent). Beckmann and Menkhoff (2008) using a survey data of 649 fund managers in US, Germany, Thailand, and Italy also find that female professionals are more risk averse than the males.

Supporting above findings, Dwyer et al. (2002) use data from a national survey of almost 2000 mutual fund investors and find that women are more risk averse than men in their most recent, largest, and riskiest mutual fund investment decisions. However, this relationship is weakened after controlling for investor financial knowledge. Therefore, they suggest that the difference in knowledge between women and men may be the reason why women exhibit less risk-taking behavior than men. However, Niessen and Ruenzi (2007) show that even after controlling for educational background and work experience US female fund managers are more risk averse, follow less extreme and more consistent investment styles and trade less than male managers. This result is also supported in the recent study on the relationship between gender and risk tolerance of US mutual funds by Luongo (2011) and Welch and Wang (2013).

Studies on the demographic profile of US SRI investors show that higher proportion of SRI investors are women. Junkus and Berry (2010) find that the typical SRI investor is female, single, younger, less wealthy and better educated than other non-SRI investors. They suggest that this may due to women have higher risk aversion and more concern for the social environment than men. Therefore, the risk aversion of women combined with their female stereotypical behavior may have explained why women tend to improve the company's social performance and tend to invest in socially responsible companies than men.

While there have been studies examining on the association between fund manager characteristics such as gender, age, and education and their investment risk, and the relationship between woman directors and company's social performance there is no evidence so far investigating whether women fund managers tend to invest in firms with high social performance. Therefore, we argue that woman fund managers hold more investment with high social performance ratings than man fund managers:

H1: *Ceteris paribus*, woman mutual fund managers will hold more socially responsible portfolios than men.

3. Methodology

3.1 Sample and Data

Data on Indonesian open-end mutual fund name, objective, inception date, net assets of the product, management fee, total assets, investment objective, investment holdings, and fund manager characteristics are collected from 25 fund websites and 78 prospectuses. We collect fund manager characteristics such as name, educational background, investment manager degree, international graduation, CFA title, working background, nationality, and tenure. The social performance data are collected from Firmialy and

Nainggolan (2016) which provide us with the final sample of 264 companies (mutual fund holdings) as per 2013. The uniqueness of the data is that we use all holdings in the mutual fund, while other research on mutual fund Indonesia uses only limited or top-five holdings.

3.2 Statistical Model and Variables

Our research began with the measurement of mutual funds' CSP score based on the methodology from Firmialy and Nainggolan (2016). They combined several guidelines from Wood (1991), Clarkson (1995), Hopkins (1997), Steg (2003), Dommerholt (2009) to represent CSP framework from academics and CSP framework from KLD, SAM, Calvert, Sustainalytics, FTSE4Good, Vigeo, Oekom, DJSI, GRI, SRI-KEhati, ISO 26000, and IFC to represent social rating agency. They select these rating agencies based on the availability and transparency of data and methodology in the internet, and then modified it so it will be better suited to match Indonesia's business environment. Their final CSPF consist of three main dimensions which are social, environmental and economic. The first dimension consists of 7 observable indicators and 47 observable sub indicators. The second dimension consists of 5 observable indicators and 23 observable sub indicators, and the third dimension consists of 5 indicators and 23 sub-indicators. Overall, their proposed CSPF model will cover 3 dimensions, 17 indicators and 93 sub-indicators.

They divide their framework to strength and concern, whereas company's strength link with their positive behavior, whereas company's concern link with the company's negative behavior. The sum of all aspects fell categorized under company's strength can be defined as "strength disclosure score", while sum of all aspects under company's concern category were translated as "concern disclosure score". The sum of strength and concern score represents composite "total disclosure scores". They employed content analysis on their sub-indicators data as the coding basis and count each word frequency to measure extensiveness of the information disclosed.

For CSP score estimation, the disclosure score for each item and dimension in the CSPF were converted to the range of scale between 1-3, with the score of 3 represent firms that disclose relatively detailed evaluation criteria in the annual report, sustainability report or corporate websites, whereas a score of 2 represents companies that disclose an average amount of information, and finally a score of 1 if it disclose a very brief textual description. Company whose disclose nothing fall into this latter category.

We answer the second research objective by modifying models proposed by Niessen et al. (2007) and Dwyer et al. (2002). These steps are started by collecting data regarding both mutual funds and fund managers' characteristic. The data are collected from the prospectus of 61 mutual funds. The models that we use in this research are:

(1)

where SocialRatings are social ranking of mutual fund by calculating the average of holding's social rankings in the observe mutual funds. As an alternative, we will add social scores off all companies that are invested by fund manager's off all mutual fund. Female Dummy is 1 if the fund manager are females, and 0 if males. We will control other variables such as other mutual funds' characteristics (e.g. age, size or net assets, management fee) and other fund managers' characteristics (educational degree, international graduate, CFA, nationality).

4. Results

Table 1 provides the summary of statistics including the correlation matrix of our variables. The table shows that the average CSP score is 1.01. It means that on average mutual funds in the sample of this research disclose a very brief textual description for evaluation criteria in the annual report, sustainability report or corporate websites. Table 1 also shows that the average gender proportion (Mgr_Female) has average of 0.18 meaning that there are 18% female fund managers that are observed in the sample in this research.

Table 1. Summary Statistics of Indonesian Equity Funds in 2013

	N	Mean	Std. Dev.	Min	Max
<i>Disclosure</i>	61	868.78	174.11	293.80	1161.73
<i>CSP</i>	61	1.01	0.10	0.73	1.21
<i>Strength</i>	61	511.82	98.08	167.45	679.23
<i>Concern</i>	61	356.96	77.56	126.34	483.41
<i>Mgr_Female</i>	61	0.18	0.20	0.00	0.67
<i>Mgr_Dgr</i>	61	0.56	0.24	0.00	1.00
<i>Mgr_IntlGrad</i>	61	0.45	0.33	0.00	1.00
<i>Mgr_CFA</i>	61	0.16	0.22	0.00	1.00
<i>Mgr_Natl</i>	61	0.05	0.19	0.00	1.00
<i>SRI</i>	61	0.02	0.13	0.00	1.00
<i>Syariah</i>	61	0.20	0.40	0.00	1.00
<i>Size</i>	61	26.22	1.61	23.64	29.40
<i>Age</i>	61	5.20	4.54	0.17	17.25
<i>Management Fee</i>	61	0.03	0.01	0.01	0.05

Table 2 shows the correlation between independent and control variables that are used in our research. The table shows positively strong correlations between managers with CFA and manager that are graduated from foreign universities (0.57) and between mutual fund size and manager that are graduated from foreign universities (0.65). There are no strong negative correlation between the variables.

Table 2. Correlation Matrix of Independent Variables
Mgr_Female *Mgr_Dgr* *Mgr_IntlGrad* *Mgr_CFA* *Mgr_Natl* *SRI* *Syariah* *Size* *Age*

<i>Mgr_Female</i>	1								
<i>Mgr_Dgr</i>	0.05	1							
<i>Mgr_IntlGrad</i>	0.28	0.42	1						
<i>Mgr_CFA</i>	-0.12	0.47	0.57	1					
<i>Mgr_Natl</i>	-0.20	-0.12	-0.26	-0.16	1				
<i>SRI</i>	0.21	-0.03	0.09	-0.10	-0.04	1			
<i>Syariah</i>	-0.24	-0.01	-0.24	-0.11	0.21	-0.06	1		
<i>Size</i>	0.21	0.32	0.65	0.23	-0.15	0.08	-0.19	1	
<i>Age</i>	-0.01	0.14	0.16	0.04	0.14	-0.04	-0.06	0.29	1
<i>Management Fee</i>	-0.20	-0.56	-0.20	-0.12	-0.12	-0.19	0.05	-0.21	-0.13

Table 3 shows the univariate tests of our measures of CSP. Results show that only for *Mgr_Female* and *Mgr_Dgr* seem to differentiate funds with high and low Strength (significant at the 10% and 5% level respectively). Funds with high female proportion and higher degree tend to invest in firms with high score of Strength.

Table 3. Univariate Tests

	<i>Disclosure</i>	<i>CSP</i>	<i>Strength</i>	<i>Concern</i>
<i>Mgr_Female</i>	0.06 (0.21)	0.07 (0.17)	0.09 * (0.09)	0.08 (0.11)
<i>Mgr_Dgr</i>	0.08 (0.21)	0.04 (0.50)	0.13 ** (0.03)	0.04 (0.47)
<i>Mgr_IntlGrad</i>	0.07 (0.40)	0.05 (0.53)	0.12 (0.18)	0.02 (0.79)
<i>Mgr_CFA</i>	0.02	0.00	0.04	-0.02

	(0.76)	(0.93)	(0.49)	(0.79)
<i>Mgr_Natl</i>	-0.03	-0.04	-0.03	-0.03
	(0.60)	(0.46)	(0.60)	(0.60)
<i>SRI</i>	0.03	0.03	0.03	0.03
	(0.33)	(0.38)	(0.33)	(0.33)
<i>Syariah</i>	-0.14	-0.18 *	-0.14	-0.14
	(0.18)	(0.08)	(0.18)	(0.18)
<i>Size</i>	0.63	0.04	0.74 *	0.38
	(0.13)	(0.93)	(0.07)	(0.37)
<i>Age</i>	1.07	1.17	1.91 *	0.85
	(0.36)	(0.32)	(0.10)	(0.47)
<i>Management Fee</i>	0.00	0.00	0.00	0.00
	(0.72)	(0.93)	(0.23)	(0.67)

The symbols ***, **, * denote significance at the 1, 5, and 10 percent level, respectively.

Table 4 provides the regression analysis result. Supporting our hypothesis, female fund managers tend to invest in firms with high CSP measures such as Disclosure, CSP, and Strength. This finding is consistent with the argument that female are more risk averse and put higher concern on social and ethical issues than man managers. We do not find other fund manager characteristics to be associated with CSP measures. On control variables, we also find that only SRI funds that invest in firms with high CSP measures as expected.

Table 4. Regression of Corporate Social Performance Measures and Fund Manager Characteristics

	<i>Disclosure</i>	<i>CSP</i>	<i>Strength</i>	<i>Concern</i>
<i>Mar_Female</i>	284.33 *** (0.01)	0.10 * (0.10)	146.63 ** (0.03)	137.71 *** (0.01)
<i>Mar_Dgr</i>	134.82 (0.27)	0.02 (0.76)	87.98 (0.19)	46.85 (0.39)
<i>Mar_IntlGrad</i>	-111.60 (0.50)	-0.04 (0.65)	-43.13 (0.65)	-68.47 (0.32)
<i>Mar_CFA</i>	35.61 (0.89)	-0.47×10^{-2} (0.97)	11.17 (0.94)	24.44 (0.82)
<i>Mar_Natl</i>	-52.99 (0.69)	-0.03 (0.56)	-31.55 (0.63)	-21.43 (0.75)
<i>SRI</i>	258.70 *** (0.00)	0.16 *** (0.00)	149.65 *** (0.00)	109.06 *** (0.00)
<i>Syariah</i>	-56.77 (0.28)	-0.05 * (0.06)	-23.84 (0.39)	-32.93 (0.19)
<i>Size</i>	14.88 (0.42)	0.01 (0.33)	8.36 (0.42)	6.53 (0.41)
<i>Age</i>	5.55 (0.25)	0.27×10^{-2} (0.33)	3.43 (0.21)	2.12 (0.31)
<i>Management Fee</i>	3101.62 (0.24)	0.10 (0.95)	1760.27 (0.24)	1341.47 (0.26)
Constant	293.97 (0.54)	0.72 *** (0.01)	173.41 (0.52)	120.55 (0.56)
R-squared	0.2254	0.2428	0.2294	0.2285

The symbols ***, **, * denote significance at the 1, 5, and 10 percent level, respectively.

5. Conclusion

Our study concludes that the average CSP score for 61 mutual funds in the sample is 1.01. It suggests that on average mutual funds in Indonesia disclose a very brief textual description for evaluation criteria in the annual report, sustainability report or corporate websites (CSP score 1 = disclose a very brief textual description, 2 = disclose an average amount of information, 3 = disclose relatively detailed evaluation criteria in the annual report, sustainability report or corporate websites). Our research also concludes that female fund managers tend to allocate the assets in firms with higher CSP score or better CSP disclosure. Thus, female fund managers prefers to invest in companies with positive behaviour. These findings consistent with our hypothesis and previous studies that state female managers have a positive relationship with disclosure level of CSR strategy (Fernandez-Feijoo et al., 2012). This could be explained by the differences between women and men in their biological, social behavior, and values (Broadbridge and Hearn, 2008; Martenson, 2008; Sealy and Singh, 2010). Our results suggest that larger number of female in Indonesia mutual fund industry could improve the increased of investment in firms with high social performance.

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Local Governments' Expenditures Efficiencies in Indonesia

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Abstract

This paper investigates the efficiency of local governments' expenditures in Indonesia, setting Human Development and Poverty level as the designated outputs. Annual data of 33 provinces in Indonesia during 2007-2011 are collected for conducting this research. Data Envelopment Analysis (DEA) is used to measure the efficiency levels. We found that, during the analysis period, the efficiency levels of local government expenditures of provinces outside of Java Island are still deficient. DKI Jakarta, West Java Province, DI Yogyakarta, and Banten Province are always located in the efficient frontiers.

Keywords: Local Government's Expenditures; Efficiency; Data Envelopment Analysis; Human Development Index; Poverty;

1. Introduction

After the decentralization policy has been effectively implemented in 2001 in Indonesia, the authority has been shifted from the central government to the local governments. Local governments now become the cutting edge of economic developments. The purpose of this policy are (1) to reduce the fiscal gaps among the local governments, (2) to provide better and more efficient public goods and services, and (3) to bring the government closer to the people (Siddik, in Abimanyu & Megantara 2009).

However, recent studies show that the decentralization policy did not contribute to a better economic performance in Indonesia (Tirtosuharto 2010, Pepinsky & Wihardja 2011). There are inefficiencies in the implementation of government programs thus the desired outcomes were not reachable. The problem solving for such inefficiencies could be attained if the local governments were aware of their relative positions among themselves and acknowledge where they should take a benchmark to, and were also aware of important factors that might improve their expenditures efficiencies.

This study is purposed to measure the relative efficiencies of local government expenditures in. These objectives were reached through two steps. In the first step, the relative efficiencies were calculated by using Data Envelopment Analysis (DEA) method. By measuring the relative efficiencies levels, the inefficient local governments could consider provinces that lied on the efficient frontier as benchmarks to measure how far they were outperformed, as well as to adopt better programs and standards that have been implemented by the efficient local governments and adjust them with their contextual constraints.

The data set consists of aggregated expenditures per capita of sub-nationals and cities government in the 33 provinces in Indonesia during 2007-2011. Human Development Index is used as the output of the measurement as it is believed that this index would reflect a broader insight of welfare than other economic indicators such as GDP level or economic growth (Prasetyo and Pudjono, 2013). Furthermore, reducing the poverty level has become a concern of the local governments in Indonesia. Therefore, we also involve the percentage of people that lie below the poverty line in each province as an output measure.

This study finds that, during the analysis period, the efficiency levels of local government expenditures of provinces outside of Java Island are still deficient. DKI Jakarta, West Java Province, DI Yogyakarta, and Banten Province are always located in the efficient frontiers.

The rest of the paper is organized as follows: Section 2 will discuss the existing literature and current

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issue; ranging from the implementation of fiscal decentralization in Indonesia to the human and poverty development and determinants of local government efficiencies in many countries. The methodology being used in this study will be explained in Section 3. The result of comparative efficiencies will be analyzed in Section 4. And lastly, concluding remarks will appear in Section 5.

2. Literature Review

2.1. Fiscal Decentralization in Indonesia

There are aspirations, especially from the marginal areas in Indonesia, that struggle for decentralization post-reform era in 1998. This idea has come true since the issuance of Law No. 22/1999 and Law No. 25/1999. However, this policy has only been implemented since 2001. In this policy, the central government is obliged to transfer some amount of funds to the local government for running their program. Also, local government could collect local tax and retribution by authority.

Mardiasmo (in Abimanyu & Megantara, 2009) explained that the purposes of fiscal decentralization Indonesia are: (1) reducing the gap between central government and local governments (vertical fiscal imbalance) and inter-local governments, (2) improving the quality of public services while reducing the gap of public service among local governments, (3) increasing the efficiency of natural resources empowerment, (4) implementing transparency and accountability in the spirit of good governance, and (5) supporting the fiscal sustainability in the macroeconomic policies.

With the extended flexibility of expenditures allocation for the local governments, it is expected to have a positive correlation with public welfare. However, previous studies found that local governments have not efficiently managed the expenditures allocation. Aritenang (2008) found that the disparity between provinces in Indonesia is still severe after the implementation of fiscal decentralization policy. These disparities, particularly in the level of development and resource capacities, implied fiscal decentralization did not affect a robust growth (Ismail et al. 2004, Tirtosuharto 2010).

2.2. Human Development in Indonesia

Human development is an alternative measure other than the purely economic indicators that seen people as the real wealth of a nation. UNDP (1990) defined human development as the process of widening people's choices and the level of their achieved well-being. The development of HDI was inspired by the capabilities approach by Amartya Sen that focuses on what people are able to do and be so that they have more freedom to live the kind of life which they find valuable (Nussbaum & Sen, 1993).

Several dimensions have been proposed in the early development of human development (see Alkire, 2002). However, UNDP had extracted them into three measures, i.e. longevity, education, and standard of living. The education component of the HDI is measured by mean of years of schooling for adults aged 25 years and expected years of schooling for children of the school entering age. The health component is measured by life expectancy at birth. And the living standard is measured by GNI per capita (PPP). The scores for the three HDI dimension indices are then aggregated into a composite index using geometric mean (UNDP, 1990)

Indonesian Center of Statistical Bureau (BPS) uses the same parameters as used by UNDP in constructing the HDI at the provincial level, except for the measurement of the living standard dimension. Instead of using GNI per capita (PPP), BPS prefers to use real-expenditure-per-capita adjusted by Atkinson formula (BPS, 2008). In 2012, UNDP categorized Indonesia as a medium human development country. Indonesia positioned 121st rank among other countries, with HDI score 0.629 (UNDP, 2013)

2.3. Poverty in Indonesia

BPS uses a basic-needs-approach in measuring the poverty rate. Based on this approach, poor people are defined as those who cannot fulfill their basic needs from the expenditure point of view. To obtain the data, BPS took a set of samples that represents the expenses of people in three regions in Indonesia (West, Central, and East) annually. This way, each province has distinguished poverty line as the elements and quantity of basic needs consumed were also different.

Throughout the years, the Indonesian government has made a remarkable achievement in reducing the poverty rate. It had fallen from 24.2% in 1998 to 11.37% in 2013. Meanwhile, the average poverty line has also increased from IDR 96,959.00 to IDR 289,041.91 in the same period. Despite this accomplishment, the World Bank (2012a) mentioned that about 40% of Indonesian population remains highly vulnerable to shocks that threaten to push them back into poverty.

3. Methodology

3.1. Data setups

In this paper, the analysis period is deliberately limited, from 2007 to 2011, due to the rapid expansion of regions in Indonesia. During this period, there are many cities and municipalities split into two or more intra provinces. The numbers of provinces are, however, remained 33 provinces. This limitation is needed as a constant amount of observation is needed to ensure the fairness in measuring relative efficiencies. Besides, consistency is also needed for measuring the performances of the efficiencies.

Firstly, we prepare a setup for input data. Each city and municipality in Indonesia have its own expenditure budget. Meanwhile, the province governments also have expenditures budgets. However, there is no clear distinction whether the performances of target outputs are caused by the programs that are run by city and municipality governments or by the province governments. The implementation of the provinces' and cities and municipalities' programs are often overlapped. Therefore, in this study, the provinces' expenditures are combined with the expenditures of cities and municipalities' within the province. These combined expenditures (so-called local governments' expenditures) are then adjusted with the number of population in each province to become the local-government-expenditure-per-capita, and become the inputs that are being analyzed.

Next step is to setup the output measures. There two variables that are designed as the output measures, The HDI and rate of poverty in each province provided by Indonesian Center of Statistical Bureau (BPS). In addition, there is an adjustment made for rate-of-poverty measurement. DEA approach uses maximization of the objective function whereas the government objective is to minimize the poverty rate. This problem can be solved by inverting the value of the poverty rate.

3.2. Data Envelopment Analysis

Data envelopment analysis (DEA) is a non-parametric mathematical programming to estimate the inefficiency of outputs given inputs and vice versa. This method constructs an envelopment frontier over the data points such that all observed points lie on or below the production frontier (Coelli, 1996). This method, however, does not generate general relationship and only rely on the input-output ratio optimization. It firstly introduced by Farrell (1957) and then extended by Banker, Charnes, and Cooper (1984) to accommodate when the decision-making units (DMUs) are operating at the non-optimal scale environment. These non-optimal scales might be caused by imperfect competition, constraints on resources, etc.

Coelli (1996) comprehensively discussed the DEA method. Assume there is data on K inputs and M outputs for each of N DMU. For the i -th DMU, these are represented by the vector x_i and y_i , respectively. The $K \times N$ input matrix, X , and the $M \times N$ output matrix, Y , represent the data of all N . Then the DMU's problem is

$$\begin{aligned}
 & \text{Max } \Phi, \lambda \Phi & (1) \\
 & \text{s.t.} \\
 & -\Phi y_i + Y\lambda \geq 0, \\
 & x_i - X\lambda \geq 0, \\
 & N1' \lambda = 1 \\
 & \lambda \geq 0,
 \end{aligned}$$

where Φ is a scalar and λ is a $N \times 1$ vector of constants. $N1$ is a $N \times 1$ vector of ones. The value of Φ obtained will be the efficiency score for the i -th DMU. It will satisfy $\Phi \geq 1$, with a value of 1 indicating a point on the frontier, and hence a technically efficient DMU. The proportional increase in outputs that could be achieved by the i -th DMU with input quantities held constant denotes by $\Phi - 1$, while $1/\Phi$ defines the technical efficiency scores which vary between zero and one.

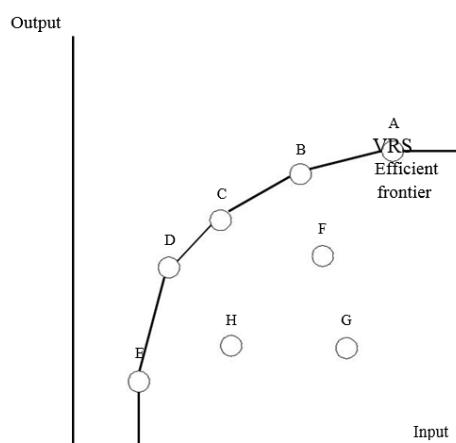


Figure 1 The DEA Efficient Frontier

The VRS efficient frontier sorts the slopes starting from DMU that has minimum input. In figure 1, DMU A, B, C, D, and E are efficient and forming an “efficient frontier”. Therefore, the technical efficiency of those DMUs are set as 1. The technical efficiency of DMU F, G and H will be measured by considering their distances to the “efficient frontier”.

4. Analysis

Table 1 The efficiency scores with DEA approach

Province	2007	2008	2009	2010	2011	Province	2007	2008	2009	2010	2011
Bali	0.94	0.93	0.93	0.94	0.94	North Sulawesi	0.98	0.98	0.98	0.98	0.98
Bangka	0.94	0.94	0.94	0.94	0.94	North Sumatra	0.98	0.99	0.98	0.98	0.98
Belitung						NTB	0.86	0.87	0.87	0.86	0.87
Banten	1	1	1	1	1	NTT	0.88	0.87	0.87	0.88	0.88
Bengkulu	0.93	0.94	0.94	0.94	0.94	Papua	0.83	0.83	0.83	0.84	0.84
Central Java	0.99	0.99	1	1	0.99	Riau	0.97	0.98	0.98	0.98	0.98
C. Kalimantan	0.96	0.96	0.96	0.96	0.96	Riau Islands	0.96	0.96	0.96	0.97	0.97
Central Sulawesi	0.91	0.91	0.91	0.92	0.92	S.E. Sulawesi	0.9	0.9	0.9	0.91	0.91
DI Yogyakarta	1	1	1	1	1	S. Kalimantan	0.89	0.89	0.9	0.9	0.9
DKI Jakarta	1	1	1	1	1	South Sulawesi	0.93	0.93	0.93	0.94	0.94
East Java	0.97	0.98	0.98	0.98	0.97	South Sumatera	0.95	0.95	0.95	0.95	0.95
East Kalimantan	0.96	0.97	0.97	0.97	0.98	West Java	1	1	1	1	1
Kalimantan						West Kalimantan	0.9	0.89	0.9	0.9	0.9
Gorontalo	0.91	0.9	0.9	0.91	0.91	West Papua	0.88	0.88	0.89	0.89	0.89
Jambi	0.94	0.94	0.94	0.94	0.95	West Sulawesi	0.9	0.89	0.89	0.9	0.9
Lampung	0.95	0.97	0.97	0.97	0.95	West Sumatera	0.96	0.95	0.95	0.95	0.96
Maluku	0.91	0.91	0.92	0.92	0.92						
N.A.D.	0.92	0.92	0.92	0.92	0.93						
North Maluku	0.89	0.89	0.89	0.89	0.89						

As shown in Table 1. Through the analyzed time periods, East Java Province had the largest nominal expenditure budget among all province, while West Sulawesi Province had the smallest nominal expenditure budget. Nonetheless, when it is adjusted by the number of inhabitants in the area, West Papua had the largest local government expenditure per capita. Banten Province had the smallest local government expenditure per capita during 2007-2010, but its position was replaced by West Java Province in 2011. DKI Jakarta had the largest HDI and also the lowest rate of poverty among all provinces, while on the contrary, Papua had the smallest HDI and the biggest rate of poverty.

In aggregate, it can be seen that provinces that are located in Java Island – such as DKI Jakarta, West Java Province, DI Yogyakarta, and Banten Province– have become the most efficient provinces regarding government expenditure during the sample period. On the other hand, Provinces that are located in the east region of Indonesia – such as North Maluku Province, NTT Province, NTB Province, Papua Province, and West Papua Province – had the worst relative efficiency scores. This result is interesting since two of those provinces which had the least efficiency scores, i.e. Papua and West Papua, are allocating a huge amount of expenditure per capita compare to other provinces. Yet, it seems to be left behind in the sense of human development and poverty.

5. Conclusion

Decentralization policy has been effectively implemented since 2001 in Indonesia. In this policy, the central government is obliged to transfer some amount of funds to the local government for running their program. In addition, local government could collect local tax and retribution by with authority. However, from the previous studies, there is an indication that inefficiencies exist in the implementation. This paper investigates the efficiency of local governments' expenditures in Indonesia, setting Human Development and Poverty level as the designated outputs.

The study results DKI Jakarta, West Java Province, DI Yogyakarta, and Banten Province have become the most efficient provinces regarding government expenditure during the sample period. On the other hand, North Maluku Province, NTT Province, NTB Province, Papua Province, and West Papua Province had the worst relative efficiency scores.

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Analysis on Factors Influencing Participation of Tofu SMEs in Environmental Impact Management

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Abstract

Until 2013, 92 tofu small to middle enterprises (SME) are identified throughout Semarang proper. Although the contribution of these tofu SME is significant, yet concerns have been raised on its liquid and solid waste, odors, and smoke which are attributed to the decline in the environmental quality surrounding their operational vicinity. The results of environmental monitoring shows that the water quality of Kaligarang river continues to decline, while the air quality is still good. However, some parameters also show a significant trend toward decrease in the air quality (Badan Lingkungan Hidup, Semarang City, 2015). The purpose of this study is to determine the factors affecting participation of Tofu SMEs in environmental management and this research is intended as an explanatory research. The sampling technique employed in this research is non-probability sampling, namely purposive sampling, with basic criterion that the tofu SME has been operating three years minimal with a production capacity of twenty kilograms of soybeans. The samples in this study comprise of thirty Tofu SMEs. Likert scale measurement is used in this research. The analysis is carried out by means of factor analysis test using SPSS 15.0 for Windows. Results of the analysis find that the most significant factors affecting the participation of Tofu SMEs consists of competence, commitment, and business environment variables. Factors of competence variable competencies include knowledge on impact management, organizational competence, and the application of impact management. Factors of commitment variable include the need to manage the impact and the cost of impact management. Factors of business environment variable include social norms and business competition. It is recommended that the skill of tofu SMEs owner to manage the business impact need to be improved and they need to be encouraged to apply those skills. The application of written rules needs to be tightened and the government's program to improve the performance of the management of environmental impacts of tofu SME's need to be improved.

"Keywords: Competence; Commitment; Business Environment; Impact Management."

1. Introduction

Tofu, a protein-rich food made of soybean, is one of the most sought after delicacy by Indonesian people of all social backgrounds. In the city of Semarang, there are tofu manufacturers spread across sixteen sub-districts; most of which are small and medium enterprises (SMEs), which are capable of contributing to employment and providing food supply. However, the production process of these manufacturers leaves undesirable impacts. The production process and waste water of the tofu manufacturing are attributed to these negative impacts. The energy used in processing the ingredients can degrade the air quality in the vicinity of the manufacture site and the waste water is directly dumped without prior treatment to the local body of water, degrading the quality of water. The research of Regional Development Office (BAPPEDA) of Medan in 1993 recorded that chemical compounds within waste water of tofu manufacturing, especially BOD, COS, TSS and high-concentrated fat/oil exceeded the standard limit for environmental safety (Husin, 2008).

Within the last five years, results of environmental survey in Semarang has shown that most parameters are still within the safety limits, which means that the overall environmental conditions in the city is still well; except for dust particle parameter, which has exceeded the safety limit. Parameters for water quality of Kaligarang (one of the fresh water supply of Semarang city) shows to exceed safety limit, which means that the water quality of this source is very low (Badan Lingkungan Hidup Kota Semarang, 2015). Until today, many citizens and traditional market sellers use rivers as waste dumping site. In Semarang, rivers

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become the site of water waste dumping for tofu manufacturers, or in other words businesses themselves are responsible for the deteriorating water quality in the city; not to mention another pollution namely odor.

Hillary (2000) in Cote, *et al* (2006) conducted a study in England which found that SMEs are responsible for the 70 percent pollution in the country. Negative impacts from the operation of tofu manufacturing are often tolerated by the local community, and are even neglected by the local government due to the industry's perceived significant economic contribution. As an entity, tofu manufacturer should take part in environmental management. The contribution of tofu manufacturer in environmental management will give significant impact in realizing a healthy life and environment for the local community. Some of the most prevalent environmental issue in Semarang are environmental pollution and deterioration as well as low awareness of the community on the importance of good environmental management (Semarang City Regional Regulation No 12 Year 2011). This research aims to discover factors influencing tofu SME in environmental management in Semarang city.

2. Theories and Methods

2.1 The concept of Small and Medium Enterprises (Micro, Small and Medium Enterprise Concept)

There are various terms and criteria to categorize enterprises into small and medium businesses. Some of the most commonly used terms are small and medium enterprise (SME), small firm (SF), micro and small enterprise (MSE), and small-scale enterprise (SSE). In Indonesia, micro, small and medium enterprises can take the form of industry or otherwise. Indonesia set up criteria for micro, small and medium enterprises based on net worth excluding land and manufacturing building, and annual sales volume, which are regulated in Indonesian Regulation No. 8 Year 2008. A micro enterprise has a maximum net worth of Rp.50.000.000,-, or an annual sales volume of Rp.300.000.000,-. A small enterprise has a maximum net worth between Rp.50.000.000,- and Rp.500.000.000,-, or an annual sales volume between Rp.300.000.000,- and Rp.2.500.000.000,-. A middle enterprise has a maximum net worth between Rp.500.000.000,- and Rp.10.000.000.000,-, or an annual sales volume between Rp.2.500.000.000,- and Rp.50.000.000.000,-.

Viewed from the number of employee, a micro enterprise has ≤ 4 employee, a small enterprise has between 5 to 19 employees, whereas a middle enterprise has between 20 and 99 employees (Biro Pusat Statistik in Tambunan, 2009). Tofu manufacturer is an enterprise which processes raw ingredients (soy bean) into a consumable product (tofu), making this enterprise fall into industrial sector. Most tofu manufacturers in Semarang are small and middle enterprises.

2.2 The participation of SMEs in Environmental Management

Environmental management is an effort which is carried out in stages, namely environmental planning, implementing, sourcing, control, and development. This effort is carried out to ensure the sustainability of the environmental quality and to prevent the deterioration of the managed natural resource and other natural resources in the vicinity, and to prevent pollution from waste or other dangerous pollutants (Supardi, 1994). SMEs as a player in the industrial sector have an obligation to be responsible for the environmental management. Negative impacts from the operation of tofu manufacturing are often tolerated by the local community, and are even neglected by the local government due to the industry's perceived significant economic contribution. This negligence will cause the enterprise and the local community in which it operates suffer in the long-term (GTZ, Ministry of Environment of Indonesia, 2009).

Vernon *et al* (2003) explained that among the characteristics of SMEs are that these enterprises believe that their activity has low environmental impact, have low awareness toward regulation, use limited environmental management tools and system, have tendency to be reactive toward environmental change, hold cost and regulation as main motivations, has limited resources which are needed to benefit from management tools and are discouraged to work with many parties. A report from Organization for Economic Cooperation and Development (OECD) in Cote *et al* (2006) shows that many small businesses do not have enough opportunity to participate in discussion on environmental issues, are not aware of their own compliance with environmental regulations, and lacking manpower and resources to perform environmental impact management. Most SMEs do not care about any environmental impact that they cause and about the environmental regulation that they are supposed to follow, and do not care about the sustainability of their own businesses; even so far as to dismiss the importance of regulation which are supposed to bind them and of management tools which may help them improve their environment, and it is difficult to reach, mobilize or inspire them for any improvement which has anything to do with the environment (Hillary in Cote *et al*, 2006).

One of the efforts made by businesses to be more environmentally friendly is dubbed eco-efficiency. There are many incentives for an enterprise to adopt policies in line with eco-efficiency principles. In practice, eco-efficiency can be defined as operational activities of an enterprise which are environmentally friendly and can be grouped into internal and external motivations (Cote, Booth, & Louis, 2006). Internal motivations come from within the enterprise namely cost reduction, quality improvement for goods and services, innovation, increase in employee's motivation, individual commitment / social responsibilities, risk and credit management, and retaining or expanding market share. External force or motivations include consumer demands for more environmentally friendly products and services, pressure from shareholders, competitors, government, public and global (Cote, Booth, & Louis, 2006).

3 Research Methods

3.1 Population and Samples

The population observed of this research comprises of 92 tofu SMEs located in Semarang; of which 30 SMEs ($\pm 30\%$) are set up as the samples to be studied. Samples were determined using purposive sampling method, with three years of minimum lifetime and 20 kg of soybean per day minimum production capacity as the sampling criteria.

3.2 Research Instruments

This research is carried out by means of questionnaires presented in Likert scale. The questionnaires are designed in three variables; the participation of tofu SMEs in environmental management (4 Indicators), internal factors (22 Indicators), and external factors (5 Indicators).

3.3 Data Analysis

The data in this research are analyzed using exploratory factor analysis aided by Statistic Package for Social Sciences (SPSS) Ver 15.0 for Windows.

4 Results

Most of the tofu SMEs in Semarang are privately owned, of which operation is commonly carried out by the help of one or two family member(s) of the owner; only 3% of the SMEs identified employ people with no familial ties to the business owner. The business owners have been in the industry for quite some time, with 43% of all samples have been making tofu for more than 20 years (30% been in the business for more than 40 years), only 13% has been in the business between 21 and 30 years, 40% have been doing this between 11-20 years, and 17% have experienced the business for less than 10 years. Out of all 30 tofu SMEs, 20% of them has one tons of soybean per day production capacity, 67% are identified with capacities between 100 and 1000 kg of soybean per day, and 13% have less than 100 kg soybean per day of production capacity. The total number of people employed in all the sample SMEs are accounted as 454 people, most of whom are related to the business owner of their respective SMEs. 50% of the SMEs still employ traditional furnace and 50% use boiler with firewood as fuel, and only 3% use liquid petroleum gas (LPG) as fuel. Artesian well (outfitted with electric water pump) is the main water source in the tofu-making process. Waste management in these SMEs is fairly simple. Although most of the SMEs directly dump their waste water to the nearest ditch or river, 23% of the sample SMEs treats their waste water through communal waste water treatment facility. Most of these SMEs also do not have specific measure to manage the fumes resulted from production process, other than designing largely ventilated production chamber. The management of odor pollution are tackled by the SMEs by flushing the production chamber with water.

4.1 Factor Analysis Test

Calculation of mean for indicator values from the three variables resulted in internal and external factor having mean values of 3.0; meaning that these factors are quite significant. On the other hand, the participation of tofu SMEs of Semarang city in environmental management has a mean value of 2.3, meaning that this variable is not significant enough. Since the number of indicators for internal factors (22 Indicators) are quite numerous, for the sake of factor analysis, the author grouped the internal variables into two, namely: (1) Internal Variables-A; and (2) Internal Variables-B. Each group of variables has 11 indicators.

4.1.1 Internal Factor Variables-A

The calculation resulted in a Kaiser-Meyer-Olkin MSA value of 0.683; more than 0.5, with 0.00 to less than 0.05 significance limit (Sarwono, 2010); thereby the indicators in Internal Variables-A are predictable and can be investigated further with the exception of variable X9 (frequency of local complaint against activities of SMEs) with MSA 0.331. Further data analysis shows that three factors are formed (Table 4). Internal Variables-A can be explained by *factor one* with 45.91% significance; by *factor two* with 17.37% significance; by *factor three* with 11.76% significance. Therefore, the significance of the combined three factors in explaining Internal Variables-A are rated in 75.04%.

Table 4 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.591	45.912	45.912	4.591	45.912	45.912
2	1.737	17.369	63.281	1.737	17.369	63.281
3	1.176	11.762	75.043	1.176	11.762	75.043
4	.798	7.977	83.020			
5	.577	5.766	88.786			
6	.417	4.172	92.959			
7	.272	2.722	95.680			
8	.239	2.390	98.071			
9	.137	1.366	99.436			
10	.056	.564	100.000			

Extraction Method: Principal Component Analysis

Results from rotated component matrix (Table 5) show that the components of Internal Variables-A can be grouped into three factors with the following order:

- a. *Factor one:*
 1. Variable X3 (participation in workshops / trainings)
 2. Variable X7 (knowledge of environmental impact of industrial activity)
 3. Variable X8 (industrial activities impact disturbance on the environment)
 4. Variable X10 (knowledge on environmental impact management)
 5. Variable X11 (expertise in environmental impact management)
- b. *Factor two:*
 1. Variable X4 (number of work days)
 2. Variable X5 (production capacity)
 3. Variable X6 (number of employees)
- c. *Factor three:*
 1. Variable X12 (environmental impact management practices)
 2. Variable X13 (the importance of impact management for business sustainability)

Table 5 Rotated Component Matrix (a)

Variable	Component		
	1	2	3
x3	.634	.011	.414
x4	.087	.832	.409
x5	.207	.898	.175
x6	.255	.799	-.210
x7	.819	.360	-.042
x8	.558	.002	.207
x10	.649	.378	.442
x11	.809	.450	-.014
x12	.341	.038	.838
x13	.051	.130	.909

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization

Observing the characteristics of each factor, *factor one* can be summarized as “knowledge on environmental impact of industry”, whereas *factor two* as “scale of business”, and *factor three* as “expertise in impact management”. Overall, the three formal factors of Internal Variables-A can be labeled as “competence” since they reflect knowledge and expertise in environmental impact management as well as scale of business which is a component of business competence. According to Scale (1975) in Sutrisno (2009), the word competence can be etymologically traced to the definition of ‘the dimension of behavior or expertise or talent of a leader or a staff in possession of skills, knowledge and attitude which are considered good’. Schematically, those factors can be described as seen below:

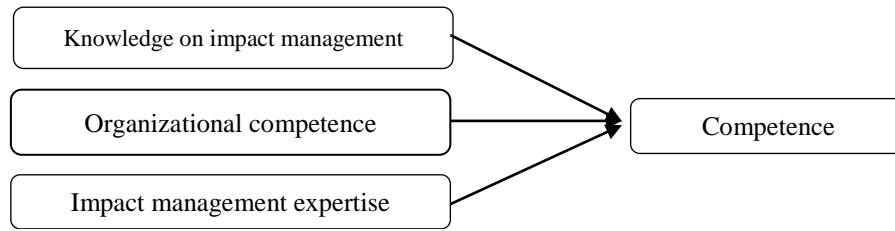


Figure 1. Factors of Competence Variable

4.1.2 Internal Factor Variables-B

Results of analysis identify all variables of Internal Variables-B to be predictable and can be analyzed further. The results of further analysis are presented in the following table.

Table 6 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.084	46.220	46.220	5.084	46.220	46.220
2	3.130	28.453	74.673	3.130	28.453	74.673
3	.840	7.633	82.307			
4	.652	5.923	88.230			
5	.470	4.277	92.508			
6	.328	2.981	95.488			
7	.193	1.753	97.241			
8	.146	1.329	98.570			
9	.078	.709	99.279			
10	.061	.556	99.835			
11	.018	.165	100.000			

Extraction Method: Principal Component Analysis

Three factors are formed from the *total variance explained*. *Factor one* can explain Internal Variables-B with 46.22% significance and *factor two* with 28.45% significance. Both factors explain Internal Variables-B by 74.67%.

Table 7. Rotated Component Matrix(a)

Variable	Component	
	1	2
x16	.104	.635
x17	.958	.027
x18	.912	-.035
x19	.031	.885
x20	.021	.969
x21	-.007	.952
x22	.305	.592
x23	.916	.040
x24	.898	.040
x25	.807	.295
x26	.655	.400

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Division of the components of Internal Variables-B (Table 7) into two factors results in the following order:

- a. *Factor one:*
1. Variable X17 (the importance of impact management for business sustainability)
 2. Variable X18 (the need of impact management for business sustainability)
 3. Variable X23 (the use of impact management for business sustainability)
 4. Variable X24 (the need of impact management to sustain the environment)
 5. Variable X25 (the awareness of business owner in maintaining the environment)
 6. Variable X26 (willingness to keep environmental impact management in the future)
- b. *Factor two:*
1. Variable X16 (regulation by unwritten convention)
 2. Variable X19 (cost incurred by environmental impact management)
 3. Variable X20 (calculated cost for environmental impact management)
 4. Variable X21 (reasonable cost for environmental impact management)
 5. Variable X22 (disturbance caused to production by environmental impact management)

Observing the characteristics of both factors, *factor one* can be summarized as “the need on environmental impact management”, and *factor two* as “environmental impact management cost”. Overall, the three components of Internal Variables-B can be labeled as “commitment to impact management”. Commitment is identification, engagement and loyalty expressed by a person to his / her enterprise (Gibson, 1996). Indicators for the variable of tofu business owners’ commitment to environmental impact management are (a) impact management as a need for business sustainability and (b) cost incurred by environmental impact management.

Those factors can be described in schematics as seen below:

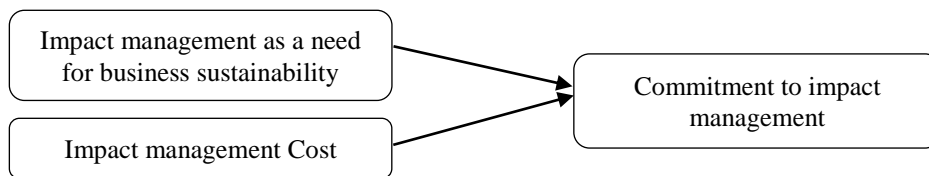


Figure 2. Factors of Commitment to Impact Management Variable

4.1.3 External Factors Variables

Out of five indicators of external factor variables, four are rated with MSA value of more than 0.5; which means that they are predictable and can be analyzed further. One variable, namely X33 (market competition demand for environmental impact management), has an MSA value of 0.488 and thus it is not a significant component for the variable. Results of total variance explained (Table 8), indicate two major factor components of External Factors. External Factors Variable can be explained by *factor one* with 50.81% significance and by *factor two* with 27.45% significance. Both factors together explain External Factors Variable with 78.38% significance.

Table 8 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.032	50.811	50.811	2.032	50.811	50.811
2	1.103	27.571	78.382	1.103	27.571	78.382
3	.565	14.136	92.518			
4	.299	7.482	100.000			

Extraction Method: Principal Component Analysis.

Rotated component matrix process results in the division of the indicators into two component factors for External Factors Variable.

Table 9. Rotated Component Matrix(a)

Variable	Component	
	1	2
x27	.823	.380
x29	.868	-.203
x33	.559	.636
x34	-.071	.893

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Division of the four indicators into two factors results in the following order:

a. *Factor one:*

1. Variable X27 (government sanction if industrial impacts damages the environment)
2. Variable X29 (attendance in group meetings)

b. *Factor two:*

1. Variable X33 (demand from the local community for environmental impact management)
2. Variable X34 (intensity of business competition)

It can be concluded from the analysis of both factors that the factor one can be dubbed as “social norms” and factor two as “business competition”. Norms are guidelines for an individual to behave according to the expected custom of the community in which that person belongs (Soekanto, 2012). Schematic representation of these factors can be seen below:

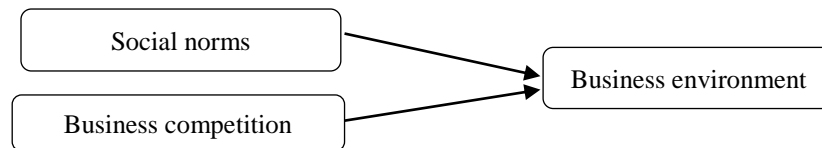


Figure 3. Factors of Business Environment Factors

In conclusion, in relation to model for the participation of tofu SMEs in Semarang for environmental impact management, the following schematics can be used to describe the model:

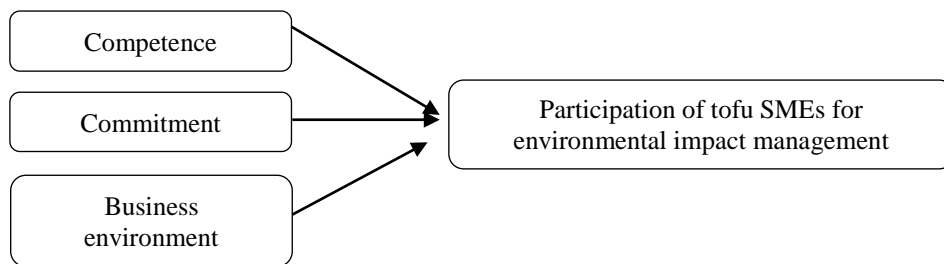


Figure 4. Models of variables affecting tofu SMEs in participating in environmental impact management

4.2 Discussions

The aim of environmental management is to prevent the deterioration of the managed natural resources and the natural resources in the immediate surroundings, as well as to prevent waste contamination and the release of hazardous pollutants (Supardi, 1994). The environmental management practices of tofu SMEs studied in this report showed poor detailed planning including impact control to sustain the immediate environmental condition.

Environmental management practices of the tofu SMEs in this report was largely based on business expansion and the development of the surrounding population. Opting to establish their businesses near the river, business owners begin by building the production chamber, installing production equipment and building waste water discharge outlet to the nearest river. As the density of the population of the surrounding neighborhood rises, the “demand” for the business to reduce discomforting impact increases. This development is reflected by the construction of waste water discharge outlet, being initially a simply

dug-ditch, often being improved into permanent, enclosed ducts, a few fortunate tofu SMEs owner even benefit from the construction of Community Waste Water Treatment Facility by the government. The process of business environmental practices adaptation to the demand of its surrounding population is significantly apparent; in line with one of SMEs characteristics of being highly flexible in operation; not only against competitors from bigger scale businesses (Tambunan, 2009); but also in adjusting to their business environment.

Another noteworthy finding in this study is that the adjustments carried out by tofu SMEs in its environmental management practices are more motivated by the keeping of good relations with their neighboring population instead of by sustaining the environment. It would seem that tofu SME owners awareness in preventing the deterioration of their surrounding environment is still relatively low.

Factor analysis test showed that the significant factors in the participation of tofu SMEs in environmental management were: competence variables, organizational competence variables, and impact management expertise variables.

Factors comprising the Competence variables are: knowledge on impact management, organizational competence, and impact management expertise. This result is in accordance to Wibowo (2009) that competence are skills and knowledge characterized by professionalism in a certain field which become the underlying feature of the performance in the said field; also with Kreitner dan Kinicki (2003) who stated that competence explains ability and skills. The knowledge of tofu SME owners in environmental impact management are reflected in several sub-factors or indicators: (1) participation in counseling/training related to business impact management; (2) knowledge on business impact on the environment; (3) business impact on the environment; (4) knowledge on impact management; and (5) expertise in managing the environmental impact of their respective businesses. *Knowledge*, as one of the of the competences, information on a certain field or on a subject of a certain field possessed by a person (Boyatzis, in Sudarmanto, 2009). It can be concluded that this aspect is highly related to the environmental impact caused and its management. *Organizational competence*, as one of the of the competences, includes the skill to plan a job, to organize human resources, to obtain jobs, to measure progress, and to assess risk (Wibowo, 2009). Sub-factors of *Organizational Competence*, include: (1) total days production operations; (2) production capacity; and (3) total manpower count. The method by which tofu SME owners manage their manpower to process the raw ingredient (soybean) and to produce goods, as well to design production days within a month of operation; reflect organizational competence. *Impact management expertise*, is the ability to perform mental and physical work (Boyatzis, dalam Sudarmanto, 2009). Sub-factors for impact management expertise are: (1) the implementation of impact management expertise; and (2) the significance of impact management toward the sustainability of the business.

The second significant variable in the participation of tofu SMEs in environmental impact management is Commitment. Commitment is defined as the identification, involvement, and loyalty made by a person toward his business (Gibson, 1996) The willingness of tofu SME owners to provide time and effort in managing business impact can be associated with the definition of commitment above. Commitment in impact management can be reflected in; The *first* factor; the perceived notion of a tofu SME owner on the significance of impact management toward the sustainability of his business. The significance of impact management factor can be observed in several sub-factors: (1) the level of significance of impact management; (2) impact management as a requirement for the sustainability of business; (3) contribution of impact management toward business; (4) significance of maintaining the surrounding environment toward business; (4) level of attention in environmental preservation; and (4) awareness to perform continuous impact management in the future. The *second* factor, availability and opinion on the impact management cost. sub-factors of impact management cost include: (1) compliance to conventions; (2) impact management cost need; (3) amount of impact management cost; (4) fairness of impact management cost; and (5) disruption of impact management on production operations. All of the tofu SMEs studied were categorized as small enterprises, with no formal association and with the owner of each SME acting as a representation for the business. The role of employees is vital because in the production process, only a few owners directly involve themselves. Almost all of the waste in tofu production comes from the production process itself; technical decisions in production process are suggested by employees, with most of the SME owners taking the final decision. It appears both employees and SME owners share a role in environmental impact management, with the power to make final decisions lies in the hands of the SME owners.

The *third* or last variable significant to the involvement of tofu SMEs in environmental impact management is Business Environment. Business environment here means external environment, in which factors outside of the control of the company can influence the choice in direction and action, organizational structure, and internal process of the company (Pierce and Robinson, 2008). Two significant factors were found in the Business Environment variable: (1) Social Norms; and (2) Business Competition. *Social norm* factor fall into the category of macro environment, and business competition factor can be categorized into operational environment (Pearce and Robinson, 2008). As stated before, norm is a set of societal values and

expectations with which an individual is expected to adhere (Soerjono Soekanto, 2012). Sub-factors of *Social Norms* are: (1) sanction from the government should the environmental impact of the business is proven to be significantly harmful, and (2) the frequency of presence in group meetings. The mean score for government sanction was proven to be quite significant, 2.9, higher than that for the *internal factors*. However, the respondent revealed that the government sanction imposed was perceived as lax, and the worst of all cases mostly involved a warning from the local sub-district office, which was still reported as a very rare case.

What is stated in Hillary (2000) to some extent confirms the fact that most small-to-medium enterprises often receive little attention from government institution. This treatment is does not come from the absence of rules and regulations, rather it stems from lax of surveillance. This study discovered that the tofu SME owners were unaware or does not possess any knowledge of the written legal regulations on the business, and that they perceived themselves as being bound by a convention, which was to not disturb the surrounding neighborhood; causing no disruption to the daily activities of the population living in the vicinity of the factory. However, this did not mean that the government let off the operation of tofu SMEs altogether. Although community waste treatment plant was still proven to be costly both the SME owners and the government, the government continued to provide various counseling and training programs to improve the performance of the tofu SMEs.

The *second* factor in the Business Environment variable is business competition, which consists of: (1) demand from the local community for impact management; and (2) the intensity of business competition. Local community demand is defined here as the compliance to request from the population living the vicinity of the factory to prevent any discomfort that may be caused by the operation of the business. The high intensity of the competition in the tofu industry was attributed to competition from large-scale tofu producers. As mentioned earlier, tofu is a very popular food with high market demand. Any mishap that small-scale tofu industry may experience can result in market share takeover by larger scale producers. However, the intense business competition did not seem to provide significant motivation for tofu SMEs to adopt good environmental impact management practices, an action that can help prevent further harm to the environment. This study found that among the small-to-middle scale tofu industry, consumer demand, government regulation, and pressure from the community were not significant incentives for the SMEs to adopt good environmental impact management practices; as stated in NetRegs (2003).

5. Conclusion

It is concluded in this research that the participation of tofu SMEs in Semarang in conducting environmental impact management is still low. Three variables affecting such participation are identified as competence, commitment, and business environment. The weakest indicator of competence variable is the expertise in impact management and in the practices of impact management. To encourage participation of SMEs in environmental impact management: (a) programs to increase the capacity of tofu SME owners in impact management and assistance in their application need to be given; (b) from the perspective of business strategy, the firms should enhance their comprehension towards an environmentally friendly product as distinctive quality.

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Human Resource Capacity of SMEs: Women's Employment of Convection Industry

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Abstract

Small and Medium Enterprises (SMEs) is one of alternative strategy form supporting economic development in Indonesia, particularly since 1998. Its contribution, for instance, equity and employment opportunities for the community, especially women, are not only active but also productive. Most SMEs are concentrated in the sectors of production and a service, one of the sectors is the textile and garment (convection). Absorbing human resources mostly consists of women labor which married or not married, doesn't have higher education. They work armed with skills, so it is not possible to compete with those who work in other sectors.

Women's employment in the SMEs sector is working to get additional income for the personal needs of the family. Yet, women still have the responsibility of housework, which allows women are less able to align the activities of the household and productive activities, the consequences will affect the income and the Cosmos survival of SMEs.

Why women's employment in a convection factory ?, what the contribution of women to family income. This study used a qualitative descriptive approach by doing in-depth interview.

Reason to work is economic factor, because the husband works as a laborer and cannot meet their daily needs, the women may help meeting the needs of her husband and family by working, in addition, a productive spare time, socialization with friends. The reasons to work at SMEs convection because the closeness location to home, comfortable, not strict rules / loose, not a lot of penalties, permit to take a holiday for family, not early starting working hours, friendly small business owners, pleasant working environment.

Key Word : HR Capacity, Women's Employment , SMEs Convection

1. Introduction

Small and medium Enterprise is one of the economic drivers for people in many countries. In Indonesia SMEs also one of the drivers, because some entrepreneurs comes from industrial family. The consumers of this industry comes from bottom to middle class. The role of SMEs have been significant since monetary crisis in 1998, it acts as safety float in the process of national economic recovery. It encourage economic growth and employment. SMEs can also be more flexible and adaptable to development and direction of the market demand. It can also create a field work faster in comparison with other business sectors.

SMEs is a form of strategic alternatives to support economic development in Indonesia, it has proven its role in equalization and employment opportunities for the community. It also has contributed to the revenue of the country. SMEs could survive during time of crisis and still survive because several factors, it produce consumer goods, its income elasticity of demand is relatively low, banking financing in the funding aspect of business, conduct strict production specialization, is engaged in the informal sector as a result of the number of layoffs in the formal sector.

Data from the Ministry of MSME in 2008 shows SMEs in Indonesia have contributed a total of 53.28 percent from 20.12 percent of the GDP and export value of Indonesia. It provided employment and able to absorb 99.98 percent of the total workforce Indonesia, the data shows there is a great potential in the SME sector.

SMEs has various obstacles in capital, such as: competitiveness of products, the expertise, the infrastructure, labor policy which has not accommodate minimum wage and social security. (Suara

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Merdeka.2007. Dampingi Industri Kecil, Bantu Modal Usaha). One of them SMEs are dominated by women who are still being subjected to gender discrimination. Convection SMEs development is inseparable from the role of workers, mostly women, either married or unmarried, where some of the employmet are not having formal education or uneducated and some others having low level education degree. In this regards most of them only continuing their education until elementary highschool. Due to such conditions these workers having low skills, and they are not at the young age. Therefore, it impeded them to compete in the other formal sectors, except SMEs. In opposite SMEs with the limited capital, dan limited productivity capability has the limited capacity to pay their employment with the salary under regional minimum standard wages. In this point, such circumstances open the possibility for SME's to employ women in theirs sectors. This study ais to (1)Determine the capacity of Women's employment SMEs Convection in Semarang;(2)Know the labor contributions of women to the family income;(3)Know the barriers and motivation of women's employment force in the SME's convection; (4) Know the relationship between employment and labour, and owners . This research provide: (1) Information of women's employmen capacity of SME's convection in Semarang;(2) Recommendations to the employer or related parties regarding survival ability/existence of employment in the SME's sector.

2. Theory

Various criteria on SMEs gives different emphasis, According to Undang-Undang RI No 20 Tahun 2008 dan Kementrian Negara Koperasi dan Usaha Kecil Menengah (Menekop dan UKM) emphasis more on the capital, according to the Biro Pusat Statistik (BPS) gives more emphasis to the labor.

There are small businesses that are generally grouped into 3 (three) special class that includes: (a) Small Industry: handicrafts industry, metal casting industry, convection and a variety of other industries; (b) A small enterprise: channeling, craft shops, cooperatives, waserba, restaurants, flower shops, and other professional services; (c) The informal sector: agent thrift, kiosks and other street vendors. (Harimurti Subanar, 2001, 2-4) According to Tulus THTambunan (2002: 34) that SMEs are a source of innovation and technological production, growth in the number of entrepreneurs who are creative and innovative and to create skilled and flexible workforce in the production process to meet changes in market demand fast.

According to a survey by HSBC Jakarta titled Emerging Markets Small Business Confidence Monitor shows that 92% of SMEs in Indonesia believes additional labor this year (Ministry of Cooperatives, 2012) as many as 60% of the approximately 51,21 million. SMEs in Indonesia are managed or owned by women DNG labor absorbing 91.8 million or 93% of total employment, women workers in the informal sector also accounted for 55% of GDP (Gross domestic products)

Weaknesses of SMEs (Harimurti Subanar, 2001, 8-9) (1) Never carry out feasibility studies, market research, analysis of the velocity of cash; (2) Do not have a long-term system planning, adequate accounting systems, budget capital requirements, perenca; (3) High layoffs and less proportional division of labor; (4) The difficulty of working capital, capital resources of the owner; (5) Too many expenses beyond control and debt that are not useful, and also not in her obey the provisions of accounting standards; (5) Lack of business information, there is no technical manual operational activities, less consistent with the provisions of the order, so many claims. Sincere T.H.Tambunan (2002: 56) one satuya are problems in obtaining human resources with good quality

According to M.Shoheih(2007: 86-87): "employees are the business partners, each other need and complement each other. Employees are forced to express ideas, developed reward system, creating a conducive working atmosphere. According to Meutia Hatta (2006): women's employment are paid lower than men, since they are considered as secondary additional income earner in the family, when the company's facing losses, they begin to layoff women.

According to Tilly, LA and Scott, JW, (1978, process of economic transformation can be divided into three categories of developmental phase, namely (1) the family-based economy, namely households still the base of economic activity, production activity done in the house, it is not there is a clear distinction between economic activity and domestic life; (2) the family-wage labor economy that is no longer concentrated on household activities but outside the home, especially in factories. Women as the development of dual role (dual role); (3) the family-consumer economy that is characterized by the presence of the state (government intervention) in the system of wage labor, advances in technology and increase productivity leads to more household members perform consumption and reproduction function. Employment of a family member has significant contribution to the economic needs of households, since women has doubles role, women are considered as a receiver (consumer) income although women are still indispensable in providing support to meet the needs of the family. (Sunyoto Usman, 2006: 115)

Tiffany, Sharon W, (1982) concluded that the work is not merely an activity that emit calories, energy, or time on a particular task, work is an economic activity that is an integral part of social life in which has specific values. (In Sunyoto Usman, 2010: 118-120)

3. Research Methodology

Research approach: qualitative descriptive cross sectional to describe the tendency of women's employment capacity. Locations were purposively selected in 4 SMEs convection which relatively has same product, as follows: SMEs Enrico Collection, Winna Collection, Gloria 3 S Collection and Image Mandiri 13 (CM 13). 5 people from each SMEs are willing to provide information.

Source of information: women's employment who still working and entrepreneur/owner with in-depth interviews and observation, as the process data is already at the level redundancy and the answers are no variations, then the retrieval of data would suffice. Validity test is done Triangulation include different data sources, data collection methods

Data analysis through data reduction, data display, categorization, domain analysis and taxonomic. (Lexy J. Moleong, MA, (1993) Verified and conclusions are drawn and shown as a narrative.

4. Result and Discussion

SMEs convection products are sport uniform, jackets, school uniform, handicraft from fabric. The total production vary from 100 to 300 pieces per day, 200 – 250 pieces per month. The number of workforce 5 into 11 people, the number of women is greater than men.

The level education of women in SMEs is relatively low, mostly are in elementary school, only part of it in junior high school or senior high school. The age range 33 – 55 years old, most of them are married. Mostly they work in informal SMEs because they don't have chance to get formal work, their workforce does not have good quality, which this condition is the weakness of SMEs (T.H. Tambunan).

In the other side, SMEs with the limited capital, limited productivity capability, and limited capacity to pay their workers wages lead to a limited choices to employ human resources with the higher qualifications. With the respect of such circumstances the low skill human resources have more opportunity to be employed by the SMEs. Therefore, it can be called as a mutual social benefits.

The development of SMEs lead to work opportunities, especially for women's employemnt, since SMEs do not require a specific formal education requirements but rather rely on the skills.

Although the SMEs sector convection does not require women's employment to pursue specific education, but the level of education was instrumental in completing the work, especially in the ability to receive instruction and guidance at the first time at work, and after it. While the skills and experience as a factor supporting capacity women's employment. This reflected in the average length of work between 3 and 10 years. Those women has sewing skill. Which clarified by the owner, they are more likely to accept the labor of skilled and have experience.

The skills of women's can influence on the acceptance as candidates for employment, as well as employment salary, especially the sewing skills. Most skill are learnt at home that have a sewing machine, at a course, but most worker gain from the experience of working in other places. Average length of work more than 3 years, around 7 years to 10 years, but there was one women's employment of less than one year, but has gained high skill because she has been working in another SMEs.

The longer working experience can increase the skill. The duration of work depends on the existence of SMEs convection in these locations from 3 to 5 years, but some have been working seven to 10 years, those with longer period employment are those of an age above 40-50 years, married and have children.

The relatively short tenure of less than one year to one year are those with middle and high school level of education, age is relatively young and unmarried. Their purpose of working is using spare time while waiting for a formal job, working in the office or in the factory, and as a stepping stone, although this can cause level of high labor turnover. It is expressed by small business owners, "they're using the spare time while waiting for a more promising job, and as a stepping stone." SMEs owners do not mind and allow for them working in SMEs. Since those person also owner neighbor, they have flexibility, leads to high turnover rate.

Women's employment in the SME sector perceive that working in the SME sector convection is fun because according to the skills and experience they owned, it does not feel difficult, besides the requirement is pretty low, such as does not require education specific, age restrictions, as well as marital status. Most of them feels working SMEs as a good source of income. Women in SMEs are paid less than men, because their job description is considered easy, such as "obras", "sewing", "over-deck", installing piping. Those

women excel on those jobs. The type of work done by men is harder, such as: cutting, pattern-making, printing, packing, and there are some that because of the expertise that is as artisan border,

With the disparity in the type of work by gender causes the women's employment force earns less as dictated by Meutia Hatta (2006) that the problems many faced by women's employment, because women are only considered as a secondary income earner in family, they don't complain with small salary.

The classification of labor is determined by the employer which is based on the expertise and skills, the worker cannot choose. Convection SMEs focuses on the expertise and skills of sewing, the basic skills that should have is using a sewing machine or specified by vacancy requirement. SMEs convection is pleased when accepting of women workers who are experienced in the field of convection, most have experienced that already worked in the same plane, such as: convection, garment among other parts of sewing, parts over deck, installation of piping. Yet, some portion who works comes from another field, such as medicinal plants, or who has never worked.

Work experience which aligned to previous job is an important factor, resulting SMEs have no difficulty in operation, while a small percentage worker who do not have work experience, but at least can sew or can use a sewing machine, usually will be in place in parts the easiest is in the "obras" and "mbatil" (ie cleaning or cutting remnants yarn product results)

The reason women's employment in SMEs convection vary, most states quite fun because it is not heavy, not stressed with work due to depart is not too early, flexible because they can complete homework, comfortable environment, SME owners are friendly and can be tolerant, these reasons lead that female employees of SMEs at home because one hand can generate revenue, on the other hand the work is not a burden.

Employment in the SME sector convection employment for women is a job that can be occupied because it is considered as women destiny and culture, in addition to cook and stitch. SMEs convection shows women have been included in economic activities for women as well as a productive resource.

Women's employment gives income to the family shown by their willing to work in convection SME. They would like to help their husband to meet their daily need. Most of their husband work as labor in garage, hardware store. Since their spending for their children, especially their education fee. They need additional income, since their husband salary is not sufficient to meet daily need. This reason is given by they who has been working around 4-10 years. Some of them works as backbone of the family, because their husband is ill.

Some women who has short duration of working time willing to work at SME because they can spend time, socialize, get income. This phenomena shows the 2nd phase of economic transformation. (Tilly, LA and Scott, JW, 1978 in Sunyoto Usman, 2110: 115-170). Those women not only work at household, but also outside the house, including working in SME. Women has dual role, woks to gain salary, and as a housewives, which considered cannot gain income, and perceived low. While women who works outside their house perceived higher, although they don't get salary as high as men. Although they have salary, but the household income mostly from men, women salary is additional. Therefore, if company suffer loss and need to reduce employer, women will be laid off first before men.

Wages received depends on the type of work, years of experience, skills and expertise, a simple job would earn relatively small, whereas SMEs "Winna Colection", with the reward of Rp. 150.000, - per week without requiring specific conditions and all types of work, and without regard to length of service, with tenure of three years to those who have worked 9 years.

This type of work is relatively simple in SMEs convection is "obras" and "mbatil (ie cleaning the remnants of yarn) wages received between Rp. 15.000, - to Rp. 17500.00 (this data is also supported from the triangulation in SMEs that are not used as a kind of research) while job: sewing, over the deck, install piping is the kind of work that requires skill and experience, and wages in the air given the variation is between (1) Rp. 25.000,00 until Rp. 45.000.00; (2) Rp. 20.000,00 until Rp. 25.000,00, (3) Rp. 20.000,00 until Rp. 50.000, -00, (4) Rp.25.000,00 to Rp. 35.000.00; so there is an SME that rewards per day ranges from Rp. 15.000,00 until Rp. 35.000.00 (triangulation results through interviews with SME non-research work force).

Wages received by the majority of women's employment is daily wage, given every single week in Saturday, the wages received by Air variation of Rp. 200.000, - to Rp. 210.000, -with the working period of less than one year - one year, Rp. 270.000, for a term of four years, it also is dependent on the type of work, experience, and tenure., It also is dependent on the type of work, experience, and tenure. And the amount of time worked. the consequences of the daily wage if the workforce is absent from work then it will not get a piece rate wages received while a small portion of women workers each received weekly wage of Rp. 300.000, - (SMEs Enrico)

This suggests that the labor of women range from the lowest and highest Rp.120.000,00 Rp.270.000,00 per week, with an average wage of women workers is Rp.150.000,00 per week. From these data when referring to the Minimum Wage (UMR) in Semarang in 2012, Rp. 991,500.00 per month, the figure is still below the minimum wage specified.

Although wages are still below the minimum wage the city, and desire of women workers to earn higher wages due to increasing price no one dared to demand wage increases because "*pekewuh*" because it has got a job and accepted work, besides that if undemanding afraid that unemployment, this suggests that female employees always lose when they want to negotiate about their fate despite improvements in the informal sector are SMEs. To improve the wages, labor usually work harder, increase employment, improve the skills so they can ask to work with wholesale.

The contribution of wages to the family economy shows different reasons, the wages of women workers said enough to help the family economy, since almost all respondents reasoned work due to economic factors, to try to help her husband meet their daily needs, because the husband's income is not sufficient for the needs every day, husband mostly work as laborers, and there is a small portion whose husband does not work because of illness, then the power of women who became the backbone of the family.

In addition to meeting the needs of families, some are used for gathering PKK, or by investing into gold. Some mention that the wages received not decent enough to meet their daily needs.

Factors supports employment of women work in SMEs convection among other factors is the distance of SMEs to home so it does not cost transport, since SME close to their house, they can return to do homework, nurture children, and take care of their sick husband at home. Occasionally they brought their children to work. During breaks some remain in the workplace and used for rest, prayer and to eat, take a nap.

Low requirements such as the level of education, marital status and age, SMEs have been more pleased when workers already have experience and skilled in the area to work on. Regulations that are not too tight, working hours of the day or not too early ie in the start at 08.00 until 17.00, when employment comes too late not too in wearing a witness, if you want a work permit are not as strict when working in the plant, do not come to work because there is a need family, illness, and there are families who are sick are allowed and almost all the labor of women had not come to work.

Conducive working environment, SMEs owners are friendly, tolerant, cause women workers become more comfortable and female employment by working to socialize with friends, physical facilities that can support the work that is a resting place, a place of prayer, a bathroom, and there are some SMEs are on lunch, and there is also an operational vehicle to support the work, but it is usually used by male labor.

Obstacles faced by workers when the machine "fussy" or broken and not repaired immediately so that it can interfere with the production, the raw material has not been prepared so that labor cannot work with a full maximum this can lead hindrance in consecutive .

Factors that increased orders or "full order" and close to deadline time, the workers must work overtime means to be a spend time and energy more, there can be annual leave, if overtime is given overtime pay Rp. 4.000,00 per hour and there are SMEs convection gave Rp. 10.000.00 per 2 hours, workers feel tired This makes exhausted and could not take the time to family. There is work to make clothes with new models and hard or difficult, so the production becomes long. While constraints in the face of the female labor force is when the husband is ill and must take care of, then the women workers can not work . With these constraints will affect the productivity of female labor and productivity of SMEs.

The relationship between employment with SMEs owners over kinship, for example, when there are workers and their families got problem, SME owners to help by providing a souvenir, and are allowed to miss work, in held open together, each periodic almost all SMEs invited to picnic together for vacation, and there are savings to SMEs which organizes the feast implemented solely by the owners of SMEs, when the feast of Eid received gifts and prizes. It is like the experience M.Shoheih, (2007: 86-87) in managing SMEs CV Sabaru: "employees are among the business partners with each other need each other and complement each other. Employees at excitatory to express ideas, developed reward system, creating a conducive working atmosphere, in the wake of an atmosphere of togetherness among employees.

5. Conclusion

Convection is a type of SME, it products are outfit (shirt), clothing by sport, training, jackets and crafts, with production of between 100-300 pcs per day and there are 200-250 pcs per month

The number of workers between 5 to 11 people, the number of woman is more than man. Labor comes from residents around the site SMEs, or according to the needs.

The education level of its worker mostly comes from elementary education schools, but there is a small number of workers who has middle and high school degree. All of them are married and had children between 2-3 people and there are workers who have 5 children, their age is relatively young. But they have experience or have been working in SMEs convection current between 3-10 years. Their type of work include obras, sewing, overdeck, installing piping,

The workers are paid with daily wage system, given every week, average wages below the minimum wage earned in the city of Semarang, acceptance of the lowest wage is Rp.120.000, 00 and the highest is Rp. 270.000,00 per week.

Wages are used as for family income, helped their husband to supplement daily family needs. This womwn's employmet motivation is economic reasons, because her husband works as a laborer but could not sufficient. Or, it could be just spending time, or socialize with others.

Another reason working in SMEs convection because the SMEs location close to home, comfortable, regulations are not strict / loose, not sanctions, could go home if there is an urgent situation at home, working hours is not too early, SME owners are friendly, good work environment.

Social relations between labor and the owners of SMEs good and not formal, kinship, periodically there is a picnic together, also during Ramadan they are invited to break fasting together, there is also bonus on national religion day.

The decreasing of production sometimes comes from broken machine, it will take some time to repair it. It can also come from the late ness of material for production. There are new policy so that the process becomes longer. Or, when there is a massive order with short deadlines, overtime, consequently workers become tired and no time for rest and family.

In this study SMEs sustainability are supported by low capacity human resources (in this point women), flexible regulations, familiarity work relationship, and proximity (where the SMEs are situated near of worker domicile neighbourhood). Since most of workers are housewife that culturaly do not positioned as the backbone of family economy. Therefore their jobs is considered as part time jobs in their spare time. In sum up SMEs and worker (as described in this study) building a mutual social benefits.

Suggestion :

Women's employment need to further enhance their knowledge through education through high school, and improve their skills through a sewing course, the course cuts (modeste).

Women's employmet need to be more active and motivated in order to further improve productivity. SMEs need to provide proper overtime pay, when chasing a target.

SMEs needs to provide salary at least equal to the minimum wage.

The production machine should be well maintain, no delay in the raw material. There is a dedicated technician personnel so that the engine can be promptly repaired damaged. The workers need to be given allowances production when production reaches the target.

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The Relationship between Volunteer Performance with Volunteer Needs Based on Maslow's Hierarchy in Banana Event Organizer

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Abstract

There are many good reasons to volunteer time to help others. These reasons bring volunteer to perform well or not depends on fulfillment their motives that they want to contribute in organization. Obviously, it will become a problem for both organization and volunteer. The aim of this research is to know which factor of volunteer desire that company of organization must do or increase in order to fulfill their basic of needs as their motivation to involve in organization, so that the company of organization especially entrepreneur will meet volunteer performance based on their expectation. There are two research questions that will this research answer, there are: Whether Maslow's Hierarchy of Human Needs Theory as volunteer motivation, contribute significantly to their performance in terms of hours work in Banana EO and which factor that the most significant impact to hours work for Banana Event Organizer. Basically, this research use two concepts theory, Maslow's Hierarchy of Human Needs and measuring volunteer performance. This research is quantitative research using questionnaire. The result of this research is relationship between hours work for Banana Event Organizer with each factor of Maslow's Hierarchy of Human Needs. The suggestion of this research is the organization must concern with factors that have impact to volunteer performance in order to achieve volunteer performance based on organization of company expectation.

Keywords: volunteer performance; Malsow's Hierarchy of Human Needs; survey study; Banana EO

1. Introduction

Recent year, volunteer empowerment becomes exist to run some organization activities, because volunteering does not for salary oriented (e.g., salary), organizations usually collaborate with volunteers for some objectives. The organization usually recruit the volunteer based on their needs and some consideration about volunteer motivation to involve as a part of team, then the organization and volunteer intention will meet each other. They must find the factor to motivate their volunteers to work well, engage and keep them. The organizations have to know the interest of the volunteer and why they want to contribute. Every body has different factor that can drives him to become volunteers and they are feeling free to choose what kind of organization that they want to contribute. This is necessary for organization to know what the motives to contribute in the organization in order to barter intangible benefit between volunteer and organization. After that, the volunteer will works as an employee of team and do some task to run organization activities. As, in his book on teamwork, (Sanborn, 1992) point out that research shows when teams work well not only does the employer profit, but employee benefit as well. Teams improve people qualities and benefit employees by taking them seriously, giving them more control over their work lives, and creating commitment by involving them in the decision-making process (Sanborn, 1992).

Management has long known that building a cohesive, motivated team is a key step toward the ultimate accomplishment of team goals. But, can management improve team performance by increasing the team's

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motivational level and can a behavioral theory based on individual motivation, such as Maslow's Hierarchy of Human Needs (Maslow, 1943) be applied to a volunteer performance. A validated team performance and motivational survey set out to answer these questions.

As we know, the organization was difficult to manage volunteer to increase volunteer performance because they are work voluntary, but the objective of organization must be achieved by involving the volunteers as an their employee. Volunteer performance is affecting by company objective, the capability of the leader in organization and the some output of job performance and job satisfaction. Volunteer performance becomes a vital factor which must be considered by organization, because if the volunteer performance under expectation, the organization or company will have some problems in their team to achieve company or organization objectives. The organizations have to know first the impact of volunteer needs to volunteer performance in cases if the organization can or cannot provide their desire. The organization of entrepreneur does not give tangible benefit to volunteer such as salary or wages as part time employee, but volunteer still have to contribute and run the organization that they want to contribute as a paid-employee. The problem is the organization of entrepreneur cannot demand many things or emphasis the volunteers with similar threat as same as their full time employees because they work voluntary. So, the organization have to know the factors that have relationship with that problem and control the volunteer as a part of team to increase volunteer performance in order to achieve the goal of organization. Because of that, the company of organization important to has a concern in factor desire that can affect to their performance. The aim of this research is to know which factor of volunteer desire that company of organization must do to increase volunteer performance, so that the company of organization especially entrepreneur will meet volunteer performance based on their expectation. Since the company of organization knows the factors, they have to provide this to attract volunteers to be involved and have performance as organization expect. This research will answer two questions by exploratory research, first whether Maslow's Hierarchy of Human Needs Theory as volunteer motivation contribute significantly to volunteer performance in terms of hours work in Banana EO and which factor that the most significant impact to hours work for Banana Event Organizer.

2. Literature Review

There are many good reasons for volunteer to involve the organization. In the reality, volunteers are need involve in an organization to get the intangible benefit and also the company needs volunteer as the stakeholder of the organization to run the team of organization. For example WWF has volunteer program, and the purpose of the volunteer is to provide a great experience and directly face the unique challenge of how Indonesia safeguarding the environment and assets. Both WWF and volunteer meet their objectives and can fulfil desire each other when they work together as a team. Even though both of them work each other, WWF needs volunteer work with their best performance and volunteer also tend to their human needs met when they work in organization as a volunteer by organization. The researcher trust that the important things aspect that related with volunteer is to know the motivation using of Maslow's theory as a basic of human needs which has impact to volunteer performance. The researcher thinks, it is a good research for both organization and volunteer because to run a team is not only talk about money and full time paid employee, but it can be barter benefit with society. Volunteering can be a rewarding experience for both volunteer and the beneficiary. Before deciding to volunteer for a cause, however, it is a good idea to examine both motives for volunteering and the expectations of the beneficiaries of time and effort.

Some of previous research conducted about volunteer motivation to become a voluntary employee. According to some researchers and practitioners, the factors that may affect the performance of volunteer at work place are the exclusive nature and function of job satisfaction change, or systematic development or weakening in job satisfaction over spell. The purposes are knowing why people volunteer can enhance the recruitment (e.g., Cnaan and Goldberg-Glen 1991; Gidron 1984), specific information and more understand about the motivation to volunteer for more effective placement of volunteer for suitable position (Shye, 2010). Motivation is directly linked to the performance of employees at work. The motivated employees' performance is more apparent than demotivated ones. Previous research has the goal to find out the effect of goal difficulty, the methods of goal settings and expected external evaluation on basic motivation. Difficult goals and evaluative contexts improve performance and that the method of setting goals has not significant effect on performance when goal difficulty is held constant. One may accept the claim that voluntarism is practiced in order to promote one's own interests, needs or wants. The volunteer, expects to get something out of his or her volunteering activity. In this case the natural question arises, what are the benefits of volunteering. In previous research, the literature both positions found to be held. Allen and Rushton (1983), for example, bring evidence for the existence of the "altruistic personality" while Flashman and

Quick (1985) brought experimental evidence from social psychology of cases of self sacrifice made to always help each others Titmus (1971) describes man as an altruistic creature with a built-in urge to give to others. In the previous research, there is no paper research examine correlation between basic of human needs based on Maslow's Theory of human needs with volunteer performance. So, in this research, researcher mind that to conduct others theory of motivation to become a volunteer, we have to know first about basic needs of volunteer as a human being that must be filled by organization that they involve. What is needed based on Maslow's Theory for this research, then is a procedure for measure the motivation of volunteer that can transcend the contents embodied in the specific variables.

2.1. Behavioral Theory

Abraham Maslow's Hierarchy of Human Needs behavioral theory (Maslow, 1943), of which motivation is a part, and its relationship with volunteer performance is the fundamental focus of this research. Motivation is the factor that can drive to helping people to focus their minds and support their work effectively. Maslow's behavioral theory, specifically his Hierarchy of Human Needs, was chosen primarily because there are different levels of motivation as well as different levels of team performance. Maslow adds that under all but exceptional circumstances, an individual strives to satisfy a predictable sequence of needs, beginning with efforts to fulfill physiological needs, followed by effort to fulfill safety, social, ego, and self-realization needs (Maslow, 1943). Maslow states that people are motivated by unsatisfied needs. Once a level is satisfied, a person is "pulled" to the next higher level by another unsatisfied need (Maslow, 1943). It is beneficial for managers to understand worker needs in order to motivate them in ways that will get the job done. Unfortunately, as Hanks observes, most organizations do not even try to meet the higher needs (membership, esteem, self-actualization). Instead they simply give the worker money to use for his physiological needs and offer him job security in an effort to meet the safety needs (Hanks,1991). He further adds that by ignoring higher needs, the organization loses a good opportunity to motivate its workers; and they go else where to have their higher needs met. It is difficult to foster a team environment if employees are focusing on reaching the next rung on the job ladder rather than improving their teams or increasing their value to the organization (Bergel, 1994). Without the proper team motivation, organizations will continue to be disappointed with performance results as well as reengineering and restructuring efforts. In his book entitled *Project Management*, (Kerzner, 1992) states that team motivation has the strongest overall influence on team success, and is an important factor in all phases of a team performance. Team motivation is a strong driver that, if lacking, becomes a strong restraint. Team membership is a strong motivator, as members learn to work together efficiently and with enjoyment (Donnelly and Kezsbom, 1994). The wise manager will use all available means to effectively maintain and improve worker motivation, satisfaction and performance. Team motivation can act like a gas pedal on a car, it can keep you cruising with the rest of the traffic or put you into the passing lane (LeBIance, 1994).

2.2. Maslow's Hierarchy of Human Needs

The volunteer team performance can be measured, the critical component of investigating the volunteer performance and motivational link is the behavioral theory. The theorist of most concern in this study is Abraham Maslow. He is the father of the human potential movement who developed a validated hierarchy of human needs theory (Maslow, 1943). Validation of Maslow's Hierarchy of Human Needs behavioral theory is critical for previous research because it builds on what has been proven or already established. His Hierarchy of Human Needs theory was chosen because there are different levels of motivation as well as different levels of team performance. Maslow states that there are five characteristics, which may be called basic needs. These are briefly physiological, safety, love, esteem, and self- actualization.

He adds that people are motivated by the desire to achieve or maintain the various conditions upon which these basic satisfactions rest and by certain more intellectual desires. These basic goals are related to each other and are arranged in a hierarchy. Level 1(Physiological Needs) - These are the needs that are usually taken as the starting point for motivational theory. If physiological needs such as food, drink, shelter, sex, and so on are not met, the person will never move onto the next level of need. Undoubtedly, these needs are the most basic of all needs. What this means specifically is, that if all needs are unsatisfied the person is dominated by the physiological needs. Furthermore, all other needs may become simply nonexistent or be pushed into the background (Maslow, 1943). Once the physiological needs are satisfied, the "higher" needs emerge and these dominate the organism. When these in turn are satisfied, again new (and still "higher") needs emerge and so on (Lowery, 1973). This is what is meant by saying that the basic human needs are organized into a hierarchy. Level 2 (Safety Needs) - Needs such as safety, peace, lack of danger and threat,

security, stability and protection are a new set of needs that emerge when the physiological needs are relatively well gratified. The healthy, normal, fortunate adult in our culture is largely satisfied in his safety needs (Maslow, 1943). Level 3 (Love Needs) - If both the physiological and safety needs are fairly well gratified, then there will emerge the love and affection and belongingness needs, and the whole cycle already established will repeat itself with this new center. In addition, level 3 needs include the membership needs such as having friends, intimacy and contact with others, being one of a group, of acceptance, of having a place and the identification with group goals and triumphs. In our society the thwarting of these needs is the most commonly found core in cases of maladjustment and more severe psychopathology (Maslow, 1943). Level 4 (Esteem Needs) - All people in our society (with a few pathological exceptions) have a need or desire for a stable, firmly based, (usually) high evaluation of themselves, for self-respect, or self-esteem, and for the esteem of others. Satisfaction of the self-esteem need leads to feelings of self-confidence, worth, strength, capability and adequacy of being useful and necessary in the world (Maslow, 1943). Along with this are feelings of success, respect, worthiness, prestige, leadership and achievement. Level 5 (Self-Actualization) - Even if all these needs are satisfied, we expect that a new discontent and restlessness will soon develop. Striving to be the best or all you can be essentially sums up the self-actualization need. The clear emergence of these needs rests upon prior satisfaction of the physiological, safety, love and esteem needs (Maslow, 1943). Self-actualizing without one single exception, involved in a cause outside their own skin, in something outside of themselves (Maslow, 1971).

2.3. *Volunteers*

Volunteers are a group of human that help organization to run the event. Volunteerism is unpaid people to help organization to whom the worker has no obligations (Musick and Wilson (1997). Volunteers are also more have chance than paid workers to learn skills on the job, and this may affect performance ratings. There are many differences between the domains of paid and volunteer work, including a lack of pay and dependence on the organization for subsistence. However, whereas the motives for volunteering may be different than the motives for employment in a paying job, the tasks and situations these individuals face in their volunteer work can often be similar to the tasks and situations individuals face in paid work (Wilson & Musick, 1997). For many individuals, these activities are akin to a career, and they can come to identify with the goals and be committed to the values of those organizations (Jaime B. Henning, 2006).

2.3.1. *Volunteer Job Description*

To conduct a successful event it is often required to delegate responsibility to a volunteer. Based on Banana Event Organizer job descriptions, there are 5 divisions that volunteers can involve to run the event activities:

- **Fund Rising/ Sponsorship**

Volunteers are needed to help with fundraising ideas, create proposal, sending letters out to businesses for sponsorship, sending out letters for cooperate with other company and working with organizations on third party fundraising projects.

- **Operation**

Volunteers are needed for set-up the venue and break-down of event equipment/displays, placing marketing kit of event, event electricity, parking area, accommodation for entertainer and have responsibility to the event operational from start until end of event as well as possible.

- **Event**

Volunteers for the main stage will ensure the attendees have a wrist band/badge and will assist in seating attendees so that entertainer can start in a timely manner. Volunteers will also provide assistance with AV problems and will have coordination with sound system expert, as well as keep the area orderly after each entertainer finished.

- **Tenant**

Volunteers are needed to collect information about tenant, approach them, answer tenant questions, help in tenant registration and payment. In the day of event, the volunteers become Liasson Officer of tenant. Volunteers have to help tenants and fulfill their needs as can as possible.

- **Marketing/ Public Relation**

Volunteers are needed to create various publications for the Etalage project such publications will include, but are not limited to, newsletters, press releases as well as various publication for special event. Volunteers also have to prepare all of marketing kit (poster, banner, video, voice advertising) and cooperate with community and food blogger to publish the event.

2.3.2. Volunteer Performance

Performance is a function both of motivation and ability (Lewin 1935), as well as having the opportunity to engage in appropriate action (Blumberg and Pringle 1982). According to Jean A. Grube and Jane Allyn Piliavin in Role Identity, Organizational experience and Volunteer Performance research, there are three outcome variables of volunteer performance: hours worked for the organization (Banana Event Organizer), hours worked for other organizations, and intent to leave Banana Event Organizer. Three of these variables will be used for this research. The other research on blood donation has mainly explored intentions to donate and the number of donations made over time. Similarly, work on volunteering has mainly focused on hours worked, although Snyder and his colleagues have also looked at retention. Retention, or its obverse, turn over, which has been much studied in the organizational literature, is a particularly important variable with volunteers because it presents serious problems for organizations that depend on them. Previous research have reports directly from the volunteers regarding the number of hours worked. We do not have actual turn over information in our data set. It is in fact objectively extremely difficult to ascertain when a volunteer has actually left an organization, just as it is difficult to know when a blood donor has stopped giving. (Grube & Piliavin, 2015) Of blood donors who have given in the past year, 92% say they plan to give in the current year (Louis Harris & Associates, 1998). However, 55% of donors who have not given blood in the past year, but have in the previous 4 years, say they plan to give in the next year. One must go to prior donors who have not given for 5 years before their estimated likelihood of future donation (10% to 15%) is like that of non donors. Presumably, the same is true for volunteers.

In the Azjen and Fishbein (1977) model, intention is considered to be the best predictor of actual behavior. In the blood donor literature, intent to donate actually is the single best predictor of continued blood donation (Piliavin & Callero, 1991). In a review of the organizational literature, Steel and Ovalle (1984) found in a meta-analysis of such studies that the average correlation between intent to quit and actual turn over was .50. The results of a pre test sample of previous research showed that perceived expectations directly influenced volunteer hours worked and intent to leave. Similarly, Harrison (1995) demonstrated that social norms had a significant influence on volunteers' intentions to work at home less shelters. Individual may be motivated to donate hours because such behavior is consistent with their identities as volunteers, direct pressure exerted by others in the organizational setting also may play a role (Grube & Piliavin, 2015). Furthermore, this research will be tested 5 hypotheses in this research, there are:

- 1) H₁: As psychological needs of respondents fulfilled increasingly, the number work hours in Banana Event Organizer will increase.
- 2) H₂: As safety needs of respondents fulfilled increasingly, the number work hours in Banana Event Organizer will increase.
- 3) H₃: As love needs of respondents fulfilled increasingly, the number work hours in Banana Event Organizer will increase.
- 4) H₄: As esteem needs of respondents fulfilled increasingly, the number work hours in Banana Event Organizer will increase.
- 5) H₅: As self-actualization of respondents fulfilled increasingly, the number work hours in Banana Event Organizer will increase.

3. Methodology

This research is quantitative research, because it will measure by every relationship variable by statistic and will be conducted by survey study which this research collect the sample from one population because survey forms lend themselves to large amounts of data that is far less time consuming to execute and analyze compared to personal interviews and enables a wider sample to be taken. The cross-sectional survey design is applied here, which is a study that collects data on all relevant variables (Maslow's Hierarchy of Needs and volunteer performance) one time, was chosen to find relationships and show trends. The key feature of the cross-sectional design is that its data represent a set of people or cases at one point in time. The statistical tools that use for this research is multiple linear regression. Before analyze this research using MLR, the data should go through classical assumption test. First, normality test, is to know whether the data are normal distribution or not. The multiple linear regression should normal distribution, if the data not normal distribution yet, the data cannot analyze using multiple linear regression. Second, multicollinearity test, is to know whether in the regression model indicated correlation among variable or not, because appropriate regression model should not has correlation between independent variable. Third, heteroskedacity test is to know whether in regression model indicated variance differentiation from one

residual to other residual or not. Appropriate regression model should not have heteroskedacity. Forth, is autocorrelation, but if the data not time series it should not tested and this research is cross sectional. Five is linearity, is to know whether two variables have significant correlation with each other or not. The appropriate data should have linear relationship between independent variable (X) with dependent variable (Y). The population of this research is Banana Event Organizer's volunteer. Banana Event Organizer has 42 active volunteers to run the organization in one event project. The sample is all volunteers population who ever contribute in Banana Event Organizer with different interval of age. The interval will be classified sample from student with age 16-18 years old, 19-21 years old, and ≥ 22 years old. This research is special case that involved all of volunteer population as sample for this research. The sampling technique for this research is nonprobability sampling with judgment sampling, because the sample based on specific criteria that researcher defined before which is volunteer of Banana EO. This research instrument is questionnaire in order to answer question that already mentioned before. The scale of questionnaire is interval number which is 1= strongly disagree and 4 = strongly agree. The question is closed-ended questions were chosen over open-ended question as the questionnaire structure for the following reasons: closed-ended questions are easy to count, time efficient and require little thoughtful attention compared to open-ended questions. In addition, responses to the questions are accurate and consistent among the individuals surveyed. The closed-ended question format that was utilized was forced choice. Such questions are called forced choice because the response lists do not include "other," "no opinion," "not sure," or "not applicable" as choices Rassel and O'Sullivan, (1989).

This research will test the hypothesis that has been determined before to see impact of the variables. The researcher determines the operational variable first before make the questionnaire. The dependent variable is volunteer performance which is hour works in Banana EO. These variables will correlate with the satisfaction of independent variable of Maslow's Hierarchy of Human Needs when they contribute in Banana EO. The variables are: psychological needs, safety needs, love needs, esteem needs, and self actualization needs. All of variables of this research are come from the paper that conducted previously.

4. Results

The questionnaires distribute to all volunteer population. The demographic respondents, gander of respondent were 15 people men and 27 women. The age of the respondent were more than 23 years old 23 people, 16-18 years old 12 people, and 19-21 years old 7 people. 24 people joined in Banana Event Organizer once and 18 people twice. 28 people got information from their friend, 9 people from roadshow, 4 people from roadshow and 1 people from their family to join in Banana Event Organizer. After knew the respondent demographic, then checked the reliability and validity. The results is all of question in questionnaire were reliable enough, because the total Cronbach's Alpha is 0.922 it means greater than 0.7 and all of variable question in item statistic there is no one of variables had score more than Cronbach's Alpha. Case processing summary table output explain that 42 distributed questionnaires are 100% valid. In output table correlation all of "Skor Total" for each variable was greater than t-table which is 0.3044 (df=40, sig. 0.05). The result of reliability and validity mean all of data reliable and the tool was appropriate. This research respondent is all of population. So, this data should not check the normality, but to get more satisfied this research, researcher conduct the normality test. The normality tested by Saphiro-Wilk because the sample less than 50 respondents and the result showed that all variable sig. are greater than 0.05, these mean all of data were normal distribution. The multicollinearity tested in coefficient table explained all of VIF score for each variable was less than 10 and tolerance collinearity score more than 0.2 of each variable it means there was no multicollinearity occurred. Heteroscedacity tested on coefficient table explained all sig. score of independent variable were greater than 0.05. T-table score (df=41) at 0.5 sig. level score was 2.020 and all of t-count on coefficient table in all of variable less than 2.020. So, it means there was no heteroscedacity occurred. Autocorrelation only test if the data is time series, but in this research the data was cross section, so autocorellation test was not tasted in this research. Linearity test on ANOVA table each of sig. score every variable was greater than 0.05. It means there was significant linear relationship between volunteer performance (Y) with psychological needs (X_1), safety needs (X_2), love needs (X_3), esteem needs (X_4) and self actualization (X_5). After conduct all of classical assumption test characteristic was fulfilled, then conduct the multiple linear regression analysis.

Table 1. Model Summary Table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.672 ^a	.552	.516	.36908	.452	5.941	5	36	.000	1.604

a. Predictors: (Constant), X5_Self_Actualization, X1_Psychological_Needs, X2_Safety_Needs, X3_Love_Needs, X4_Esteem_Needs

b. Dependent Variable: Y_Volunteer_Performance

The result of multiple linear regression shown on table model summary above. R square on table was 0.552 it means variance of volunteer performance (Y) was 55,2% explained by psychological needs (X₁), safety needs (X₂), love needs (X₃), esteem needs (X₄) and self actualization (X₅). On ANOVA table, sig. score was 0.000, it less than 0.05 and F score was 5.941 based on F table (df1=5 and df2= 36) thus, F table was 2.48 and F calculated was greater than F table which is 5.941. So, based on sig. score and F score, independent variable: psychological needs (X₁), safety needs (X₂), love needs (X₃), esteem needs (X₄) and self actualization (X₅) significantly contribute to the explanation of dependent variable: volunteer variable (Y). The std. error of the estimate was 0.36908 this score was less than all of std. deviation score in descriptive statistic table. So, the regression model was appropriate to predict volunteer performance.

Table 2. ANOVA Table
ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.047	5	.809	5.941	.000 ^b
	Residual	4.904	36	.136		
	Total	8.951	41			

a. Dependent Variable: Y_Volunteer_Performance

b. Predictors: (Constant), X5_Self_Actualization, X1_Psychological_Needs, X2_Safety_Needs, X3_Love_Needs, X4_Esteem_Needs

On coefficients table we can see beta in unstandardized coefficients, based on result the formula to measure volunteer performance can describe follows:

$$Y^1 = 1.360 + 0.045X_1 - 0.258X_2 + 0.298X_3 + 0.098X_4 + 0.388X_5 \tag{1}$$

The formula above means every 0.045 increased in psychological needs, 0.045 increased in volunteer performance was predicted, every 0.258 increase in safety needs, 0.258 decrease in volunteer performance was predicted, every 0.298 increased in love needs, 0.298 increased in volunteer performance was predicted, every 0.098 increased in esteem needs, 0.098 increased in volunteer performance, every 0.388 increased in self actualization, 0.388 increased in volunteer performance was predicted holding all the variable constant. The sig. shows that all of variable less than 0.05 it means all of variables influence significantly to volunteer performance. On correlation table, the variable that had sig. score less than 0.05 means variable significant correlation to other variable. All of variable were significantly correlation among the variable. Psychological needs strongly had significant correlation with volunteer performance, safety needs strongly had significant correlation with volunteer performance, love needs strongly had significant correlation with volunteer performance and so on.

5. Discussion

As of Maslow’s Hierarchy of Human Needs Theory respondents fulfilled increasingly, the number work hours in Banana Event Organizer will increase. The findings show, all of Maslow Theory of Human Needs impact significantly to volunteer hours work in Banana EO. Volunteers influenced by self-actualization as the most motivation factor for them, then followed by love needs, esteem needs and psychological needs. Otherwise, every increase in safety needs, volunteers tend to demotivate to increase their work hour for Banana EO because actually someone who want to be volunteer it means he want to involving himself in

new challenges and he is not searching for safety on the contrary. He goes out from his comfort zone in his life when involving in organization as volunteer. In this case, Maslow's Hierarchy of Human Needs Theory in terms of safety is not applicable to motivate him to increase his performance as volunteer. So, all of H1_{1,3,4,5} are accepted except, H1₂. They expect their needs will be fulfilled when contribute in organization as volunteer. Every their self-actualization, love needs, esteem needs and psychological needs meet in event organization, they will increase their work performance by increasing hours work for Banana EO. This research has taken only correlated with hours work in Banana EO, even there are so many factors to measure volunteer performance. It is possible of course that other entrepreneur with more involving volunteers may produce entirely different results. In addition, it is important to emphasize more methodology use to verification this research. The approach outlined in this research should be replicated in other entrepreneur business as well as entrepreneur who involving volunteers to run the business with social objectives.

6. Conclusion and Recommendation

The aim of this research is to know which factor of volunteer desire that company of organization must do to increase volunteer performance. This research shows four volunteer motivation that have impact to performance, there are : psychological needs, love needs, self esteem and self actualization needs. So, that the organization should concern with Maslow Theory of Human Needs factor as volunteer motivation. The most company have to concern is in self actualization, because self actualization give the most contribution that has significantly impact to volunteer performance. Basically, Banana EO should to fulfill volunteers basic needs more because the role of volunteer for Banana EO is very important to run their business and volunteer can meet their needs when work voluntary in Banana EO.

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The impact of labor union, compensation, labor solidarity, and social support on the welfare of women workers: Indonesia case study

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Abstract

This research aims to analyze the influence of labor union, compensation, worker solidarity and social support, on the welfare of women workers. This is an explanatory research. Samples were using 186 women workers who participated in the International Labor Day in 2015 in Semarang, Indonesia. Samples were taken by an convenience sampling. Data were collected using questionnaires. The research used likert scale as measurement scale, and data were then analyzed using the average score, simple linear regression, and linear regression. The result of this research shows that labor union, compensation, worker solidarity and social support have significant influence on the welfare of women workers. However, the variables of compensation and social support were more dominant in influencing the welfare of women workers, compared to other variables. The higher the compensation and the stronger the social support given to women workers, the higher the welfare of women workers. Meanwhile, the role of labor union who were expected to enhance the welfare of women, showed less robust. Moreover, the result of this research also shows that worker solidarity for women workers is weak, while labor solidarity among women workers is indispensable when they are facing problems in their work.

Keywords: role of labor union, compensation, worker solidarity, social support, welfare of women workers

1. Introduction

The issue of women workers is still an attractive topic, because women workers with all their limitations begin to explore the world of work, especially those who work as laborers in factories. The entry of women workers in capital-intensive industries further reaffirmed that women workers is a phenomenon of modern capitalism. Due to the root of the liberalism in which women have no choice but to help the family economy, thus provides opportunities for women to have more roles outside their domestic affairs in the family. Effinger, Birgit Pfau (2012), explains that women working behavior is influenced by society and family cultural model. This condition is supported by the research results of Rau, Alexandra (2013), stating that women should work, manage themselves to be more masculine. Masculinities/gender inequality based on the research results of Haynes, Katalin Takacs (2014) has a positive influence on total salary received by an employee although in a very little scale. The research results of Scott, Gill & Usha Brown (2000), describes that social promises given to women as low income housewives are not proven. The women workers have been promised a help to balance their family life and their jobs, and a support to enter the labor market. However, when entering the work they actually received low wages and no security guarantee for their children left at home when they should be working. The results also indicate that the responsibility of women workers is increasing rapidly, but their rights are not increased.

The existence of women workers in an industry is necessarily associated with the unions in the industries where women workers were working since the role of unions is the main component of modern industrial system in a country Ghosh, Piyali, *et al.* (2009). The role of labor union is very important because unionization would help them in facing the challenge and illustrates the success they achieve for the ability

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that has been given and will make a strong contribution on the role of labor union as a social organization that protects the rights of women workers as well as strengthen their bargaining position (Gall, Gregor & Jack Fiorito, 2012; Lee, Bill & Catherine Cassell, 2011).

Efforts to protect the rights of women workers and raise their dignity is through compensation, for example, the amount of wages, shift premiums, attendance premiums and overtime. According to Resurreccion, F.Pamela (2012), compensation is a variable that significantly influences organization competitiveness. Rau, Alexandra (2013) stated that women contribution in social economy should get an effective and realistic compensation for their family.

Workers solidarity in a factory according to the concept of Durkheim (1893) about the division of labor in society, is a communal solidarity which is bound on the basis of sentiments, feelings and attachments among fellow workers so that more dominated by the mechanical rather than organic solidarity. Mechanical solidarity in this case concerns with a strong and decisive collective consciousness in every movement of labor. The research results of Paskov & Caroline Dewilde (2012) also showed that solidarity is the willingness to contribute to other's welfare.

Workers' solidarity will run well with social support from the workers. Lin, Yung-Sen *et al* (2014) explained that social support can mediate a long period exhaustion with welfare. Harris, *et al* (2014) stated that social support is crucial since the struggle of labor union to defend workers' rights will be effective if supported by workers solidarity. Therefore, social support is badly needed by every worker.

In fact, the condition of women workers is a cause for concern in terms of clothing, food and shelter. It is because the amount of wages is not comparable with the necessities of life. This is supported by the opinion of K,Cynthia, *et al* (2015) stating that workers who lack of skills are more in need of support because their income is low and they spend more time on their job. Therefore, welfare reform possibly occurs in behavior, especially with regard to woman leadership which ultimately can improve the welfare of women workers (Fitzgerald, John M & David C. Ribar, 2004). Meanwhile, Kirton, Gill & Geraldine Healy (2012) described that there is an oppression due to gender differences which affect women working improvement.

The problems encountered in this study is that the welfare of women workers are still in the low category. Such conditions can be seen in Table 1 on the conformity of City Minimum Wage (CMW) with the Decent Living Needs (DLN) in five districts / cities that are considered representative for the respondents in Central Java province. The amount of CMW and DLN over the years showed a tendency to always go up, except in 2013 when CMW in Semarang and Demak regency is under the DLN. On the other side, shift premiums, attendance premiums, and pay are often not taken into account by the company. This is reinforced by the research of Stavrevska, Vesna (2011) showing that low wages give bad influence on business because a relatively high wages has a big effect than the relatively low one (Pfeifer, Christian, 2010).

Table 1. City Minimum Wage (CMW) and Decent Living Needs (DLN) in some districts in Central Java

Municipality/District	CMW 2013	DLN 2013	CMW 2014	DLN 2014	CMW 2015	DLN 2015
Semarang Municipality	Rp 1.209.100*	Rp 1.229.007	Rp. 1.423.500	Rp. 1.403.500	Rp. 1.685.000	Rp. 1.663.900
Demak District	Rp 995.000*	Rp 1.000.850	Rp. 1.280.000	Rp. 1.278.669	Rp. 1.535.000	Rp. 1.463.000
Semarang District	Rp 1.051.000	Rp 1.051.000	Rp. 1.208.200	Rp. 1.176.817	Rp. 1.419.000	Rp. 1.381.600
Kendal District	Rp 982.392	Rp 982.392	Rp. 1.206.000	Rp. 1.206.000	Rp. 1.383.000	Rp. 1.383.000
Salatiga Municipality	Rp 974.000	Rp 973.806	Rp. 1.170.000	Rp. 1.169.000	Rp. 1.287.000	Rp. 1.279.000
Regions						
City					Rp. 1.685.000	
East					Rp. 1.155.000	
West					Rp. 1.100.000	

Source: Central Bureau of Statistics, 2013-2015, processed. Note: *under the DLN

The novelty of this study lies in the issue of low labor costs in Central Java Province that never rises to the rate of Rp. 2,000,000 but has reached over Rp. 1,000,000. Despite the fact that the wages of workers from year to year is always up (see table 1), the amount of wages is still in the low category. Table 1 also shows that the CMW in the district / municipality of Central Java province for urban areas is Rp. 1.206 million, in the eastern region is Rp. 1,200,000, in the western region is Rp. 1,100,000. The low CMW in Central Java had become the mindset of the entrepreneurs outside of Central Java that make them want to move their operations to Central Java because wages are rated much lower than the CMW in other provinces, for example, CMW in the capital city of Indonesia, Jakarta, is Rp. 2.693 million, CMW in

Bandung is Rp. 2.356 million and CMW in Surabaya is Rp. 2.71 million.

This research examined about: (1) the influence of labor union role on the welfare of women workers, (2) the influence of compensation on the welfare of women workers, (3) the influence of labor solidarity on the welfare of women workers, (4) the influence of social support on the welfare of women workers and (5) the influence of labor union role, compensation, worker solidarity and social support to the welfare of women workers.

2. Research method

Variables examined in this research consist of four independent variables, they are: labor union role (X_1), compensation (X_2), workers solidarity (X_3), social support (X_4), and one dependent variable, that is, the welfare of women workers (Y). The variables are explained in Table 2.

Table 2. Research variable and indicator

Symbol	Variable	Type of Variable	Indicator
X_1	Labor union role	Independent	Negotiations; dispute resolution; information and communication facilities create a harmonious relationship between workers, unions and companies
X_2	Compensation	Independent	Wages, shift premiums, attendance premiums, overtime pay
X_3	Workers solidarity	Independent	Concern, mutual giving, selflessness
X_4	Social support	Independent	Emotional support, information support, group support
Y	The welfare of women workers	Dependent	The fulfillment of clothing, food and shelter needs

The type of this research is explanatory research. The sample in this study is 186 women workers working in garment, pharmaceutical, herbal and knitting factories and willing to be interviewed. Samples were taken using a convenience sampling when women workers follow International Labor Day in 2015 in Semarang Indonesia. Data collection technique used is questionnaires. Measurement scale used is the Likert Scale. Analysis of data used is the average score, simple linear regression and multiple linear regression.

3. Results and discussion

Respondents in this study was 100 percent female workers working in garment, herbal, pharmaceutical, and knitting factories, 89.78 % of whom is married. The age of women workers is classified as productive since about 81.18 % is aged under 47 years and 51.61 % of them has finished senior high school education, while 46.77 % were certified elementary and junior high school. The length of service for the majority (47.31 %) is between 1 and 10 years and 30.11 % is between 11 and 20 years. Wages per month for the majority of the workers is between Rp. 1,100,000 to Rp. 1,500,000 (91.39 %). The CMW in Semarang / Central Java Province in 2015 amounted to Rp. 1.685 million (the CMW in 2014 is Rp. 1.425 million and the CMW in 2016 is Rp. 1.909 million)

Table 3 explains the average score of each indicator, they are, labor unions role, compensation, workers solidarity, social support and the welfare of women workers.

Martinez, D. Arthur, *et al* (2012) explains that the role of labor union is to protect workers' interests in promoting peace and harmony in the workplace and maintaining good relations with the company. The variable of labor union role in Table 3 is influenced by four indicators, namely: (1) protection with the average indicator of 4.14; (2) dispute resolution with the average indicator of 4.04; (3) information and communication facilities with the average indicator of 3.98, and (4) Harmonization with the average indicator of 4.09. The average score of 4.04 and 3.98 is below the average score for all indicators (4.06). It means that the role of labor unions in resolving disputes between the workers and the management is weak, and the role of labor union as a conduit of information and communication facilities is also weak. The total score obtained is 3037 and the total frequency is 748. The average score for the variable of labor union role is 4.06. When compared to the range of scores of 1-5, the results obtained is in the high category. Thus, the average score of labor union role in the garment, pharmaceutical, herbal, and knitting factories is good enough. This condition is in line with the opinion of Donado, Alejandro & Klaus Walde (2010), stating that labor union played a major role in providing a safe workplace for employees, and have the ability to gather information and transmit the information to the company related to job or technologies which could

adversely impact the health of workers.

Table 3. Table of the average score of labor unions role, compensation, workers solidarity, social support and the welfare of women workers

Variable & Indicator	Number of Respondents	Average of Indicator	Total Score	Total Frequency	Average of all indicators
Labor Unions Role (X₁)					
1. Protection		4,14	770		
2. Dispute Resolution		4,04	751		
3. Information & communication Facilities	186	3,98	740		
4. Harmonization		4,09	760		
			3037	748	4,06
Compensation (X₂)					
1. Wages, shift premiums, attendance premiums, overtime pay		3,88	721		
2. Production bonus	186	3,73	693		
3. Leave entitlements		2,70	703		
4. Holiday allowance		3,80	698		
			2624	696	3,77
Workers Solidarity (X₃)					
1. Concern		4,12	767		
2. Mutual giving	186	4,16	773		
3. Selflessness		4,06	759		
			2295	557	4,12
Social Support (X₄)					
1. Emotional support		4,27	790		
2. Information support	186	4,08	755		
3. Group support		4,15	771		
			2325	560	4,15
The Welfare of Women Workers (Y)					
1. The fulfillment of clothing needs		3,72	692		
2. The fulfillment of food needs	186	3,76	699		
3. The fulfillment of shelter needs		3,78	700		
			2094	559	3,75

Source: Processed Primary Data, 2016

Improving workers condition to contribute to the safety, health and pleasant working environment for the workers can be done by giving compensation in the form of social insurance (Thanh, Nhat Tam, *et al*, 2005). The variable of compensation in Table 3 is influenced by four indicators, namely: (1) wages, shift premiums, attendance premiums, overtime pay with the average indicator of 3.88; (2) production bonus with the average indicator of 3.73 (3) leave entitlements with the average indicator of 2.70 and holiday allowances with the average indicator of 3.80. The average score of 3.73 and 2.70 is below the average for all indicators (3,77). It means that the compensation given to women workers in the form of production bonus and leave entitlements is given less attention by the company management. The total score is 2624 while the total frequency is 696 so that it can be seen that the average value of the variable of compensation of is 3.77. When compared to the range of scores of 1-5, the results obtained is in the medium category. This shows that the average score for women workers compensation in garment, pharmaceutical, herbal, and knitting factories is in the medium category. This result is in accordance with the view of Sopiah (2013) stating that the provision of compensation in the form of money as well as non-money will improve the welfare of women workers.

The variable of workers solidarity is affected by three indicators, namely: (1) concern with the average indicator of 4.12; (2) mutual giving with the average indicator of 4.16 (3) selflessness with the average indicator of 4.06. The average score for selflessness of 4.06 is below the average score for all indicators (4.12). It means that in the case of solidarity, there is unwillingness to make sacrifices among women workers. The total score is 2295 while the total frequency is 557 so that it can be seen that the average value for the variable of workers solidarity is 4.12. When compared to the range of scores of 1-5, the results

obtained is in the enough category. This indicates that the average score for workers solidarity in garment, pharmaceutical, herbal, and knitting factories is enough. This result is in line with the opinion of Beal, *et al* (2014) stating that solidarity is a togetherness in obtaining something fairly.

Emotional support has a negative effect while at the same time emotional employees has a positive effect on workers welfare (Fatma, Yunus & Esengul, 2014). The variable of social support is affected by three indicators, namely (1) emotional support with the average indicator of 4.27; (2) information support with the average indicator of 4.08 and (3) group support with the average indicator of 4.15. The average score of 4.08 is below the average score of all indicators (4.15) meaning that women workers lack of information support. The total score is 2325 while the total frequency is 560 so that it can be seen that the average score of social support variable is 4.15. When compared to the range of scores of 1-5, the results obtained is in the enough category. This shows that the average score of social support in the garment, pharmaceutical, herbal and knitting factories is enough. Thus, social support from fellow workers can create women workers' welfare (Ferguson, Merideth, *et al* (2012).

Table 4. Regression analysis and significance test of labor union role, compensation, labor solidarity, social support and the welfare of women workers

Variable	Corelation Coefficient (r)	Determinatio n Coefficient (R ²)	Partial Significance Testing	Simultaneous Significance Testing
Labor union role on the welfare of women workers ($Y = 20,336 + 0,303 X_1$)	0,324	0,105	$t_{count} = 4,652 > t_{table} = 2.603$ Significant	$t_{count} = (-1,170)$ Significant < 5% (0,244)
Compensation on the welfare of women workers ($Y = 19,129 + 0,287 X_2$)	0,468	0,219	$t_{count} = 7,180 > t_{table} = 2.603$ Significant	$t_{count} = 4,057$ Significant < 1% (0,000)
Workers solidarity on the welfare of women workers ($Y = 16,374 + 0,366 X_3$)	0,489	0,239	$t_{count} = 6,246 > t_{table} = 2.603$ Signifikan	$t_{count} = 0,846$ Significant < 5% (0,399)
Social support on the welfare of women workers ($Y = 11,887 + 0,681 X_4$)	0,311	0,295	$t_{count} = 7,607 > t_{table} = 2.603$ Significant	$t_{count} = 3,433$ Significant < 1% (0,001)
labor union role, compensation, worker solidarity and social support on the welfare of women workers ($Y = 9,050 + (-0,093 X_1) + 0,196 X_2 + 0,069 X_3 + 0,457 X_4$)	0,557	0,311		$F_{count} = 20,391 > F_{tabel} = 2,42$ Significant < 1% (0,000)

Source: Results of Simple and Multiple Linear Regression Analysis, processed, 2016

Research findings of KT, Srinivas (2013) explained that as long as the company provides essential welfare facilities for employees, it can help the productivity of workers. The variable of women workers welfare is affected by three indicators, namely: (1) the fulfillment of clothing with the average indicator of 3.72; (2) the fulfillment of food with the average indicator of 3.76; (3) the fulfillment of shelter with the average indicator of 3.78. The average score of clothing fulfillment of 3.72 is below the average score for all indicators (3.75). It means that the needs of clothing for women workers is not important because the need for clothing is not a basic daily life necessity. The total score is 2094 while the total frequency is 559 so that it can be seen that the average score for the variable of women workers welfare is 3.75. When compared to the range of scores of 1-5, the results obtained is in the medium category. This shows that the average welfare of women workers in the garment, pharmaceutical, herbal and knitting factories is moderate. Related to this, Scott, Gill and Usha Brown (2000) stated that the presence of women in social economy can strengthen their struggle for an effective and realistic compensation for their families.

The result of the average score of the indicators (Table 3) shows that the welfare of women workers has the lowest average score compared to other variables. The low welfare score of women workers is due to the fact that companies rarely give entitlement in the midst of women workers' hectic work day thereby

making them depressed. Management also did not give production bonus to women workers. Women workers only get a basic salary provided by management in accordance with the agreement that has been determined although these workers are able to produce output exceeding targets set by the company. This situation makes women workers have no job satisfaction because management just prioritize the output produced without regarding the welfare of women workers.

In addition, the limited information and communications support makes women workers difficult to take an action. The inadequate information and communication facilities shows the absence of democracy as the media to deliver opinions in the organization so as to make women workers can not recognize and address the problems that exist within the organization. Involvement and participation of women workers are not required and not included in the organization. Since there is no job satisfaction, women workers are more concerned with their own need causing them not have a willingness to sacrifice for other women workers. One of the example of this case is when one of the women workers experiences difficulties in doing her jobs, not many of other fellow workers are willing to help.

Therefore, in improving the welfare of women workers, the company must protect them, pay attention to the rights required by them as well as providing adequate facilities that can convey their aspirations to the company. In addition, companies also need to compensate women workers with appropriate wealth creation.

Table 4 describing research results based on regression analysis indicated that: (1) the role of labor union has a significant effect on the welfare of women workers, (2) compensation has a significant effect on the welfare of women workers, (3) workers solidarity has a significant effect on the welfare of women workers, (4) social support has a significant effect on the welfare of workers and (5) the role of labor union, compensation, worker solidarity and social support have a significant effect on the welfare of women workers.

3.1 The influence of labor union role on the welfare of women workers

Jovanovic, Branimir & Marjan Petreski (2014) explained that the role of labor union is very influential on the dynamics of wages. A weak union in a country leads to the decrease of labor costs and cannot bring the wages back to the equilibrium. Based on table 4, it can be explained that the correlation coefficient (r) or the level of relationship between the variable of labor union role and the welfare of women workers amounted to 0.324 which lies in the lower interval (Sugiyono, 2010:250; Sarwono, 2012:85). So it can be said that the strength of the relationship between trade unions role and the welfare of women workers is low. Regression coefficients for the variable of labor union role is 0.303. While the constant value for the variable of women workers welfare is 20.336 meaning that without the influence of the variable of labor union role, the assessment on women workers welfare is 20.336 (constant). So, if labor union role is increased to a maximum point of 1, the welfare of women workers will be increased by 20.336. It means that the higher labor union role, the better women workers in garment, pharmaceutical, herbal and knitting factories. From Table 4, it is also known that determination coefficient (R^2) amounted to 0,105, which means that labor union role has a little effect, only 10.50%, on the welfare of women workers. While the remaining 89.50% is influenced by other variables that are not observed in this study. The value of $t_{\text{count}} = 4.652 > t_{\text{table}} = 2.603$ meaning that there is a significant influence of labor union role on the welfare of women workers. While the value of significance testing of $<5\%$ (0.244) showed a negative influence, it is because the role of labor union in resolving disputes between workers and management is weak, besides information and communication facilities provided are too inadequate. This condition is supported by the view of Sadler, Julie (2012) about the importance of participative leadership and the role of labor union leader in building the participation of labor unions.

3.2 The influence of compensation on the welfare of women workers

Chiu, Randy K, *et al* (2002) suggested that salary, year-end bonuses, mortgage loans, and the distribution of profits in Hong Kong is the most important factor to retain and motivate employees. In China, year-end bonuses, housing, cash benefits, overtime pay and bonuses of the individual is the most important factor to retain and motivate employees. Based on table 4, it can be explained that the correlation coefficient (r) or the level of the relationship between the variable of compensation and women workers welfare amounted to 0.468 which lies in the intermediate intervals (Sugiyono 2010: 250; Sarwono, 2012: 85). So it can be said that the strength of the relationship between compensation and the welfare of women workers are moderate. Regression coefficient value for the variable of compensation amounted to 0,287. The constant value of the variable of women workers welfare amounted to 19.129 meaning that without the influence of the variable of compensation, the assessment on the welfare of women workers is 19.129

(constant). So, if the compensation is increased to a maximum value of 1, the welfare of women workers will be increased by 19.129. It means that the higher the compensation, the better the welfare of women workers. From Table 4, it is also known that the determination coefficient (R square) is 0.219 meaning that compensation gives little effect, only 21.90%, on the welfare of women workers. While the remaining 78.10% is influenced by other variables that are not observed in this study. The value of $t_{\text{count}} = 7.180 > t_{\text{table}} = 2.603$ meaning that there is a significant relationship between compensation on the welfare of women workers. While the value of significance testing which is $<1\%$ (0,000) shows a positive effect. This is because the management provide additional wages to workers when work beyond working hours in the form of overtime payment. However, compensation in the form of entitlement and holiday allowance given to workers is less noticed by company management. Thus, workers want a fair and specific compensation (Shipley, Christopher J & Brian H. Kleiner, 2005).

3.3 The influence of workers solidarity on the welfare of women workers

Kelly, John. E (2004) , explained that to build a healthy global social economy, organizational support is needed to direct the principles of solidarity and subsidiarity. Based on table 4, it can be explained that the correlation coefficient (r) or the level of relationship between the variable of workers solidarity with the welfare of women workers amounted to 0.468 which lies in the intermediate intervals (Sugiyono 2010: 250; Sarwono, 2012: 85). So it can be said that the strength of the relationship between workers solidarity with the welfare of women workers is moderate. Regression coefficients for the variable of workers solidarity is 0.366. The constant value of the variable of women workers welfare amounted to 16.374 meaning that without the influence of workers solidarity variable, the assessment on the welfare of women workers amounted to 16.374 (constant). So, if the international solidarity of workers is increased to a maximum value of 1, the welfare of women workers will be increased by 16.374. It means that the higher the workers solidarity, the better the welfare of women workers. From Table 4, it is also known that the determination coefficient (R square) is 0.239 meaning that solidarity gives workers little effect, only 23.90%, on the welfare of women workers. While the remaining 76.10% is influenced by other variables that are not observed in this study. The value of $t_{\text{count}} = 6.246 > t_{\text{table}} = 2.603$ meaning that there is significant influence of workers solidarity on the welfare of women workers. The result of significance testing is $<5\%$ (0.399), indicating a positive effect, this is because fellow workers have good concern and mutual giving.

3.4 The influence of social support on the welfare of women workers

DiMatteo (1991) explained that social support is support coming from family, neighbors, friends, coworkers and others. This support is necessary because the union struggle to fight for workers' rights will be effective when supported by the solidarity of the workers. Based on table 4, it can be explained that the correlation coefficient (r) or the level of the relationship between social support variables with the welfare of women workers amounted to 0.311 which lies in the lower interval (Sugiyono 2010: 250; Sarwono, 2012: 85). So it can be said that the relationship between social support and the welfare of women workers is weak . Regression coefficients for the variable of social support is at 0.681. The constant value for the variable of women workers welfare amounted to 11.887 meaning that without the influence of the variable of social support, the assessment on the welfare of women workers amounted to 11.887 (constant). So, if social support is increased to a maximum value of 1, the welfare of women workers will be increased by 11.887. It means that the higher the social support, the better the welfare of women workers. From Table 4, it is also known that the determination coefficient (R square) is 0.295 meaning that social support gives little effect, only 29.50%, on the welfare of women workers. While the remaining 70.50% is influenced by other variables that are not observed in this study. The value of $t_{\text{count}} = 7.607 > t_{\text{table}} = 2.603$ meaning that there is significant influence of social support on the welfare of women workers. The results of significance testing is $<1\%$ (0.000), indicating a positive effect. This is due to a great emotional support to workers. This result is confirmed by the opinion of Saronson, I.G Levine, *et al* (1983), stating that social support is a condition that can benefit from one person to another trustworthy person, thereby making the person feel valued, cared for, and loved.

3.5 The influence of labor union role, compensation, workers solidarity and social support on the welfare of women workers

Based on Table 4, it can be explained that the level of relationship between the variables of trade unions role, compensation, worker solidarity and social support and the welfare of women workers amounted to 0.557 which lies in the intermediate intervals (Sugiyono 2010: 250; Sarwono, 2012: 85). The regression coefficient for the variable of labor union is -0.093, the variable of compensation is 0.196, the variable of

labor solidarity is 0.069, and the variable of social support is 0.457. The variable of labor union role turned out to have little effect. For example in resolving disputes between workers and management, the union cannot find a definitive agreement because it is not supported by accurate information and communication between them. The constant value of the variable of women workers amounted to 9.050 meaning that if labor union role, compensation, worker solidarity and social support are increased to a maximum value of 1, the welfare of women workers will be increase by 9.050. The higher the labor unions role, compensation, worker solidarity and social support, the higher the welfare of women workers. From Table 4, it is also noted that labor union role, compensation, worker solidarity and social support gives little effect, only 31.10%, on the welfare of women workers. While the remaining 68.90% is influenced by other variables that are not observed in this study. Based on the testing, it is known that the role of labor union, compensation, worker solidarity and social support in the welfare of women workers gain $F_{\text{count}} = 20.391 >$ from $F_{\text{table}} = 2.42$, meaning that there is influence of labor union role, compensation, worker solidarity and social support simultaneously on the welfare of women workers. This influence shows that the better the role of trade unions, compensation, worker solidarity and social support, the better the welfare of women workers. The significance value of $<1\%$ showed a positive influence and $F_{\text{count}} = 20.391 > F_{\text{table}} = 2.42$. It means that the higher the evaluation on labor unions role, compensation, worker solidarity and social support to the welfare of women workers, the better the welfare of women workers. The test results were confirmed by the calculation of the determination coefficient of the four variables which obtained a value of 31.1%. Social support variables have the most dominant effect compared to the three other variables. This is because women workers have a high emotional and group support, in which fellow female workers have empathy, attention and care to each other as a means of emotional release. This provides a positive impact on women workers so as to create a sense of comfort and feel loved when facing a variety of pressures and problems in life. Besides, fellow female workers were able to motivate each other to work because they share a common fate and social activities.

The result of this research is in line with the research results of Khan, Muhammad Tariq & Naseer Ahmed Khan (2011) explaining that labor union function as instrument which is able to improve the bargaining position of the workers. Blazovich, Janell L. (2013) stated that compensation create a combination of strong and weak performances. A low working productivity can be compensated by compensation performance. Durkheim (1893) explained that social solidarity is inter-group relation based on the common moral feeling and trust, which is strengthened by a common emotional experience. Research results of Roxana, Aldea-Capotescu (2013) explained that social support from fellow workers is a valuable capital for workers. Therefore, to improve the welfare of women workers, there are 4 synergized aspects, they are, trade unions role, compensation, workers solidarity and social support.

4. Conclusion

This research concluded that the role of labor unions showed negative results. This is because labor union role the media of information and communication is inadequate, so workers have difficulties to resolve the problems appropriately. The compensation given by the company to workers is in the category of small, since the company does not give a production bonus and leave entitlements accordingly. Labor solidarity is expressed well, but women workers' willingness to sacrifice is relatively small or weak (the willingness to sacrifice is an important thing to support for a better labor solidarity). Research results also show that information support is not good because of the weak role of workers union as the media of information and communication so that women workers experience limitations in information and communication. The welfare of women workers is in the low category due to the lack of compensation. Women workers also expressed their lack of appropriate entitlement. Selflessness among group members also makes the welfare of women workers can not be met properly.

Recommendation from this research is the role of labor unions need to be improved for the sustainability of women workers activities. The provision of a fair and proper compensation for women workers is needed. Selflessness needs to be improved to build a high solidarity. The improvement of social support in the form of information and communication support is needed to create a maximum working participation. All of those are meant to create a better welfare for women workers.

Workers: dead for fighting or alive for being oppressed

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Designing Base Salary Based On Competency Using Job Based Structure for Café Halaman

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Abstract

Human Capital Management concept state that every employee within a company will invest their time, talent, and creativity in company's human capital only if those individuals receive benefits beyond the cost they spend or as a minimum equal to the marginal cost (Baron & Armstrong, 2007). The employer is required to identify the reward for their employees' performance which done to reach company objective, and it must fulfil external competitiveness, internal equity, and consideration toward business budget as appropriate compensation (Milkovich, Newman, & Gerhart, 2014). Failure in rewarding employee may lead to employee dissatisfaction where they will not work at optimum performance and may cause high employee turnover. Based on research, high employee turnover is common in restaurant sub-industry. In 2014, American restaurant reached 66.3 percent of employee turnover (Bureau of Labour Statistics' Job Openings and Labour Turnover, 2015). For 50 percent of employee turnover in American fast food restaurant in 2010, \$3.4 billion training and recruiting cost were delivered by employees leaving the company (Ray, 2010). In Indonesia, Trade, Hotel, and Restaurant industry sector contribute 13.96 percent of Indonesian GDP, which was the third largest contribution among industries in 2012 (Badan Pusat Statistik, 2015). Café Halaman is restaurant established in 1999 which occupied as research object since it is still finding difficulties to develop job salary.

The aim of this research is to design base salary based on competency using the job-based structure for Café Halaman. Primary data in this study is job analysis consist of the job description and job specification. To find the value of the job, the researcher conducts job evaluation using job-based structure approach which involves point method as an instrument to process job analysis. Point method required compensable factor that delivered from scaled and weighted competencies appropriate to Café Halaman. Benchmarking to industry salary rate is necessary with consideration toward company budget to define decent base salary and result in form of base salary for positions.

Keywords: Base Salary; Competency; Job Based Structure; Job Analysis; Job Evaluation; Point Method; Compensable Factor

1. Introduction

Restaurant is close to human lifestyle due to its role as business providing food and beverage to fulfil human basic need of food as source of energy. Nowadays, restaurant not only deliver food and beverage, but also service and place as the point for society to spend time and meet relations. This phenomenon then stimulates many parties to run restaurant business which lead to increasing number of restaurant. In Bandung, Café Halaman is a well-known restaurant since 1999 and currently running three outlets in Bandung city. Café Halaman is categorised as a small and medium enterprise, and it should pay attention toward their business aspects, especially toward human capital management which defines the value of Café Halaman as restaurant compared to competitors. Presently, compensation structure in Café Halaman is 100 percent in the form of base salary. To determine base salary, Café Halaman is still using conventional practice which are judgment, comparison, and information of average wage without consideration toward Human Capital Management approach, since HCM system in Café Halaman is not running well. This factor leads to a situation where the employer has no understanding whether their payment system is already suitable and fulfil the essential of ideal compensation which consider external competitiveness, internal equity, company budget, and regulation (Milkovich, Newman, & Gerhart, 2014). Failure in rewarding employee may lead to employee dissatisfaction where they will not work at optimum performance and even cause high employee turnover.

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2. Purpose of The Study

This study aims to design base salary based on Human Capital Management approach for Café Halaman as a form of improvement for Cafe Halaman management. In general, this study intends to define compensation system for small and medium enterprise to define ideal base salary through Human Capital Management approach which pays attention to external competitiveness, internal equity, and company budget.

3. Literature Review

3.1. Compensation

Compensation is one of the most important component in human capital management function (Stone, 1995). It has an effort on strengthen keys values of an organisation and help the organisation to achieve the organisation's objective (Stone, 1995). For organisation, compensation is a significant expense that has aims to attract and keep the desired quality mix of employees, motivate the employees to improve their performance by making sure that the compensation is in consistent internal level and competitive externally (Baron & Armstrong, 2007). In employee point of view, compensation is a reward of their improvement in performance, productivity, flexibility, and the capacity to innovate which should result from enlarging the skill base and increasing levels of knowledge competencies as company's sake (Baron & Armstrong, 2007).

3.2. Job Analysis

Job analysis is a critical component in determining the equitable compensation. Job analysis consists of a job description and job specification which are prerequisites to conduct job evaluation (Bodnarchuk, 2012). It is used by the human capital manager to explain precisely a role of a position in a company. Through this method, manager able to measure the balance of rights and responsibilities of a position and define the quality of people suitable for the position (Dessler, 2015). The information gathered in job analysis stated the task perform in the job, equipment used on the job, and job behaviour. Job analysis is not an analysis of employee performance in the job, but the description of the job itself. Job analysis results in objective basis for establishing the job relatedness of human capital management function including classification, recruitment, training, and compensation (Dessler, 2015).

3.2.1. Job Description

The job description is the collected written review of the task, function, and responsibilities of the job (Stone, 1995). The purpose of a job description is to explain the aim, limitation, role, and responsibilities of a specified job and provide clear guidance to certify the adequate performance. The format of job description contains a list of job duties, the objective of the role, importance, and frequency of the functions and job relationships. The header is job identification which explains the job title with name, location, and supervisors; the body is job summary which describes the primary purpose, task context, brief of the job contribution to the organisation, decision-making right, accountabilities of the position, limitation of position, and prerequisites for the position, (Bodnarchuk, 2012). Some job descriptions include additional information about problem solving, internal and external environment, key contacts, references and supervision (Bodnarchuk, 2012).

3.2.2. Job Specification

Job specification clarifies criteria of person needed for the job according to the required qualifications. Job specification is a written list of characteristics needed including attitudes, skills, experience, qualifications, motivation, mental, and physical appearance that are expected able to perform well in a particular job (Bodnarchuk, 2012). It is used by the recruiter as a guideline to find the right person and designing relevant test required to understand the employee recruited since job specification focuses on person and attribute behind that person (Milkovich, Newman, & Gerhart, 2014).

3.3. Job Evaluation

Job evaluation is a systematic process of jobs comparison to define the value of one position about other and eventually results in a wage or salary structure or hierarchy (Dessler, 2015). The fundamental principle

of job evaluation lay on balance appreciation. More complex job duties, greater qualifications, and more responsibilities, the employer should pay a more significant amount of reward (Dessler, 2015). Generally, compensation management uses compensable factor as a variable which establishes how the job compares to one another, and that determine the pay for each job (Dessler, 2015). Dessler (2015) stated that job evaluator performs three primary functions, they are: defining the benchmark jobs, determining compensable factor, and evaluating the worth of each job. To assess the job, there are three suitable job evaluation methods. They are ranking method, job classification, and point method (Milkovich, Newman, & Gerhart, 2014).

3.3.1. Point Method

Point method is one of job evaluation method in which the number of compensable factors are identified and then the degree to which each of this factor is present on the job is determined (Dessler, 2015). Compensable factors are based on a strategic direction of business. The elements are scaled based on the importance of a job to the organisation. Point method is known for three components like compensable factor, scaled factor degree, and weight that show the importance of every factors and level they are presented in each job which fulfils the aim of internal equity (Milkovich, Newman, & Gerhart, 2014). The compensable factor is identified as job attribute that provides the basis for evaluating the value of jobs within an organisation which must be work related, business related, and acceptable for parties involved (Milkovich, Newman, & Gerhart, 2014). The factors are levelled to clear the degree to which they are present in every job and weighted to define the importance of the position to an organisation. These are steps to conduct point method (Milkovich, Newman, & Gerhart, 2014):

- Conduct job analysis
- Define compensable factor
- Scale the factors
- Determine weight of each factor
- Select criterion pay structure
- Communicate the plan

4. Method

4.1. Preliminary Research

Preliminary research is held as an early action to find the suitable object of research. The researcher needs to ensure that the object is appropriate and need improvement through performed research. Forms of early research are carried out through the interview with the supervisor which followed by questionnaire. The interview leads the researcher to define the symptoms and understand the root cause. Then, the questionnaire is organised as quick scanning for all employee in order to support the existing result of interview with quantified data.

4.2. Problem Identification

Through problem identification, the researcher can diagnose problem and define kind of improvement can be done on the object with the aim to solve the problem through data which is gathered in preliminary research. With the purpose of the identifying problem, the researcher accomplished deep interview to several stakeholders and captured their point of view toward the issue. The discussion is carried out because the researcher can elaborate and discuss the issue to find the root of the problem. Based on interview and discussion, Café Halaman is still using judgment to determine employees' salary.

4.3. Research Objective and Research Question

The result of problem identification is fundamental in establishing research objective and research question. The research objective is constructed to answer the issue of Café Halaman compensation by fixing the root cause. To achieve the goal, the question is designed to assist the researcher focus in accomplishing the purpose. The questions must be able to be analysed and specific.

4.4. Literature Review

In the literature review, the researcher gather related information and theory needed directly affect the

research. That information collected from review of previous relevant research and study from human capital management book. Literature review clears the insight of researcher to a designing method and does process during research.

4.5. Data Collection

Data collection is a process to gather data needed for analysis. Type of this research needs more secondary data which own by Café Halaman since job evaluation focus to the calculation of data achieved in the form of secondary data. Secondary data is data available from other sources and ready to be used without any direct data gathering process to the primary object. In this research, secondary data will be in the form of company's job description and job specification from Café Halaman HR database and industry salary rate.

4.6. Job Analysis

During the process of data collection, the researcher conducts analysis toward the existing job analysis which is developed by Café Halaman. To run the operation apparently, Café Halaman is required to develop clear job analysis which is consist of coherent job description and job specification. Job analysis is demanded to define the value of each job. If current job analysis developed by Café Halaman did not deliver clear and measurable job description and specification, the researcher is expected do conduct improvement regarding the Café Halaman's job analysis. The researcher needs to conduct job analysis through redefining responsibility, the performance indicator, work relation, job specification, job description, and competencies which each position require for. The competencies and its scales are derived from Spencer and Spencer dictionary that approved by the stakeholder in Café Halaman. The competencies will be transformed into scores which are required to calculate job value.

4.7. Job Evaluation

Point method is conducted to evaluate the jobs. To make comparison among the jobs to generate value, the researcher use competency derived from Spencer and Spencer dictionary and scale it. Spencer and Spencer's competency dictionary role as the source to determine competencies since it covers competencies required by all job family in general. Competency is used as the foundation for developing job evaluation due to its function which is more flexible to be applied in restaurant and café which often to make rotation among jobs which have similar job competency. Competency is needed to be classified into core competency which represents Café Halaman's value, the managerial competency which is needed to guide the subordinate, and functional competency which is required based on the type and focus of the position. Core competency, managerial competency, and functional competencies have their weight with one hundred percent total and will be consisted of several sub-factors that own their sub-factor weight. The result of multiplication between weight of comparison factor and sub-factor will be the total weight which is values of position after multiplied by 100,000 to find the maximum value of the position. The maximum job value will be divided by 10 to find the minimum job value. Scores of levels between highest and lowest level are derived from interpolation method using the highest and lowest levels' score. Those derived scores of each competencies level is fundamental of scoring process to all competencies. All score of competencies then summed to find total of job value per position. This score will be the factor to divide the benchmark salary in order to find value of benchmark per job value. This value takes a role as multiplier to find job salary in form of Rupiah.

4.7.1. Defining Job Competency

With the purpose of conducting the evaluation, the researcher needs to identify the appropriate competencies which will be used as compensable factors to value the job through point method. The compensable factor is an element that job has in common that is used to compare the job. Since Café Halaman often to organize rotation, competency is the most suitable compensable factor utilized in this valuation process. Competencies will be obtained based on company's approval and derived from vision and mission, also job analysis.

4.7.2. Defining Job Value

Job value is the aim in this process. To generate job value, point method is utilized as the most precise method to fulfil the requirement of internal equity through the compensable factor that presents the degree

of competency which is used in each job. Point method requires compensable factor and sub-factor which will be weighted based on analysis and interview with HR Manager. After HR manager stated factor, sub-factor, and their weighted percentage, the researcher may continue the process to find maximum job value by multiplying weight of factor, the weight of sub-factor and 100,000 to find maximum job value. If the result divided by 10, there will be minimum job value. Highest and lowest job value will be used to calculate the score for each competency scale through interpolation. The level of competency derived from the scale in competency dictionary by Spencer & Spencer. If all scores for each competency level are defined, the researcher needs to score the job based on job analysis and total all scores to find total job value.

4.7.3. Defining Compensation

Defining compensation is stage to the final price of a job. Input data that requested in this stage is total job value for each position. This step also requires benchmark salary from the same industry to define benchmark per job value. The result will be sorted from the largest to the smallest. One of those values will be selected as multiplication factor based on company budget to get job salary. The output of this process is job salary in the form of rupiah.

4.7.3.1. Benchmark

Benchmarking is required to understand the competitiveness of designed salary compared to the same job in other companies within the same industry. Industry salary or another company pay will be used as numerator divided by job value that results in a number of benchmark per job value as the base for multiplication to job value with the purpose of deriving job price. The number of benchmark per job value will influence the rate of job salary. Five of the highest number of benchmark per job value will be marked and offered to the company. Afterwards, Café Halaman will choose one of those value as multiplication factor fit their financial budget to derive job price.

4.7.3.2. Company Budget

Company Budget is an important factor to derive the job price due to the company financial ability to pay all compensation cost. Five marked number of benchmark per job value is the range of multiplication factors that will be multiplied by job value to find job price. One of those value will be elected by Café Halaman HR Manager through interview based on their financial capacity.

4.7.4. Validation

After job prices are identified, the researcher needs to confirm the result of research to Café Halaman as the research object. The researcher is also required to explain the background, process, and implication of the research. Validation will be delivered through interview to stakeholder of Café Halaman

5. Result and Discussion

This section will describe the process of job evaluation to provide job value for positions in Café Halaman. Data process and analysis in this stage use point method which requires compensable factors as the comparison. Compensable factors are based on the strategic direction of business. The elements are scaled based on the importance of the job to an organisation. Point method is known for three components like compensable factor, scaled factor degree, and weight that show the importance of every factors and level they are presented in each job (Milkovich, Newman, & Gerhart, 2014).

5.1. Compensable Factor

Table 1. Compensable Factor

Compensable Factor
Core Competency
Managerial Competency
Functional Competency
Working Condition

Compensable factors are derived based on Human Capital approach with consideration to Café Halaman

business strategy. There are four compensable factors involved as comparison factor in this process, they are core competency which represents Café Halaman's company value, the managerial competency which is needed to guide the subordinate, functional competency which is required based on the focus of position, and working condition as attention to physical environment where employee work.

5.1.1. Core Competency

Table 2 Core Competency

Corporate Value	Core Competency
Competitive	Achievement Orientation (ACH)
Customer Focus	Customer Service Orientation (CSO)
Teamwork	Team and Cooperation (TW)

Café Halaman's company values are strive to excellence, serve the customer with hearted-fully, adaptive to any condition, and tremendous teamwork to deliver the best service. Based on those corporate value, the researcher derived core competencies that must be owned by everyone within the company. Those values then translated using Spencer and Spencer competency dictionary. Core competencies which derived from those value are achievement orientation, customer service orientation, and teamwork-cooperation. Achievement orientation represents the work standard, competitiveness, and desire of the employee to finish tasks and achieves the goal. Based on the interview, this competency is the excellence of Café Halaman's employees. Customer Service Orientation shows Café Halaman sincerity to serve the client to create customer satisfaction toward their products and services as a restaurant. Teamwork defines that employee must be able to work under coordination within a team to reach the goal.

5.1.2. Managerial Competency

Table 3 Managerial Competency

Managerial Value	Managerial Competency
Lead team	Team Leadership (TL)
Communicate clearly	Directives (DIR)
Persuade subordinate	Impact-Influence (IMP)
Critical thinking	Analytical Thinking (AT)
Generate concept	Conceptual Thinking (CT)

Managerial competency is required for the managerial position to lead and directly subordinate to reach the objective of the company. Based on business process and strategy of Café Halaman, there are four managerial competencies needed by the managerial scale in Café Halaman to run the management function. Those competencies are team leadership, directives, impact & influence, and analytical thinking. Team leadership is ability required for a manager to take a position as leader to guide the subordinate and develop the strategy for team appropriate to their authority. Directives state that manager should have the ability to give clear and effective direction corresponding to their strategy. Impact-influence is competency required by a manager to persuade others to achieve the aim and build others' perception to influence the group. Analytical thinking competency means that a manager should be able to understand and analyse the problem, pay attention to detail, simplify complicated things, can make a priority, and be critical to receive information. Conceptual thinking shows that manager should have comprehensive perspective to see the condition in aim to build concept and problem-solving.

5.1.3. Functional Competency

Table 5.4 Functional Competency

Functional Value	Functional Competency
Pay attention to order detail	Concern for Order (CO)
Find information to be analysed	Information Seeking (INFO)
Create and keep relation	Relationship Building (RB)
Confidence to have contact with customer	Self Confidence (SCF)
Support one each other	Developing Other (DEV)
Mastery the job	Expertise (EXP)

Functional competency derived as special competencies required based on the description of each job which may lead to different functional competency for each job within a company. Functional competency defined based on the certain job family since jobs in one job family probably have same competency.

Concern for order requires some position to make sure that everything is clear, well organised, and perfect before served or submitted. This competency helps chef, waiter, and steward, which in charge to process orders and deliver it directly to customer, able to serve the best and do the excellent for the customer. Information seeking means that particular job needs to find more information which probably will be a benefit for the company in the future and to conduct the analysis. More information collected, better analysis can be done by the supervisor, manager, head of event, and marketing. Relationship building defines how certain jobs are required by waiter, manager, and steward to build and keep relationship with customer for company sake. To create a relation, self-confidence is needed to make contact with other. Self-confidence is also required for several positions to be brave to state the idea, aspiration, take decision, rebuke and greet other like supervisor. Developing other shows particular position requires the one who fill the job to be able to support other with the aim of achieving higher target or increasing performance like chef, waiter, and captain. Expertise is needed by some position to execute particular job conducted such as chef that require knowledge, expertise, and experience which take the one to master the job.

5.1.4. Working Condition

Table 5 Working Condition

Level	Comfort Level	Risk Accident
1	Work in settle indoor facilities	Probability of accident is very low
2	Work sometimes indoor and outdoor	Probability of accident is quite high
3	Work outdoor or in kitchen	Probability of accident is very high

Working condition pays attention to comfort level and risk accident. Comfort level defines the comfort standards of the environment where the employee works into indoor, indoor-outdoor, and fully outdoor. Risk accident which explains the probability of risk occur to a position divided into low, medium, and high.

5.2. Weight of Compensable Factor and Compensable Sub-Factor

To determine the weight of each compensable factor, the researcher conducts interview to HR manager in Café Halaman to capture Café Halaman point of view toward compensable factors' weight. Compensable factors consist of core competency with 24%, managerial competency for 17%, functional competency sized 48%, and work environment for 11%. Functional competency takes the largest part since Café Halaman require some competency for a particular position like a chef that might be different from other position and need special expertise. HR manager stated that Cafe Halaman employee is known as the friendly and competent employee who also hunted by competitor. Second largest portion belong to functional competency since Café Halaman concern to their corporate value as a "feels like home restaurant" since 1999. Third most significant weight belong to managerial competency which contributes to developing company through leading the employee to maximum performance and achieves company's goal by excellent managerial competency. Work environment come as the last largest portion since the difference of risk accident and comfort level is not significant

Table 6 Core Competency Sub-Factor and Weight

Factor	Sub-factor	Weight	Total Weight
Core 24%	ACH	23%	5.52%
	CSO	34%	8.16%
	TW	43%	10.32%

Core competency explains competencies derived from company value. In this research, the researcher obtained achievement orientation, customer service orientation, and teamwork as the universal value that must be owned by all employee within Café Halaman. Those values are the result of the interview with HR manager in Cafe Halaman. The highest percentage belongs to teamwork competency for 43% because teamwork is required to keep the business process run smoothly in harmony to achieve company objective. Second largest core competency is customer service orientation which represents the value of Café Halaman as a restaurant which aims to get customer satisfaction toward their product and service. This competency requires the employee to serve the customer as best as they can. The last competency is an achievement which shows Café Halaman requires competitive employee and do their job maximally.

Table 7 Managerial Competency Sub-Factor and Weight

Factor	Sub-factor	Weight	Total Weight
Managerial 17%	TL	35%	5.95%
	DIR	30%	5.10%
	IMP	8%	1.36%
	AT	15%	2.55%
	CT	12%	2.04%

Managerial competency is required by managerial level to lead others under their authority. Managerial competency in this research consist of team leadership as the largest portion of competency since a manager should lead subordinate to achieve the goal, directives due to manager responsibility to give direction clearly, analytic thinking as requirement to make analysis toward job diversification and strategy, conceptual thinking which is required to build framework of goal, and impact-influence which is generally needed by manager to inspire, convince, and inspire subordinate to achieve the objectives.

Table 8 Functional Competency Sub-Factor and Weight

Factor	Sub-factor	Weight	Total Weight
Functional 48%	CO	15%	7.20%
	INFO	13%	6.24%
	RB	17%	8.16%
	SCF	13%	6.24%
	DEV	16%	7.68%
	EXP	26%	12.48%

There are six competencies build up functional competencies. The focus of researcher and HR Manager in this section is to value position based on required functional competencies which are different for every position. In this section, the researcher categorizes job into the group within a job family. The aim of this action is to simplify the process since jobs within the same job family have same competencies where that job can conduct rotation and this also lead to the similar job value. Expertise takes the biggest percentage since some position in Café Halaman need people with particular expertise to fulfil the position. Second largest is relationship building which represents several positions which have to build relation internally (inside the company) and externally (with parties outside the company such as customer and business partner). Developing other is also included to define competencies of position like human resource management which have to support employee to improve and develop themselves. The concern to order explains that employee should pay more attention toward detail and standard of things they do to deliver the best. Information seeking is involved in defining position which requires the one who fill position to be curious and look for information used by company such customer satisfaction and complaint.

Table 9 Working Condition Sub-Factor and Weight

Factor	Sub-factor	Weight	Total Weight
Work Environment 11%	CL	70%	7.70%
	RA	30%	3.30%

The working environment takes a part in calculation through comfort level and risk accident. Higher the level means the positions have a higher probability of the accident and uncomfortable working area, so they have to be compensated more. The comfort level is more important than other since the workplace is safe enough for the employee since the workplace which is designed to follow the safety regulation and there is no significant risk in the job.

5.3. Job Value Calculation

Calculation of job value can be done through multiplication of factors' weight and sub-factors' weight. The result then multiplied with 100.000 to find maximum job value. Maximum job value will be used as the maximum score of competency and through interpolation the score for each level of competency will be derived from this maximum job value. With aim of getting minimum job value, the researcher needs to divide maximum job value by 10.

5.3.1. Define Maximum Job Value

Table 10 Core Competency Maximum Job Value

Factor	Weight	Sub-Factor	Weight	Total Weight	Max Job Value	Min. Job Value
Core	24%	ACH	23%	5.52%	5520	552
		CSO	34%	8.16%	8160	816
		TW	43%	10.32%	10320	1032

Achievement orientation has 5520 maximum job value and 552 minimum job value. Customer service orientation gets 8160 maximum job value with 816 minimum job value. The last is team work which has highest maximum job value in core competency with 10320 and 1032 minimum job value

Table 11 Managerial Competency Maximum Job Value

Factor	Weight	Sub-Factor	Weight	Total Weight	Max Job Value	Min. Job Value
Managerial	17%	TL	35%	5.95%	5950	595
		DIR	30%	5.10%	5100	510
		IMP	8%	1.36%	1360	136
		AT	15%	2.55%	2550	255
		CT	12%	2.04%	2040	204

Managerial competency has team leadership as competency with the highest job value which is 5950 and 595 minimum job value. Directives follow behind with 5100 maximum job value and 510 minimum value. Next range is analytical thinking from 255 to 2550 maximum job value. Conceptual thinking has 204 to 2040, and the last is impact and influence with 136 to 1360 range of job value

Table 12 Functional Competency Maximum Job Value

Factor	Weight	Sub-Factor	Weight	Total Weight	Max Job Value	Min. Job Value
Functional	48%	CO	15%	7.20%	7200	720
		INFO	13%	6.24%	6240	624
		RB	17%	8.16%	8160	816
		SCF	13%	6.24%	6240	624
		DEV	16%	7.68%	7680	768
		EXP	26%	12.48%	12480	1248

From the lowest maximum job value, there are information seeking and self-confidence that have same job value from 624 to 6240. Concern for order follows after them with range 720 to 7200. Developing other is varied wit 768 at the bottom and 7680 on the top. The largest range is expertise that covers job value 1248 to 12480.

Table 13 Working Condition Maximum Job Value

Factor	Weight	Sub-Factor	Weight	Total Weight	Max Job Value	Min. Job Value
Working Condition	24%	CL	70	7.70%	7700	770
		RA	30	3.30%	5500	550

Working condition consists of comfort level with 770 to 7700 range of job value and risk accident that reached for 550 to 5500

5.3.2. Score of Sub-Factors' Level

Table 14 Competency Scale and Score

	0	1	2	3	4	5	6	7	8	9
ACH	0	552.00	1261.71	1971.43	2681.14	3390.86	4100.57	4810.29	5520.00	
CSO	0	816.00	1734.00	2652.00	3570.00	4488.00	5406.00	6324.00	7242.00	8160.00
TW	0	1032.00	2580.00	4128.00	5676.00	7224.00	8772.00	10320.00		
TL	0	595.00	1487.50	2380.00	3272.50	4165.00	5057.50	5950.00		
DIR	0	510.00	1083.75	1657.50	2231.25	2805.00	3378.75	3952.50	4526.25	5100.00
IMP	0	136.00	310.86	485.71	660.57	835.43	1010.29	1185.14	1360.00	
AT	0	255.00	714.00	1173.00	1632.00	2091.00	2550.00			
CT	0	204.00	510.00	816.00	1122.00	1428.00	1734.00	2040.00		
CO	0	720.00	1800.00	2880.00	3960.00	5040.00	6120.00	7200.00		
INFO	0	624.00	1560.00	2496.00	3432.00	4368.00	5304.00	6240.00		
RB	0	816.00	1865.14	2914.29	3963.43	5012.57	6061.71	7110.86	8160.00	
SCF	0	624.00	1747.20	2870.40	3993.60	5116.80	6240.00			
DEV	0	768.00	1632.00	2496.00	3360.00	4224.00	5088.00	5952.00	6816.00	7680.00
EXP	0	1248.00	2852.57	4457.14	6061.71	7666.29	9270.86	10875.43	12480.00	
CL	0	770.00	2502.50	4235.00	5967.50	7700.00				
RA	0	330.00	1072.50	1815.00	2557.50	3300.00				

The table above shows interpolation method used in point method. After defining maximum and minimum job value, researcher conduct interpolation for each competency scale. The number of scale is based on the scale in competency dictionary by Spencer & Spencer, for example, ACH is consist of 9 level, from level 0 to level 8. For every increasing scale, there will be increasing score as resulted from calculation of difference between maximum and minimum job value divided by the number of scales which already subtracted by one. The result of this calculation is used to add the score for each scale until the maximum value. Score for each level is important to find score of job value based on competency in job analysis of each job. For example, if head of marketing communication required level 3 of achievement, the score will be 1971.43. Other competencies also apply the same method. If all competencies already scored, the next step is sum all scores to find total job value.

5.3.3. Job Value per Position

Table 14 Job Salary Calculation

Positions	Salary Benchmark*	Job Value	Benchmark/Job Value	Job Salary
Head of Mrktg. Dept	Rp3,000,000	27693.08	108.330	Rp3,000,000
Head of Gnrl. Affair Dept.	Rp3,300,000	27693.08	119.162	Rp3,000,000
Guest Relation Staff	Rp1,300,000	14563.05	89.267	Rp1,577,620
Steward	Rp1,200,000	14563.05	82.400	Rp1,577,620
Dishwasher	Rp1,500,000	12709.92	118.018	Rp1,376,870
Income Audit	Rp2,000,000	25535.63	78.321	Rp2,766,283
Chef	Rp9,500,000	61365.87	154.809	Rp6,647,784
Supervisor	Rp2,150,000	25535.63	84.196	Rp2,766,283

*Average salary for restaurant in Bandung

To calculate job salary, the researcher benchmarks the calculation with the standard of restaurant salary in Bandung as the comparison to each position to find the value of benchmark/job value. In the table, there are eight positions which are the representation of job family which has similarity with other position in one job family. There is a possibility of rotation in one job family since they require similar competencies. Benchmarked salaries are divided by job values to find the number of benchmark per job value. The result of benchmark per job salary then sorted from the highest to the lowest. This value will be multiplication factor to find job salary. Higher benchmark per job value will lead to higher job salary. Because of that, the researcher needs to conduct validation through an interview to choose which benchmark per value that will be used fit to the company budget. In this research, the researcher used third largest benchmark per job value based on Café Halaman statement since this number is fit with company budget.

6. Conclusion

Ideal base salary must fit external competitiveness, internal equity, and company budget. This research tried to design ideal compensation system for Café Halaman the in the form of base salary. The main data is job analysis in the form of the job description and job specification owned the by company. Those data then processed through job evaluation using point method which requires compensable factor. This research use

competency as the compensable factor since competency is more flexible for a business like Café Halaman, which often conduct rotation, so job with the same competency able to shift. Those compensable factors have sub-factor which scaled using competency dictionary by Spencer & Spencer, weighted based on analysis with HR Manager, and multiplied to find maximum job value. Maximum job value is processed through interpolation method to develop the score for competency scale. A score of each competency level is used to valuing the job. Total job value role to divide benchmark salary to define benchmark per job value. The result is sorted from highest to lowest and selected by HR Manager as multiplication factor which fit company budget. The result of this research is base salary which fulfils the requirement of external competitiveness, internal equity, and company budget. The result is expected will improve compensation system in Cafe Halaman, which based on judgment without any consideration toward Human Capital Management approach.

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Defining Factors of Keystone Organization in Hijab Fashion Industry: Case Study of Bandung City, Indonesia

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Abstract

The interaction of all stakeholders, from producers, consumers, suppliers, government, and other related parties create a complex relationship called business ecosystem. Stakeholders of business always expect to be in a healthy business ecosystem. In this era of fast growing technologies and high competition, every stakeholder could not only pay attention to its internal concern, but also should play as an active actor to participate in the ecosystem and create a healthy business ecosystem. Indonesian companies and entrepreneurs as one of emerging market should understand their own ecosystem, their position in the ecosystem, and their role in it. The main purpose of understanding the ecosystem is to become more adaptive to changes and to thrive in the fast changing environment. Keystone organization is one of the roles in the ecosystem whose objective is to develop the whole business ecosystem and in return keystone organization will have advantages – among others are ensuring its survival and wealth. Regarding the important role of keystone organization and the advantages gained, this paper aims to understand characteristics that build keystone organization. Factor analysis will be used to detect characteristics exist in keystone organization. Hijab companies and entrepreneurs will be the correspondent to answer the objective. It is expected by understanding the characteristics of keystone organization, stakeholders can develop their objectives from internal focus only to a wider perspective, do more collaboration and create a sustainable ecosystem.

Keywords: keystone organization; sustainability; factor analysis; co-creation; service science

1. Introduction

People are social being in their natural state. Aristotle would even say that a man is by nature a social animal, and society is something that precedes the individual. They have different goals and values (Kirk, 2011), including social connection, learning opportunities, status, creativity, choice and also financial gain (Lawrence & Nohria, 2002) in their effort to connected with others. For all the motivational above, business would be a good represent, because, in business people could find one or more motivations explained by Lawrence and Nohria (2002), especially financial gain. Consist of multi different people in it, business cannot run alone except being connected to other business to support its process to produce goods or services for customers. Although it would start with only two stakeholders like producer and supplier, in its journey business will invite more stakeholders to cooperate, and eventually become one business ecosystem. Business ecosystem, which is introduced by James F Moore (1993), basically is a system which consists of lots of parties that influence each other and make benefit from their presence. The goal of business ecosystem is to get a lot of people to bring their creativity together and accomplish something more important than they can do on their own. It is obvious that creating things together through collaboration and co-creation will give a lot of benefits to the whole ecosystem particularly to fulfill customer needs.

Marco Iansiti and Levien (2004), explored more about business ecosystem and tried to set a framework for determining the health of a company's position in the competitive environment by using an analogy that

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relates business systems to biological ecosystems. The idea is that although companies compete in a business ecosystem, the business ecosystem must be maintained to in healthy and sustains condition. From all stakeholders that exist, Iansiti and Levien (2004) introduce three types of role that can be taken by companies in a business ecosystem. They are keystone organization, dominator company, and niche players. Their research demonstrates that every role has their own action, but they emphasized of the role of keystone player as the most important role in keeping the ecosystem healthy. In biological, keystone species is a species that produce benefits for the ecosystem and its members and the removal of this species can dramatic cascading effects through the entire ecosystem (Paine, 1992; De Leo & Levin, 1997; Khanina, 1998). In every business, stakeholders want to be in a healthy and sustainable business ecosystem that can support stakeholders to grow, develop and also sustain. Therefore, the discussion about keystone is needed.

Not every stakeholders can be keystone organization, because to be a keystone organization, a stakeholder should have specific characteristics (Iansiti & Levien, 2004) which they use to maintain the ecosystem's health. Furthermore, Iansiti and Levien (2004) describe business ecosystem's health as an overall performance indicator of business ecosystem, and they determined three indicators: robustness, productivity, and niche creation. In other literature, Hartigh, Tol, and Visscher (2006) make a contribution to the measurement by adding partners health and network health, while Karhiniemi (2009) added influencing factors to measure business ecosystem. Having a lot of factors to be measured, more compact indicators are needed to be constructed. Thus, this paper addresses a research question on the characteristics of keystone organization and to reduce the many factors, factor analysis will be use in this research. Hijab industry as business ecosystem is chosen to be the case study of this paper because of the fast growing phenomena of the last decade in Bandung.

The next section provides a brief review of the literature of business ecosystem, keystone organization role, and business ecosystem health measurement. Following the literature review is research method descriptions, steps in doing factor analysis as quantitative method will be explained here. The reason of choosing factor analysis, list of factors to be reduced, questionnaire development process, and selection process of participants will be describe here. Thereafter, the discussion and analysis of statistical result, limitation and future research and the last section is devoted to the conclusions.

2. The role of keystone organization

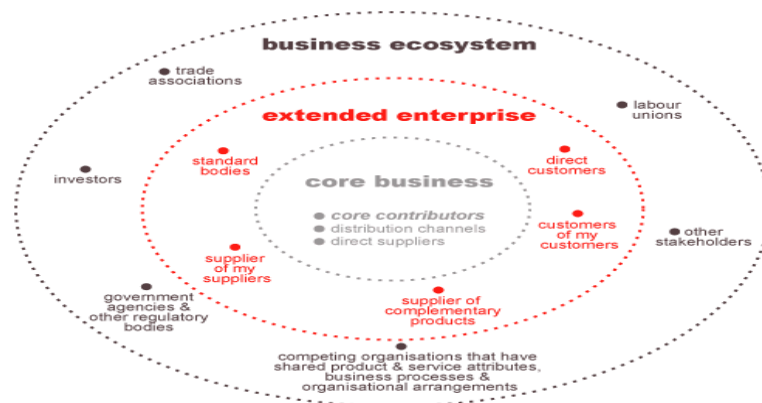


Figure 1. Business ecosystem map by James F Moore

Business ecosystem is a term that introduced by James F Moore (1993) which defines as an economic community supported by a foundation of interacting organizations and individuals (the organisms of the business world). The economic community produces goods and services of value to customers, who are themselves members of the ecosystem. The member organisms in business ecosystem consist of all companies, organizations or groups of people that directly or indirectly affect the company. There are but not limited to suppliers, customers, distributors, advertising companies, government, ICT, investors, and also competitors. Over time, they co-evolve their capabilities and roles, and tend to align themselves with the directions set by one or more central companies. Although it is hard or nearly impossible to draw the whole parties/entities that involve within the industry, Moore still suggested drawing a business ecosystem map since that in fact the ecosystem influences the decision of what strategy of company to apply and that

would directly impact the activities within the organization. Kastali and Neeli (2013) also emphasized the important to map your business ecosystem to see any opportunities to innovate your business model, perform your ecosystem role better than the competition and secure your position. To make it clearer, it is suggested to write down all the possible actors involved in the system and draw from the greatest interdependencies and the most profound effects on the organization. Moore draws a framework to map the business ecosystem which consists of 3 layers (Figure 1):

The benefit of mapping the business ecosystem is that one company knows their position and for that it can take appropriate strategies to benefit and sustain in the business. Completing Moore’s analysis, Iansiti and Levien (2004), figured out the roles that play in business ecosystem. They identified three roles: keystones, dominators, and niche players. Among those roles, keystone was identified as the role whose aim is to enhance the overall health of the network by creating value and sharing value. It is said that keystone organization can share benefits to the whole ecosystem, it creates value and increases ecosystem productivity. Among the activities of keystone organization are simplifying the complex task of networking and creating the new products that can make things more efficient. Iansiti and Levien (2004) declare that keystone organization with its characteristics can shares values, increases robustness and influences niche creation by sharing innovative technologies” (Iansiti and Levien, 2004).

Iansiti and Levien (2004) say that keystone organization is the one that serves as a hub across other entities in the ecosystem. Keystone organization can influence connections within the network and maintaining a predictable platform on which other network members can rely. Keystone organization plays an important role since it can boost the overall productivity of a network, increasing its robustness, and also promoting innovation. When a keystone is suddenly removed from an ecosystem, a dramatic and chaotic reorganization ensues. Keystone organization, as enabler will create or enhance a platform for the ecosystem. The platform then will enable partners to innovate. The innovation drives customer demand, and finally the demand will drive benefits to the firms, including keystone organization.

3. Measurement of Business Ecosystem’s Health

Environment where a business in, have contribution to that business performance (Moore, 1993). Living in a healthy business ecosystem will be different with living in unhealthy business ecosystem, one of the reasons is because healthy business environment will provide healthy environment for the creation of new firms and products (Iansiti & Levien, 2004). They concluded that performance of a firm is influenced not only by its own internal capabilities, competitor, customers, partners and suppliers, but also dynamic interactions with the ecosystem as a whole. To define the characteristics of keystone organization, the variable of business ecosystem health measurement will be use. The argument according to author view is that keystone organization with specific characteristics provides activities which direct to a healthy business ecosystem. The measurement variables of business ecosystem are the underlying characteristic of keystone organization that reflect in its activities. In their article (Keystone and Dominators, 2004), Iansiti and Levien describes that there are three critical measures of business ecosystem health: productivity, robustness and niche creation. Those three measurements are having their sub variables (Figure 2).

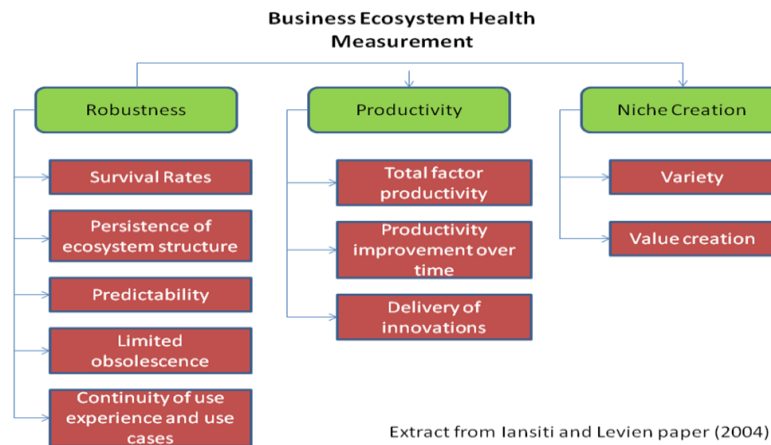


Figure 2. Business ecosystem health measurement

Adding to those measurements is influencing factors which contributed by Karhiniemi (2009) in his master thesis. He explained that influencing factors should be the measurable parameter for ecosystem analysis. There are five influencing factors to be considered: political, regional, regulative environment, domains and transforming areas. Supporting Iansiti (2005), Karhiniemi explained that the using of parameters will support to decision making and strategy and also can be used as a dashboard in business ecosystem management. While Hartigh; Tol; and Visscher (2006) tried to make the measurements more simple and readable by management of business and subsequently being used to monitoring and improving business ecosystem performance. They thought that Iansiti and Levien’s concept could not be easy applied by management of a business. In their paper, they structured the process of inventorying operational measurement for business ecosystem health based on Iansiti and Levien business ecosystem’s health measurement but they extended Iansiti and Levien’s research in order to make the measurement more clearly by proposing two levels of measurement which are: business ecosystem level and company level. All three variables (robustness, productivity, and niche creation) were being compared between business ecosystem level and company level. To achieve their aim to develop a concrete measurement tool of business ecosystem’s health that can be used by company’s management, they select eleven measurements out of thirty two measurements (Figure 3).

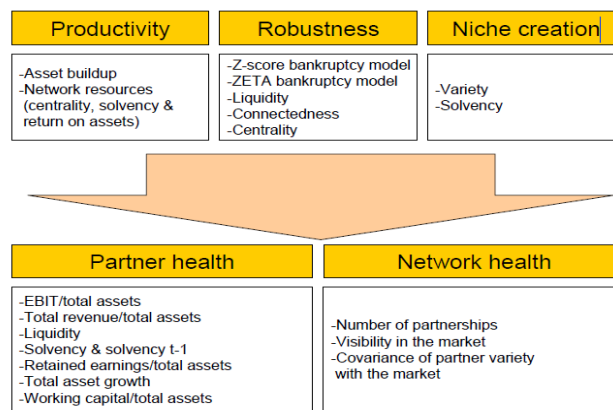


Figure 3. Hartigh et al ecosystem health measurement (2006)

Measurement of business ecosystem’s health from previous researches can be summary into six measurements: robustness, productivity, niche creation, partner health, network health, and influence factors with twenty six variables. All those variables are important according to previous researches and could define the characteristic of keystone organization, but will resulted to a very stiff condition of appointing one or more companies to be identified as keystone organization. These twenty six variables will be used in this paper to be analyzed using statistical process to Bandung context. It is presumed that those variables can be reduced to a smaller number variables that considered to represent keystone organization characteristic to Bandung businessmen perceptions.

Table 1. Measurements of Business Ecosystem

Authors	Paper	Variables	Measurement
Iansiti and Levien	Keystones and Dominators: Framing Operating and Technology Strategy in a Business Ecosystem	survival rates	Robustness
		persistence of ecosystem structure	
		Predictability	
		limited obsolescence	Productivity
		continuity of use	
		experience and use cases	
		total factor productivity	Productivity
		productivity improvement over time	
		delivery of innovations	Niche creation
		Variety	

		value creation	
		EBIT/total assets	
		total revenue/total asset	
		Liquidity	
		solvency and solvency t-1	Partner health
		retained earnings/total assets	
Hartigh, Tol, and Visscher	The Health Measurement of a Business Ecosystem	total asset growth	
		working capital/total assets	
		number of partnership	
		visibility in the market	Network health
		covariance of partner variety with the market)	
		political influence	
		regional influence	
		regulative environment influence	Influence factors
Karhiniemi	Master thesis: Creating and Sustaining Successful Business Ecosystems	domain influence	
		transforming areas influence	

4. Methods and Results

In order to define the characteristics of keystone organization from twenty-six variables, factor analysis will be the suitable statistical method to use. Factor analysis according to Hair et al (2010) is a multivariate statistical technique which can be used for data reduction purposes. Too many variables that found in a case could make a misleading interpretation of that case, and to avoid that situation those variables should be reduced, leave the unrelated variables, and summarized in set of variables that explain most of the case. In this research it is expected that factor analysis can reduce the variables into smaller variables that explain the model. Although quantitative approach will be used, a qualitative approach is necessary considering that the term of keystone and its existence in Indonesia, especially in Bandung is not clear.

4.1 Data collection

Bandung as mention in introduction is being selected for at least for two reasons. First, the development of hijab fashion ecosystem in Bandung is the most significant. It shows by numerous national hijab designers and also famous branded started their journey from Bandung. Bandung also fulfill the selection because it has a more complete stakeholders in hijab fashion ecosystem like many textile factories, supportive factories (buttons, sewing materials, etc), wholesale sellers, producers, retailers, and customer who contribute a great deal in making the ecosystem sustain. Second, the type of people in Bandung who are characterized as creative people. They are willing to learn, excepting new innovations (method, technology, lifestyle, etc) and willingness to share to others (in term of thought, experience and collaboration). People in Bandung, specifically who are active in hijab fashion industry (producer, distributor, retailer, supplier, and customer) will be the target respondent to answer the survey.

Construction of the questioner begins with literatures review which arises to twenty six variables. Each variable plan to be represented by one question and by doing so make the total questions in questionnaire are the same number as variables number, twenty six. But after tested the questionnaire to narrow number of retailers, author excluded some questions and replaced with other questions for the concept of two variables are not familiar for the sample respondents. The variables excluded are domain influences and regional influences, and some other variables have more than one question to sharpen the understanding of the respondent. The final questionnaire consists of twenty five questions which represent twenty four

variables (table 2). A likert scale format was used in the questionnaire with two different responses. First category used for six questions are disagree; less agree; agree; and strongly agree. Second category used for seventeen questions are not important; less important; important; and most important. Four category of answer is used to avoid ambiguity of respondent when they are in the middle of thinking the answer of the questions.

The distribution of the questionnaire is done in both ways, online and offline. Offline survey was done in Pasar Baru and Balubur Townsquare (Baltos). Both of them are the most famous place for hijab fashion stores with different segment. Pasar Baru targeted middle low customers who are looking for various but not expensive outfit, while Baltos targeted middle class customers who are looking for unique with fair price outfit. Online respondent was gathered through community help. Hijabers mom community (HmC) chapter Bandung, are willing to help to distribute the questionnaire to its members. We choose this community, because its members mostly are local designers who are struggling to exist in hijab fashion ecosystem. Total respondents gathered are seventy eight respondents, but we have to exclude 3 offline respondents from Pasar Baru because they did not fill the questioner completely. Online respondent is the biggest participant portion from the three locations of survey with 46,2%, followed by fairly equal portion to Pasar Baru and Baltos participants 24,3% and 29,5% (table 3). From all respondents, 90% are females, average age is 30-39 years old, and average time of be in hijab industry is 3-5 years. Percentages of position of respondents in the ecosystem are 32% customers, 64% producers/distributors/retailers; and 4% suppliers.

Table 2. Representation of variables in questionnaire

Variables	Measurement	Number of Question
Survival rates		1
persistance of ecosystem structure		2
Predictability	Robustness	1
limited obsolescence		1
continuity of use experience and use cases		1
Total factor productivity		1
productivity improvement over time	Productivity	5
delivery of innovations		3
Variety	Niche creation	1
Value creation		1
EBIT/total assets		
Totalrevenue/total asset		
Liquidity		
solvency and solvency t-1	Partner health	1
retained earnings/total assets		
total asset growth		
working capital/total assets		
number of partnership		1
visibility in the market	Network health	1
covariance of partner variety with the market)		1
political influence		1
regional influence		0
regulative environment influence	Influence factors	1
domain influence		0
transforming areas influence		2

Table 3. Respondent distribution

Location	Number of Respondent	%
Pasar Baru	19	46,2%
Baltos	23	24,3%
Online	33	29,5%
	78	

4.2 Statistical process

Factor analysis is used to reduce the many variables. In this research, we want to reduce from twenty six variables to more compact variables. First step is put all the survey result in excel and then process them using SPSS. Second, we test the variable with the SPSS data reduction and resulted KMO score of 0.342. When we saw the anti image correlation, there are a lot of variables that have MSA less than 0.5. We have to exclude the MSA with score less than 0.5, and re-run the test. The remaining variables after we delete variables with small MSA are survival rate, productivity, technology innovation, and idea innovation. The result shows a better KMO score, 0.636 with significance level less than 0.05. This can be concluded that these variables can be process using factor analysis.

Table 4. KMO & Bartlett's Test

1	KMO Measure of Sampling Adequacy	0.342
	Bartlett's Test of Sphericity	1642.143
	Df	190
	Sig.	0.000
2	KMO Measure of Sampling Adequacy	0.636
	Bartlett's Test of Sphericity	77.645
	Df	6
	Sig.	0.000

Table 5. Eigen value table

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.144	53.592	53.592	2.144	53.592	53.592
2	1.001	25.033	78.624	1.001	25.033	78.624
3	.585	14.617	93.241			
4	.270	6.759	100.000			

Table 6. Component matrix

Component Matrix^a

	Component	
	1	2
Survival Rate	.039	.998
Total Factor Productivity	.783	.042
Tech inovation	.911	-.026
Idea inovation	.837	-.057

5. Keystone organization's characteristics

Result of statistical approach was meant to reduce from twenty six variables to smaller variables, from twenty six factors, we conclude to only two factors that explain the characteristic of keystone organization. The remaining variables survival rate, productivity, innovation in technology and innovation in idea are become the variables to be map to the two factors. Survival rate belong to factor 2 while the rest of it belong to factor 1.

Table 7. Factor explained

Factor 1	Factor 2
Total Productivity	Survival rate
Technology innovation	
Idea innovation	

Divided into two factor groups, we are strongly suggested that the first group will be named as production and development, and the second group will be named as survival rate. Production and development group consist of total productivity, technology innovation and idea innovation. Keystone organization in this group is characterized to be the player who consistently trigger the creation of innovation, both in technology and also in idea. Innovation is becoming the star that being believed as a resource for companies to survive and grow. Keystone organization should have this characteristic, and by perform the ability to continually innovate, keystone can manage the ecosystem in sustainable condition. In hijab fashion the innovation in technology usually associate with machines that is used for the whole supply chain (yarn processing machine, textile processing machine, sewing machine, etc). While the idea innovation usually associated with the innovation of using a more natural resources for textile that environmentally friendly, innovation in design, innovation in business process, and also innovation in distribution channel. Those innovations in hijab fashion considered to be important to be prioritized and therefore become the characteristic of keystone organization in hijab fashion industry.

The second group, survival rate, is a really matter factor. Although to survive is important to every business, but in hijab fashion in Indonesia, it is meant more than the other industries. Member of the ecosystem is still thinking only the way to survive. When we see to hijab fashion in Indonesia, the result is suitable. The new players of the industry are so many, with most of them are the follower who has only little and even no creative thinking in design. These follower could produce the near-same product to designer's product with much cheaper price. While the follower also having the same problem to survive, since they lack of creativity, they cannot compete to each other follower except in monetary terms. It will drag their profitability to the lowest level, followed by requiring to add some more resources, specifically capital. So, the keystone organization should have the ability to maintain the survival rate of the ecosystem's member.

The result in the process was quite interesting, because from twenty six variables, only four of them can be process by using factor analysis. The reduction shows that only the four variables really matter to hijab fashion stakeholders when associated to keystone organization. It is also reflected that although keystone organization should have the lot characteristic in building the sustainability in their ecosystem, but in Bandung, the financial, value co creation, variety, and others, are not as important as four remaining variables. Hijab fashion stakeholders in Bandung are still focusing only on production ability of keystone, and innovation in two dimensions to support their own productivity, and the second most important to the stakeholders is survival rate, where keystone organization is expected to have the ability to drag most of the ecosystem member to survive when bad days come.

6. Limitation and future research

Evaluation of researcher is coming from quantitative approach. There are some missing steps in building the questionnaire. First of all, there are no preliminary researches of what kind of characteristics of keystone that exist in stakeholders' opinion. It should be done by qualitative method to explore more detail to experts in the ecosystem. Secondly, the questionnaire after built should be tested and revised several times, not only one time to get a representative questions that support the research question. Third, researcher should find a lot more respondents because to do factor analysis the minimum requirement of respondent is 100. It is not that easy to find respondent who fully understand about business ecosystem. Most of them are still in the area of producing and selling. The main focus is how to get bigger portion of

the pie. From qualitative sides, although the characteristics have been defined, keystone organization in hijab fashion industry should be discovered and being analyzed with these defined characteristics..

7. Conclusion

Keystone organization characteristic in hijab fashion ecosystem in Bandung are production and innovation in first group and survival rate in the second group. This finding is important because it shows that it is not necessary for one company to must have lots of characteristics define in previous research to be a keystone organization. Although the conclusion should really be followed with a deep observation to find out, weather the keystone organization really exist in hijab fashion ecosystem in Bandung.

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Internal Communication Obstacles in the Implementation of Employee Value Proposition

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Abstract

Employee Value Proposition (EVP) is a concept or framework that can be used to examine on how organization can attract and retain talents, who are considered as valuable for the organization. Briefly, EVP is a unique set of attributes and benefits that can be used by an organization to attract talents to join the organization and to keep current employees staying in it (Tower Watson, 2010). One of the state owned company in Indonesia specialized in Telecommunication industry has already been implementing partially EVP since 2015. Which currently is as the largest telecommunication service and network provider in Indonesia. When implementing EVP, the division faced several obstacles in particular on how the management have to communicate EVP to the employees. The aims of this study are therefore to determine the obstacles, which according to the management is potentially caused by poor communication of EVP. This study used both qualitative and quantitative research methods. The data collection technique for the qualitative method is conducted using interview, while the one for the quantitative method uses survey. The qualitative method is used twice: before and after the quantitative method. Besides determining the obstacles faced by the division, based on the findings, this study also provides a suitable communication model and proposes recommendations and an implementation plan for the division. One of the recommendations is to encourage the division to use a combined method for communicating EVP, which is using face-to-face interaction and ICT tools.

Keywords: Employee Value Proposition, Talents, Communication, Internal Communication, Communication Channels.

1. Introduction

Telecommunication industry played an important role in the country's general economic development. Indonesia has the nation's large population and rapid economic growth have led to significant demand for telecommunications services. One of the state-owned company in Telecommunication industry realizes that human capital plays a strategic position and role in order to achieve their vision as a world-class company with the global standards. Since 2015 the company has been implementing the concept of Employee Value Proposition (EVP) to their entire employees. It is because they realize that in order to be an organization that is globally competitive and sustainable, the company needs to pay a close attention to their key asset, which are their employees. Although the company has been implementing EVP, it is however they still face some obstacles in particular in communicating EVP to their employees.

The purpose of this research therefore to understand how a firm can manage their communication in the implementation of Employee Value Proposition. In particular, we focus the analysis on determining obstacles related to internal communication. According to Corporate Leadership Council (2006), to get a work life balance an organization needs to communicate its EVP effectively. In the case of this company, based on our interview, we find that the management still has a doubt whether or not EVP has been communicated well to their employee. Although EVP has been implementing in the company, the management realizes that the expected outcomes has not been gained. With this background, three specific aims of the study are posed, which are (1) determining the causes of the poor communication of in the

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implementation of EVP; (2) choosing the suitable communication model in the company, and (3) proposing recommendations and an implementation plan for the company.

This paper is organized as follows. After this introduction, the next section provides a brief review of literature on EVP and internal communication. Section 3 describes the research methods used in this research that are qualitative and quantitative research methods. Thereafter, Section 4 explains the analysis of this research and is followed by Section 5 presenting the conclusions and practical implications.

2. Theoretical Overview

The Corporate Leadership Council (2006) proposes the concept of Employee Value Proposition, which is believed, will lead to attraction and commitment of employees in an organization. Detail information on the relation between EVP and the attraction and commitment of employees can be seen in the following figure.

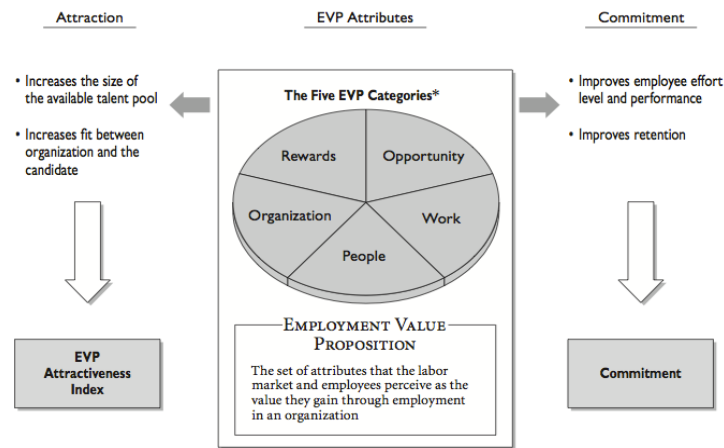


Figure 1 EVP Concept by Corporate Leadership Council (2006)

Based on the Corporate Leadership Council study (2006), the EVP consists of five attributes, which are Reward, Opportunity, Work, People, and Organization. Table 1 below provides the definition of each attribute.

Table 1 Attributes of EVP

Reward	Consist of the tangible rewards and benefit from the company, either cash or non cash. For instance: compensation, medical aid, car allowance, and others.
Opportunity	This is the opportunity that offered by company. The opportunities like the development and career growth in a company with the possibility to move up and climb the stages of corporate after joining the company.
Work	The actually definition work in job, does the work literally satisfy the employee and are they interested in what they do on a daily activities.
People	The culture of company that fit with the new employee and the results derived from environment itself. For instance: the shared vision of organization and is the sustainability climate conducive which encourages employees to be creative.
Organization	The characteristics, categories, and type of industry of the organization.

With regard to the connection between EVP and Internal Communication, Tower Watson (2014) argues that communicating EVP with employees is an important part of both building an EVP and ensuring the employee awareness and understanding what EVP and how EVP relates to them. Furthermore, to be a successful company, it is argued that the company has to be adaptable to uncertain changes that are occurred occasionally. To be so the company is required to have a good quality of internal communication (Dunmore, 2002; J. Gray & Laidlaw, 2004).

HRM Recruitment Group (2012) develops a survey on EVP by specifying variables associated with each dimension/ attribute of EVP. See Table 2 below.

Table 2 Dimensions (Attributes) and Variables of EVP

No.	Dimension	Variable
1	Total Rewards	Salary
		Health Cover
		Pension Fund
		Life Assurance
		Post-Retirement Health Care Facilities
		Annual Leave
		Company Car
		Performance Bonus
		Share Options
		2
Provision of study support		
Learning and Development		
Allocation of mentor		
Policy to promote internally		
Clear career paths		
Organization's growth		
Organizational Stability		
Performance Feedback		
3	Organization	Reputation with customers.
		The diversity in workforce.
		Approach to environmental responsibility.
		Approach to CSR.
		Approach to ethics.
		Recognition as a "Great Employer".
		Market share and position.
		Approach to quality standards.
		Using of current and emerging technology.
		The size.
		The industry sector.
		Awareness of the brand.
		Reputation for innovation.
The opinion		
4	Work and People	The opportunity to travel as part of your role.
		The level of innovation.
		Role's influence on decision-making.
		The leadership listening to employees opinions when making decisions.
		Your personal interest in the responsibilities of your role.
		Location.
		Work/life balance.

No.	Dimension	Variable
		Recognition provided to employees in your role.
		Reporting.

When a company pays close attention to their EVP, it is argued that the company will be successful. The success of the implementation of EVP is usually determined by how effective and comprehensive the company communicates and defines their EVP programs (Tower Watson, 2010). Nowadays, communication within a company is not only seen as more multidimensional but also much more than only about information flow, transfer message, and information exchange. Downs & Hazen (1977) develop a survey named the Communication Satisfaction Questionnaire (CSQ) that provides measurement tools related to employees’ attitudes and judgments of numerous communication practices. The factors of the communication survey questionnaire can be seen in Table 3 below.

Table 3 Factor of CSQ

Organizational perspective	Encompasses information on the organization as a whole.
Personal Feedback	Related to employees’ need to know how they are being judged and how their performance is being evaluated.
Organizational Integration	The degree to which people receive information about their nearest environment.
Supervisory Communication	Involves communication with superiors, both upward and downward.
Communication Climate	Includes communication on both the organizational and personal levels.
Horizontal Communication	To what extent people and informal communication is precise and flowing between people.
Media Quality	Includes the communication channels.
Subordinate Communication	Entails upward and downward communication with subordinates.
Top Management Communication	Evaluates the communication of top management with organizational people.
Interdepartmental Communication	Encompasses communication that is needed between the different departments of the organization.

3. Research Method

Using respectively qualitative, quantitative, and qualitative research methods conducted this research. (c.f., Bryman, 2012). The qualitative used in the beginning of the research process is in order to identify problems faced by the company related to poor communication during the implementation of EVP and to validate the questionnaires so that the questions are applicable to the situations in the organization. The data collected from the survey was then analysed. To help better understanding on the collected data, qualitative research (i.e. through an interview) was conducted. See Figure 2 on the sequence of the research methods employed in this research.

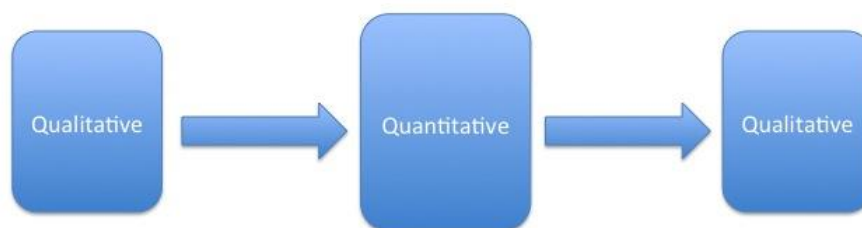


Figure 2 The sequence of the research methods employed in this research

3.1. Data Collection and Data Analysis

Data was gathered through two methods: interviews and the surveys (questionnaires). The interviews were conducted in a form of semi-structured. The interviewees were chosen with the criteria that the persons have understanding on the implementation of EVP. The topics were asked during the interviews include the implementation EVP, attributes of EVP, their communication channels used by the company in communicating EVP.

With regard to the survey, a total of 93 respondents filling in the questionnaires. The questions can be classified into two categories: EVP and Internal Communication. The criteria of the respondents are the employees of the company's of research object.

In this research, data will be processed and analysed through categorizing the data and looking links among the contents of the various data acquired. The data obtained from the questionnaires will be organised and presented in a descriptive form. Descriptive analysis was used to provide information on the implementation of EVP and internal communication occurred in the company. The data collected from the interviews was organised to better understand about the problems faced by the organization and to clarify the results of the questionnaires.

3.2. Validity and Reliability

The questionnaires used to obtain data on Understanding Employee Value Proposition from HRM Recruitment Group (2012) are also a valid measurement. The questionnaires used in this survey for measuring the internal communication have been proven to be a valid measurement tool (Steingrimsdóttir, 2011). To measure the reliability of the research method is to test to what extent the survey can be used to identify the same topic in another organization. The questionnaires used in this research have been used in those previous researches.

Related to the qualitative research method, the (construct) validity is assured by defining clearly the concepts used in this research such as EVP (Yin, 2009). The issue of reliability is addressed by describing clearly the process conducted in this research (Yin, 2009). This is conducted such as informing the sequence of the research process.

4. Results and Analysis

4.1. Understanding Employee Value Proposition

The level of urgency will represent the result of survey. The urgency level is a grouping of data for categories in relation to treatment and to rate of speed of response to the corresponding category when conveyed to other divisions in order to be follow-up by the company. There are three categories for expressing the level urgency related to understanding of Employee Value Proposition model surveyed to respondents/employees. Those are Urgent, Needed but a less urgent and Optional. The urgent level is a state and the imperative need; it is very important; urgent level in this EVP category stated that is a factor that should be prioritized and be a consideration factor for employees working at this company. While, the needed but less urgent level is an important factor but not a top priority for employees to join the company or stay in the company, although employees are still looking at this factor to become the consideration. And the optional level is a factor that is not a requirement to be fulfilled; could be chosen but not obligatory to implemented in EVP model, and most of employees not seen this factor to their considerations. The results of the survey are presented in the Table 4.

Table 4 The Attributes and Level of Urgency

Total Rewards	Urgent	Health cover, Salary, and Pension fund.
	Needed but a less urgent	Post-Retirement health care facilities, Life assurance, and Annual leave.
	Optional	Performance bonus, Share options, and Company car.

	Urgent	Clear career paths, Policy to promote internally, and Performance feedback.
	Needed but a less urgent	Learning and development, Organizational stability, and Career planning.
	Optional	Provision of study support, Organization's growth, and Allocation of mentor.

Organization	Urgent	Reputation with customers, Using current and emerging technology, Approach to ethics, Approach to quality standards, and Awareness of the brand.
	Needed but a less urgent	Market share and position, Approach to CSR, Reputation for innovation, The industry sector, and The diversity in workforce.
	Optional	Approach to environmental responsibility, The opinion, Recognition as a "Great Employer", and The size.

Work and People	Urgent	Work/life balance, The leader listening to employee opinions when making decisions, and Your role's influence on decision-making.
	Needed but a less urgent	The location, The level of innovation, and The level of recognition provided to employees in your role.
	Optional	Reporting, Your personal interest in the responsibilities of your role, and The opportunity to travel as part of your role.

By considering the level of urgency, it helps the organization to pay close attention to which factors that are considered by the employees as urgent; needed but less urgent; and only optional. The urgent category is the factors that are considered by the employees as major considerations related to their work and career on the company. The needed but a less urgent category is the factors that are considered by the employees as common considerations and the last category is the factors that are considered as optional factors or not the main considerations for the employee to succeed their careers on the company.

4.2. Internal Communication

Related to the questionnaires on internal communication, the overall amount and quality information about company's strategy, goals, events and changes are considered as satisfying for the employees. The amount information about management actions, accomplishments and/or failures either from an outsider or from top management is considered fairly by the surveyed employees. It means that the employees feel that they obtain enough information about management actions and accomplishments. The result of the survey however shows that they consider the overall amount and quality information about career development and remuneration benefits offered by the company as not clear. The result indicates that the employees are unsatisfied with the amount of information concerning career development and remuneration benefits.

The result also depicts that the trust factor scores high. It indicates that the respondents consider that the information they receive from their supervisor is trustworthy and believe that they are trust with their supervisor. Furthermore, related to whether their supervisor does not listen to them, the result of the survey shows that the employees score that question low. It indicates that the supervisor probably always listen to the employees. However, the result shows that the top management has considered by the employee have not established open and trustworthy communication with them. The score related to the question on the communication between the management and the employees is low and the score regarding to trustworthy information from top management is average.

Furthermore, the result shows that the overall information received from co-workers and communication flow with co-workers are considered as neither trustworthy nor open. It can be interpreted that the surveyed employees are unsatisfied with information received from co-workers. Nevertheless, the result also shows that the employees have a good feeling with experience of solidarity among the co-workers.

With regard to the issue on the overall flow of information within the company, the finding of this research shows that the employees' satisfaction are below their criteria. It can be interpreted that the employees expect that they should receive better information related to the issue.

Based on the results presented above, it is suggested in this research that the organization needs to focus on improving the quality of communication related to the implementation of EVP through two recommendation channels: (1) face-to-face interaction and (2) ICT tools. Furthermore, it is suggested that the organization needs to differentiate the use of the communication channels by considering which attributes of EVP that are going to be communicated to the employees. See Table 5 below.

Table 5 EVP Attributes and Communication Channels

EVP Attributes	Face to Face Interactions	ICT Tools
Total Rewards	Counseling for the program Pension Fund, Retirement Health Care Facilities, and Life Insurance	HR Portal for HR issues
Opportunity	Counseling for Career Path, Promotion, and Performance Feedback	Email blasting for news of training and development, Provision of Study HR Portal for creating career path for themselves
Organization	Meeting for Current Condition of company	Content Management System for news and update of company
Work and People	Gathering for Culture Activities in order to support work life balance program.	HR Portal can be used for Reporting between subordinate to supervisor

5. Conclusion

Based on the analysis, it shows that the company faced the obstacles on the communication in implementing their EVP. The information about (1) career and development, (2) remuneration and (3) benefits need to be clearly informed to their employees. The channels information should be improved and further developed to effectively communicate EVP attributes.

The survey result shows that the communication with co-workers are considered by the respondents as less (1) trustworthy, (2) free flowing, and (3) satisfied. The company still has home works to solve. Furthermore, most of the respondents are not aware about the information related to EVP. Because the co-workers are the closest information resources in the workforce, it is therefore argued in this thesis that face-to-face technique can be the best way to keep the employees up with the information. Moreover, to improve the quality in communication EVP to the employees, it is suggested in this paper that the company can use these two following communication channels those are (1) face-to-face interaction and (2) ICT tools. In particular, it is suggested in this paper that the company need to differentiate the communication channels that are used when communicating certain attributes of EVP.

Hopefully this analysis can help the readers to explore their options related on the issue on facing company's problem, especially in Employee Value Proposition model and internal communication. Getting the depth explanation on the factors of EVP by considering the level of urgency and a various kinds of communication channels in implemented the EVP in the company. This research deficiency is it only focus on the internal of the company, hopefully it will be an encouragements for another factors on EVP and internal communication problem that could be a cause of problems for further research in the future and obtain the solution.

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Appendix A. The Questions of Interview

Introduction from Interviewee: Since this company already implemented the EVP Model, I really want to deeply know about EVP and I interested with this topics, because I felt the implementation EVP since 2015 on this company is low in communication, and mostly employee didn't aware about that.

Interviewer: What is the biggest issue on Employee Value Proposition model that implemented on your company?

Interviewer: Related on that issue, why you can say that implementation of EVP is low in communication?

Interviewer: If we discuss another reason, how about the turn over employee in this company?

Interviewer: While, the turn over is not the reason why the communication of EVP is low. About the survey, what kinds of survey I have to do to know about the EVP? And if I can contribute to overcome these issues, what your expectation will be?

Appendix B. The Survey

Appendix B. 1 Employee Value Proposition

1	Please consider each the following compensation and reward related elements. Rate each of the attributes based on their importance to you in your current role or when considering a future role?					
		1	2	3	4	5
	Salary					
	Health cover					
	Pension Contribution Level					
	Life Assurance					
	Provision of Sick Pay					
	Amount of Annual Leave					
	Company Car					
	Performance Bonus					
	Share Options					

2	Please review each of the following attributes related to the development of your career. Rate each element based on its importance to you in your current role or when considering a future role.					
		1	2	3	4	5
	Formal Career Planning					
	Provision of Study Support					
	Organization Commitment to Learning & Development					
	Allocation of a Senior Executive as Mentor					
	Company with Policy to Promote Internally					
	Clear Career Paths					
	Organization's Growth Rate					
	Organizational Stability					
Performance Feedback						
3	Please consider the following characteristics and behaviours of an organization and rate them on their level of importance to you, in your decision to stay with your current organization or your decision to choose a new organization as an employer?					
		1	2	3	4	5
	The company's reputation with customers.					
	The diversity of the company's workforce.					
	The company's approach to environmental responsibility.					
	The company's approach to corporate social responsibility.					
	The company's approach to ethics.					
	The company's recognition as a "Great Employer".					
	The company's market share and position.					
	The company's approach to quality standards.					
	The use of current and emerging technology.					
	The size of the organization.					
	The industry sector the company is in.					
	The awareness of the organization's brand.					
The organization's reputation for innovation.						
The opinion held by your friends or family of the organization.						
4	Please rate the following characteristics of your current role or when considering a future role, based on their importance to you?					
		1	2	3	4	5
	The opportunity to travel as part of your role.					
	The level of innovation encouraged in your role.					
	Your role's influence on decision-making.					
	The leadership listening to employees opinions when making decisions.					
	Your personal interest in the responsibilities of your role.					
	The location of where your role is based.					
	The work/life balance your role offers.					
	The level of recognition provided to employees in your role.					
The person to whom you report or would be reporting to.						

Appendix B. 2 Internal Communication

No	Question	1	2	3	4	5
1	I am satisfied with the amount and quality of information I get about Company's strategy and goals					
2	I receive information from Company about management actions, accomplishments and/or failures before I hear information in the news or from an outsider					
3	I am satisfied with the amount and quality of information I get about events and changes within Company					
4	I receive information from co-workers about management actions, accomplishments and/or failures of Company before I hear the information from top management					
5	I often lack information to perform my job properly					
6	I am satisfied with the communication I have with my co-workers within Company					
7	The communications I have with my co-workers are open and free flowing					
8	Overall the flow of information within Company's sufficient					
9	My supervisor does not listen to me when I talk to him/her					
10	I receive information about my job performance					
11	Information I receive from my co-workers is trustworthy					
12	I do not follow news about Company					
13	Information I receive from my supervisor is trustworthy					
14	I am satisfied with the amount of information I receive concerning the department I belong to					
15	My knowledge and talent are not put to good use in my job					
16	Information I receive from top management is trustworthy					
17	The communications I have with top management are open and free flowing					
18	My supervisor is open to new ideas					

19	My job is not valued appropriately					
20	I receive recognition for my job					
21	I have all the materials and equipment needed to do my job					
22	I experience solidarity among my co-workers					
23	My supervisor trusts me					
24	My supervisor praises me					
25	I know what is expected of me in my job					

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Overview of Corporate Political Action in Emerging Economies in Indonesia

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Abstract

This study offers a framework to find the importance of corporate political activity (CPA) of companies in Indonesia in order to influence government decision-making. This paper reviews recent literatures in this area and integrate them to depict what CPA is, the antecedents of CPA and how companies implement CPA in emerging economies. Using evidence of the current issues related to business-political relationship in Indonesia we describe industries in Indonesia in which corporate political activity plays a major role. There are three major industries being explored in this study: mining, construction, and strategic industries. This study will help to provide framework to understand the relationship between business and political environment in Indonesia.

Keywords: Corporate Political Action, Indonesia, Government Policy, Emerging Economies

1. Introduction

Corporate Political Action (CPA) can be defined as a firm attempt to influence government policy-making to benefit the firm (Baysinger, 1984, Hillman *et al*, 1999). This type of action is considered as firms' non-market strategy. According to Shaffer (1995) firms can alter government policy-making through environmental through lobbying, Political Action Committee (PAC), environmental scanning, coalition building, and advocacy advertising.

As an emerging economies, Indonesia is gradually improve and its business and commercial opportunities. In business sector, the government enact business-friendly changes for the oil and gas sector (Fortune, 2015). Relationship between business and government is necessary for firm to secure the political connection with the government. This is not only applied to firms which operate in developed economies, but also important in emerging economies.

CPA has been discussed on different perspective by scholars, such as politics, economy, and business. These research on CPA is focus on specific political strategy taken by the firms and their relationship with business and government (Getz, 1997; Shaffer, 1995). While previous research provide various finding and theory about the implementation and effect of CPA by firms, very few have provide specific research on its implementation in emerging economy, precisely Indonesia. Most of the research in this topic were done in western context, such as United State and European countries. Indonesia have different political, economic, and cultural system. This difference will affect how a firm in Indonesia take an action to influence government policy. In this research we try to develop various prepositions to enhance our understanding on this particular area.

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2. Literature Review

2.1. Corporate Political Action

Previous scholars define Corporate Political Action (CPA) as firms attempt to influence government policy to benefit the firms (Baysinger, 1984; Hillman *et al* 1999). Lux, *et al* (2012) argue that firms influence government official to help them with appropriation, policy maintenance, policy change, and policy creation. There are a various kind of ways for a firms to influence policy-making. Shaffer (1995) explained that firms take actions through lobbying, Political Action Committee (PAC), environmental scanning, coalition building, and advocacy advertising.

The reason why firms engage in CPA is because government policy is one of important determinants of firm performance (Keim & Baysinger, 1998; Schuler, 1996; Shaffer 1995). Investment in CPA have much larger rate of return compared to the other investment of the firms in which rate of return from CPA expenditure of the firm is 200% (Moran, 1985 as cited in Lux *et al*, 2012). Government policy is also one of important factor that shape firm competitive environment (Porter, 2011). Government reserve the right to create regulation and policy related to the size of the market and the structure of the market. Firms will benefit if they are able to secure suitable policy for their own advantage. It means that influencing the policy-making process of the government can benefit the firm by reshaping the competitive environment to their advantages (Lux, *et al*, 2012). Furthermore, Hillman *et al* (1999) argue that by creating relation with the government will benefit the firm since they can get influence and access to information, as well as reducing uncertainty and transaction cost.

2.2. The Antecedents of Corporate Political Action

Research on CPA usually based on three levels: firm, industry and country level. On the firm level, previous scholars have focused on firm size as the important antecedent of CPA (Boddewyn & Brewer, 1994; Hansen & Mitchell, 2000). Size of the firm is linked with its ability to engage in political environment (Schuler & Rehbein, 1997) and its visibility in political environment (Schuler *et al*, 2002). It is found that the size of the firm is related to their public policy influence, in which larger firms have more influence in public policy making (Macher & Mayo, 2015). Larger firms are able to do so mainly because they can offer greater advantages for the government in term of votes, incomes, and employment. Moreover, Getz (1997) argue that larger firms tend to be more active in CPA because they are more visible to the government, hence they are liable to higher penalty by the government.

Another important firm level factor that determined firm participation in CPA is firm age. Research find that firm age is positively related with its ability to influence policy- making (Macher and Mayo, 2012; Macher *et al*, 2011). We can argue that older firms have better ability in policy-making influence since they are more experienced (Hillman, 2003). Firm age can also be linked to its ability to policy making influence based on its visibility and reputation (Keim & Baysinger, 1988).

On the firm level, management of the firms, precisely top management, is considered as one of important factor that determined firm engagement in CPA. It is based on the finding that top management have significant influence on important decision of the firms, such as strategic change (Wiersema & Bantel, 1992). We can argue that participation on CPA is one of the important strategic decision of the firm. Moreover, it is found that senior executives of firm play a role on whether or not firm will actively engage on CPA. The involvement of senior executive in political activity affect their firm CPA (Ozer, 2010).

Previous study on CPA observe industry structure as a factor that determined firm decision to be politically active (Schuler, 1999; Hillman, 2003; Macher & Mayo, 2015).

Schuler *et al* (2002) found that firms in concentrated industry are more politically active than those in fragmented industry, those firms are more likely to participate in lobbying and contribute to campaign.

On country level, political structures of the country is among one of the important antecedent of CPA. CPA is likely to differ in countries with difference political system such as parliamentary and congressional (Hillman & Keim, 1995).

2.3. Corporate Political Action in Indonesia as an Emerging Economies

Most of scholarly research on CPA are focused on Western context, with few amounts of research focusing in country such as China, Japan and South Korea (Yongqiang & Zhilong, 2006; Feng *et al*, 2013; Feng, *et al*, 2010; . However, policy-making influence of the firms will be different across industries and countries (Macher & Mayo, 2015). There is a big difference between Indonesia, as a country as well as an economic entity from the west. It will influence how the government works, which in the end influence the business-government relationship in the country.

Mietzner (2013) explain that business elite in Indonesia decide to participate in political area so that their business to obtain preferential treatment. Fisman (2001) argue that during the New Order (*Order Baru*) a numbers of firm in Indonesia could gain advantages because they have connection to President Soeharto. Subsequently, firms who can secure connection with Indonesia President Abdurrahman Wahid could also gain some advantages from this connection (Eklof, 2002). Furthermore, political system in Indonesia had changed since the *Reformasi* era to a more democratic system. The emergence of decentralization system in Indonesia is also important aspect in changing of political system in Indonesia. Eventually, the change in political system also influence the government-business relation in the country.

In other countries, firms can formally engage in policy-making process. For example, in country such as United State, business forms Political Action Committee to pool campaign and donates funds to political campaign. In case of Indonesia, even though firms are politically active to gain certain benefit, discussion on how they engage with government is not talked publicly.

As aforementioned above, the political system in Indonesia had changed overtime, so are the ways firms engage in political area. In present days, Indonesia is considered as an emerging economy. As an emerging economy Indonesia growing rapidly and its government policies is changing to favor economic liberalization. Therefore, firms which operate in Indonesia will have to compromise with this change, which eventually affect their corporate political activity in Indonesia. Similar to CPA in developed economy, study on CPA in emerging economy found that it contributes to firm growth (Lu & Choi, 2013), which mean that firms in emerging economy engage in political action not only to secure their current position in industry but also to grow as a firm.

3. Research Methodology

3.1. Conceptual Framework

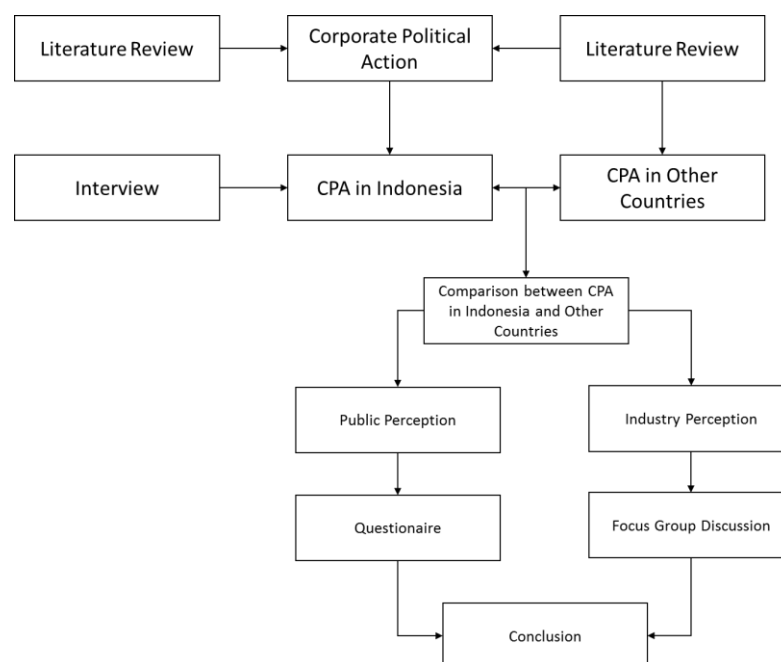


Fig.1. Conceptual Framework

This research will be conducted in two stage as illustrated in Figure 1 below. In first stage, we conducted literature study to analyze and identify the practice of CPA in general. We will the do interview with practitioners to get understanding about the practice of CPA in Indonesia. Using the literature review we mostly will have understanding on how CPA is done in other countries, which later will be compared to CPA in Indonesia.

In the second stage of the study, from the result of comparison between CPA in Indonesia and other countries, we will conduct focus group discussion to get more comprehensive understanding on how and why firms in Indonesia engage in CPA. Furthermore, we will also do empirical research by using questionnaires to discover about public perception on CPA in Indonesia. Three sectors are selected in this study: health industry, mining, and manufacturing.

3.2. Data and Sample

The data that will be use in interview and focus group discussion in this study will be obtained using purposive sampling in which we determined the sample based on their expertise and knowledge. The informant for this research will be those whose firms' performance are influence by government policy. In this paper, we take firms in mining, construction and strategic industries as examples of firms which engage in political area in Indonesia due to current issues related to this industry.

We argue that firms in these industries actively engage in political area because of the size and age of the firms and also the structure of the industry. In addition, a survey conduct by McKinsey & Company found that executives in energy are among those who consider government and regulator as their most critical stakeholder, thus they would actively influence government and the regulator because it is important for their competitive future, and hence, the political action must be a priority (Yoffie, 1988).

In conducting survey research, to collect the data a set of questionnaires be sent out to public in order to collect their opinion on the practice of CPA in Indonesia. To get the appropriate representative sample from the population this research use non-probability purposive sampling. This sampling method was use because using this sample technique researcher can get all possible cases that fit the criteria using various method (Neuman, 2007).

4. Conclusion

Firms' involvement in public policy making is one of important strategy in business. Basically, the government issued certain public policies to support the economies and business in the country. In practice, firms as a business entity will take action to influence public policy making in order to make the business environment more favorable to their business.

Since it is importance for firms to consider the risk of political activity, it is important to have deeper understanding about this particular issue. This research are expected to give understanding associate with Corporate Political Action in Indonesia, the CPA that dominantly done by firms in Indonesia, its effectivity and public perception towards them.

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Building A Framework of Organization Design Using Organizational DNA Profile (Case Study at PT. LEN Railway Systems)

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Abstract

Facing domestic market down-turn, and long term strategic plan urgencies, PT. Len Railway Systems (LRS) should reorganize itself to expand to regional market accordingly, which requires the organization to have strong execution and highly agile. To design such organization is not just simply by changing the organization structure, but should also consider the strategic plan requirements, which aligned with the four organizational DNA (OrgDNA) building blocks. This research develop new organizational design framework which shows clearer specific unit requirements, where the information flow is hampered and also shows which organizational grouping is more engaging for the employees. The proposed framework for this specific case study are capable to define new business-process-based organizational grouping, which should clarify the key process, a new decision making process, an institutionalized internal and external information flow protocols, a lateral and horizontal promotion or rotation, a non-financial rewards, and an integrated management system, and also a cross functional process-based management for core business process on organization structure for LRS.

Keyword : organizational design, process-based organization, information-based organization, Organizational DNA, organizational design framework, railway system company organization.

1. Introduction

LRS is a subsidiary of a state-owned company (PT. LEN Industries) that engaged in the field of railway system electronic/electrical controller, power systems, and telecommunication system (PT. Len Industri, 2013). Facing domestic market downturn, LRS strategies is to execute market penetration, market development, product development, business forward integration or horizontal integration. To achieve that objective, LRS defined the long-term general strategies, which are; Innovation and value-added solution development, Go Asia and market expansion, Reliable and highly competence Human Capital, Organization and management system that support growth, Integrated and excellent supply chain management.

To achieve this objectives, LRS should reorganize itself into a resilient organization profile, which highly agile and have strong execution (Gary L. Neilson, 2008).

By using McKinsey's 7S tools, it's clear that LRS is having problems on their Human Resource Management Systems, as illustrated on **Figure 1**.

Figure 1 represent that LRS's HR system has the lowest number among other 7S's components, to be more detail, the 7S result also could be seen in **Figure 2**.

Figure 2 shows that the recruitment specification is not yet correct, career path is under development, training program is only done when needed, prioritizing only "experienced" employee but not the competence for the job, organizational structure is complete but not updated, unclear job description and overlapping roles, and also having knowledge and accurate information and able to adapt, but rarely done in LRS.

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McKinsey's 7S Questionnaire Result

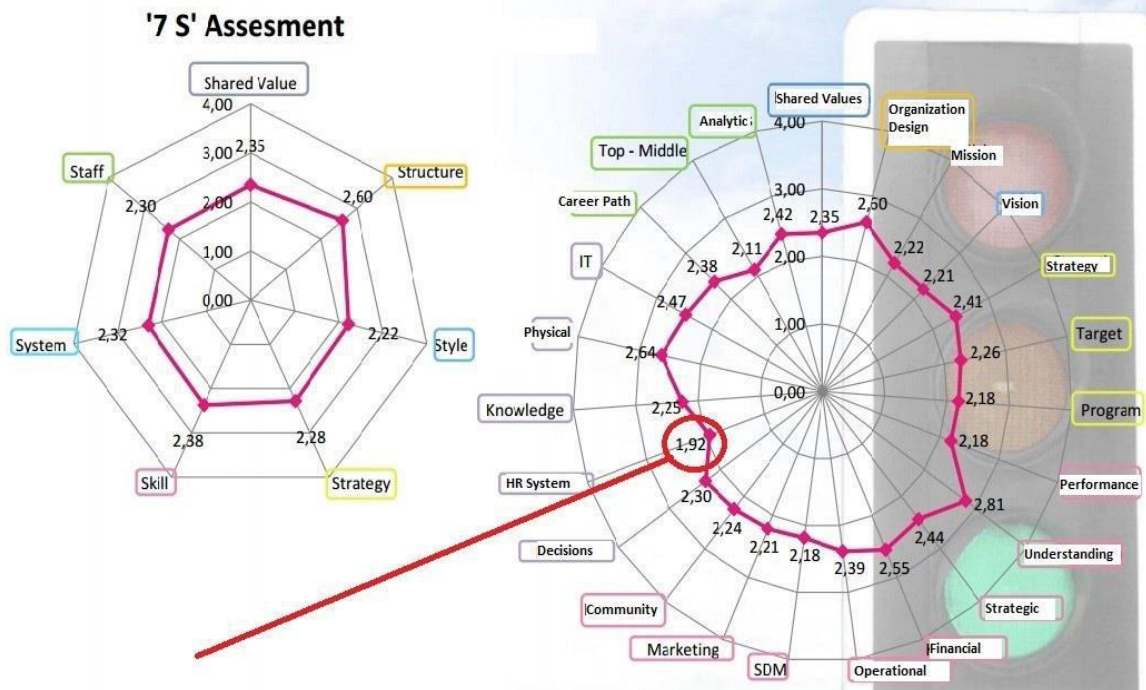


Figure 1 LRS's McKinsey 7S result (PT. Len Railway System, 2014)

System	HR System	2.32	1.92
Staff	Top-Middle	2.30	2.11
Strategy	Program	2.28	2.18
Skill	Performance	2.38	2.18
Skill	Human Capital	2.38	2.18
Style	Vision	2.22	2.21
Skill	Marketing	2.38	2.21
Style	Mission	2.22	2.22
Skill	Community	2.38	2.24
System	Knowledge	2.32	2.25
Strategy	Target	2.28	2.26
System	Decision	2.32	2.30
Value	Shared Values	2.35	2.35
Staff	Career Path	2.30	2.38
Skill	Operational	2.38	2.39
Strategy	Strategy	2.28	2.41
Staff	Analytic	2.30	2.42
Skill	Strategic	2.38	2.44
System	IT	2.32	2.47
Skill	Financial	2.38	2.55
Structure	Organization Design	2.60	2.60
System	Physical	2.32	2.64
Skill	Understanding	2.38	2.81

Recruitment and selection has been done, but the specification is not fit
 Career path has started to plan
 Training program is done only when needed and very rare

Has vision, mission, targets and performance
 Prioritize experienced employee on important position

Organization structure is complete but not updated
 Job and Role clearly defined

Rules and Accountabilities is clearly written
 For several position still happens overlapping roles
 Structure is aligned with company's activity

Physical infrastructure is supporting company's needs
 Physical Infrastructure is supporting efficiency and effectiveness

The company already have the accurate knowledge and information and capable to adapt, but rarely done (industry and competition)

Figure 2 LRS's 7S detail result (PT. Len Railway System, 2014)

This research goals is to contribute to organizational design practices, to propose a clearer path on identifying the problem and treatment in the unit level, it's information flow, which organizational grouping that are more engaging to the employee and the appropriate motivator for the employee.

2. Research Methodology

The methodology for this research is firstly to identify the organizational design requirements from the strategic plan requirements, followed by identifying existing organizational DNA requirements by OrgDNA questionnaire which accompanied by observation, workshop and FGD as shown in **Figure 3**.

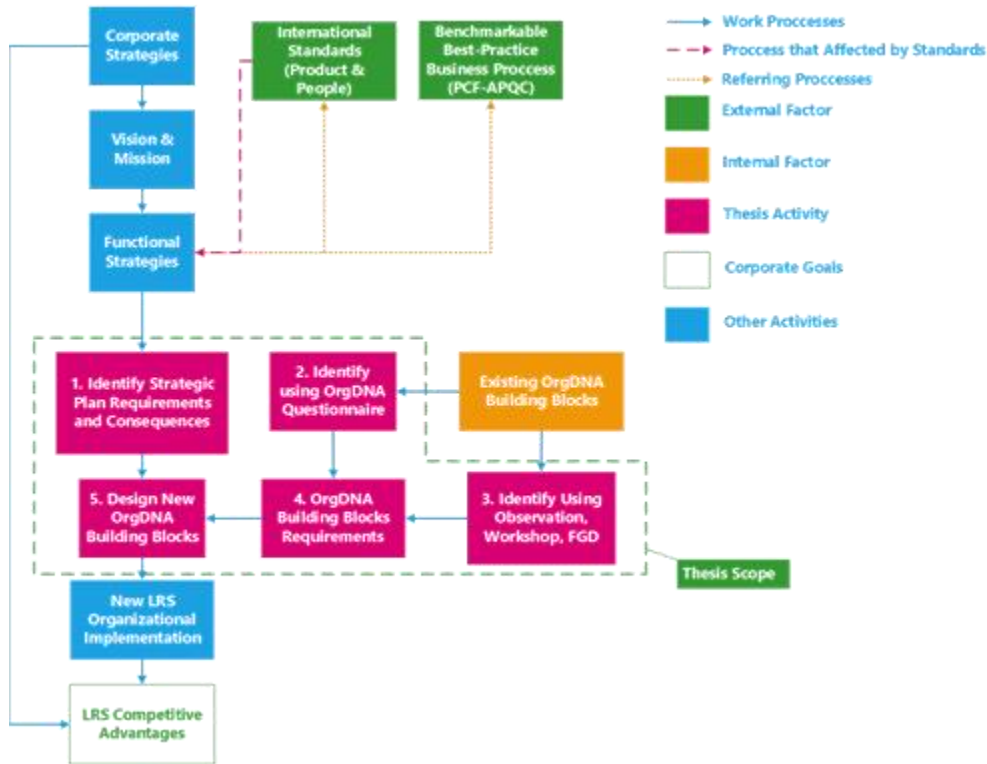


Figure 3 Organizational Design Conceptual Framework

Here are the definition for each activities of the research, illustrated in **Figure 3**. The identification of strategic plan requirements and consequences should refer to the company’s functional strategy which considers the standards of railway system products and people competencies, and followed by best-practice business process benchmarking efforts, the data required for this activities is taken from long-term strategic plan document of PT. LRS (PT. Len Railway System, 2014) and from the qualitative methods (Observation, Workshop, Focus Group Discussion (FGD)) that done with the employee of LRS. This activities followed by identifying the existing OrgDNA building blocks requirements, this data is gathered by using the OrgDNA profile questionnaire to identify existing four organizational building blocks.

The Organizational DNA Profile (OrgDNA Profile) is a metaphor which is useful in understanding the idiosyncratic characteristics of an organization. Like the DNA of living organisms, the DNA of living organizations consists of four basic building blocks, which combine and recombine to express distinct identities, or personalities (see **Figure 4**). These organizational building blocks—decision rights, information, motivators, and structure—largely determine how a firm looks and behaves, both internally and externally.

The good news is that—unlike human DNA—organizational DNA can be modified. An organization’s DNA strongly influences—and, in some ways, even determines—each individual employee’s behavior (Pasternack, 2005).

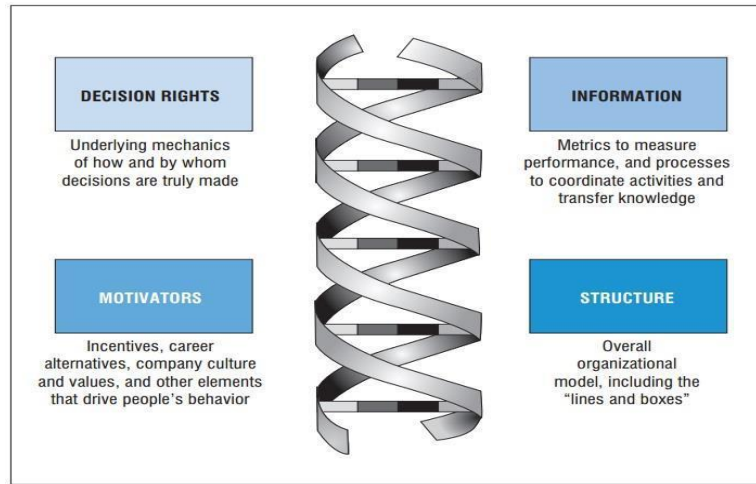


Figure 4. The Four Organizational Building Blocks (Pasternack, 2005)

Deeper in this Organizational DNA profile that the disproportionately heavy influence of that decision rights and information have on both execution ability and execution agility. Each of these building blocks is roughly twice as “strong” as structure and motivators in their correlation with these twin pillars of organizational success.

Put simply, decision rights and information are the “dominant genes” in organizational DNA. Structure and motivators are still important and influential, but they are clearly “recessive.” (Strategy& - Formerly Booz & Company, 2008)

OrgDNA profile defined 7 organization profile, 3 of them are considered as healthy organization profile and (Resilient, Just-in-Time, Military Precision) and the 4 others are unhealthy organization (Passive-Aggressive, Outgrown, Over-managed, Fit and Starts), as illustrated on Figure 5

Healthy Organizational Profile		Dysfunctional Organizational Profile	
The Resilient Organization	Flexible enough to adapt quickly to external market shifts, yet steadfastly focused on and aligned to a coherent business strategy	The Outgrown Organization	Too large and complex to be effectively controlled by a small team, but has yet to democratize decision-making authority
The Just-in-Time Organization	Inconsistently prepared for change, but can turn on a dime when necessary, without losing sight of the big picture	The Overmanaged Organization	Multiple layers of management create analysis paralysis in a frequently bureaucratic and highly political environment
The Military Organization	Often driven by a small, involved senior team, succeeds primarily through the will and foresight of its leaders	The Fits-and-Starts Organization	Contains scores of smart, motivated, and talented people, who rarely pull in the same direction at the same time
		The Passive-Aggressive Organization	Congenial and seemingly conflict-free, this organization builds consensus easily, but struggles to implement agreed-upon plans

Source: Booz Allen Hamilton

Figure 5 The 7 Organizational DNA Profiles (Strategy& - Formerly Booz & Company, 2008)

To support, verifies, and validates the symptoms resulted from the questionnaire, is done by using qualitative methods (Observation, Workshop, Focus Group Discussion (FGD)) with the employees and the management team, to gather insights, and if possible to find out the root cause of the problems.

To Define new OrgDNA building blocks requirements, could be done by combining strategic plan requirements with the new organizational building blocks to formulates new LRS organization structure, information flow, decision rights, and motivators.

The verified method of OrgDNA profiler and the following methods of organizational design in this research could contribute into more formalized method from identifying organizational symptoms until each organizational DNA building blocks definition.

3. Data and Analysis

The data for this research is consist of the OrgDNA profiler questionnaire, Observation, Workshop, and

Focus-Group Discussion, this data will produce the new four organizational building blocks requirements, these organizational building blocks should be aligned with the strategic plan requirements, the data from OrgDNA Profiler questions, as illustrated on **Appendix A1**, by counting the dominant numbers of each answers of the question as the representatives of the data, resulting:

1. LRS is a “resilient” company as shown in **Appendix A1, point (1)**. LRS perceived as “resilient” organization, the healthiest from the other profiles, but by comparing and verifying with the observation, workshop, and FGD methods, the result shows the other way, this leads to further investigation, which shows that categorizing the questionnaire results by units, by directorates, and by management level will expose further details and combination possibilities, such as :
 The different organizational perception between units in the whole company
 The different lateral organizational perception between directorates in the whole company
 The different lateral organizational perception among mid-management and among top-management
 The different vertical organizational perception between management levels (Top-Management, Mid-Management, Unit Staffs level)
 The different organizational perception between employee categorized by technical (electrical, telecommunication, civil, mechanical, etc.) and non-technical work (finance, accounting, HR, etc.)
 The different organizational perception between employee categorized by the process classification, core business process and the non-core/management and support process.
2. In the contrary with the result from McKinsey 7s, workshop, observation, and FGD shows the other way, so to get more detail, the data is categorized again by all of the vertical hierarchy, Top Management (all of the directors data), Mid-Management (all of the VPs data), Staffs (all of the employee excluding the top and mid-management) which resulting that the mid-management has “just-in-time” perception (2),
3. This matter is indicated as the “senior-middle management divide” which describe that senior/top managers were far more likely to be optimistic than their middle-management colleagues were, in their perception of engagement level. Since middle managers are tasked with handling more day-to-day employee issues, their assessment is likely the more accurate (Harvard Business Review Analytic Services, 2013), this finding is encourage deeper categorization to see more granular problems in each units/person in the organization (3),
4. It shows that every unit or person or function have their own results, which varies between “resilient”, “military precision”, “just-in-time”, and “fits-and-starts” profile, not a homogenous “resilient”, so the symptoms and treatment of each unit is adapted accordingly for each units. As for the new organizational building blocks specifically for the new structure, besides to cope new units required for the new organization, the new organization should also provide employee engagement by grouping them with the similar organizational perception about the company (Smith, 2012), since the current grouping of the directorate resulting this combination Marketing and Planning Directorate (Resilient), Technical and Operation (Just-in-Time), and Human Capital, General Affairs and Finance (Resilient) (4),
5. Along the research it’s found out that grouping the directorate based on Core Process and the others with
 Corporate Process is resulting both of the grouping is having the profile (Resilient), which is better than grouping of Technical (Engineering-based job) with the Non-Technical (Non Engineering-based job), this grouping (Core and Corporate) grouping is also indicated by the OrgDNA profiler symptoms and treatment for the “fits-and-starts” and “resilient” where there should be a cross functional team on the core process.

Besides those result of symptoms and its treatment. There are also important thing of the OrgDNA profile, that are top traits of “Strong Execution” and “Highly Agile”, these traits determine whether the company is having good execution ability and good execution agility, these traits could be seen from the answers of the OrgDNA questionnaire results.

Question Number.	Top Three "Strong Execution" (Execution Ability) Factors
3	Everyone has a good idea of the decisions and actions for which he or she is responsible
6	Once made, decisions are rarely second-guessed
16	Important information (even bad news) about the competitive environment gets to headquarters quickly

Question Number.	Top Three "Highly Agile" (Execution Agility) Factors
16	Important information (even bad news) about the competitive environment gets to headquarters quickly
3	Everyone has a good idea of the decisions and actions for which he or she is responsible
17	We rarely send conflicting messages to the market

Question Number.	Top Three Other Symptoms or Confusion among organization members
19	Confusion whether Leaders here are more focused on immediate objectives or playing for the long term
23	Workarounds (e.g., creating unauthorized processes to get work done) are a common occurrence in this organization
27	Too many people here have overlapping roles

Figure 6 Top Three Traits and Other Symptoms/Confusion in LRS

This research is also highlighting the top three traits that determine the “Strong Execution” and “Highly Agile”, and the top three confusions and the dominant weakness of in LRS, as illustrated as the red fonts in **Figure 6**.

Further from the questionnaire data, there are current “Top Three Traits and Confusion Symptoms” of each of the organizational building blocks that must be change from its current condition into the target condition, whether to keep up the current positive traits (blue fonts) or to fix the negative traits (red fonts), details solution on each Organizational DNA building blocks explanation as follows:

4.1. Structure Building Blocks

From the result of the data at **Appendix B2** there are top confusion and symptoms that lies on specific organizational building blocks, as illustrated on **Table 1**.

Table 1 LRS's Current and Target Condition of Structure Building Blocks

Structure Building Blocks	
Current Condition	Target Condition
Workaround (e.g. creating unauthorized processes to get work done) are a common occurrence in this organization	LRS should have firm and efficient business process, which accommodates field operation dynamic nature

<p>Confusion : Whether our organization’s structure has about the right number of layers or too many layers and too much complexity</p> <p>Confusion : Influence in this organization depends mostly on the title and role or reputation, credibility and relationships</p> <p>Too many people here have overlapping roles</p> <p>LRS organizational focus on process and internal issues gets in the way of attention on markets and customers</p>	<p>LRS structure should have the right number of layers, to eliminates unnecessary bureaucracy when there are need quick escalation of authorities, especially in products and services management</p> <p>LRS should have people which have title and role that are respected by reputation, credibility and relationships, ones could respect each other when they know what others do.</p> <p>Every unit has their own accountabilities and authorities, aligned with the next process owners and work collaboratively within their jurisdiction, this should controlled by an entity to aligned activities with the standards</p> <p>LRS should have single contact points for the market, specifically in the value creation process based organization, so that it would be responsive to the market and customer dynamics</p>
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Table 1 shows there are workarounds, confusion on organization structure layer, organization influence, overlapping roles, and alignment of process in LRS’s organizational building blocks. According to this data, then there should be a directorate that specifically handles core business process, which named “Directorate of Products and Services” which become the interpretation of a process-based organization which resembles in several points of Hernaus’s “Process-based Organization Design Model” (Hernaus, 2008).

While the other directorates which handles the corporates business process, since there are constraints in LRS that should only three directorates so the “Corporates” grouping itself is divided into two, the “Integrated Management Systems” and the “Resource and Sustainability Management”.

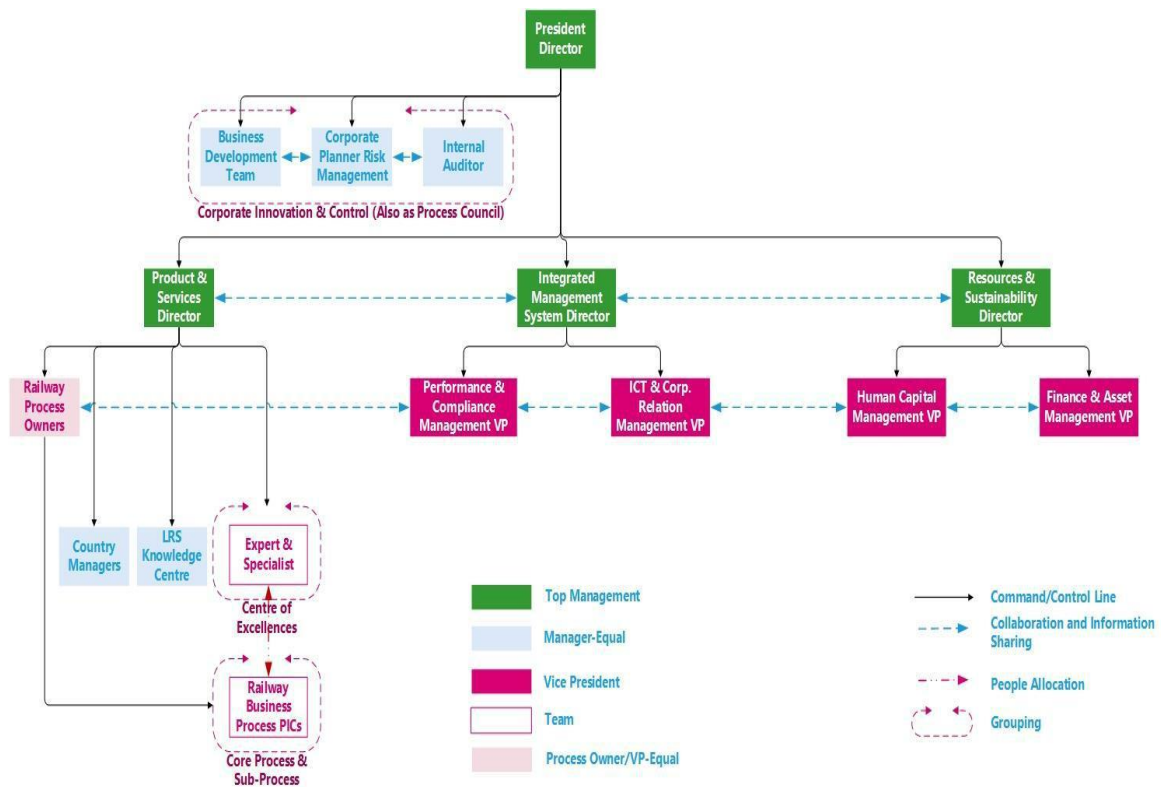


Figure 7 New LRS Organization Structure (in general)

Since there are many standards and regulation that LRS should face when entering regional market (Railway Standards, Local Regulation, etc.), so that requires an “Integrated Management System” which could manage all of this standards in one place to remove document duplication, provide control and guide the business process in the most effective and efficient way (Chartered Quality Institute, 2007), this Integrated Management System Directorate is also acts as an “Information Based Organization” which explained by Drucker (Drucker, 1988), this function in the large organization should managed by Information and Communication Technology, since in Railway System Company the document flow, working evidence, standards and regulation play important roles and used intensively.

The third directorates are the one which handles the resources and assets management, which named Resource and Sustainability Management., other parts of the management, such as business development, risk management and internal audits is on the “neck” of the President Director, since those three function roles as the innovation and control units for the whole company. As illustrated in **Figure 7**.

4.2. Decision Rights Building Blocks

After the “Structure” organization building blocks is defined as above, the next is to identify and define the new decision rights, accountabilities and authorities based on the business process they are assigned by. This assignment of the process to the units is based on LRS classification framework (Pratama, 2015), which adopts

APQC’s Process Classification Framework (PCF) for Aerospace and Defence Industries (APQC, 2015) and some of the Cross Industry PCF (APQC, 2014). This process assignments will eliminates overlapping roles, creating unauthorized actions, clarify of each unit decision and actions for which they’re responsible. The decision rights allocation as shown in **Appendix B1 and B2**, For the second-guessing practice in the organization, there are example from Pasternack on his writing, as illustrated on **Figure 7** (Pasternack, 2005)

Figure 7 shows The new decision making principles will includes Propose-Validate-Decide-Execute principles which explains new decision-making process is should be institutionalized within the organization and communicated to all of the stakeholders, so that every decision is taken is a firm one and eliminates second-guessing practices.

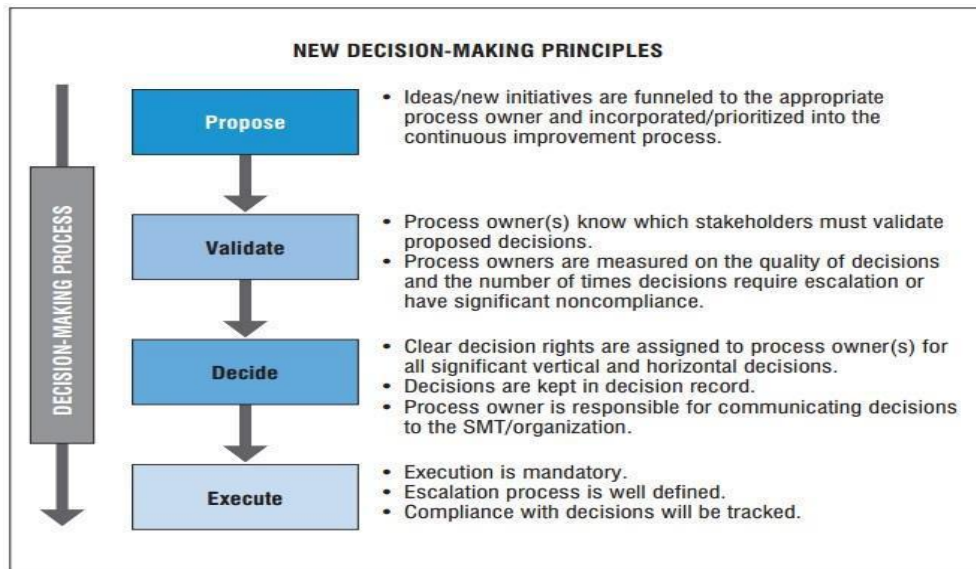


Figure 8 Example of New Decision-Making Process (Pasternack, 2005)

The current condition should be manage into the targeted condition to achieve the “Strong Execution” and “Highly Agile” targets, as illustrated in **Table 2**.

Table 2 LRS Current and Target Condition of Decision Rights Building Blocks

Decision Rights Building Blocks	
Current Condition	Target Condition
Not everyone has a good idea of the decisions and actions for which he or she is responsible Once made, decisions are often second – guessed	Each employee have clear deision and action he or she is responsible

<p>Confusion about : the culture of this organization can best be described as command and control or persuade and cajole</p> <p>Confusion about : when we look at new opportunities we put first financial attractiveness of the market or fit with our strategy and capabilities</p> <p>Confusion about : whether we have a distinctive culture that gives us a competitive advantages</p>	<p>Propose a new decision making process that eliminates second-guessing practice</p> <p>Corporate values and culture needs to be set which one is appropriate in which condition</p> <p>There should be a decision making support mechanism that provides executives a sufficient information to make a decision</p> <p>The company culture / values should provide and flourish competitive advantages in the organization</p>
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4.3 Information Flow Building Blocks

In the current condition and target of the Information Flow building blocks shows that LRS don't have metrics they need to evaluate business performance, and there are confusion whether the organization is generally more people-oriented or task oriented, so there should be a clear and institutionalized business performance metrics and knowledge management orientation, when everyone know what they are doing for their decision and action, have similar knowledge level then task-oriented is possible, this could possible to be done by firstly nurture best practice or knowledge sharing and benchmarking which socialized and become the culture of the company, details at **Table 3**.

Table 3 Current and Target Condition of Information Flow Building Blocks

Information Flow Building Blocks	
Current Condition	Target Condition
<p>Important information (even bad news) about the competitive environment gets to headquarters quickly</p> <p>LRS often send conflicting messages to the market</p> <p>Information not flows freely across organizational boundaries</p> <p>Confusion whether leaders here are more focused on immediate objectives or playing for the long term</p> <p>LRS doesn't have the metrics to evaluate business performance</p> <p>Confusion whether the organization is generally more people-oriented or task-oriented</p>	<p>Keep this up and improve it by also giving decision making support information</p> <p>Every message to the extend partly should be managed for each party and aligned with the strategy</p> <p>Every internal information flow should also be managed and aligned with the strategy</p> <p>Management should communicate their vision and mission, targets and clarify into employee objectives</p> <p>Define, clarify and institutionalize business performance</p> <p>LRS should manage where both of this orientation is fit</p>

While other current condition that should be improved is the information flow policies that should be formalized and aligned, since current condition could leads into send conflicting messages to the market, or even internal parties, which will cause confusion and misinformation, this could be worse if the decision making process of the top-management is influenced by the wrong information and false calculation, which leads to the whole company misleads, lost opportunity and for worse is bankruptcy.

The information flow management proposed in this research is to manage, align, and accurately transmit and receive for each stakeholders in the company, and outside the company, by assigning the "Integrated Management Systems" Directorate as the single point of contact, information and knowledge hub, value-creation-based information source, resource-based information, and ultimately the business intelligence and decision support information for the top management, as illustrated in **Figure 8**. Similarly for the external information flow, this directorate take the role as official press release of the company to the outside world, as presented in **Figure 9**.

Figure 8 represent the internal information flow for top-management, mid-management, and employee level, including what kind of information that exchanged each other. While **Figure 9** shows the external flow information from the company to the considered as external stakeholders.

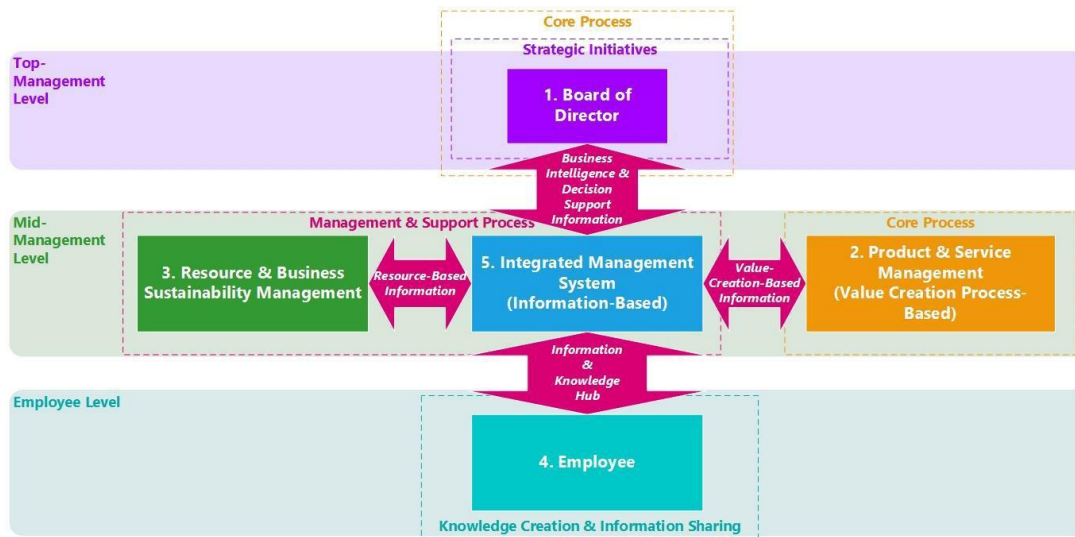


Figure 8 LRS's Internal Information Flow Management

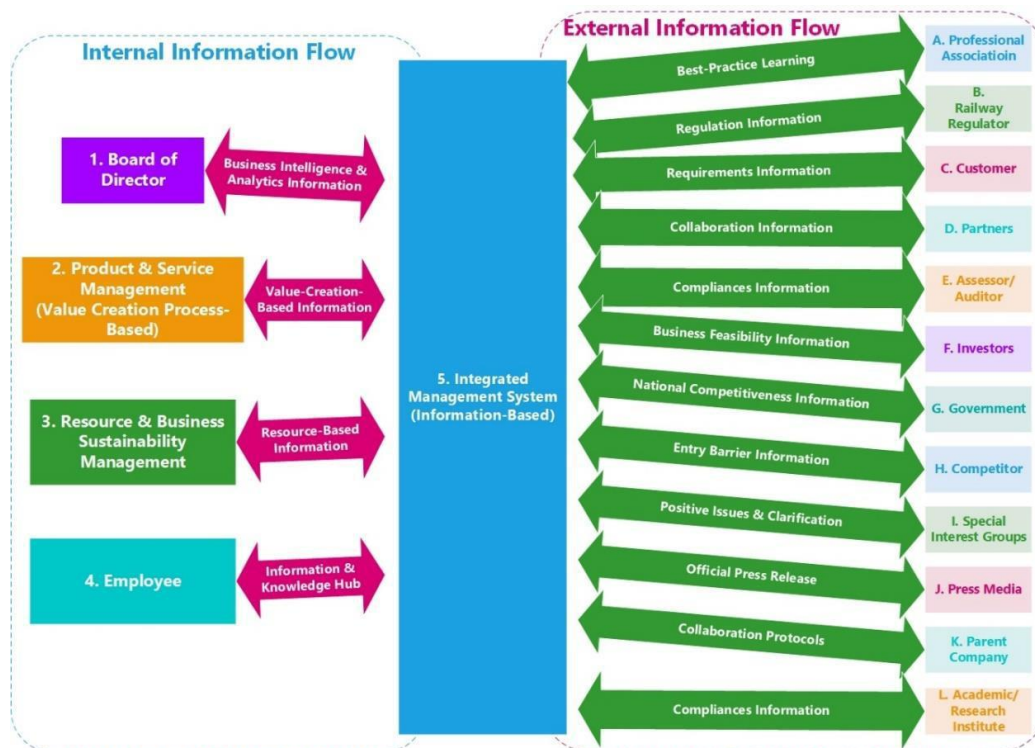


Figure 9 LRS's External Information Flow Management

4.4. Motivators Building Blocks

According to the current and expected target condition of the motivators building blocks which taken from the top three confusion and symptoms of the building blocks, shows that LRS's motivators is still in its early stage to cope the strategic plan requirements to compete in regional market which should attracts the best talents, this finding is also indicated in McKinsey's 7S findings in the beginning of this research. Listed on **Table 4**.

Table 4 Current and Target Condition of Motivators Building Blocks

Motivation Building Blocks	
Current Condition	Target Condition
If a colleague makes commitment	Commitment oriented culture is nurtured with individual performance-based metrics
Confusion whether people are rewarded more based on values and pride or incentives and rewards	LRS should manage appropriately, financial and non-financial rewards and clarify those reward systems
Confusion whether the senior people here “walk the talk”	Coaching, best practice sharing, knowledge management should be institutionalized in LRS
Confusion people who innovate get rewarded here	Creating institutionalized cross functional teams for improvements, and developments, and create incentives and rewards
Confusion whether the ability to deliver on performance commitment is strongly influences career advancement and compensation or not	LRS should build individual performance metrics and provide rewards for best performer, and their career advancement

4. Conclusions

From this research there are several points, suggestion for the next research and improvements from the methods proposed, they are:

1. Organizational DNA profiling is a powerful tools to find what’s wrong in the company if added with the data grouping method. The data is grouped into organizational level, secondly then grouped into unit/person/mid-management and their staffs, each grouping has its own benefit, to analyze the underlying mechanics, and to understand what to do next. Proposed method of this research are grouping the verified data (with qualitative data) which could resulting clearer portray the current organizational
2. To verifies and gain deep insights, critical questions should be prepared after gaining the data from the quantitative method (OrgDNA Profiler Questionnaire), this research propose that qualitative method should also become references to obtain clearer and sharper source of the organizational problems.
3. The top traits or the dominant genes in Organizational DNA to provide “Strong Execution” and “Highly Agile” will be much improved, if using the benefit of Information and Communication Technologies to automatize the decision making process and information flow regulation.
4. This research, especially in the structure building blocks, is partly an interpretation and application of Tomislav Hernaus and Peter F. Drucker works and CQI’s version of Integrated Management Systems.
5. Aligning strategic plan requirements with OrgDNA results data, should consider these notes, Strategic plan objectives, it’s boundaries and alignment with the OrgDNA building blocks
6. The proposed framework for Organizational design, based on OrgDNA Profile is illustrated in **Figure 10**
7. **Figure 10** shows that functional strategic plan needs the references (Standards and Benchmarks), as a guidance and boundaries, since strategic plan is to set the objectives of the organizational design, it should cope everything it takes to win the competition. Organizational design requirements identification will portray current orgDNA building blocks, then the data will be verified and aligned with the strategic plan requirements, this information will be the source for design new organization to achieve the targeted OrgDNA building blocks.
8. The methodologies used in this case will not resulting a one-size-fits-all solutions, the results may vary according to the condition of the organization.

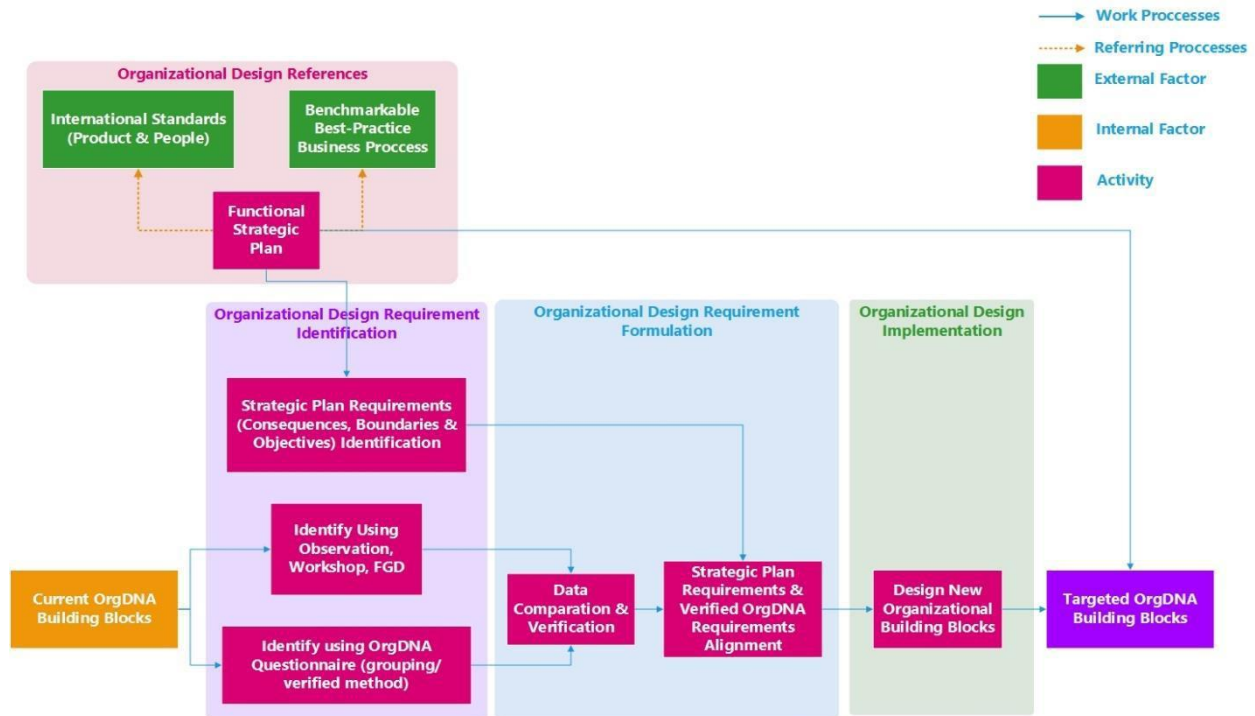


Figure 10 New Organizational design framework using OrgDNA profiler

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Consumer Perception Analysis to "Wardah" Cosmetics Brand Positioning and Awareness Strategy as A "Safe and Sacred" Cosmetic in Semarang

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Abstract

Wardah Cosmetic has obtained a halal certificate from POM MUI (Institute for Food, Drugs and Cosmetics of Indonesian Ulema Council). This certificate has become Wardah's positioning, as distinctive character of the brand. This also reveals that Wardah has concern towards Moslem consumers, including those who are performing the Hajj or Umrah. But, being positioned as a "Safe and Sacred" cosmetic will narrow the market share of the firm to reach a heterogeneous and wider segment. Hence, the positioning consistency of Wardah should be captured by consumers to create perception as expected by the firm. This is a descriptive research, with the aim to analyze whether the firm's positioning strategy has been properly embedded into the consumers' mind. The respondents are 241 Wardah users in Semarang City. This study has found that the consumers' awareness of the product is high. The highest positioning is on the Halal and Islamic product categories which is suitable for tropic areas. Steps to create a promotional strategy for product positioning has been as expected by the company. However, this study suggests the firm to meet the needs of product quality in accordance to demands of various segments.

Keywords: Perception, positioning, brand awareness

1. Preface

Along with the development of the current business condition, the competition is also increasing. Likewise, the needs and desires of the community become more diverse and increased. Such conditions may be the strength of the business, especially for companies that are able to reflect the needs of the community by providing the required goods.

Human needs can basically be divided into primary needs and secondary needs. According to the ILO (International Labour Organization), the primary needs are requirements relating to the adequacy of the basic needs of every human being. Secondary needs are the complement of primary needs. The secondary needs will be met if primary requirements have been fulfilled. But at this moment, the terms primary and secondary needs no longer show the level of needs must be met first, yet equally as requirements strived to be met, even at the same time.

The needs for health and beauty care, especially for women, are no longer perceived as secondary needs; they become the demands that would always be met. Increasing awareness to the importance of attractive appearance, both in society and workplace, fueling the business attempts to meet society needs of health and beauty.

Association of Indonesian Cosmetics Company (Perkosmi) estimates that sales of cosmetics will continue to increase. Nuning S Barwa, Chairman of Perkosmi, said that cosmetic sales volume growth was supported by the increased demand, particularly from middle class consumers. Research Department of Finance Today projected the national cosmetics industry to have a great opportunity in penetrating the ASEAN market. One factor that support the growth of exports to ASEAN countries is the common climate,

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social, cultural and people's purchasing power. It will be easier for manufacturers of cosmetics in Indonesia to create an equal preference with ASEAN consumers society (Indonesia Finance Today, The Ministry of Industry - Republic of Indonesia). Judging from the amount of production capacity, turnover, sales, product variations, foreign exchange earnings and employments, the cosmetics industry could be capable of moving the wheel of national economy.

The problem we faced today is the large number of imported cosmetic products that already flooding the market, including those illegally imported. It is feared that the products do not meet health and safety standards in accordance with Islamic values. Moreover, there are still lack of regulations that require importer of cosmetic products to have permission from the Food and Drug Supervisory Agency (BPOM).

Until now, the cosmetics industry in Indonesia has 81 companies, with 48 small and medium enterprises, and 33 large enterprises. Despite the competition that perceived to be more intense in the future, a company named PT Paragon Technology and Innovation does not reduce its intention for producing cosmetic goods.

PT Paragon Technology and Innovation was established on 28 February 1985 with the initial name of PT Pusaka Tradition Capital. The company changed its name to PT Paragon Technology and Innovation in 2011. At that time, the company's founder and owner still saw the open opportunities in this industry. This company was started modestly with the initial products for hair care branded Ega, distributed directly to salons.

As a newcomer at that time, definitely the company experienced various difficult problems, especially with the nature of cosmetic products consumers who often precarious to shift brands. The use of cosmetics for women considered to be risky for skin health when used alternately or with trial and error nature. Because of the perseverance and the ability to read existing opportunities, finally in 1995 PT Paragon Technology and Innovation (PTI) began to develop cosmetic products branded Wardah.

At this time Wardah products are well known by the people of Indonesia as a local cosmetic product that can compete with foreign products. Wardah products can already be found throughout Indonesia. Wardah placed its products to traditional markets and cosmetic shops to facilitate lower economic class consumers. Shopping centers also become places to sell Wardah products, through the opening of official outlets.

Wardah products are originally intended for a particular religious community, strengthened by its ads using famous women wearing hijab. The background of this business strategy is to seek opportunities to capture the Moslem communities by launching halal products. Currently, Wardah positioning tagline is "Sacred and Safe Cosmetics". This tagline is considered to hit the mark in people's minds. With the "sacred" word, people considered Wardah as halal and safe guaranteed. Wardah as halal cosmetics, using safe materials that do not contain hydroquinone. Cosmetics compound with halal ingredients will provide safety and comfort for the users. Cosmetic products not only intended to create physical beauty, but also to give psychological comfort. Halal products tagline has been attached to Wardah as the attractiveness that made it become Indonesia's worldwide cosmetic products.

Positioning is an important strategy, because clear and good positioning will create consumer awareness of the product's brand. The more consumers be able to recall the brand and distinguish the identity of a product with another products means that the strength of the brand will be more established. The success of positioning strategy is determined by the company's ability to identify who is the consumer that use Wardah products. It was not an easy task. The precision required so that the market segment really can be used to offer products according to customer needs.

Along with the business development, variety of products were developed, such as products for sensitive, acne, dry, oily, or normal skin. They also developed cosmetic products for skin treatments, which is now the pride of the company, named **Wardah Lightening Series** which generate bright maintained skin. **Beauty Solution** includes special skin care products for women with dry pimples to the women who go to Hajj or Umrah. Another collection of the products is **Beauty Expert** consisting of a number of make up kits like lip palette with color gradations..

It was realized that the more number and range of buyers, with their diverse needs, the company can not be able to meet all those needs. Companies must identify the buyers that can be well served, and may provide benefits to the company. Therefore, in the marketing programs, the company will determine the specific market segments, so that the development of products can truly meet the needs of the buyer.

A strategic step in the marketing to choose a buyer who would be served (Philip Kotler, 2008: 225), is to perform market segmentation, which divides the whole market into smaller segments with different needs, characteristics, or behaviors that might need specific products or marketing mix. Next is the market target assignment, which evaluates the attractiveness of each market segment and select one or more market segments which would be selected.

In this increasingly diverse variety of Wardah cosmetic products, it is a big challenge for the company to maintain the product positioning and create strong brand awareness for users. In other hand, public requirements for cosmetic products are not only limited only on halal materials, but also on the variety or

diversity of product benefits, both for beauty and treatment. The company cannot ignore the increasingly tight competition in cosmetic products. With a wide selection of brands and product functionality, it will allow consumers to switch from one brand to another brand. It become a dilemmatic choice for the company, because positioning Wardah with halal label will become a special attraction for the Moslem community, thus can be a competitive strength, but in the other hand, it will also narrow the limit of product user segmentation.

The number of customers continues to grow as well as the variety of the products, it will have an impact on the diversity of customer characteristics. It is important for marketing to understand the customer characteristics, as it will be the main determinant for deciding the marketing strategy. This purpose needs to be balanced with the deep intensity of customer analysis to acknowledge the Wardah cosmetics user profile. It requires the latest studies measures to determine the user's perception of Wardah products labeled "Safe and Sacred" Cosmetics, as a form of product positioning strategy, in consumers' minds. In this case it is necessary that the studies are consistent and continuous toward the Wardah consumers behavior in particular. The inability of the company to build brand awareness through positioning policy will lead to a shift in perceptions of Wardah cosmetic products.

2. Methods

The type of this research is descriptive research, which intended to gather information about the status of an existing phenomenon, as it is, in the condition when the time of the study conducted. (Suharsini, 2000: 309)

The population of this study is the "Wardah cosmetics" users. The samples are parts of the population, consisting of a number of selected members of the population. Cosmetics users are in unlimited number, because it is uncertainty known. Using the opinion consideration from Sekaran, 2006, the effective sample size for a study using questionnaires for data collection is between 30 to 500 respondents. Thus the sample was set at 250 respondents. The sampling technique is using purposive sampling, the requirements that must be met to qualify as a sample is that the respondent should have used "Wardah" cosmetics in the last 3 months.

3. Research Findings

The respondents in this research totalled 241. In accordance with the objectives of this study, the respondents are users of Wardah cosmetics products, note that the time span respondents use cosmetics were varies. The longest time respondents using cosmetics is 2 to 3 years. The majority of respondents were Muslim, women, age category between teenager until adulthood. In the economic aspects, the respondents can be generally categorized as low to moderate income. This is related to the status of respondents in general: teens and adolescence, yet still a student and unemployed. The nationality of the majority of the respondents was the citizen of Indonesia. The highest education of the respondents was undergraduated program.

The main reason to use Wardah cosmetics in large part because of the halal label, by 65,15%. The next reason is safe for the skin, by 43,57%. However, most respondents also use other cosmetics, by 84.2%, citing the need for cosmetics is very diverse, both for facial beauty needs and skin care. To meet those needs, they use other brands. Other types of products owned by the respondents in addition to Wardah brand, the largest is lipstick by 62,01%, the next the powder by 51,96%.

The level of understanding about the effectiveness of the promotion done by Wardah cosmetic were varied. The majority of the respondents by 36.1% stated they often see Wardah cosmetic products promotion, about 12.9% stated they very often see it. The most memorable promotion and gives deep impression to the respondents, about 30,7% when they see the ads that Wardah cosmetic product is Islamic/halal, the next one is about 22.8%, when the respondents see the model or the performer was very charming because of her beauty.

3.1. *The Consumers Perception Toward the Positioning Strategy Of Wardah Cosmetics*

The company's policy in the field of marketing stated that their target market is middle to high society, particularly Muslims. This target market policy is based on the existence of a market opportunity, where there has not been a cosmetics company that focuses on halal cosmetic products, and it becomes a policy to differentiate with other companies. Nevertheless, Wardah also frequently promoting that their cosmetic products also convenient to be used by non-muslim community. Safe and halal factor should be a priority for throughout the community

1. Positioning of The Benefits

The benefits of Wardah cosmetics differentiate with another brand of cosmetics, mostly because the materials used are not in contrary with Islamic values, and in priority for the users safety and health. Positioning about the benefits includes products benefits to enhance beauty, creates a sense of confidence, and overcome skin problems.

Table: 1 Mean Score of Positioning of the Benefits

No	Item Pert	n	Score										total score	mean
			5		4		3		2		1			
			F	%	F	%	F	%	F	%	F	%		
1	x11	241	20	2.14	175	18.79	39	4.18	7	0.75	0	0.00	931	3.863
2	x12	241	20	2.15	174	18.71	40	4.3	7	0.73	0	0.00	930	3.869
3	x13	241	12	1.39	127	14.80	88	10.25	12	1.39	2	0.23	858	3.56
Variable Score Mean			3.764											

Description

- X11 : Using Wardah cosmetic can enhance the beauty
- X12 : Using Wardah cosmetic can create a sense of confidence
- X12 : Using Wardah cosmetic can overcome skin problems.

The mean positioning of the benefits is about of 3.764. If compared with the scale used, then the mean score is on the category between 'strong' and 'strong enough' positioning.

2. Positioning of The Users

In accordance with the company promotion, by showing the famous women wearing hijab, the company intends to infuse in consumers' mind that Wardah cosmetics are intended for women with hijab, because it is safe and sacred as it does not contradict with the Islamic values, both in the production process and the materials. The perception of the consumer towards the users positioning is as follows:

Table 2 The mean score about users positioning answers recapitulation

No	Item Pert	n	Score										total score	mean
			5		4		3		2		1			
			F	%	F	%	F	%	F	%	F	%		
1	x21	241	37	4.26	100	11.52	80	9.21	19	2.18	5	0.57	868	3.602
2	x22	241	22	2.66	97	11.72	89	10.7	29	3.50	4	0.48	827	3.432
3	x23	241	20	2.56	68	8.707	109	13.95	38	4.86	6	0.76	781	3.241
Variable score Mean			3.425											

Description

X21 : the users of Wardah cosmetic are all ages

X22 : the users of Wardah cosmetic generally Moslem

X23 : the users of Wardah cosmetic generally women with hijab

The mean showed 3.425 or can be said to be among the category of 'strong' and 'very strong'. The answer that shows the lowest figure compared to the mean score is associated with the question on cosmetics users in general are wearing hijab. Thus it can be said that the promotion done by the company showing the model wearing hijab does not affect consumers and do not restrict consumers' choice in Wardah cosmetic.

3. Positioning to The Competitors.

Cosmetic products have a very large variation and diversity of usability and usage. Users of cosmetics in general have a purchase pattern that cannot easily changed, therefore creating consumer confidence becomes very important. To find out how strong this brand embedded in the minds of consumers related to the ability of competing can be seen in the following table:

Table 3 The mean score about positioning to the competitors answers recapitulation

No	Item	n	Score										total score	mean
			5		4		3		2		1			
			F	%	F	%	F	%	F	%	F	%		
1	X31	241	12	1.41	118	13.93	93	10.98	18	2.12	0	0.00	847	3.515
2	X32	241	12	1.41	115	13.56	102	12.02	10	1.17	2	0.23	848	3.519
3	X33	241	15	1.75	118	13.83	91	10.66	16	1.87	1	0.11	853	3.539
Variable score Mean		3.525												

Description

X31 : Wardah cosmetics has more customers than the competitors' products

X32 : Wardah cosmetics product quality is superior to competitors' products

X33 : Wardah cosmetics is the most popular product compared to the competitors

From the table above, the mean value of positioning to the competitors is 3.525, categorized to 'good enough'. Each questions has total score and mean that not much different one to another. It can be said that the positioning of respondents against the forces of competition is balanced.

4. Positioning of Product Category

Wardah Cosmetics is in the category of local brand cosmetics. Produced by the domestic factories and owned by local company. 100% original products of Indonesia. Nevertheless Wardah cosmetic products already managed with modern standards and procedures in accordance with Halal certificate which has been obtained by this company. Aside from being a pioneer of halal cosmetics, Wardah has 3 concept of beauty that at once become the positioning of Wardah cosmetic products (Marketing. co.id, Cecep Supriadi, 13 Feb 2014):

Table 4 Positioning of products category

No	Item pert	n	Score										total score	mFea n
			5		4		3		2		1			
			F	%	F	%	F	%	F	%	F	%		
1	X41	241	78	7.61	150	14.63	10	0.97	2	0.19	1	0.09	1025	4.253
2	X42	241	44	4.46	176	17.86	19	1.92	2	0.20	0	0.00	985	4.087
Variable score mean			4.17											

Description

X41 : Wardah Cosmetics is in the category of Halal and Islamic cosmetic products

X42 : Wardah Cosmetics is in the category of products that are suitable for the tropical areas

From the table above, the variable score mean is 4.17. The two question items mean value are 4.253 and 4.087. It can be said that the respondents really understand Wardah cosmetics positioning with halal and Islamic products category and also local brand that suitable for the tropical areas.

5. Positioning of Product Quality

At first Wardah Cosmetics was not really known in the society. Every efforts had been made by the company to develop the products, until eventually Wardah Cosmetics achieve several awards. Nurhayati disclosed that they continue to improve the 4 P's: Product, Place, Price, and Promotion. Wardah improved continuously, both in terms of quality, design, even logo. Over time, the company was expanding its market segment. Through continuous advertising they embed a perception that halal cosmetics are not only for Moslem women, but also good for anyone that wants to look beautiful, because Wardah Cosmetics use safe and natural ingredients.

Table 5 The mean score of Positioning in Products Quality

No	Item pert	n	Score										total score	mean
			5		4		3		2		1			
			F	%	F	%	F	%	F	%	F	%		
1	X51	241	67	6.66	152	15.10	20	1.98	1	0.09	1	0.09	1006	4.174
2	X52	241	52	5.21	174	17.43	13	1.30	1	0.10	1	0.10	998	4.141
3	X53	241	38	3.91	180	18.53	17	1.75	4	0.41	2	0.20	971	4.029
4	X54	241	38	4	159	16.75	37	3.89	5	0.52	2	0.21	949	3.938
Variable score mean			4.071											

Description

- X51 : Wardah Cosmetics has a wide range and complete product variation
 X52 : Wardah Cosmetics use safe ingredients
 X53 : the cosmetic products quality varied or tiered adjusted to product prices
 X54 : the cosmetic products are using quality packaging

It showed that the mean score is 4.071. With the variable score mean 4.071 then positioning of the product quality can be categorized as 'good'.

6. Brand Awareness

The brand is an important element for a product. The success of the marketing strategy is determined by the strength of the brand. The brand should be clearly positioned in the minds of consumers, so that the positioning perception of the product can be understood properly. Consumer awareness towards Wardah Cosmetics brand will be demonstrated by the ability of consumers to recall and recall everything that is attached to the brand or product categories related to Wardah products. The following is the opinion of the respondents related to brand awareness.

Table 6 Brand awareness

No	Item pert	N	Score										total score	mean
			5		4		3		2		1			
			F	%	F	%	F	%	F	%	F	%		
1	X61	241	58	5.89	147	14.93	34	3.45	2	0.2	0	0.00	984	4.083
2	X62	241	30	3.53	113	13.31	71	8.36	17	2.0	0	0.00	849	3.523
3	X63	241	29	3.39	96	11.22	95	11.11	20	2.33	1	0.11	855	3.548
4	X64	241	50	5.1	160	16.34	27	2.75	4	0.4	0	0.00	979	4.062
5	X65	241	19	2.39	82	10.32	95	11.96	41	5.16	4	0.5	794	3.295
6	X66	241	68	6.7	156	15.38	16	1.57	1	0.09	0	0.00	1014	4.208
Variable score mean			3.7865											

Description :

- X61 : product knowledge that Wardah cosmetics are produced with halal process
 X62 : knowledge that Wardah is the pioneer of halal cosmetics
 X63 : recall the picture or logo of Wardah products
 X64 : recall the dominant color of Wardah cosmetic products package
 X65 : remember the slogan or tagline of Wardah cosmetic products
 X66 : able to differentiate Wardah cosmetics with the other products

The variable score mean of brand awareness obtained from the table is 3.7865, which means that the variable of brand awareness can be considered as 'good enough'. The mean value of the research questions that are under the average are 1) the knowledge that cosmetic Wardah is the pioneer of halal cosmetics. 2) determine the image or logo of Wardah Cosmetics 3) remember the slogan or tagline of Wardah Cosmetics products.

4. Discussion

Brand or product positioning is essential to gain mind share of the market (Hermawan Kartajaya, 2009). In this context, positioning is intended to position the product or brand in the minds of customers. In

the marketing strategy, positioning is a strategy which does not stand alone, otherwise it is associated with the communication strategy, segmentation, and the company itself. In this discussion, the results of this research will be examined through 4 C's (Customer, Company, Competitors, and Change) which are used to analyze changes in the company. Hermawan Kertajaya states the 4C Diamond can be implemented to determine the four criteria to establish positioning.

4.1. Customer

Customers have specific reasons to what extent they buy some products with some particular brands. In the reality, there is a tendency for consumers to buy a product with a brand that has been known well in their community. In their daily lives, customers do transaction for some products to fulfill their primary, secondary, and tertiary needs. The customers seemed to make purchasing decisions without deep analysis on the products and they often are not aware of some factors which affect their transaction. Thus, these purchasing decisions are made under subconsciousness (Philip Kotler, 2006).

Cosmetic products are no longer become secondary needs. The majority of Wardah customers' income levels are about 1 to 2 million which proves that there is difficulty for them to use cosmetics in their daily life. From some other factors such as their age and employment, Wardah cosmetics consumers come from all ranges of ages and various job backgrounds.

Constructing a Wardah cosmetic positioning with halal label on each product, as well as putting a tagline for Wardah as safe and sacred cosmetics have fostered a positive perception of customers. The level of consumers' awareness of the halal cosmetic products is already entrenched in their minds. Therefore, the selection of words in positioning Wardah as safe and sacred cosmetics is considered easy to understand with regards to meaning of deep concerns on the needs of safety use for natural and sacred materials of cosmetics based on Islamic values.

4.2. Company

PT Paragon Technology and Innovation is considered as a pioneering company to promote halal cosmetic products. The positioning which is done by this company helps creating its strengths and competitive advantages for Islamic-based brand compliance which leads to the Islamic values. In regard to this issue, Wardah cosmetic products put halal meaning as priority to make an effort of creating products' "sanctity" by using halal ingredients and production processes according to the provisions of Islamic values. Thus, these products simultaneously prioritize safety by using safe and natural materials.

The use of cosmetics for beauty and health purpose has become the necessity of society. As the increasing needs of consumers' on the use of cosmetics, the safety in using some products becomes more priority. However, nowadays, some cosmetics products which use chemical ingredients is broadly distributed freely in the market. With regard to this problem, society's awareness on the importance of health has developed well. According to Wisataatmadja (1997), the materials which were used to create beauty was firstly formulated from natural ingredients found within people's surroundings. Meanwhile, recently people create beauty not by using natural ingredients anymore, but they also use artificial materials for the purpose of enhancing their beauty.

Concerning this issue, PT Paragon Technology and Innovation, as Wardah cosmetics manufacturer has created the perception of the good inclination through positioning to make people aware on the benefits of Wardah cosmetic products.

4.3. Competitor

Prahalad and Hamel (1994) defines the core competencies as a set of skills and technologies which enable an organization to have a positioning in order to provide some effective benefits to customers. Therefore, the company should have at least 1) the competence to create value and 2) competencies to differentiate. From the result, it is shown that the level of consumer awareness on Wardah as a pioneer of halal cosmetics is placed in the category between high and medium. Thus, Wardah positioning in cosmetic products competitions is perceived in a good level.

4.4. Change

Positioning should be consistent to be able to maintain the relevance of various changes. Positioning is developed to reflect the company's ability to understand the changing environment. State of Indonesia as one of the countries with the largest number of Moslem population was the inspiration for Wardah cosmetics manufacturer to create products with halal label. The production of Wardah cosmetics is considered as a concern and sensitivity of manufacturer to meet the needs of the Moslem community. The

commitment and consistency of Wardah cosmetics manufacturer is producing cosmetics with free of ingredients which are not in accordance with the Islamic values without ignoring the quality of their products. The positioning consistency of Wardah cosmetics by keep maintaining relevance to environmental changes has not yet created a high level of society's awareness. It can be seen through the level of awareness on the slogans or taglines of Wardah cosmetics' largest category is on the answers of „less able to remember“ which is about 39.4% and „do not remember“ is around 17%.

4.5. Brand Awareness

David Aaker, in his book *Managing Brand Equity* defines brand awareness as the capabilities of potential customers to recall or remember that one brand included into specific product categories. He further said that in order to increase customer brand awareness toward product brand, the company can perform, among other things: 1) made a short message to let customers quickly remember but hard to forget it, 2) use a short tag line, catchy, and interesting.

Marketing strategy of Wardah cosmetics manufacturer, in order to increase brand awareness, has been done through delivery of messages as a form of positioning, as well as to display a competitive advantage. The tag line “safe and sacred cosmetics” has been able to deliver a concern message to society and at the same time give the protection. The establishment of the Wardah brand identity with consistent and earnest, at this point has showed good results.

Wardah cosmetic products have been known as halal cosmetics, with the use of halal and natural materials, which may minimize the risk of negative effects caused by cosmetics appliance. It is showed by the research results, with the greatest number of answers, 61% of respondents „know“ that Wardah cosmetic product is halal, and 24.1% of them „really know“ it. Furthermore, the results of the research show that the awareness of respondents towards the products logo or symbol is balanced between „able to recall“ or „very able recall“, with „less able to recall“ or „do not able to recall“ the products logo or symbol.

5. Conclusion

The marketing strategy of Wardah Cosmetics with halal products, carrying the tag line "safe and sacred cosmetics", could be perceived correctly, as expected by the company. Short and clear messages give a strong impression thus become entrenched in customers' memory and create strong brand awareness. The understanding of halal products is more based on the safe and healthy source of materials. Wardah Cosmetics with this tagline also become distinctive compared to other cosmetic products. The establishment of the consumers' perception is more influenced by the company's consistency in carrying the halal label.

The consumers' decision to buy and use the cosmetic products are not specified by the halal product but by the excellence of quality. The convenient feeling toward Wardah cosmetics perceived after using the products, creating a good perception about the product quality.

The users of Wardah Cosmetics are excluded in the loyal category. The diversity of brands and types/variations of cosmetic products causing the community become disloyal to one kind of product. The tendency is that the consumers use more than one brand of cosmetics.

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Effect of Celebrity Endorsement's Credibility on Attitude toward Advertisement and Purchase Intention in Instagram

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Abstract

Practice of using celebrity as spokesperson for advertising products has been used in several years and continuously favored by the society. Celebrity endorsed advertisement recognized as a crucial constituent of marketing communications strategy for companies in today's competitive environment (Mukherjee, 2009). Present research wants to explore the consumer preference of celebrity endorsement as compared to non-celebrity endorsement, and examine the effect of endorser's credibility on attitude toward advertisement and purchase intention in Indonesian market. This research will analyze the source of credibility, i.e. expertise and trustworthiness as the variable of celebrity endorsement. Multiple Regression, and Path analysis will be used as the analysis method. The data gathered by distributing questionnaire to 387 respondents. The respondents are preferred that celebrity endorsement in Instagram is more attracting, favorable, convincing, influencing, and trusted than non-celebrity (celebgram) endorsement. This study reveals that Expertise and Trustworthiness of celebrity are having influence on attitude toward advertisement of consumer and purchase intention. Findings will help online retailer to create more effective celebrity endorsement in Instagram.

Keywords: Celebrity Endorsement; Instagram; Attitude toward Advertisement; Consumer Purchase Intention; Social Media

1. Introduction

Currently Instagram becomes one of social media that favored by Indonesian society, in year 2015 the growth of Instagram's user in Indonesia is increasing by 215% (Reza, 2015). According to Global Web Index cited by Chaffey (2016) shows the fact that Instagram become the top five of most popular network, which also makes consideration that Instagram becomes a powerful mobile platform for advertisement in this present. Surprisingly, Indonesia has become the third country which has largest number of Instagram users in year of 2015 (Instagram, 2015). This fact currently has seen as a good opportunity by business owner to use Instagram as their media to open online shop. In addition, the ease of use and all the features that provide by Instagram are also becoming the reason for business owner to choose Instagram as their online platform.

Celebrity endorsement is powerful technique that amplifies the impact of advertisement and forms favorable and positive influence on recall and buying decision (Choudhury & Mukherjee, 2014). It could be a compelling tool to distinguish product from competitors in this competitive markets (Erdogan, 1999). However, in choosing the right figure or endorser, the credibility of the person should be considered since any wreck can affect the costumer's purchase behavior (McCracken, 1989). A well-known and credible personality should become the consideration in choosing figure to present or support the product in competitive marketing word (Gheysari et al, 2012). According to Hovland & Weiss (1951), credibility is based on the expertise and trustworthiness of source

Source credibility is considered as standout amongst the most imperative of all stimuli that advertisers use to form and leverage consumer's attitude toward advertisement, and is expected to affect the other behavioral result such as attitude toward brand, and purchase intention. Numerous researches have investigated the impact of endorsers' credibility and found it influence on purchase intention (Ahmed et al, 2014; Sertoglu, et al, 2014; O'Mahony et al, 2014; ul Hassan et al, 2014) and attitude toward advertisement (Sallam & Wahid, 2012; Yoon, *et al* 1998; Muralidharan & Xue, 2015).

The practice of celebrity endorsements in Instagram were done through a contract that made by the company with a celebrity, then the celebrity will makes one or multiple posts relating the brand on their personal Instagram account. However, in Indonesia the endorsement practices were not only direct to the

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celebrity but it recognizes the common people or called as *selebgram*. In spite of previous research which show celebrity endorsed advertisements were more attractive and had higher influence to purchase intention than non-celebrity endorsed advertisement (Ahmed et al, 2015), *selebgram* is also considered have potential and great effects by the Indonesia online retailer, whether to increase the awareness or gain some followers by Indonesian society (Ulya, 2015) which leads to increasing number in sales.

This research has purpose to explore consumer preference of celebrity endorsed advertisement as compared with non-celebrity (*selebgram*) endorsed advertisement, and explore the impact of celebrity endorsement in Instagram on consumers' attitude toward advertisement and purchase intention. Moreover, explore the impact of attitude toward advertisement as the mediator of celebrity endorsement and purchase intention.

2. Literature Review

2.1. Celebrity Endorsement

Friedman & Friedman (1979) defined celebrity as an individual who is well known by the public (such as actor/actress, athlete, entertainer, and etc.) for all their achievements in their field. According to McCracken (1989), celebrity endorser is any person who enjoys the public identification and employs this recognition on personal interest of a consumer good by presenting with it in an advertisement. Celebrity endorsement refers to a written or spoken statement, or a testimonial from recognizable figure, in order to promoting or advertising a product.

A model that could be used to measure the effectiveness of message that transferred by endorser is called source of credibility, which depends on expertise and trustworthiness of the endorser (Hovland & Weiss, 1951). Source of credibility refers to characters of source that perceived as having relevant knowledge and/or experience by the recipient, so the recipient believe that the source provide impartial information. Information from a credible source influences beliefs, opinions, attitudes, and/or behavior through a procedure known as internalization, which happen when the recipient adopts the opinion of the credible communicator since they believe information from the source is accurate (Erdogan, 1999). Expertise defined as *perceived skill of an endorser to make or provide valid assertions*, and trustworthiness as *the recipient's belief toward the source of giving right affirmations*, that affect the information believability and persuasiveness (Hovland & Weiss, 1951; Belch & Belch, 2009)

2.2. Attitude toward Advertisement

Attitude is one of internal factors that could influence the purchase decision (Lake, 2009). An attitude will indicate if consumer is attracted to something and will consequently affect the consumer buying intention towards a product (Lafferty & Goldsmith, 1998). Regarding to advertising, as cited from Mackenzie, Lutz & Belch (1986), attitude toward advertisement is defined as a tendency of reacts or responds in particular to advertising stimulus a particular exposure situation. The consumer who is effectively influenced by advertisement may form a positive attitude toward advertisements that may then influence his or her purchase intention (Sallam & Algamash, 2016). Holbrook & Batra (1987) proposed that attitude toward advertisement based on the consumer consideration whether like or dislike the ads, react favorably or unfavorably to the ads, feel positive or negative toward the ads, and see the ad is good or bad. According to Liu & Teo (2007), the consumers' attitude and buying intention are may influenced by the endorser who performs high on expertise and trustworthiness. Previous scholars found that trustworthiness and expertise of endorser positively influence the attitude toward advertisement (Sallam & Wahid, 2012; Yoon, *et al* 1998; Muralidharan & Xue, 2015). Thus, this study propose hypothesis that:

H1a: Endorsers' Expertise affects the attitude toward advertisement

H2a: Endorsers' Trustworthiness affects the attitude toward advertisement

2.3. Purchase Intention

Purchase intention is intention of consumer to buy a specific brand which they have chosen for themselves after particular evaluation (Laroche et al, 1996). Purchase intention represents the chance of a person to purchase a product, where the higher purchase intention will raise the willingness of customer to buy a product (Dodds, et al., 1991; Schiffman & Kanuk, 2000). Willingness to search for the information, intention to buy the product, and willingness to recommend the product to others will be used as measurement of purchase intention (Sertoglu, *et al*, 2014). Previous study found that purchase intention

could be influenced by expertise and trustworthiness of the source (ul Hasan & Jamil, 2014; O'Mahony, *et al*, 1997/1998; Ong, *et al*, 2015; Sertoglu, *et al*, 2014; Kumar, 2010). According to Lafferty & Goldsmith (1998), an attitude will demonstrate if consumer is pulled in to something and will therefore influence their purchase intention towards the product. Sallam & Algammash (2016) and Wahid & Ahmed (2011) discovered that there was relationship and influence between attitude toward advertisement and purchase intention. Therefore, this study hypothesis that:

H1b: Endorsers' Expertise affects the purchase intention

H2b: Endorsers' Trustworthiness affects the purchase intention

H3: Attitude toward advertisement affects the purchase intention

2.4. Conceptual Framework

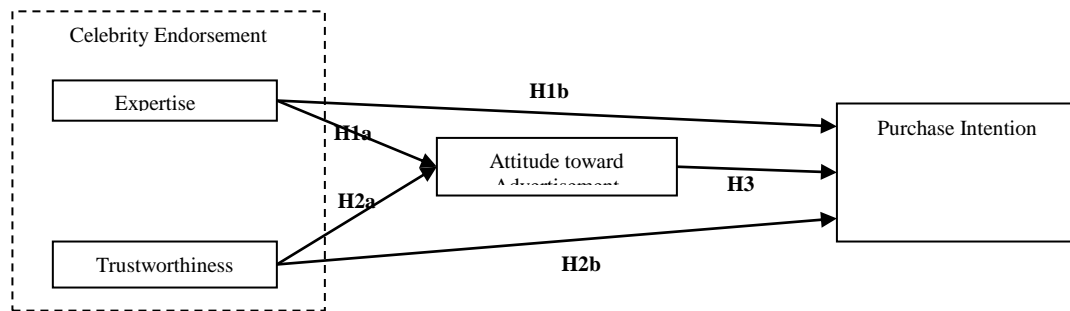


Figure 1. Framework of the study

3. Methodology

This research used quantitative research, while the primary data were gathered by conducting survey using questionnaire. The sample of this research chosen based on judgment sampling to customer in Indonesia who have Instagram, in age between 16 – 35 years old, and have seen celebrity endorsement in Instagram. The total numbers of sample in study were 387 respondents. There will be four sections in the questionnaire; section 1 about demographic information, section 2 about customer attitude toward celebrity endorsement advertising, and section 3 indicates celebrity endorsement, and section 4 indicates the purchase intention. The questionnaire will design based on Likert Scale (range from 1 – 5, number 1 for Strongly Disagree; number 2 for Disagree; number 3 for Neutral; number 4 for Agree; Number 5 for Strongly Agree) and there is also a question that design as semantic differential scaling. Data was analyzed by using multiple regression and analysis using SPSS application.

4. Data Analysis

4.1. Validity and Reliability Test

The indicators for each variable are developed according previous research. This research used factor analysis is performed for the validity test. The indicator is stated as valid when the value of factor loading should be more than 0.5, Kaiser-Meyer-Olkin (KMO) above 0.5 and the Bartlett's Test value must be less than 0.05. While for the reliability test, Cronbach's Alpha test is used where the result should be above 0.6 to be stated as reliable. The result for validity and reliability can be seen in the table below:

Table 4 Validity and Reliability Test

Variable	Indicator	KMO	Bartlett's Test	Factor Loading	Cronbach's Alpha
Attitude toward Advertisement	Likeability	0.930	0.000	0.648	0.822
	Favourability			0.723	
	Feeling			0.766	
	Good/Bad			0.803	
Expertise	Experience	0.930	0.000	0.717	0.837
	Knowledge			0.838	
	Quality			0.679	
	Skill			0.702	
Trustworthiness	Trust	0.930	0.000	0.782	0.835
	Honest			0.825	
	Reliable			0.726	
Purchase Intention	Willingness	0.930	0.000	0.711	0.842
	Intention			0.817	
	Recommend			0.717	

4.2. Respondent Profile

From the 387 numbers of respondents, 62.79% are woman and 37.21% are man. Most of them are from high school students or college students (92.76%) and in age between 17-21 years old (82.95%). The questionnaire distributed to big cities around Indonesia and Bandung as the most dominate domicile of respondent (42.89%).

4.3. Consumer Preferences

Table 5 Consumer Preferences of Comparing Celebrity Endorsement and Selebgram Endorsement

Item	Choices	Frequency	Percentage
Attracting	Celebrity Endorsement	207	53.49%
	Selebgram Endorsement	116	29.97%
	Not both of them	64	16.54%
Favorable	Celebrity Endorsement	181	46.77%
	Selebgram Endorsement	124	32.04%
	Not both of them	82	21.19%
Influencing	Celebrity Endorsement	172	44.44%
	Selebgram Endorsement	113	29.20%
	Not both of them	102	26.36%
Convincing	Celebrity Endorsement	191	49.35%
	Selebgram Endorsement	90	23.26%
	Not both of them	106	27.39%
Trusted	Celebrity Endorsement	197	50.90%
	Selebgram Endorsement	82	21.19%
	Not both of them	108	27.91%

The table above shows the comparison between celebrity endorsement and *selebgram* endorsement in several aspects based on the customer preference. Surprisingly, celebrity-endorsed advertisement is advance in every aspect that stated. Respondents answer endorsement which use celebrity, a person who already well known by society -like actor or actress, model, or an athlete, is more attractive, more favorable, more influencing, more convincing and more trusted compared with the *selebgram*-endorsed advertisement.

4.4. Model Testing

This study executes two models to examining the framework study. First model is examining the effect of Expertise and Trustworthiness on Attitude toward Advertisement by using multiple regression analysis. Where the result of the first model could be seen in Table 2. The findings suggest these two factors significantly affect the attitude toward advertisement as much 41.5% based on R² value. Expertise (Beta=0.404, p=0.000) and Trustworthiness (Beta=0.318, p=0.000) possess positive and significant influence on the attitude toward advertisement as the individual variable. Therefore this study supports the hypothesis H1a and H2a, the expertise and trustworthiness of celebrity affects the attitude toward advertisement.

Table 6 Relationships of Expertise and Trustworthiness on Attitude Toward Advertisement

Dependent Variable	Independent Variable	ANOVA		Coefficient ^a		R ²
		F	Sig	β	Sig	
Attitude Toward Advertisement	Expertise	131.141	0.000	0.404	0.000	0.415
	Trustworthiness			0.318	0.000	

Second model defines the influence of Expertise, Trustworthiness, and Attitude toward Advertisement toward Purchase Intention by using multiple regression analysis. According to result (Table 3.), based on R² value, together these variables have influence on Purchase Intention as 49.7%. As individual variable, Expertise (Beta=0.271, p=0.000), Trustworthiness (Beta=0.267, p=0.000), and Attitude toward Advertisement (Beta=0.292, p=0.000) also positively and significantly affect the Purchase Intention. Therefore, the hypothesis H1b, H2b, and H3 is supported. The Expertise, Trustworthiness, and Attitude toward Advertisement affect the Purchase Intention.

Table 7 Relationships of Expertise, Trustworthiness and Attitude Toward Advertisement on Purchase Intention

Dependent Variable	Independent Variable	ANOVA		Coefficient ^a		R ²
		F	Sig	β	Sig	
Purchase Intention	Expertise	126.087	0.000	0.271	0.000	0.497
	Trustworthiness			0.269	0.000	
	Attitude toward Advertisement			0.292	0.000	

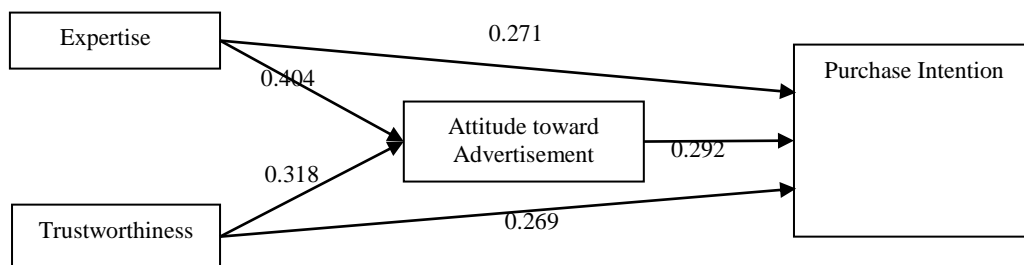


Figure 2. Regression Analysis Summary

According to regression analysis result summary (figure 2.), there is indirect and direct influence between the dependent and independent variable. Path analysis is performed to test the influence of Expertise and Trustworthiness as variable from celebrity endorsement’s credibility towards Purchase Intention through Attitude toward Advertisement as the intervening variables. The total effect is calculated by multiplying Beta values of indirect relationship between Expertise and Trustworthiness on Attitude toward Advertisement and then adding with direct relationship between Expertise and Trustworthiness on Purchase Intention. The calculation table is shown on table 3.

Table 8 Total Effect Result

Intervening Variable	Dependent Variable	Independent Variable	Indirect	Direct	Total Effects
Attitude toward Advertisement	Purchase Intention	Expertise	$0.404 \times 0.292 = 0.118$	0.271	0.389
Attitude toward Advertisement	Purchase Intention	Trustworthiness	$0.318 \times 0.292 = 0.093$	0.269	0.362

Based on table above, attitude toward advertisement is defined to become a mediator on celebrity's trustworthiness and purchase intention and celebrity's expertise and purchase intention, while expertise of endorser becomes the variable that has the strongest indirect influence to purchase intention with total effect value is 0.389. As for trustworthiness, it holds total effect value as much 0.362 to purchase intention indirectly.

5. Conclusion

Customer preferred endorsement that using celebrity is more advance in the term of attracting, favorability, influencing, convincing and trust as compared with the non-celebrity or *selebgram*. In testing the hypothesis, this research reveals to accept the entire hypothesis. Expertise and Trustworthiness of celebrity have influence on attitude toward advertisement of consumer (Sallam & Wahid, 2012; Yoon, *et al* 1998; Muralidharan & Xue, 2015) and purchase intention (Ahmed *et al*, 2014; Sertoglu, *et al*, 2014; O'Mahony *et al*, 2014; ul Hassan *et al*, 2014). Purchase intention also influenced by consumer attitude toward advertisement (Sallam & Algammash, 2016; Wahid & Ahmed, 2011). Attitude toward advertisement becomes partial mediator on trustworthiness and purchase intention and expertise and purchase intention.

This research gives recommendation for Indonesian online retailer that celebrity endorsement is still becoming the favored marketing activities in this current environment. It is better to choose the celebrity, a well-known public figure either an actor/actress, athlete, or entertainer than *selebgram* as the endorser. In choosing the celebrity, marketer also should concern about their expertise and trustworthiness since it could influence the consumer attitude and buying intention. However, further research about this topic is needed to cover the limitation of this research like expand the sample size, analysis from the other possibilities variable of the celebrity and another method to analysis the correlation and relations among the variable.

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Appendix A. Celebrity Endorsement Pictures

A.1. Respondent Profile

Table 9 Respondent Profile

Demographic	Frequency	%	Demographic	Frequency	%		
Age	17 - 21 years old	321	82.95%	Domicile	Jakarta	42	10.85%
	22 - 26 years old	61	15.76%		Bandung	166	42.89%
	27 - 31 years old	4	1.03%		Bali	98	25.32%
	32 - 35 years old	1	0.26%		Surabaya	23	5.94%
Gender	Man	144	37.21%		Yogyakarta	35	9.04%
	Woman	243	62.79%		Others	23	5.94%
Occupation	Students / College Students	359	92.76%	Instagram User	Yes	387	100.00%
	Private employee	18	4.65%		No	No	0
	Government employee	7	1.81%				
	Entrepreneur	3	0.78%				

A.2. Regression Result

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.644 ^a	.415	.412	2.21539

a. Predictors: (Constant), Trustworthiness, Expertise

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1336.355	2	668.177	136.141	.000 ^a
	Residual	1884.658	384	4.908		
	Total	3221.013	386			

a. Predictors: (Constant), Trustworthiness, Expertise

b. Dependent Variable: Attitude toward Advertisement

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.947	.615		8.050	.000
	Expertise	.385	.046	.404	8.404	.000
	Trustworthiness	.383	.058	.318	6.622	.000

a. Dependent Variable: Attitude toward Advertisement

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.705 ^a	.497	.493	1.72252

a. Predictors: (Constant), Attitude toward Advertisement, Trustworthiness, Expertise

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1122.330	3	374.110	126.087	.000 ^a
	Residual	1136.387	383	2.967		
	Total	2258.717	386			

a. Predictors: (Constant), Attitude toward Advertisement, Trustworthiness, Expertise

b. Dependent Variable: Purchase Intention

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.107	.517		-.207	.836
	Expertise	.216	.039	.271	5.576	.000
	Trustworthiness	.271	.047	.269	5.712	.000
	Attitude toward Advertisement	.245	.040	.292	6.166	.000

a. Dependent Variable: Purchase Intention

A.3. *Celebrity Endorsement and Selebgram Endorsement practice in Instagram*



Figure 1. Celebrity (Indonesian actors) endorsement practice in Instagram



Figure 3. Non-celebrity (*Selebgram*) endorsement practice in Instagram

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Understanding The Destination Image of Jalan LLRE Martadinata Bandung: Conjoint Analysis Approach

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Abstract

Tourism industry plays an important role in Bandung City economic development. It was recorded that the number of tourist that came to Bandung in 2012 reached 3.3 million tourists and the number is gradually increasing over years. Tourism industry constitutes around 30% of Bandung's Own Resource Revenue and the percentage is increasing over years. One of the most popular Bandung tourism destination is Jalan LLRE Martadinata or Jalan Riau. Jalan Riau was regarded as shopping and culinary tourism district due to its main attraction. One factor that influences tourist behavior and decisions to come to one destination is destination image. Realizing the importance of destination image, it is necessary to understand tourist perception about destination images. Using conjoint analysis, this study aimed to understand tourist perception of Jalan Riau destination image. The result of this study will reveal tourist perception and level of important of Jalan Riau shopping and culinary image.

Keywords: destination image; conjoint analysis; Jalan LLRE Martadinata

1. Introduction

Tourism industry plays important role in Bandung City economic development. According to Center Bureau of Statistic or Badan Pusat Statistik (2015), there were 3.3 million tourists that came to Bandung in 2012. The number of tourists that came to Bandung was gradually increasing over years. It reached 5.6 million tourists in 2014. Bandung's department of culture and tourism or Dinas Kebudayaan dan Pariwisata Bandung (2009) claimed that tourism industry constitutes around 30% of Bandung's Own Resource Revenue. The percentage of tourism industry contribution towards Bandung's Own Resource Revenue was also reported increasing over years.

One of destination that became tourist favorite is Jalan LLRE Martadinata or Jalan Riau. According to District Regulation of Bandung number 1 (2013), Jalan Riau is regarded as strategic tourism district. Strategic tourism district is a district that attract the tourists or has potential to attract the tourist and has other significant impact on economic development, social and cultural, environmental support, or defence and security. Jalan Riau is also regarded as shopping and culinary tourism district due to its main attraction. Koestantia, Nuryanti, Prayitno, and Femina (2014) identified three clusters exist in Jalan Riau including creative industry clusters which are culinary and fashion. The study also revealed that most of tourist came to Jalan Riau due to its fashion and culinary products.

One factor that influences tourist behavior and decisions to visit a destination is the destination images. Gartner and Tasci (2007) said that destination images shaped up tourist pre-visit, during visit and post-visit behavior. Before visiting the destination, destination image influence tourist decision and intention to visit the destination. At the destination, destination image plays important role in shaping up tourist satisfaction. Destination image also influences tourist post-visit behavior such as intention to recommend and intention to revisit the destination.

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Realizing the importance of the destination image, it is necessary to understand tourist perception about destination images. Using conjoint analysis, this study aimed to understand tourist perception of Jalan Riau destination images. In line with the aimed of the study, this study will answer two research questions: 1) How do tourist perceived about shopping and culinary images of Jalan Riau? 2) How important is culinary image of Jalan Riau compared to its shopping image?

Brief literature review about destination image will be provided in the next section (Section 2). The following Section 3 will discuss about the methodology of the research, especially about conjoint analysis. Then, the result and discussion will be revealed on the Section 4. At last, the conclusion will be provided in the Section 5.

2. Literature Review

Destination image plays important role in shaping up tourist behavior. Gartner and Tasci (2007) study revealed the influence of destination image on tourist pre-visit, during visit and post visit behavior. Before visiting the destination, the image of destination will influence tourist decision making process. It relates with tourist's choice of destination and tourist's intention to visit the destination. During visit, destination image will affect tourist satisfaction. Del Bosque and San Martin (2008) argued that destination image will build up tourist expectation which is related to tourist satisfaction. After visiting the destination, destination image will influence tourist intention to revisit and recommend (Gartner and Tasci, 2007). This notion was agreed by Qu, Kim, and Im (2011) as their study revealed cognitive, affective and unique image of destination will build up overall image of destination that influence tourist intention to visit and to recommend the destination.

Due to its important in the tourism body of knowledge, destination image had been studied since early 1970s. However, there is still no consensus in the definition of destination images (Gallarza, Saura, and Garcia, 2002). The most commonly used definition of destination image is "the sum of beliefs, ideas, and impressions that a person has of a destination" (Crompton, 1979). Other researchers defined destination image with quite similar construct such as "mental construct" (Reynolds, 1985), "ideas or conceptions" (Embacher and Buttle, 1989), or "perceptions" (Echtner and Ritchie, 1991).

According to Baloglu and McCleary (1999), destination image can be approached by cognitive and affective components of the destination. Cognitive components refer to person's impression about "object" of the destination. It relates to the objects or elements on the destination such as natural environment, tourist attraction and supporting infrastructure. Affective components refer to the "feelings" toward destination; for examples exciting, relaxing and arousing feelings.

Beerli and Martin (2004) study reported that shopping attribute is one of the factors that influence destination image. Previous study from Sirakaya-turk, Ekinci, and Martin (2015) and Lo and Qu (2015) showed that tourist perception about shopping attributes (i.e. utilitarian and hedonic shopping values) indirectly influence tourist intention to revisit the destination and positive word-of-mouth.

Many studies (Beerli and Martin ,2004; Baloglu and McCleary , 1999; Gallarza, Saura, and Garcia, 2002) reported that the foods on destination as one factors that shaped up the image of the destination. Karim and Chi (2010) examined the relationship of Thailand, France and Italian food images towards tourist visit intention. The food images attributes were included food/cuisine (e.g. variety of foods, good quality of foods, and delicious foods), dining/restaurant (e.g. reasonable price, attractive restaurant, and easy to access restaurant) and food-related tourism construct. Lertputtarak (2012) examined the relationship between Thailand food and restaurant image and tourist revisit intention. Both study report that the food image had positive influence to tourist revisit intention.

Quan and Wang (2004) said that eating plays significant role for building tourism experience. Eating experience can be categorized as peak touristic experience and supporting consumer experience. Peak touristic experience refers to the main attraction that triggers tourist intention to visit destination. Supporting consumer experience refers to eat as fulfilling the tourist basic needs. The study also revealed the role of foods in the tourism destination that can be categorized as the main attraction or as a supporting role in tourism destination.

In summary, destination image plays an important role in shaping up tourist behavior. It shapes up tourist expectation and intention to visit the destination. It is also relates with tourist' satisfaction and intention to revisit the destination. Previous study showed the role of the shopping and food image in shaping up the image of destination. It revealed that both food and shopping image of the destination have successfully attracted tourist to visit and spread positive word-of-mouth about the destination.

3. Methodology

To capture the perception of tourist about the image of destination, conjoint analysis is utilized. Conjoint analysis is multivariate dependence statistic tools that used to understand respondents perception about an object (e.g. products, service, or image) (Santoso, 2010; Hair, Black, Babin and Anderson, 2010). The dependent variable can be metric or nonmetric which represents overall preferences of respondents towards the factors and levels of an object. Factors represent specific attributes of an object and levels are components that describe the factors. The independent variables are factors and levels which are nonmetric data.

According to Santoso (2010) there are five steps required to conduct conjoint analysis. The five steps to conduct conjoint analysis will be illustrated bellow.



Figure 1. Step to conduct conjoint analysis

In this study, two factors were examined. They were shopping image and culinary image of Jalan Riau. In this study, there were five levels for shopping image and four levels for culinary image that would be tested. The decisions to choose the factors and levels were based on the literature and discussion with people that familiar with Jalan Riau. The levels of shopping and culinary image will be presented in the table below.

Table 1. Factors and Levels

Factors	Levels
1. Shopping images	a. Comfort b. Reasonable Price c. Good Products d. Easy to Access e. Up to Date Model
2. Culinary images	a. Delicious b. Reasonable Price c. Offer Variety of Foods d. Good Service Quality

Stimuli are combination of levels from different factors (Santoso, 2010). These stimuli were the ones that would be tested to the respondents. Twenty stimuli were generated in this study. The example of the stimuli statement was “Jalan Riau is comfortable shopping district and culinary district that offer delicious foods”. Respondents’ perceptions of the stimuli were noted using 4 points likert scale (1-strongly disagree, 2-disagree, 3-agree, 4-strongly agree).

To gather the respondent perception about the Jalan Riau shopping and culinary images, purposive sampling method was used. The selected respondents were tourist that had visited Jalan Riau at least once and familiar with Jalan Riau. There were thirty three respondents participated in this study. The respondents were asked to answer the questions related respondent characteristics (i.e. gender, age and income) and their perception of the stimulus.

The conjoint analysis and evaluation of predictive accuracy phase were conducted utilizing *IBM SPSS Statistics 20*. There would be three output generated from the *IBM SPSS Statistics 20*. The first output is the utility of each level of the factors. Utility is respondent’s subjective perception about an object. This output will reveal how the respondent values the levels of Jalan Riau shopping and culinary image. The second output is the level of importance of the factors. This output will compare the importance level of Jalan Riau shopping and culinary image factors. At last, the predictive accuracy will be generated to assess whether the prediction of the conjoint analysis represent the actual perception of the respondents. The predictive ability conjoint analysis is represented by Pearson’s R and Kendall’s tau score. The higher the Pearson’s R and Kendall’s tau score, the higher predictive ability of conjoint analysis.

4. Result and Discussions

4.1 Respondents Characteristics

Thirty three respondents participated in this study. There are fifteen male respondents (45%) and eighteen female respondents (55%). The average age of respondents is twenty five years old, with twenty one years old respondent is the youngest and thirty eight years old is the oldest. There are thirteen respondents (39%) earn less than 2.5 million rupiah per month and other thirteen respondents (39%) earn between 2.5 and 5 million rupiah per month. Three respondents (9 %) earn between 5 and 7.5 million rupiah per month and four respondents (12%) earn more than 7.5 million rupiah per month.

Table 2. Respondents Characteristics

Respondents Characteristics	Result
1. Gender	
Male	45 %
Female	55 %
2. Age	
Average	25 years old
Max	38 years old
Min	21 years old
3. Income	
Less than 2.5 million rupiah per month	39 %
Between 2.5 and 5 million rupiah per month	39 %
Between 5 and 7.5 million rupiah per month	9%
More than 7.5 million rupiah per month	12%

4.2 Reliability

Before going further to the conjoint analysis, it is important to measure the reliability of the data. The Cronbach's Alpha score is measured to examine the reliability of the data. Within twenty questions asked to the respondents, the Cronbach's Alpha score is 0.92. It meets the required criteria of the reliable data, the Cronbach's Alpha score more than 0.7 (Nunnally and Bernstein, 1994).

4.3 Conjoint Analysis Result and Discussion

This study tried to understand how respondent perceived about Jalan Riau shopping and culinary images. Respondent perceptions were measured by the utility score of shopping and culinary image factors or levels. The higher the utility score, the higher the respondent values the factors or the levels. Thirty three respondents participated in this study. However, only twenty nine respondents' data that could be analysed further due to the missing data or invalid respondent answer.

Figure 2 shows respondent perception about Jalan Riau shopping image utility. The result shows the shopping image that respondent valued most is the easy to access level with the highest utility score of 0.088. It is followed by the up to date model level with utility score of 0.010. Other levels are less valued by respondents. Comfort level has the utility score of -0.016. Reasonable price and good products levels are the least valued attributes with -0.041 utility score. Based on the result above, easy to access is the most important attribute of Jalan Riau shopping image attribute. However, the result also revealed that there is not much difference between the highest and lowest score of shopping image utility levels. Thus, although the tourist perceived easy to access level as the most important shopping attribute, other attributes are still important in building up Jalan Riau shopping image.

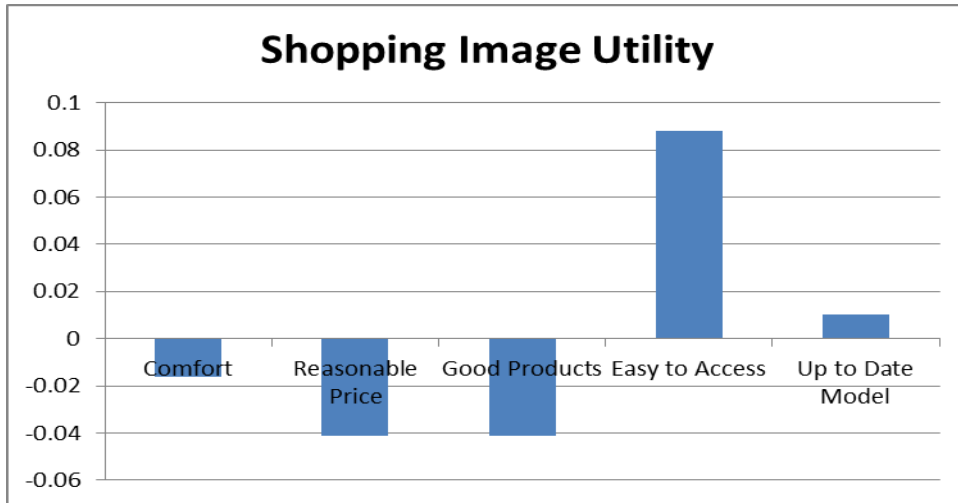


Figure 2. Shopping Image Utility

Figure 3 shows respondent perception about Jalan Riau culinary image utility. The most valued level is offer variety of foods with 0.100 utility score. The second most valued level is delicious levels and followed by good service quality levels with 0.010 and -0.010 utility score. Reasonable price is the least valued levels with -0.100 utility score. The result show that the most important culinary image attributes of Jalan Riau is the variety food offered. Like previous shopping image utility, there is not much different between the highest and the lowest culinary image levels. Thus, although tourist perceived variety of food as the most important culinary attribute, other attributes are still important in building Jalan Riau culinary image.

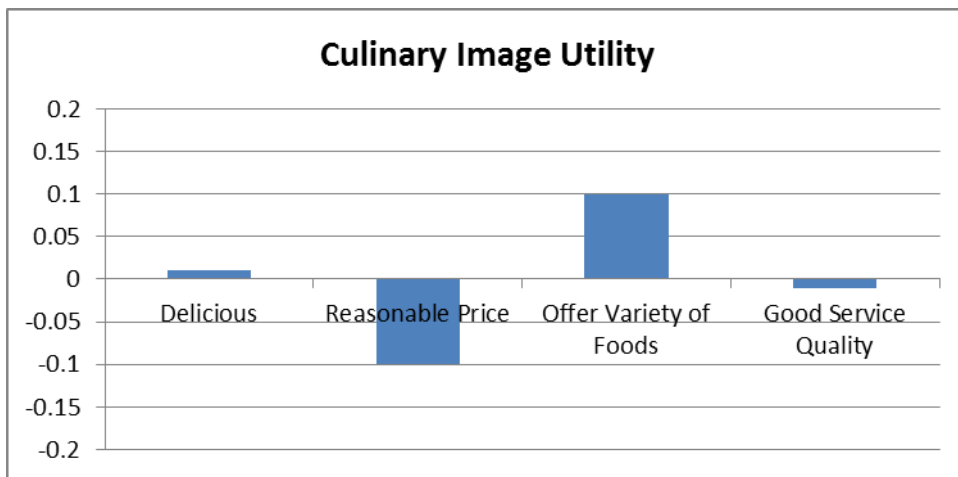


Figure 3. Culinary Image Utility

The level of important result shows that there is not much different level of important between culinary and shopping image factors. Shopping image level of importance score is 52 % while culinary image is 48 %. This result revealed that both shopping image and culinary image is important in building Jalan Riau destination images. This result also indicates the role of culinary industry in Jalan Riau which is not just as supporting destination facilities, but as the main attraction of Jalan Riau destination.

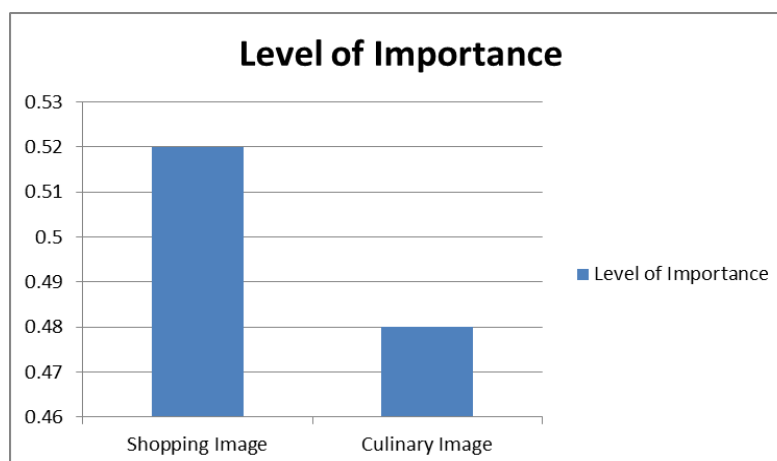


Figure 4. Culinary and Shopping Image Level of Importance

The last outputs of the conjoint analysis are the Pearson's R and Kendall's tau score. The result show Pearson's R score of 0.790 and Kendall's tau score of 0.685 which is quite high score. It represents the ability of conjoint analysis to represent the respondents perception is quite high. It means that there is strong correlation between observed and predicted respondents' perceptions. In other words, this result can be generalized as the respondent can represent other tourist perception about Jalan Riau.

5. Conclusion

This study is aimed to understand tourist perception of Jalan Riau destination images. In particular, this study addressed two issues to be answered. They are tourist perception of Jalan Riau shopping and culinary images and level of important of Jalan Riau shopping and culinary images. Conjoint analysis was used to answer the addressed issues. The result of the study revealed that easy to access level is what tourist valued most for Jalan Riau shopping image and variety of foods level for culinary images. In term of level important, there is not much different between shopping and culinary image factors. It showed that tourist perceived that both shopping and culinary image is important in building Jalan Riau destination images.

The result of this study can be used by government with regards to Jalan Riau promotional activities. As destination image can shape up tourist expectation and satisfaction, it is important to promote the image which represents the destination. This study identified shopping and culinary image attributes that can be used by government as the "jargon" to promote Jalan Riau as Bandung tourism destination.

Considering the limitation of the study, future study should be conducted with more respondents. There were 33 respondents participated in this study. Although there is not any minimum sample size requirement for conjoint analysis, it could be better to have more respondent so that the result will be more precise.

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The Effect of Online Marketing Strategy for Semi-Conventional Local Furniture Shop

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Abstract

The online marketing is developing so fast in this globalization era seen by increasing number of digital advertising spending and share percentage from 2010 to 2016. Worldwide digital ad spending topped \$100 billion in 2012, making up nearly 20% of total advertising investment. Online advertising spending will continue to expand its share of total media advertising spending through 2016. Digital advertising spending growth in Indonesia also shows the highest percentage than other countries in Asia-Pacific (Alison McCarthy, 2013). The introduction of the internet into our lives has brought many opportunities that affected also marketing. With the development of the internet, online sales (e-sales) have become more common in every day society and in a certain extent even replaced components of the traditional environment. The internet is a new channel of communication which brings new opportunities and benefits in marketing (Alexanda Talpau, 2014). Every so often, marketing reinvents itself. The method of marketing changes but the marketing principles stay the same. The latest evolution in marketing focuses on online marketing (Nadji Tehrani, 2005). The development of online marketing strategy projected that semi-conventional local furniture shop as developing enterprise should follow the marketing strategy development through online in order to keep up to date with the current trend marketing strategy. The problem happening in semi-conventional local furniture shop is stagnant condition in their marketing strategy when online marketing has not been used in the enterprise. This research is aim to explore about the impact and advantage after implementing online marketing strategy in semi-conventional local furniture shop. This research will be conducted in Cahaya Rumah Furniture Shop as a trading company or a retail furniture sector in existence over a period of 15 years. The reason of choosing this enterprise is because of the easiness in getting internal data and the permission given in doing online marketing experiment. This research is an applied research and experimental research will be used in this research to know the before and after effect of online marketing strategy and the most effective online marketing strategy for Cahaya Rumah Furniture Shop. Expected result of this study is the online marketing strategy is having positive result that brings many advantages to the Cahaya Rumah Furniture Shop. This study will also give contribution in other semi-conventional local furniture shops in Indonesia to develop their business by implementing online marketing strategy.

Keywords: Marketing; Internet; Online Marketing Strategy; Semi-Conventional Local Furniture Shop

1. Introduction

The online marketing is developing so fast in this globalization era seen by the increasing number of digital advertising spending and share percentage from 2010 to 2016. Worldwide digital ad spending topped \$100 billion in 2012, making up nearly 20% of total advertising investment. Online advertising spending will continue to expand its share of total media advertising spending through 2016. Digital advertising spending growth in Indonesia also shows the highest percentage than other countries in Asia-Pacific (Alison McCarthy, 2013). The introduction of the internet into our lives has brought many opportunities that affected also marketing. With the development of the internet, online sales (e-sales) have become more common in every day society and in a certain extent even replaced components of the traditional environment. The internet is a new channel of communication which brings new opportunities in marketing. Nowadays, online marketing has taken over more and more of the budgets allocated for marketing, increasingly diminishing traditional marketing in favor of online promotion activities (Alexanda Talpau, 2014). The network infrastructure, the enhancement of connecting bandwidth, wireless network, the dense

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coverage of mobile signal base stations, the decrease of connecting charge, the increase of mobile phone users, and also the increase of network users is being the factors that make marketing strategy is developing through online. Enterprises attempt to take the opportunities for such new marketing media. It gives benefits to the enterprises by understanding the idea of digital marketing, mastering the characteristic of digital marketing media, and realizing the key success factors in digital marketing to develop the strategies of digital marketing media (Maw-Liann Shyu, Wan-Ju Chiang, Wen-Yuan Chien, and Sheng-Liang Wang, 2015). Change in the practice of direct marketing is being driven by the increasing numbers of consumers and businesses that are making online services a part of daily living. Online marketers communicate instantly and directly with prospective customers and can provide instant fulfillment as well. These pioneering direct marketers know that effective online advertising is not hardcopy advertising put online. Instead, successful sites provide a content-rich environment and subtle and messages by satisfying these requirements in providing information that changes frequently, blending promotional and non-promotional information into the online experience, and building in interactivity (Sally Foskett, 1996). Then every so often, marketing reinvents itself. The method of marketing changes but the marketing principles stay the same.

The latest evolution in marketing focuses on online marketing (Nadji Tehrani, 2005). The development of online marketing strategy projected that semi-conventional local furniture shop as developing enterprise should follow the marketing strategy development through online in order to keep up to date with the current trend marketing strategy. The problem happening in semi-conventional local furniture shop is stagnant condition in their marketing strategy when online marketing has not been used in the enterprise. In this research about the effect of online marketing strategy for semi-conventional local furniture shop, will explore about the impact, advantages, disadvantages, and lead to the best online marketing strategy from online marketing towards semi-conventional local furniture shop. So, first of all, the research will identify about the enterprise's current condition in their marketing strategy when online marketing has not been used in the enterprise. Moreover, the easiness in getting data from a semi-conventional local furniture shop is very important in order to succeed the experimental research in exploring about the effect of using online marketing strategy for semi-conventional local furniture shop so that the permission from a semi-conventional local furniture shop is needed for this research. This research will be conducted in Cahaya Rumah Furniture Shop that located in Bogor. The reason of choosing this enterprise is because of the permission given in getting internal information and doing experiment with online marketing. The location chosen of research is in Bogor because the limited coverage area used to simplify the researcher in doing the research. Cahaya Rumah Furniture is a trading company or a retail furniture sector in existence over a period of 15 years. The vision is providing convenience and insight to costumers to meet the needs in the field of spatial planning and procurement of furniture. The mission is providing the best satisfaction for every customer both in terms of services and quality of the goods. This enterprise also has seven branches spread in some places in Bogor, such as in Ciawi, Rancamaya, Cimande, Buah Batu, Puncak, Jalan Baru, and Tajur. Therefore, this research will be conducted by using experimental research to know the after effect of using online marketing strategy, explore about the impact related to advantages and disadvantages of online marketing strategy, and also to know the best marketing strategy towards semi-conventional local furniture shop.

2. Methods

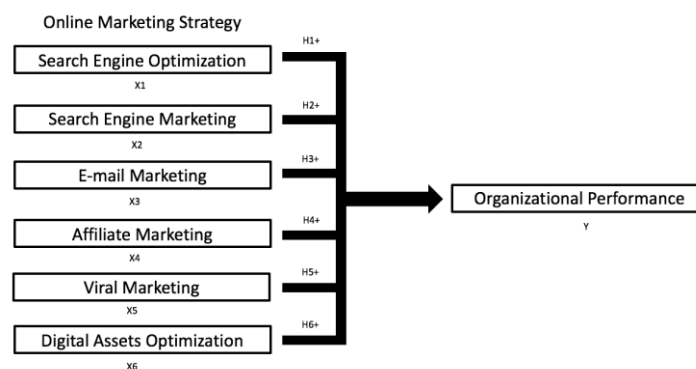


Figure 2.1 Research Framework

There are six Hypothesis based on the Research Framework, which are

H₁ Search Engine Optimization has significantly influenced Organizational Performance.

H₂ Search Engine Marketing has significantly influenced Organizational Performance.

- H₃** E-mail Marketing has significantly influenced Organizational Performance.
- H₄** Affiliate Marketing has significantly influenced Organizational Performance.
- H₅** Viral Marketing has significantly influenced Organizational Performance.
- H₆** Digital Assets Optimization has significantly influenced Organizational Performance.

This method involves the computation of ANOVA to calculate all of the organizational performance data, such as number of sales and the profit of the company. The research design of this study starts from defining problem identification, continue with searching for literature review, doing experimental research, collecting the data related to the research, analyzing the data in data analysis part, and the last is making conclusion and recommendation to compare and provide some possible solution in online marketing strategy for semi-conventional local furniture shop.

This experimental research will be conducted in Cahaya rumah Furniture Shop. Static Group Comparison is conducted to determine the influence of a variable on one group and not on another (X1 -> Y, X2 -> Y, etc). Experimental research is used to know the effect of online marketing strategy for semi-conventional local furniture shop. This research wants to identify the after effect of implementing online marketing strategy for Cahaya Rumah Furniture Shop in order to compare the organizational performance development before and after using online marketing strategy in the enterprise. Furthermore, this research will also identify the best and most effective online marketing strategy among six independent variables.

The six independent variables are consisted of Search Engine Optimization (SEO), Search Engine Marketing (SEM), E-mail Marketing, Affiliate Marketing, Viral Marketing, and Digital Assets Optimization. Search Engine Optimization is the art (or science) of increasing a website's visibility in the search engines. This can be done by increasing the ranking of a particular keyword, or increasing the volume of keywords that a site ranks for. There are a variety of SEO techniques, from on-site technical analysis and improvement, to content creation, outreach, blogging & link-building. A refinement of SEM, improving the rankings or visibility of a web page in search engines search results. SEO programs work to move targeted search results higher in rankings when results are presented to users of search engines such as Google, Bing, Yahoo!, and others. The higher the ranking when results are displayed, the more likely consumers are to click on the link and go to the targeted web site. Search Engine Marketing is A type of web marketing which promotes web sites by increasing visibility in search engine results pages through search engine optimization as well as through paid advertising, strategic content marketing and social media networks. Email marketing is one of the earliest forms of digital marketing. It involves database marketing: segmenting your customer data and delivering personalized, targeted messages at the right time. Marketing based on the distribution of a message via e-mail. E-Mail marketing can consist of a text message, a combination of words and images such as in a display ad, or provide access to a video on a web site or public video site such as YouTube. E-mail marketing also has the ability to offer a link to a specific web site to drive traffic and revenue to that site. Affiliate marketing can be quite similar to online advertising, except that the website hosting the advert will be recompensed only when a sale is made. The payment, therefore, will be higher – and will give the website owner the incentive to promote the advert more prominently. Marketing by a third party which refers customers to a specific web site or vendor. "Affiliates" market their own products, such as through a web site, but have links to other web sites unrelated to their site, but have some interest in common for consumers. Affiliates are rewarded for the number of times someone links from their site to the targeted site. Viral marketing combines many elements of the marketing mix. Some call it 'content marketing', as it always involves disseminating an element of content across multiple channels. This can include videos on Youtube, blogs, email marketing, as well as traditional elements, but the aim is to ensure that the content captures the imagination of your market, and that the content spreads naturally through online communities. Marketing through the use of videos, such as found on YouTube or similar sites. Videos can be of any length (depending on the limitations of the site hosting the video) and have any content, message, or advocacy for a cause. Videos may be as simple as an individual standing in front of a camera talking, to full, rich production values as would be found in a movie theater. Video marketing marries the strengths of sound and moving sight to present a powerful message. And the last, Search Engine Optimization is challenging enough for organizations rich with digital assets. An effort to optimize and promote those assets to bots can be both challenging and rewarding. Digital Assets Optimization is how we describe for clients what new opportunities there are to enable their customers to pull themselves via search to client content.

3. Results

Table 1 Organizational Performance Data Before Using Online Marketing

	Number of Sales	Company's Profit
July, 2015	1797	Rp1.048.397.000,00
August, 2015	1777	Rp950.075.000,00
September, 2015	1456	Rp826.921.000,00
October, 2015	1441	Rp837.654.000,00
November, 2015	1366	Rp769.344.000,00

Table 2 Organizational Performance Data After Using Online Marketing

	Number of Sales	Company's Profit
December, 2015	1617	Rp930.288.000,00
January, 2016	1508	Rp891.210.000,00
February, 2016	1275	Rp743.272.000,00
March, 2016	1331	Rp778.409.000,00
April, 2016	1240	Rp757.883.000,00

a. Number of Sales Analysis

Table 3 Number of sales Before Using Online Marketing and After Using Online Marketing

Before Using Online Marketing	After Using Online Marketing	Difference
1797	1617	180
1777	1508	269
1456	1275	181
1441	1331	110
1366	1240	126
	Total	126
	Average	173.2
	Standard Deviation	62.263

Table 4 Paired Sample Test of Number of Sales

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Number of Sales Before Using Online Marketing - Number of Sales After Using Online Marketing	173.20000	62.26315	27.84493	95.89009	250.50991	6.220	4	.003

The results show that with an alpha of 0.05 and degrees of freedom equal to 4 (n-1), obtained the value t table of 2.776 for testing the two parties. Due to the value of t is greater than t table, then H0 and H1 accepted. It means that there are significant differences between the two sets of data.

b. Company’s Profit Analysis

Table 5 *Company’s Profit Before Using Online Marketing and After Using Online Marketing*

Before Using Online Marketing	After Using Online Marketing	Difference
1048397000	930288000	118109000
950075000	891210000	58865000
826921000	743272000	83649000
837654000	778409000	59245000
769344000	757883000	11461000
Total		11461000
Average		66265800
Standard Deviation		39043317.63

Table 6 *Paired Sample Test of Company’s Profit*

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Company’s Profit Before Using Online Marketing - Company’s Profit After Using Online Marketing	66265800	39043317.63	17460702.5	17787118	114744482	3.795	4	.019

The result show that with an alpha of 0.05 and degrees of freedom equal to 4 (n-1), obtained the value t table of 2.776 for testing the two parties. Due to the value of t is greater than t table, then H0 and H1 accepted. It means that there are significant differences between the two sets of data.

Analyses focus on the impact of online marketing strategy to know the development of organizational performance, which are number of sales and company’s profit. The results above show that both of number of sales and company’s profit are still unstable, but the experiment in using online marketing is still doing to know the maximum effect in this month and the next month. Thus, this results provided some evidence that online marketing strategy is giving good impact to the organizational performance in the first month of using online marketing, which is December, 2015.

4. Conclusion

As outlined previously, the purpose of this research is to know the effect of online marketing strategy

for semi-conventional local furniture shop. This research wants to identify the after effect of implementing online marketing strategy for Cahaya Rumah Furniture Shop because the problem happening is having stagnant condition in their marketing strategy when online marketing has not been used in the enterprise. The marketing activity at Cahaya Rumah Furniture Shop as the semi-conventional local furniture shop such as promotion and advertisement in traditional marketing makes this semi-conventional local furniture shop become stagnant and decrease in the number of sales and customers because those marketing activities just reach limited area around the shop. The results of testing hypotheses using comparative testing between number of sales before using online marketing and after using online marketing shows that the Organizational Performance Data of using online marketing significantly affects the number of sales. Moreover, the results of testing hypotheses using comparative testing between company's profit before using online marketing and after using online marketing also shows that Organizational Performance data of using online marketing significantly affects company's profit. Therefore, the semi-conventional local furniture shop should use online marketing strategy to expand the promotion and advertisement through online in order to reach more customers in unlimited area that will directly increase the number of sales and develop the online marketing strategy in the enterprise. Although the result cannot conclusively show the increasing number of sales and company's profit every month, at least the result provide that the online marketing strategy is giving good impact to the organizational performance in the first month of implementing the online marketing strategy seen by the increasing number in December, 2015.

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Study of Influences of Marketing Communication Stimulus and Cues on Consumer Perception Toward Automobile Lubricant Brand Associative Network: Have You Changed Your Mind Yet?

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Abstract

There will be a time when companies want to change associative network of one of its brands through marketing communication. The change is necessary because of changed brand positioning, brand revitalization, co-branding or other reasons. The challenge lies in choosing the effective marketing communication stimuli and cues. At this moment, there is no study that reports how different stimuli and cues influence consumer perception and change brand associative network according to the needs of the companies. This research offers a contribution to fill this gap. In particular, it examines various visual cues that presents on automobile lubricants banner advertisements. Focus group discussion, in-depth interview and desk study research are conducted to explore customer perception about effective visual cues for brand's associative network modification. Furthermore, experimental research is held to measure the effectiveness of visual cues in modifying the associative network. The outcome shows that the effectiveness depends on modification scenario. Moreover, the expected visual cues can be operated for any automobile lubricant products banner advertisement.

Keywords : brand association; associative network; marketing communication; advertisement; visual cues; marketing communication stimulus; and lubricants.

1. Introduction

Oil is used in various kinds of function in every part of the world. It is treated in the different ways to be utilized by particular parties. Oil is also the basic and main ingredients of lubricants. The demands on lubricants on the worldwide market have been increasing in recent years. Even though there was the significant decrease on lubricants market in 2009, the market has been recovered slowly in 2010 until 2014 (Statista, 2016). It is shown in Figure 1.

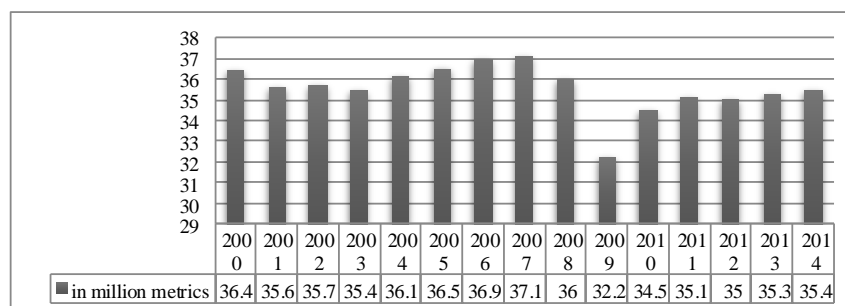


Figure 2 Global Demand for Lubricants from 2000 to 2014 in Million Metrics

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Lubricants are used in different kinds of industry. It is divided by automotive, industrial, process, metalworking and greases purposes. The biggest number of lubricants utilization is on automotive oils purposes. Automotive oils are usually used for sundry transportation medium, for instance the automobile oil. The automobile lubricants industry is still attractive for business because the number of the demand is still growing beside the fluctuative market price factor.

There are several big brand names in automobile lubricants industry such as Shell (Netherlands), Total (France) and Petronas (Malaysia), Valvoline (USA), and many more. Automobile lubricants industry is becoming more attractive to be developed by the players in the market. As the heterogenous shopping good, automobile lubricants are considered well before being bought by the consumers. Companies can build a strong brand for the automobile lubricants to be perceived in the market. To snatch their current and potential customers' attention, companies should deliver the value of their brand to them even to other stakeholders through brand value chain model.

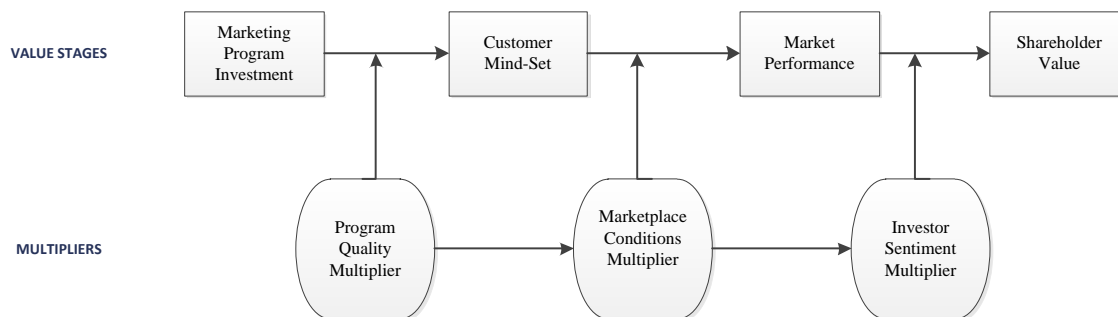


Figure 2 Brand Value Chain Model

Brand value chain model (Keller 2014) helps the brand to win in the market by starting with marketing investments and value creation processes. There are four steps on brand value chain model such as ; (1) Marketing program investment, (2) Customer mind set, (3) Market performance and (4) Shareholder Value. Between every steps, there are multipliers which may affect the stages. The multipliers are (1) Program quality multiplier, (2) Marketplace condition multiplier, and (3) Investor sentiment multiplier. The value creation stages and multipliers are very important in the brand value creation of a product or service in the marketplace. Companies should invest the right tools to deliver the sign of their product and services to the market with marketing promotional tools, for instance, advertising.

Advertising is a media of the companies to make the customers can recall and recognize their brand. American Marketing Association stated that advertising is a non-personal approach which is used by the companies to promote and presentate the product in order to be well-known by their customers. Advertising can be formed in lots of ways. It can be formed in video, banner ad, leaflet, and brochure or handbill. Banner ad is one of the advertising types that can be applied in several media. Advertising consists important stimulus and cues which should be relevant with the message. The dominant cues in the banner ad are visual cues. The cues and stimulus given may affect on the changes in customer perception and association of a brand. It is also ocured for lubricants brand. Lubricants brand may change their association from the lack of positive association to be better position.

This research can be a contribution especially in marketing area because there are no prior researches about changes association toward lubricants product before. The perception also tested by the preferred visual cues as the treatments. Prior researches commonly discuss about the effect of advertisement that affects on consumer preference. It is shows on Bolatito (2012) which tells about the effects of telecommunication advertisement toward consumer preference in Nigeria and Ayanwale, Alimi and Ayanbimipe (2005) researches which tells about the effects on advertisement also for Cadbury Nigeria Plc. In Indonesia, the effects of advertisement toward consumer preference also commonly examined as Maulana (2009) and Mungkur (2011) on soap and shampoo products. The customer preference on cues commonly tested directly on the specific product attributes, such as Kelley, Hyde and Bruwer (2015) which research about U.S. wine boottle characteristics from customer preferences. This research is reversing, which involving customer preference on advertisement before measuring the effects of the advertisement itself through the specific association. One of the ways to change customer associations is through schema associative long term memory (SALT).

Prior research stated that there are four associations in a lubricants brand, which is called "Fexon", such as trustworthy, global brand, premium packaging and high quality (Purnama 2016). The additional

association for the lubricants brand is trustworthy. Therefore, in this research, visual cues on banner ad are examined in order to change customer perception and association towards specific lubricants brand. Researcher are finding the issue in current business and formulating the concepts that relevant and can be analyzed to handle the issue. The concepts are examined through preliminary and experimental study for this research.

2. Literature Review

The relevant concepts to be applied in this research are perception, stimulus & cues, and schema associative long term memory. The following concepts are discussed below.

2.1 Perception

Customers perceive the cues and stimulus given by the company to get the message or value that being offered to them. The receiving process is called perception. Based on Solomon, Rosemary and Judith (2013), perception has three important steps. It is happened when people choose, arrange and unriddle the stimulus they perceive. The perception model are described by Mulyana (2008) as:

- Exposure;
The first step is proceed through human senses. Exposure has a message that transferred to the brain through visual, audio, touch, smell and taste senses.
- Attention;
Attention is the second step which is unavoidable. It is caused of human always bring their attention to an accident or a stimuli before giving responses or making some predictions of them. Perception requires object availability to be perceived by the human.
- Interpretation
This is the most important step when human get the information through their senses. Human can not interpret the meaning of an object directly. In the other hand, human interpret the meaning of an object based on their believes. Therefore, knowledge in perception is not about the product knowledge, but the knowledge sourced by human senses for that object.

Lindsay and Donald (1997) also have a slight different statement about perception which is the process of interpreting a stimuli or specific situation to get the meaning of their life. Therefore, the difference in comprehending and interpreting the stimuli as something meaningful for their life can be proceed in the different ways.

2.2 Stimulus and Cues

Stimulus and cues can be utilized in order to help the transformation. Stimulus and cues are two different terms. Based on Gibson (1960), stimulus are something that experimenter can set and arrange some treatments to be tested into the respondents as independent variable. It is not just something a more complicated things rather than the responses of human senses organs. Meanwhile, cue is very common term in psychology area as the sign of recalling something from prior experience as stated by Woodworth (1958). Similar with Cangelosi (1988), a cue also the part of consumer behavior pattern from previous learning process on something. Sometimes people are baffled about the difference between cue and stimuli. In fact, stimuli is different with cue because cue is a part of the stimuli which can make turn around in customer responses.

Stated in Shopper Marketing by Deloitte Touche Tohmatsu (2007), there is a stimuli which is used for marketing activities which called shopper marketing stimuli. The meaning of shopper marketing stimuli is any marketing effort that builds brand equity and has the potential to engage or influence an individual to shop or make a purchase. There are 4 (four) types of stimuli, such as:

- Product stimuli;
The product stimuli can be formed by cues that are available in certain product. The cues for product stimuli are size, shape, color, material, packaging of the product, messages, graphics, and language conveyed on the packaging.
- Price stimuli;
Beside product, the price stimuli also consist of some cues. For instance price promotions cues conveyed in circulars, shelf signs, coupon dispensers and personalized check-out coupons.
- Place stimuli; and

Place stimuli also composed by several cues where the product is being sold. Place stimuli cues can be represented with store design, layout, lighting, music, scents, aisle, shelf and display locations.

- Promotion stimuli.

Promotion activity also can be influenced by cues and stimulus. The stimuli on promotion cues can be formed in sampling, demonstrations, displays, floor advertisements, kiosk, instore visual or audio, intelligent shopping carts and digital signage.

Those stimulus are given to the customers in different forms. The forms of stimulus could be set suitable with the industries where the company in. In the other hand, not all the researcher agrees that every stimulus can make new behaviors, but reflex as the response and helped by the human organs (Gibson 1960). In conclusion, stimulus are something that responded by senses organs which can be controlled by the experimenters and resulting on reflex.

Marketers should know its consumers to get them for buying their products. One of the ways to understand the consumers is to know what the response of customer through various stimuli. The stimulus usually set by the companies to associate their products and services in the certain way. Therefore, marketers supposed to set the stimulus to get favourable responses from the customers. Stimulus as stated by Freud in Gibson (1960) is something that trigger another actions to be happened. As stated by Gibson (1960) stimulus is more than what human organs received in sensing something. The statement can be related to the five senses of consumers such as sight, hearing, taste, smell and touch. Based on those senses, author has also sets the sub-variable for human and non-human as source of the stimuli. The limitation in this research is the type of stimuli for each of sources. Author has divided sub-variable which sight senses which is called visual for human variable and sight senses (visual), hearing, touch and smell as called as audio for non-human.

Vision or visual as stated in Human Physiology is when nerve impulses are receiving some information sourced from eyes and brain which further is going to the cerebral cortex. Therefore, the visual sub-variable is when there is response as a result of eyes and brains information process. Human and non-human as variable have visual sub-variable. Even though they have the same sub-variable, the categorization will be different. The human with visual sub-variable is about what people see on another human as the stimulus and create the responses of them. For non-human variables, it is about people who see something as the stimulus in things, animals, or another source which is not human. Beside visual, there is also hearing senses which is called audio sub-variable in non-human variable. Hearing, as stated in Human Physiology, is processed through ears. The steps started when ears gather and identify the sound waves. In the same organs, it also has important roles in keep the balance. In this research, audio sub-variable will be about the sound waves as the results of information process through human ears as a stimulus to human brains as the responses. Touches are the sense which is perceived by skin and supported with 50 receptors before being processed by the brain. The cues examined in this research is visual cues in banner ad. Based on the prior research there are several elements which crucial in building the banner advertisement such as human figure, non-human figure, background settings, colors, information, and attributes.

2.3 Schema Associative Long Term Memory

Schema associative long term (SALT) memory model is an useful model in creating cognitive aspects in human minds with relating it into a specific contexture (Botelho and Coelho, 1995). The SALT model is applied on personal situation on learning from some information into decision making process. There are two possible situations or priming in utilizing this model, such as direct and indirect priming.

Direct priming is used to set obvious cues on stimulus which suitable with individual information structure. On the other hand, indirect priming is about the emerging of information revelation process because of the other association related to the current association. SALT model consist of three important elements such as content of nodes, meaning and labels of arcs and inference made in the network (Botelho and Coelho, 1995). Content of nodes is about the value in nodes that connect to human long term memory. Meanwhile, information and label of arcs are the strength between one association in a node and other association in another node. Inference in the network is about the combination of strength and activation of nodes in human long term memory.

This research expects to show the perception of specific lubricant perception based on the additional association, which is trustworthy. There are so many kinds of visual cues that are examined in this research such as information, background settings, human and non-human figure, attributes and dominant color. This

research focuses on the human and non-human visual cues as the differentiator and the other visual cues as the complement because there are no other researches which test about it. Those cues are selected because in most of the banner advertisement, the biggest size portion of visual cues are human and non-human figure.

In SALT memory model, there are two kinds of priming such as direct and indirect priming. The direct priming is set as the researcher examine directly the banner advertisement to the questionnaire. Based on prior research (Purnama 2016), there is linked association from trustworthy association, which is international certification. International certification is set to help the trustworthy association to be formed in customer mind in this research in indirect priming.

The advertisement that contains specific cues, especially visual cues can be perceived differently by the customers. The attribute of advertisements also can affect the favourable selling climate of the product itself as stated by Mukhopadhyay (1983). There are different attributes that can be used from marketers to build a message for their customers. The attributes that are used for banner advertisement are visual attributes. The attributes used can be human attributes and also non-human attributes, such as things, animal, etc. The usage of human attribute or figure in advertisement, for instance celebrity, may enhance brand recall of customers as stated by Davies and Chun (2010). Non-human figure, as the animal figure, also can be found fascinating for the customers (Hirschman, 1994; Sander and Hirschman, 1996). The comparison of human and non-human figure on advertisement also can be perceived differently. Therefore, further examination of human and non-human figure usage on lubricants advertisement is conducted in this research.

H1 : *Customers have different trustworthy perception value in facing human and non-human figure usage on lubricants advertisement.*

The direct and indirect priming also can be perceived differently as stated by Botelho and Coelho (1995). Those different priming is resulted by the difference access of human memory to theirs stored information memory. Direct priming can be perceived more favorably by customers because customers can get the point of the advertisement itself through the direct priming. In the other hand, some of the customers bored with direct priming methods. Some of the customers prefer the indirect priming advertisements, even the possibility of misinterpretation on the advertisement is occurred in indirect priming. Therefore, the favorability for both of methods should be measured further in this research. The differences between direct and indirect priming through international certification symbol are measured in this research for trustworthy association.

H2 : *Customers have different trustworthy perception value in direct and indirect priming of human and non-human figure usage on lubricants advertisement*

Customers have their own style and preference among all of the aspects of their life. They may behave differently on their preferences and less preferred things. It is also applied in advertisements. Advertisements are not only affecting on consumer preference based on product attributes, but also the promotional attributes, such as advertisement attributes in this research. There are preliminary researches that emerge the preferred visual cues for advertisement that supporting trustworthy association. Current advertisements are not based on the consumer preferences on their advertisement attributes. Therefore, the differences on trustworthy perception value on current and potential banner advertisement are measured in this research.

H3 : *Potential banner advertisement has more positive trustworthy perception on human and non-human figure usage with direct and indirect priming in lubricants advertisement.*

There are differences between human and non human cues perceived in advertising. Based on Davies and Chun (2010), advertisements that are using celebrity as advertisement model may enhance brand recall of customers. In the other hand, Lam, Shun and June Campbell; Hemphil (1996); Boyatsiz and Varghese (1994); Wright (2004); and Tornetta, Fox and Blackbird shows that different color aspects on advertisement cues can be perceived differently especially for human gender. It shows that the same visual stimulus or cues can be perceived differently by male and female. Therefore this research also examines the differences between female and male customers on trustwirthy value of human and non-human fugure usage on lubricants advertisement.

H4 : *Female and male customers have different trustworthy value on human and non-human figure usage on lubricants advertisement.*

There are two kinds of measurement settings on this research for recalling the stored information of customers, such as direct and indirect priming according to SALT model. Based on Purnama (2016), Fexon brand has to build trustworthy association. The indirect priming of the potential advertisement is using international certification as related association for trustworthy association. The positive impact of international certification on trustworthy association in this potential advertisement also an important thing in this research. Therefore, the appearance of international certification symbol should bring positive impact on trustworthy value in the potential lubricant advertisement.

H5 : *The appearance of international certification symbol on the lubricant advertisement brings significant positive influence toward trustworthy perception of the lubricant brand presented on the advertisement.*

3. Research Methodology

The objective in this research is to know the changes in customer perception toward various visual cues in banner advertisement for specific additional brand association, trustworthy. The research is conducted in Bandung, Indonesia. It is conducted in two main stages namely preliminary research and experimental research. Preliminary research consists of four qualitative researches such as focus group discussion, (expert) in-depth interview, desk study, and survey. Furthermore, it is continued with experimental research, as quantitative research. The more descriptions are described as followed.

3.1 Preliminary Research

There are four type of researches that conducted in preliminary research such as focus group discussion, (expert) in-depth interview, desk study and pilot survey. These researches are conducted as the preliminary research for the advance stage. The objective is exploring the favorable visual cues for lubricants banner advertisement. The data are collected through qualitative method. The results are analyzed descriptively in every sub-stages. Data collected in this stage are primary data, which can be got from the original source itself. The detailed is described as the following below.

3.1.1. Focus Group Discussion

This research utilizes focus group discussion to understand the important aspects in advertisements based on customers' mind. The focus group discussion involved 15 adults which consist of 8 men and 7 women. It is taken by the convenience sampling method, which is researcher choosing the people or respondents by coincidence (Sugiyono 2014). The focus group discussion is conducted in a small room which facilitated with a TV screen, white board, a table and chairs. The rooms are utilized specifically for supporting the focus group discussion to be in line and minim of disruption.

The focus group discussion held in 3 sessions with 5 people per group. The questions are open-ended and close-ended questions. They are about specific associated trustworthy cues advertisements. The materials of this activity is about subjective cues such as daily usage, high quality, fast speed, global brand and trustworthy. The technique for collecting the data from respondents is using user imagery technique. The expected results are researcher can determine which cues that are important in building and supporting the brand identities of lubricants brand which will be indicator in the experimental research.

3.1.2 In-depth Interview

The respondents of the expert interview for this research are two people with art major background. The questions asked will be open ended to the respondents. The questions are about the cues or stimulus that can help a brand to achieve lubricants brand identities, as stated in focus group discussion sub-chapter. There is no limitation in receiving the ideas from the respondents, therefore, it is unstructured interview. The expected results from expert interview is there are cues and stimulus which can help a brand to get brand identities characteristics in customer response.

3.1.3 Desk Study

Researcher is comparing and delving about several global car lubricant ads. The brands are BP, Shell, Valvoline, Castrol, Total, Petronas, Federal, Gulf and Mobil 1. The materials of visual cues utilized in this study are; (1) dominated colors, (2) background settings, (3) logo display, (4) information color and size,

(5) human figure, (6) non human figure and (7) product placement. The change or modifications of cues in every ads is the important thing in this desk study. The cues are counted as the important thing that makes the customer perception changed. Beside the change of visual cues, it is important also to understand the current advertisement condition rather than another similar banner advertisement.

3.1.4. Pilot Survey

Based on focus group discussion, in-depth interview with expert and desk study, the results are examined once again to the respondents. The examination is using qualitative methods, to examine customer preference on visual cues for an advertisement in general until specific associated advertisements. The pilot surveys are tested on 107 respondents and most of them live in Bandung. The sampling technique used in this pilot survey is one of the non-probability sampling, convenient sampling. According to Wibisono (2003), convenient sampling is one of the sampling techniques to get the information from available population members. Therefore, researcher may pick some of the respondents which available and ready to be researched. The questionnaire questions are set with close-ended questions.

3.2 Experimental Research

The objectives on this research is to know the impact of cues modification into changing on consumer perception toward trustworthy association on lubricants brand and the difference on trustworthy perception on human and non-human figure on lubricant advertisement. The experimental research method utilized is pre-post experimental research. Based on Sugiyono (2014), pre-post experimental research is when the respondent is given treatments by the researcher as the independent variable and the respons of the treatment measured by the researcher as the dependent variables in two or more different set time.

The technique sampling of this research will be judgemental sampling. Based on the same source, the judgemental sampling is about determining sample size with specific consideration. The sample size is at least 10-20 people in a group control. There are 16 control group with each 8 group for human and non-human figure treatments. It is accepted based on Roscoe (1982) in *Research Methods For Business*, who stated that the accepted sample size is around 10-20 people in a control group of experimental research. The operational variable measured is sourced from the triangulation analysis as the result from the secondary data. The expected results that researcher may get the right cues to be set in advertising to get the proper customer perceptions.

Validity are tested through expert validation. Researcher consults the proper questions asked through every research especially experimental research to the professor or lecturer and also the treatments. The structured experimental research are shown in the table 1. The data are measured by the short questionnaire at the experimental pre and post sessions. The technique of perception measurement is using semantic scale. Researcher decides to use semantic scale to show the varied response of sample at this experimental research. The score are set from 1 as the lowest score until 8 as the highest score. The sufficient data are collected and examined in some steps. The steps are:

- Two advertisements are created based on the preliminary research results. The objective of the advertisements are being the treatments at post experimental research;
- Questionnaire is also set to measure the value of customer perceptions with validity expert examination;
- Pre-research is held at a time and using the current advertisement of specific lubricants brand by respondents;
- Post-research is conducted two day after the pre-research is held. The post research treatments are using human and non-human figure advertisements based on the preliminary research;
- The data collected through 16 control groups which divided by 10 women and men for each group according to experimental research structure in Table 1;
- The data analyzed through SPSS 22 software for the quantitative data from the questionnaire. The objectives are : (1) To determine the difference between human and non-human figure advertisements; and (2) To comprehend the impact of international certification as the linked association of trustworthy toward trustworthy perception on the advertisements.

Table 10 Experimental Research Structure Table

Experimental Research Structure				
Pre-session		Post-session		
Current lubricant advertisements	Non-human Figure	Non-human Direct Priming	Direct Question	Female
				Male
		Indirect Question	Female	
			Male	
		Non-human Indirect Priming	Direct Question	Female
				Male
	Human Figure	Human Direct Priming	Indirect Question	Female
				Male
		Human Indirect Priming	Direct Question	Female
				Male
		Indirect Question	Female	
			Male	

4. Finding and Analysis

4.1. Basic Stages

The basic stages are consist of qualitative researches. The focus group discussion, in-depth interview, and desk study results are described differently. The results of those researches are used for pilot survey examination. The results are discussed below.

4.1.1 Focus Group Discussion

There are several aspects in trustworthy association examined in visual cue elements. The aspects are non-human figure, human figure, attributes, background settings, reliable attributes, information and dominant colors.

Table 11 Non-human Figure Based on Focus Group Discussion Table
Cues for Lubricants Trustworthy (Association) : Non-human Figure

No	Description	Total
1	Luxury car	7
2	Piston	3
3	Pouring lubricants liquid	2
4	Racing car	2
5	Black car	1

Respondents perceived that it is better to use luxury car for non-human figure on banner ad and followed by piston. City car also included in luxury car. It depends on the brand and model that are similar with luxury car identity. Piston also at the runner up choice of respondents because it shows the symbol that related with the using of the product, which is car. It also shows the dynamic movement on banner advertisement. Beside non-human figure, human figure also important in banner advertisement.

Table 12 Human Figure Based on Focus Group Discussion Table
Cues for Lubricants Trustworthy (Association) : Human Figure

No	Description	Total
1	Racer	9
2	Professional (athlete, professor, etc)	6

There are two professions which stand out the most in focus group discussion, racer and professional. It is better to present the racer for showing trustworthiness of the product in advertisement. The human figure also can shows the professional such as professor to shows the brand is examined in specific related institutions.

Table 13 Reliable Attributes Based on Focus Group Discussion Table
Cues for Lubricants Trustworthy (Association) : Reliable Attributes

No	Description	Total
1	International certification	10
2	Official sponsorship	2
3	Official partnership	2
4	Testimonial	1

International certification is important reliable attributes based on the respondents. It is important for them to know there are certification related with the product which it can also reflect the quality standard of a product. The minor responses also shows in official sponsorship, partnership and testimonial. The testimonial usually stills emerges some doubts in customer minds because it can be set by the advertising agency. Therefore, the domination responses in the reliable attributes is international certification.

Table 14 Background Settings Based on Focus Group Discussion Table
Cues for Lubricants Trustworthy (Association) : Background settings

No	Description	Total
1	City road	6
2	Freeway road	5
3	In a road between the skyscraper	2
4	Park	1
5	Between in the jungle	1

The background setting are dominantly on city road and freeway road. It is shows the natural state of the city car or luxury car belong. Meanwhile the minor statements are in a road between the skyscraper, park and between the jungle.

Table 15 Attributes Based on Focus Group Discussion Table
Cues for Lubricants Trustworthy (Association) : Attributes

No	Description	Total
1	Car performance as the result for product usage	12
2	Fast speed effect	2
3	Simple ad	1

The expected attributes shown in the advertisement is the impact or benefit that product gives to the non-human figure. It can deliver the brand or product value to the customers to perceive the same benefit after buying and using the lubricants product. The attributes also can be applied by using fast speed effect and simple ad which can use simple basic colors and less attributes.

Table 16 Information Based on Focus Group Discussion Table
Cues for Lubricants Trustworthy (Association) : Information

No	Description	Total
1	Benefit	13
2	Product detail	1
3	Product ingredients	1
4	"Trustworthy" word	1

In line with previous cues, the information that expected to present in the banner ad by the respondents is benefit information. They expect the value or positive impact that product give to them as the replacement of the cost they sacrifice for a product. The minor statement also occurred for product detail, product ingredients and trustworthy word.

Table 17 Color Based on Focus Group Discussion Table
Cues for Lubricants Trustworthy (Association) : Color

No	Description	Total
1	Gold	3
2	Black	3
3	Monochrome	2
4	White	1
5	Beige	1
6	Silver	1
7	Purple	1
8	Maroon	1
9	Viridian	1
10	Blue	1

The color that represent most based on all of focus group respondents are gold, black and monochrome color. The other basic colors also can represent the trustworthiness such as white, purple, blue, maroon, and beige. The combination color, it can be applied such as viridian, instead of monochrome color. These visual cues aspects are examined furthermore combined with in-depth interview and desk study process in pilot survey.

4.1.2 In-depth Interview

In depth-interview is conducted with three primary sources. They have the same background which is art. One of them are the professor of art major in an university and the others are visual communication design alumnus. They stated the proper way and suggestion for making a lubricant advertisement. The results are discussed on the following tables.

Table 18 Non-human Figure Based on In-depth Interview Table
Cues for Lubricants Trustworthy (Association) : Non-human Figure

No	Description	Total
1	Car produced by another country	1
2	Machine figure	1
3	Gears figure	1
4	Piston figure	1
5	Luxury car	1
6	Sport car	1

There is additional attributes for non-human figure such as car produced by another country, luxury car and sport car. It can be applied depends on the match of other visual cue elements. Beside the car, there still machine, gears and piston can be used in non-human figure. The piston and luxury car are also stated in the focus group discussion sessions.

Table 19 Human Figure Based on In-depth Interview Table
Cues for Lubricants Trustworthy (Association) : Human Figure

No	Description	Total
	Reflected characteristics of	
1	consumer	2
2	Professional racer	1
3	Neutral human figure	1
4	Professional in lubricants area	1

The experts stated that sometimes costumers feel the human figure in the advertisements as themselves. Therefore, it is better that the human visual cues are reflecting the consumer characteristics. The additional cues are racer, professional and neutral human figure. The neutral human figure is also important because it can avoid the negative perspective on specific human figure. The human figure which also stated in focus group discussion session are racer and professional.

Table 20 Reliable Attributes Based on In-depth Interview Table
Cues for Lubricants Trustworthy (Association) : Reliable Attributes

No	Description	Total
1	Sponsorship	2
2	Certification	1
3	Award	1

The reliable attributes stated are sponsorship and certification. It is also stated in focus group discussion session. The additional for reliable attribute is brand award. It can attract customers through brand achievement.

Table 21 Background Settings Based on In-depth Interview Table
Cues for Lubricants Trustworthy (Association) : Background Settings

No	Description	Total
1	Pit stop	1
2	Dark place	1
3	Jungle	1
4	Freeways	1

Jungle and freeways are the cues that also stated in focus group discussion session. Beside those visual cues, there are pit stop as the part of the circuit and routine place the racer visits in racing and dark place as the additional of the visual cues.

Table 22 Attributes Based on In-depth Interview Table
Cues for Lubricants Trustworthy (Association) : Attributes

No	Description	Total
1	Car performance	1
2	Fast effect on other cues	1
3	Blurred effect	1
4	Aerodynamic effects	1

The repeated visual cues from the focus group discussion and in-depth interview are car performance and the fast effect on the other cues. The blurred and aerodynamic effects also can be included in fast speed effects.

Table 23 Information Based on In-depth Interview Table
Cues for Lubricants Trustworthy (Association) : Information

No	Description	Total
1	Product benefit	3
2	Less word usage	2
3	Bold words as masculinity	1
4	Italic words help fast effect	1
5	Relevant statement with the message	1

It also important based on experts in in-depth interview the present of product benefit in the advertisement. It can shows the value of the product to the consumers which can make them enjoy the benefit after buying and using the product. The additional is about the technique in font and the relevant messages.

Table 24 Color Based on In-depth Interview Table
Cues for Lubricants Trustworthy (Association) : Color

No	Description	Total
1	Chromatic	1
2	Universal acceptance	1
3	Less color usage	1
4	Brand basic color	1
5	Blue	1
6	White	1

It is also almost the same with focus group discussion that the chromatic, blue, white and universal acceptance are used for lubricants brand. The brand basic color, which is as the sign of a brand itself beside the form, may applied to help customers recognize the brand without seeing thoroughly to the banner ads. In-depth interview results are combined with desk study and focus group discussion results are examined further in pilot survey.

4.1.3 Desk Study

Desk study is used as the comparison of one advertisement to the other in a brand. The changing visual cues are the focus of this desk study. The desk study are shown in table 15. The changes on desk study are mostly about the non-human figure such as a car as the “consumer” of the lubricant itself and dominant color used for the advertisement background. The others are usually minor aspects or even the font and display technique of advertisements.

Table 28 Desk Study Results

		Desk Study			
No	Brand	Background and Logo	Word	Figure and Model	Product Display
1	BP	<ol style="list-style-type: none"> 1. Additional car as the background 2. Logo is not always shown in every ad 	<ol style="list-style-type: none"> 1. Information is depend on the ads requirement 2. Additional black color font on smaller font (in event ads). 	<ol style="list-style-type: none"> 1. Athlete as a model is shown in partnership ad with an events. 	<ol style="list-style-type: none"> 1. Product is shown in regular ads.
2	Castrol	<ol style="list-style-type: none"> 1. The background color is plain or use some settings 	<ol style="list-style-type: none"> 1. The important words using red label 	<ol style="list-style-type: none"> 1. The figures among the ads are different depend on ad context 	<ol style="list-style-type: none"> 1. Not all of the ads are showing the products image.
3	Federal Mobil	<ol style="list-style-type: none"> 1. Background color from dark colour into relatively light color 	<ol style="list-style-type: none"> 1. There is one ad using words, the other is not 	<ol style="list-style-type: none"> 1. The second ad is using figures but not showing the products 	<ol style="list-style-type: none"> 1. The first ad focus is the products
4	Gulf	-	-	<ol style="list-style-type: none"> 1. Different car as lubricants "consumer" for ad figure 2. Athlete as a model is shown in partnership ad. 	-
5	Mobil 1	-	<ol style="list-style-type: none"> 1. Important information is set in larger font and red color. 	-	-
6	Petronas	-	-	<ol style="list-style-type: none"> 1. Different car types as the figure 	-
7	Shell	<ol style="list-style-type: none"> 1. Various background color is set (yellow, blue, and grey) 	<ol style="list-style-type: none"> 1. Using testimonial sentence on the ad 	<ol style="list-style-type: none"> 1. Different model profession and age shows in the ads. 	-
8	Total	<ol style="list-style-type: none"> 1. Background color from dark colour into relatively light color 	-	<ol style="list-style-type: none"> 1. Different figures among the ads (lubricants and racing car) 	-

4.1.4 Pilot Survey

The previous researches keywords are tested in the pilot survey to 107 respondents as the substance of a treatment in experimental research. Customers are expected to choose the most favorable options to be combined in the further research the results are shown in table 16.

Table 25 Pilot Survey Results

Pilot Survey Results on Trustworthy Perception of Lubricants Brand			
No	Visual Cues	Dominant Response 1	Dominant Response 2
1	Non-human figure	Luxury car	Piston
2	Human figure	Professional	Racer
3	Reliable attribute	International certification	Official partnership
4	Background settings	City road	Freeway road
5	Attribute	Car performance	Fast speed
6	Information	Benefit	Product detail
7	Dominan color	Gold	Black

The combination of those aspects are used for the experimental research treatments. The treatments are used to make the expected perception. There are two kinds of treatments for advance stage which set based on the pilot survey results.

4.2 Advance Stage

Experimental research is conducted in advance stages. Experimental research are conducted to each 10 people in every control groups. The total respondents for this research are 160 people. The treatments are held in pre and post experiment. Pre-experimental is conducted with giving current banner ad as the treatments for customers. In the other hand, the post-experimental is conducted with the new combination of visual cues. There are two treatments used in this research. The objectives on this research are to know the impact and differences among the group. The data are examined quantitatively through SPSS 22 as statistical tools. The research questions are listed to help researcher explores the research objectives.

The data analyzed through two types of tests. The tests are difference test and impact test. The data processed are different based on the normality level of the data. The data are examined with t-test if the data are normal. Meanwhile, Wilcoxon signed test are used when the data are not normal. The impact test is using linear regression. The questions are set based on the combination of every aspects in experimental research structures.

Difference test are set for two types of differences, such as gender and pre-post trustworthy value. The results show that there is no significance differences between customer trustworthy perception on women and men. Women and men for the potential advertisements are perceive the advertisements as trustworthy product in almost similar responses. The first hypotheses are rejected because the results also show that there is no difference on consumer trustworthy perception between human figure and non-human figure in advertisements. In the other hand, in every pre and post experimental research, dominantly the results show there are some positive differences between current and potential advertisements. The new advertisements may affect the trustworthy perception on the customers' mind.

International certification are used as the bridge of customers' mind into new additional association, which is trustworthy. In every indirect priming, the data are analyzed for the impact to the potential advertisements. The data shows that there are impacts on every trustworthy part. Therefore, it is important for the lubricants product to put the international certification symbols to get higher opportunities in growing trustworthy perception in customers mind. Therefore, the impact hypotheses from international certification symbol toward customers trustworthy perception is approved.

4.1.2. Table 30 Experimental Research Questions Table
Research Questions

No	Hypotheses	Listed Questions	Statistic	Sig. Value	Description
1	<i>Customers have different trustworthy perception value in facing human and non-human figure usage on lubricants advertisement.</i>	Are there any differences on consumer trustworthy perception for human and non-human figure on lubricants advertising?	Non-Parametric Mann-Whitney Test	0,809	Not Different
2	<i>Customers have different trustworthy perception value in direct and indirect priming of human and non-human figure usage on lubricants advertisement.</i>	Are there any differences on consumer trustworthy perception for non-human figure direct and indirect priming on lubricants advertising? Are there any differences on consumer trustworthy perception for human figure direct and indirect priming on lubricants advertising?	Non-Parametric Mann-Whitney Test	0,228	Not Different
3	<i>usage on lubricants advertisement.</i>	Are there any differences on consumer trustworthy perception for human figure direct and indirect priming on lubricants advertising?	Non-Parametric Mann-Whitney Test	0,400	Not Different
4		Are there any differences on consumer perception trustworthy for human figure in direct priming on lubricants advertising?	Compare Means Independent T-Test	0,571	Not Different
5		Are there any differences on consumer perception for human figure in indirect priming on lubricants advertising?	Compare Means Independent T-Test	0,107	Not Different
6		Are there any differences on consumer perception for non-human figure in direct priming on lubricants advertising?	Compare Means Independent T-Test	0,226	Not Different
7		Are there any differences on consumer perception for non-human figure in indirect priming on lubricants advertising?	Compare Means Independent T-Test	0,911	Not Different
8	<i>Potential banner advertisement has more positive trustworthy perception on human and non-human figure usage with direct and indirect priming in lubricants advertisement.</i>	Are there any differences on consumer perception for human figure in direct priming with direct questions on current and potential lubricants advertising?	Non-Parametric Wilcoxon Signed Rank Test	0,000	Different
9		Are there any differences on consumer perception for human figure in direct priming with indirect questions?	Non-Parametric Wilcoxon Signed Rank Test	0,000	Different
10		Are there any differences on consumer perception for human figure in indirect priming with direct questions?	Non-Parametric Wilcoxon Signed Rank Test	0,000	Different
11		Are there any differences on consumer perception for human figure in indirect priming with indirect questions?	Non-Parametric Wilcoxon Signed Rank Test	0,000	Different
12		Are there any differences on consumer perception for non-human figure in indirect priming with direct questions?	Non-Parametric Wilcoxon Signed Rank Test	0,000	Different

13	Are there any differences on consumer perception for non-human figure in indirect priming with indirect questions?	Non-Parametric Wilcoxon Signed Rank Test	0,000	Different
14	Are there any differences on consumer perception for non-human figure in direct priming with direct questions?	Non-Parametric Wilcoxon Signed Rank Test	0,000	Different
15	Are there any differences on consumer perception for non-human figure in direct priming with indirect questions?	Non-Parametric Wilcoxon Signed Rank Test	0,000	Different
16	Female and male customers have different trustworthiness values on human and non-human figure usage on lubricant advertisement.	Compare Means Independent T-Test	0,089	Not Different
17	Are there any differences on male and female consumer perception for non-human figure in direct priming with indirect questions?	Non-Parametric Mann-Whitney Test	0,687	Not Different
18	Are there any differences on male and female consumer perception for non-human figure in indirect priming with direct questions?	Compare Means Independent T-Test	0,065	Not Different
19	Are there any differences on male and female consumer perception for non-human figure in indirect priming with indirect questions?	Non-Parametric Mann-Whitney Test	0,503	Not Different
20	Are there any differences on male and female consumer perception for human figure in direct priming with direct questions?	Compare Means Independent T-Test	0,280	Not Different
21	Are there any differences on male and female consumer perception for human figure in direct priming with indirect questions?	Compare Means Independent T-Test	0,071	Not Different
22	Are there any differences on male and female consumer perception for human figure in indirect priming with direct questions?	Compare Means Independent T-Test	0,283	Not Different
23	Are there any differences on male and female consumer perception for human figure in indirect priming with indirect questions?	Compare Means Independent T-Test	0,735	Not Different
24	The appearance of international certification symbol on the lubricant advertisement brings significant positive influence toward trustworthiness perception of the lubricant brand presented on the advertisement.	Regression Linear	0,000	Positive Impact
25	Are there any impact on international certification symbol toward trustworthiness perception in human indirect priming with indirect questions on lubricant advertising?	Regression Linear	0,000	Positive Impact
26	Are there any impact on international certification symbol toward trustworthiness perception in non-human indirect priming with indirect questions on lubricant advertising?	Regression Linear	0,000	Positive Impact

27	Are there any impact on international certification symbol toward trustworthy perception in non-human indirect priming with direct questions on lubricant advertising?	Regression Linear	0,000	Positive Impact
28	Are there any impact on international certification symbol toward trustworthy perception in human indirect priming lubricant advertising?	Regression Linear	0,000	Positive Impact
29	Are there any impact on international certification symbol toward trustworthy perception in non-human indirect priming with indirect questions on lubricant advertising?	Regression Linear	0,000	Positive Impact

5. Conclusion and Implication

There are two kind of stages in this research consumer preference on visual cues of lubricant utilized to create the treatments for experiment meanwhile, the pre test treatment is using hypotheses on this research, such as:

Positive Impact

Positive Impact
 The preliminary research results are the material for post test, advertisement. There are three kind of

Hypotheses Examination		
No	Hypotheses	Result
H1	<i>Customers have different trustworthy perception value in facing human and non-human figure usage on lubricants advertisement.</i>	Not different

H2	<i>Customers have different trustworthy perception value in direct and indirect priming of human and non-human figure usage on lubricants advertisement.</i>	Not different
H3	<i>Potential banner advertisement has more positive trustworthy perception on human and non-human figure usage with direct and indirect priming in lubricants advertisement.</i>	Different
H4	<i>Female and male customers have different trustworthy value on human and non-human figure usage on lubricants advertisement.</i>	Not Different
H5	<i>The apperance of international certification symbol on the lubricant advertisement brings significant positive influence toward trustworthy perception of the lubricant brand presented on the advertisement.</i>	Positive Impact

The results show that there is no significant difference between human and non-human figure on lubricants advertising. It shows that people perceive the advertisement in a similar way. It is almost no gap between human and non-human figure in advertising. It is also happened in direct and indirect priming on human and non-human figure usage in lubricants advertisement. Companies can set the proper figure to grab customers attention, it can be human or non-human figure. In experimental research, the two treatments are set, and there are the difference between them. It shows that the possibility in adding or changing consumer perception is still possible as long the stimulus or advertisements for this research are relevant with the product and service offered. It is better to analyzed consumer preference on specific product or service area, to get more effective results in affecting customers' mind. It is examined for the third hypotheses, which with using favorable visual cues in lubricants advertisement, it can build positive perception on customers mind.

This research also tests the difference between male and female perception on lubricants advertisement. It shows that they have no different point of view in perceiving the lubricants advertisement. It is good for a company that they do not have to separate the advertisement for their common target market as long the cues are suitable with female and male customers expectation. The other results show that the international certification in lubricant advertising can help the product to be perceived as trustworthy product from customers' mind. To snatch market attention and to build additional perception based on associations, companies should know the favourable and unfavourableness of their target market in advertising. The visual cues that attract and make customers pleasant when they look at an advertisement it helps them build and a company expected perception. This research shows that trustworthy perception emerge when the visual cues are changed into the favourable cues from customers. It is better for companies to understand consumer preferences on cues and stimulus, especially in visual cues of banner ad in this research. The linked association also can help the advertisements to be more effective in reaching their target market. In lubricant industries, to build the trustworthy perception or association, international certification symbol as API SN, can be put on advertisements. It is examined can help the product and service to be more dependable for their customers.

The used of this advertisement can affect on customers' brand engagement of a specific lubricants brand. Based on the data collected, researcher also has predicted the increasing of brand engagement as the affect on consumers' brand engagement of a specific lubricants brand. It is shows as the comparison between prior advertisement into the proposed advertisement with the favorable visual cues. The pre-test brand engagement results is 26,875%. Meanwhile, post-test shows 47,5% brand engagement of customers. Therefore, it is proven to increase customers brand engagement on a specific lubricants product significantly.

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The Use of Revised Importance – Performance Analysis in Assessing the Donator Satisfaction of Rumah Amal Salman ITB (RASI)

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Abstract

Rumah Amal Salman ITB (RASI) is a zakat institution that provides services for collecting the zakat, infaq, sadaqah, and waqf. RASI has the vision to become an excellent university mosque zakat institution, a trustworthy zakat institution and become a key pillar in the social economic development in the community. To reach its visions, RASI provides many programs to the community. The amount of donation collection and program execution must be at least the same. Therefore, RASI has to gain as much as donation from donator to generate its programs. Furthermore, the service quality given to the donator becomes one of the important parts that need to be considered. In order to improve its service quality, RASI needs to assess its current condition of its service quality. This research aims to assess the importance and satisfaction performance of donator based on revised importance-performance analysis methods. The SERVQUAL dimensions with the five points of Likert scale would also be used in the questionnaire. At the end, the research would give the solution and recommendation for the RASI to be used in deciding RASI future strategy.

Keywords: Revised Importance-Performance Analysis; Service Quality; SERVQUAL; Zakat; Infaq; Sadaqah; Waqf

1. Introduction

Rumah Amal Salman ITB (RASI) is a zakat institution that provides services for collecting the zakat, infaq, sadaqah, and waqf. RASI has the vision to become an excellent university mosque zakat institution, a trustworthy zakat institution and become a key pillar in the social economic development in the community. To reach its visions, RASI provides many programs to the community. The program is divided to five focus programs, there are: educational charity, humanitarian charity, environmental and health charity, economic and empowerment charity, and syiar charity.

The educational charity program focuses on educating Indonesian young generation from elementary to higher education, orphans, and the teacher coaching. It emphasized on the education of religion, science formal (science, technology, and art), creativity, soft skills, and a variety of other disciplines. The programs are Salman Scholarship, Nusantara Pioneer Scholarship, Orphans Creative Scholarship, Salman Dormitory, Regeneration Program, ICT Goes to School, Schools Assistance Program, and Synergy for Madrasah.

The focus of humanitarian aid in ethnicity, nation, and religion area are covered in RASI's humanitarian charity program. The humanitarian charity programs is a flagship program, implemented through the cooperation of multidisciplinary and multi-agency. The programs include the following activities: Emergency Response, Salman Volunteer Corps, Disaster Area Mitigation, Car Waqf, Student Volunteer, Tough Mosque, and Road 4 Peace.

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Clean environment is the main focus in the environmental and health charity program. RASI has several health and environmental programs, both routine and incidental several programs. There are: Free Ambulance Service, Public Health Care Service, Waste Bank, Cikapundung River Eco Tourism, Blood Donation, and Car Free Day Health Care Service.

Economic and empowerment charity program focuses to build the civil society with stable and rapid advancement of the economics. To realize it, RASI introduce several programs to pilgrims, there are: Microfinance Institutions, Youth Empowerment, Synergies for Indonesia, Homeless Family Empowerment, Keluarga Sayang Anak Incubation House, and Salman Entrepreneur Club.

Rumah Amal Salman ITB wants to participate as the vanguard in the greatness of Islam. Sublime teachings of Islam should be spread to all corners of the world. Call pick up this greatness, RASI cooperates with various programs that organized in Salman Mosque ITB. Many programs launched by RASI, hoping the symbols of Islam can be felt by all walks of life around. Its Syiar charity program consist of Islamic Studies, Unit Salman, Monday-Thursday Fasting Program, Qurban Services, Salman Reading Corner, Corpse Services, Salman Women Recitation, Standby Preachers Corps, ITB Spiritual Camp, Mosque Management, and Incidental Services.

Those bigger amount of program that RASI provides need the good flow for its donation collection. Then RASI has to gain as much as donation from donator to generate its programs. With its current donator of 10,964 in 2015, the service quality given to the RASI donator becomes one of the important parts that need to be considered. In line with RASI mission to provide well systems and services that facilitate donator in giving the donation, the assessment of its current service quality condition is required.

The research about the donator satisfaction towards RASI service quality also hasn't conducted by the institution before. This research try to measure the level of donator satisfaction regarding RASI's service quality by assessing the importance and satisfaction performance of donator based on revised importance-performance analysis methods.

2. Literature Review

2.1. Zakat

Muslims have the Five Pillars of Islam that consist of five mandatory duties for every Muslim. These are the foundation for worship and a sign of commitment to the faith. Those five pillars are the shahadah (declaration of belief in the oneness of God and the acceptance of Muhammad as God's prophet), the salat (five prescribed daily prayers), paying zakat (almsgiving), sawm (fasting during the month of Ramadan), and the haji (pilgrimage during the prescribed month to Mecca) at least once in a lifetime (Oxford Islamic Studies Online, n.d.).

As one of the Five Pillars of Islam, zakat is compulsory for each and every Muslim that financially capable. Every Muslim whose finances are above a certain specified minimum must pay 2.5% of his cash balance annually to those less fortunate. There are eight categories of zakat recipients, there are the poor (*fugara*'), the needy (*masakin*), zakat official ('*amilin*), the new revert (*muallaf*), the slaves (*ar-riqab*), the debtors (*al-gharimin*), the fighters of Allah (*fisabilillah*), and the travelers (*ibnusabbil*) (Aziz, Jamil, Ismail, & Rahman, 2013). Zakat serves principally as the welfare contribution to poor and deprived Muslims.

2.2. Zakat Institution in Indonesia

In Indonesia, there are two institutions that have the task to manage, distribute, and utilize zakat namely Badan Amil Zakat (BAZ) and Lembaga Amil Zakat (LAZ). BAZ is a zakat management institution set up by the government, which was established at the proposal of the Ministry of Religious Affairs and approved by the President. While LAZ is zakat management institutions established by the private sector or outside government. LAZ is zakat management institutions that fully established on the initiative of the people and by the people engaged in proselytizing, education, social and benefit the people Islam. LAZ is confirmed, nurtured and protected by the government. In performing its duties LAZ provide a report to the government in accordance with the levels (Risal, 2015). In addition to receiving Zakat, BAZ or LAZ can also receive infaq (charitable spending), sadaqah (voluntary donation), and waqf (islamic endowment).

2.3. Service Quality

Service quality is the most important part for customer in judging the pure services. It's substantial in affecting the satisfaction level of the customer (Zeithaml, Bitner, & Gremler, 2013). Service quality that

applied properly drives many benefits, such as retain many customers, minimize expenditures, build up business image, good oral recommendation, and yielding big profit (Ladhari, 2009).

A. Parasuraman, Valarie A. Zeithaml, and Leonard L. Berry have identified the service quality dimension through their research called SERVQUAL. These five dimension of service quality are Tangibles, Reliability, Responsiveness, Assurance, and Empathy (Parasuraman, Zeithaml, & Berry, 1988).

- Tangibles are defined as physical facilities, equipment, and appearance of personnel.
- Reliability is defined as ability to perform the promised service dependably and accurately.
- Responsiveness is defined as willingness to help customers and provide prompt service.
- Assurance is defined as knowledge and courtesy of employees and their ability to inspire trust and confidence.
- Empathy is defined as caring, individualized attention the firm provides its customers.

2.4. Importance-Performance Analysis

The importance-performance analysis proposed first by Martilla and James in 1977. This technique is beneficial in knowing the importance and performance attributes of the service quality given by a firm (Martilla & James, 1977). It's effective in discover the priority attributes for improvement (Slack, 1994). This analysis will present graphically in two dimensional grid. The graphic is divided to four quadrants as a result of the means of performance and importance (see Fig. 1). Those four quadrants are: *Concentrate Here*, *Keep Up the Good Work*, *Low Priority*, and *Possible Overkill*.

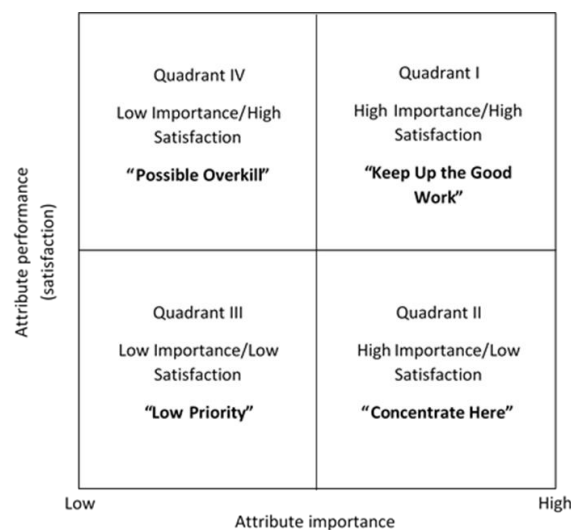


Fig. 1. Importance-performance framework

Quadrant I, marked with *Keep Up the Good Work*, has both high importance and satisfaction. It consists of attributes representing the organization's major strengths and opportunity for winning or maintaining the competitive advantage.

Quadrant II, marked with *Concentrate Here*, has high importance but low in satisfaction. It consists of highest priority attributes that the firm should improve.

Quadrant III, marked with *Low Priority*, has both low importance and satisfaction. It consists of attributes that have low priority and do not need additional effort from the management.

Quadrant IV, marked with *Possible Overkill*, has high satisfaction but low in important. It consist of resources that would be better allocated elsewhere.

2.5. Revised Importance-Performance Analysis

Matzler, Bailom, Hinterhuber, Renzl, and Pichler (2004) stated on their research that there's asymmetric relationship between attribute-level performance and overall satisfaction. The change in performance attributes has association with the change in importance attributes. Their research shown that practical decision by manager came from an IPA are deceptive. As a result, it need revision in the traditional IPA.

Revised IPA approach consists of three-factor theory concept that divide the attributes into basic, excitement, and performance factors. It also comprises the partial correlation analysis and natural logarithmic transformation (Weijaw, 2007).

2.6. Three-factor Theory of Customer Satisfaction

Kano (1984) grouped the quality attributes into three categories that have particular effect on customer satisfaction. Those three attributes are: Basic Factors, Excitement Factors, and Performance Factors (see Fig. 2).

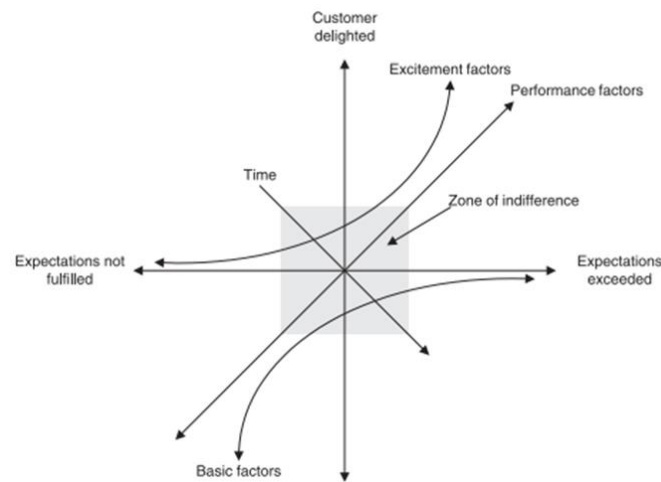


Fig. 2. Three-factor theory (Matzler, Bailom, Hinterhuber, Renzl, & Pichler, 2004)

Basic factors, similar to must-be requirements, are the essential attributes that has to be served to the customer. Its fulfillment do not result in customer satisfaction. On the other hand, if it's not fulfilled it will cause dissatisfaction to customer. Negative performance towards this attributes impacts higher on the whole satisfaction than positive performance (Weijaw, 2007).

Excitement factors, similar to attractive requirements, are the factors that have greater impacts in customer satisfaction when it's fulfilled. If this requirements are not met, it do not cause any dissatisfaction (Chen, Chang, Hsu, & Yang, 2011). This factors generates satisfaction to the customer. (Matzler, Bailom, Hinterhuber, Renzl, & Pichler, 2004).

Performance factors, similar to one-dimensional requirements, are the factors that generate customer satisfaction when the performance is high and lead to dissatisfaction when the performance is low. Higher level of fulfillment results in higher level of customer satisfaction and vice versa. This performance attributes have symmetric and linear correlation with overall satisfaction (Chen, Chang, Hsu, & Yang, 2011).

3. Methodology

The SERVQUAL dimensions with the five points of Likert scale's questionnaire are spread to RASI donator. Each questionnaire consists of 22 questions for each donator expectation and donator performance towards RASI service quality. The SERVQUAL dimensions questionnaire with its 22 attributes are used in the questionnaire, as shown in Table 1. At this research, currently the 34 from 57 gathered questionnaire is used. The questionnaire results then will be analyzed by using the revised importance-performance approach integrated with the three-factor theory.

Table 1. SERVQUAL Dimensions.

No.	Dimensions	Attributes
1.	Tangible	1. Clean office
		2. Comfortable waiting room
		3. Neat employee
		4. The use of latest technology
		5. Attractive media information
2.	Reliability	6. Services according to Islamic sharia
		7. Deliver services within the promised time
		8. Accurate donation calculation
		9. Proper distribution of donation
		10. Community empowerment -based distribution
		11. Exact annual report
3.	Responsiveness	12. Fast service
		13. Quick response
		14. Fast notification
4.	Assurance	15. Credible institution
		16. Polite employee
		17. Knowledgable employee
5.	Empathy	18. Confidentiality of donator information
		19. Understand donator needs
		20. Convenient operating hours
		21. Affordable office location
		22. Continuous improvement towards donator satisfaction

4. Analysis and Result

4.1. Reliability Test

Reliability is a tool to measure the consistency of a questionnaire. A measuring device is reliable when the measurement produces the same result in various trials. Coefficient alpha (α), often referred to as Cronbach's alpha, is used in measuring internal consistency. The range of the coefficient alpha is between 0 and 1. The Cronbach's alpha has no consistency when it has a 0 value and it has complete consistency when it has a 1 value. The excellent reliability has a Cronbach's alpha that greater than 0.90. The Cronbach's alpha in the range of 0.80 - 0.90 indicate good reliability. The Cronbach's alpha between 0.70 and 0.80 is acceptable. While the questionable reliability is scaled between 0.60 and 0.70 Cronbach's alpha. Internal consistency is poor when it range between 0.50 and 0.60. The Cronbach's alpha is unacceptable when it has value lower than 0.50 (Royal, 2011).

Table 2. Reliability Test (Performance).

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.938	.940	22

Table 3. Reliability Test (Importance).

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.922	.926	22

The results of the reliability test in Table 2 and Table 3 above show that both value of Cronbach's Alpha has very good reliability. It could be conclude that the questionnaire used in this research is reliable.

4.2. Validity Test

Validity is a tool to know how accurate the test results measures what it concedes to measure (Cherry, 2016). The validity is tested using Pearson Product Moment Correlations in SPSS. Each attribute with its total score is correlated to do the validity test. The value (r_{xy}) that is higher than r_{table} product moment is classified to the valid items (Raharjo, 2014). The value of r_{table} for 34 data used in this research is equal to 0.339. It is obtained from the r table product moment distribution with a 5% level of significance.

Table 4. Validity Test (Performance).

	r_{xy}		r_{xy}
Performance_1	.703	Performance_12	.568
Performance_2	.721	Performance_13	.674
Performance_3	.635	Performance_14	.633
Performance_4	.529	Performance_15	.719
Performance_5	.620	Performance_16	.811
Performance_6	.685	Performance_17	.813
Performance_7	.708	Performance_18	.652
Performance_8	.755	Performance_19	.677
Performance_9	.611	Performance_20	.573
Performance_10	.568	Performance_21	.712
Performance_11	.516	Performance_22	.774

Table 5. Validity Test (Importance).

	r_{xy}		r_{xy}
Importance_1	.770	Importance_12	.568
Importance_2	.622	Importance_13	.726
Importance_3	.764	Importance_14	.542
Importance_4	.619	Importance_15	.671
Importance_5	.600	Importance_16	.716
Importance_6	.433	Importance_17	.785
Importance_7	.652	Importance_18	.686
Importance_8	.502	Importance_19	.380
Importance_9	.587	Importance_20	.732
Importance_10	.624	Importance_21	.350
Importance_11	.781	Importance_22	.612

From the Table 4 and Table 5 above could be seen that the r_{xy} have higher value than the r_{table} . It means that the questionnaire used in this research is valid.

4.3. Analysis of the Revised Importance-Performance Analysis

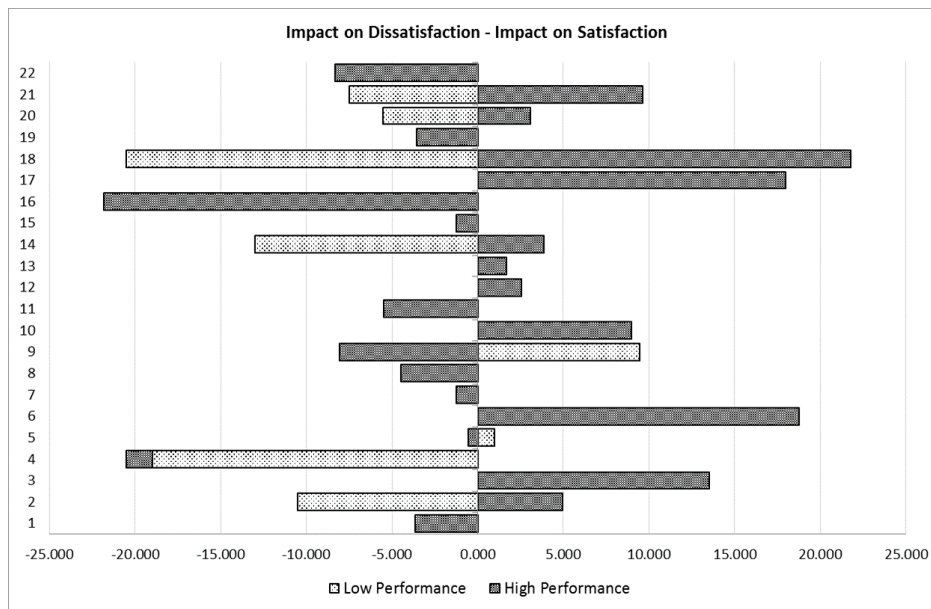


Fig. 3. Impact on Dissatisfaction - Impact on Satisfaction

The basic factors, performance factors, and excitement factors could be identified through the Fig. 3 above. The chart visualizes the results of the regression coefficient graphically. Clean office (1), comfortable waiting room (2), the use of latest technology (4), deliver services within the promised time (7), accurate donation calculation (8), exact annual report (11), fast notification (14), credible institution (15), polite employee (16), understand donator needs (19), convenient operating hours (20), and continuous improvement towards donator satisfaction (22) are the attributes that can be classified as basic factors. These attributes leads to dissatisfaction if not delivered, but do not lead to satisfaction if not delivered (prerequisite attributes).

Excitement factors are the attributes that cause satisfaction when fulfilled, but do not cause dissatisfaction when not fulfilled. The attributes that included in this factor are neat employee (3), attractive media information (5), services according to Islamic sharia (6), proper distribution of donation (9), community empowerment-based distribution (10), fast service (12), quick response (13), knowledgeable employee (17), and affordable office location (21). These attributes are unexpected by the donator and results in high pleasure.

Performance factors are the attributes that generate satisfaction in a high performance and generate dissatisfaction in a low performance. Confidentiality of donator information (18) is the attributes that can be classified as performance factors.

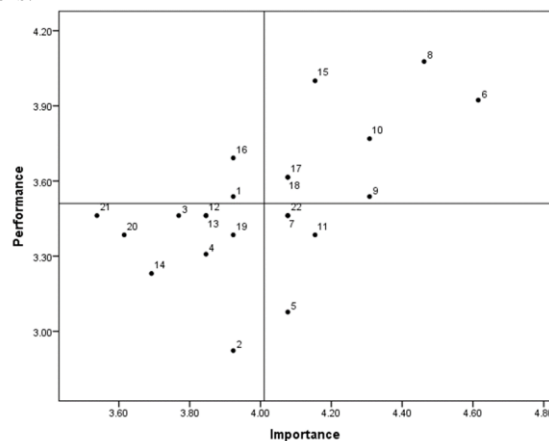


Fig. 4. Dissatisfied Donator IPA

Fig. 4 and Fig. 5 matrix divides the attributes into four quadrants. Those four quadrants are: *Concentrate Here, Keep Up the Good Work, Low Priority, and Possible Overkill*.

From the dissatisfied donator IPA matrix above, there are attributes from quadrant I that RASI needs to keep up the good work in. Those attributes are Islamic sharia (6), accurate donation calculation (8), distribute donation to the right recipient (9), services refer to properly distributed donation (10), credible institution (15), good knowledge employee (17), and confidentiality of donator information (18). All of those attributes are RASI major strengths that have the opportunities for winning or preserving the competitive advantage.

The attributes that need to concentrate by RASI for the dissatisfied donator are attractive media information (5), deliver services within the promised time (7), exact annual report (11), and continuous improvement in donator satisfaction (22). Those quadrant II attributes need prompt action from the management to reach overall donator satisfaction.

The low priority attributes for the dissatisfied donator are comfortable waiting room (2), neat employee (3), having latest technology (4), employee serves donator with fast (12), quick response (13), fast donation notification (14), understand donator needs (19), convenient operating hours (20), and affordable office location (21). Those attributes that located in quadrant III do not need extra effort from the management.

The attributes that should be overkill by RASI for the dissatisfied donator are clean office (1) and polite employee (16). The resource allocated in these quadrant IV attributes are better to be distributed elsewhere, especially in the quadrant II to generate the higher gain.

The result from the dissatisfied IPA shows that there are some misleading in data analysis. Clean office and polite employee are located in quadrant IV that mean the resource allocated on those attributes are better to be distributed elsewhere. While based on the three-factor theory, these attributes are categorized as basic factors that need to be fulfilled by RASI. Then the management should be more aware in deciding future strategy.

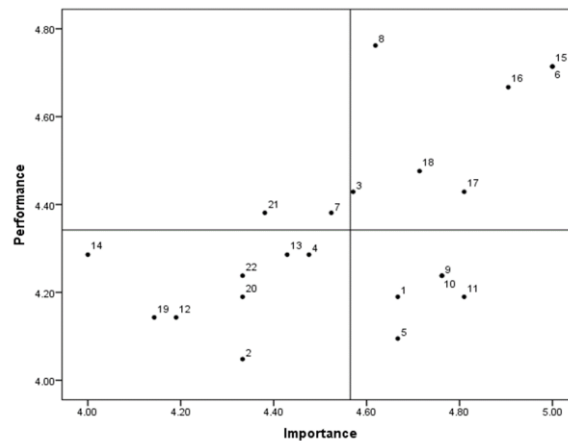


Fig. 5. Satisfied Donator IPA

From the satisfied donator IPA matrix in Fig. 5 above, the competitive advantage of RASI that need to keep the good work are neat employee (3), services refer to Islamic sharia (6), accurate donation calculation (8), credible institution (15), polite employee (16), good knowledge employee (17), and confidentiality of donator information (18). Those attributes that located in quadrant I have a high scale in both importance and performance.

In quadrant II of the IPA matrix for satisfied donator, RASI has attributes that consist of clean office (1), attractive media information (5), distribute donation to the right recipient (9), properly distributed donation (10), and exact annual report (11). Those attributes need extra effort from the management as they have high importance with a low performance.

The attributes that has low priority and do not need additional effort from the management are comfortable waiting room (2), having latest technology (4), employee serves donator with fast (12), quick response (13), fast donation notification (14), understand donator needs (19), convenient operating hours (20), and continuous improvement in donator satisfaction (22). Those quadrant III attributes for satisfied donator have a low scale in both importance and performance.

The possible attributes to be overkill by RASI for satisfied donator are deliver services within the promised time (7), and affordable office location (21). Resources used in those attributes are better deployed to the attributes located in the quadrant II.

The result from the satisfied IPA shows that there are some misleading in data analysis. deliver services within the promised time is located in quadrant IV that mean the resource allocated on those attributes are better to be distributed elsewhere. While based on the three-factor theory, these attributes are categorized as basic factors that need to be fulfilled by RASI. Then the management should be more aware in deciding future strategy.

5. Conclusion and Recommendation

In this research, RASI management needs to be competitive with its performance factors that is confidentiality of donator information. For further research the big amount of data to be used in assessing the donator satisfaction of RASI is needed. It's better to use a great amount of data to make the analysis become clearer and could identify the three-factors completely.

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Sourcing Strategy of Humanitarian Logistic: An Option Games Approach

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Abstract

Natural disaster that increases in number recently, had caused a lot of problems and social instabilities. Post disaster relief material supply chain management is needed to reduce its impact and restore social life. However, research in this area is still immature especially in sourcing strategy. As a buyer, non-profit organization such as government, NGO, and donors, can select supplier based on their capability. Each supplier can adjust its strategy throughout the time to win competition. There are two sourcing strategies that can be used in relief material procurement namely: direct procurement after disaster occurrence and option contract. Considering two suppliers interaction in relief material supply chain, we introduce option game model to estimate value of option contract and analyses supplier's interaction in maximizing their payoff. The numerical example of flood disaster in Indonesia presented applicability of model robustness.

Keywords: Sourcing strategy, relief management supply chain, option contract, game theory, natural disaster

1. Introduction

Natural disasters that include volcanic eruptions, wild fires, floods, earthquakes, famine, epidemics and other disturbances to the natural environment, could strike any country or community without exception. The importance of emergency management in today's society is undeniable since destruction and human loss caused by natural disaster could trigger social instability. Emergency management is a discipline that involves preparing for disaster before it happens, responding to disasters immediately, as well as supporting, and rebuilding societies after the natural or human-made disasters have occurred [1].

Logistics has always been an important factor in emergency management operations, to the extent that logistics efforts account for 80% of disaster relief [2]. Improving the state of the art and practice of humanitarian logistics has huge economic and social implications. The speed of humanitarian aid after a disaster depends on the ability of logisticians to procure, transport, and receive supplies at the site of a humanitarian relief effort [3]. Humanitarian logistics cover a wide range of activities that occur at any one of the phases of emergency management, i.e., mitigation, preparedness, response, and recovery [4]. Mitigation and preparedness activities are performed before occurrence of the disaster to enhance safety and reduce the potential impact on people and infrastructures. Response activities of humanitarian logistic include the transportation of supplies and equipment for search and rescue, and of equipment and material for emergency repairs to the infrastructure. Lastly, recovery process activities focuses on restoring lifelines and foster quality of life.

Humanitarian logistics differs from traditional ones in term of non-profit identity of the buyer, high stakes, unreliability, incomplete prior information and demand pattern [5]. Profit maximization goal in traditional logistic do not fit into humanitarian relief situation. Therefore its methodology and practical use could not be duplicated [6]. The biggest hurdle of humanitarian logistics has been the sheer complexity of

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the operating condition within which they had to work in order to supply aid to those affected [7]. In addition, there are specific characteristic of relief environment that impact planning and coordination of humanitarian logistic such as: number and diversity of actors, donor expectation and funding structure, competition for funding and the effects of media, unpredictability, resource scarcity or oversupply, and cost of coordination [8]. In order to overcome all of those difficulties, coordination of humanitarian logistic have to be established in term of material procurement/supply acquisition, prepositioning/warehousing, and transportation.

As the preliminary activities of humanitarian logistic, procurement needs a lot of attention in the aspect of order and price certainty from supplier. Furthermore, interaction between supplier also important issues to discuss since each of them tries to adjust their strategy in order to win competition. Based on those facts, we propose option-game model of material procurement contract in humanitarian logistic and feasible strategy of supplier in maximizing their payoff under certain condition. We believe that option-game in material procurement suitable to implement into humanitarian logistic having large information uncertainty, since its power is on reducing risk, increasing flexibility, describing interaction, and optimizing payoff.

The paper is organized as follows. Section 2 presents literature survey of real options and games theory together with its possible implementation. Section 3 shows the option-games model for purchasing contract of relief material. Section 4 discuss the proposed models and methodology in a flood disaster cases occurring in Jakarta Indonesia on 2013. Finally, section 5 summaries and conclude the result.

2. Literature Review

Relief material management is a form of social management that serve broad “social” objectives as opposed to being used for the benefit of an individual enterprise and has big differences from “strategic” materials management and “defense” materials management that respectively aim to maintain national and regional economic stability and territorial security [9]. Even this area is important; surprisingly number of literature in this area is still limited except in the area of medical community that studied the management of stockpiles of medicine, blood, and medical supplies [10]. There are certainly difference characteristic between commercial supply chain and relief chain. Relief supply chain is characterized by zero (approximately zero) lead times, high stakes, unreliable, incomplete or inexistent prior information, and different demand pattern [5].

There are several types of contract in supply chain such as: the wholesale price contract, the buyback contract, the revenue sharing contract, and the quantity flexibility contract [11]. In addition, there are quantity discount contract, number committed contract, option contract, delay compensation contract, futures contract, and punishment feedback contract [6]. The establishment of real-option theory as an alternative method of Net Present Value (NPV) method that emphasis on flexibility [12] had brought an idea to integrating supply chain under uncertainty with option theory. Option is the right, not the obligation, to undertake certain business initiatives, such as: deferring, abandoning, expanding, staging, or contracting a capital investment project before maturity date by pre-paying premium [13]. The idea of incorporating real option into supply chain contract firstly introduced by Kleindorfer [14] that mentioned two parts of contract price such as: reserve fee and executive fee. Furthermore, Burnetas and Ritchken [15] used the case of supply chain with downward sloping demand curve to study the option pricing problem and its impact to the supply chain. Fang and Winston [16], using option contracts as a price distinguishing tool, measured the demand type of enterprise and get the conclusion that even if demand type of buyers cannot be distinguished, option contract can still guarantee manufacturer the same profit. Guo [17], mentioned that options contract is an effective risk management tool to overcome the problem of double marginalization, improve the performance and efficiency of supply chain and coordinate the behavior of supply chain members so as to achieve win-win situation. Zhao et al. [18] taking wholesale price as a benchmark studied the efficiency of options contract in supply chain coordination. Lastly, Liang [6] introduce an option contract pricing model in relief material supply chain and to find feasible range of price within which both the buyer and supplier are profitable and willing to conduct the transaction with option contract instead of wholesale price mechanism.

Procurement of material for relief operation involves more than one supplier. The situation is more efficiently characterized as an oligopoly market and not as a perfect competition. In oligopoly market there are only a few suppliers present, who know about each other's activities and take into account the other competitors actions. That situation can be more efficiently modelled by game theory under endogenous competition modelling [19]. Game theory analysis provides information on how players can determine their optimal strategies taking into account the expected behavior of the competitors. Game theory is suitable for analyzing different player's behavior and interaction among them. The players can be supplier of relief

material that decides their selling price through contract with buyers or selling through wholesale price mechanism. In order to formulate a game with perfect information, it is necessary that the market players know or at least assume what the competitors will do or will not do.

Game theory enriches real options model by introduction of strategic competition and emphasizes flexibility versus commitment trade off [20]. There are several practical applications on real option and game theory that can be found in McGahan [21], Smit [22], Angelou [20], Mulyono [23], and others. McGahan developed the tradeoff between commitment and flexibility in the case of the compact disk introduction. While, Smit discussed basic principles of valuing corporate investment opportunities with important strategic dimension, that are at the core of strategic planning and investing under uncertainty. In addition, Angelou proposed decision analysis model combining real option, game theory, and analytic hierarchy process (AHP) for modelling competitive interactions between players in the ICT business field. Mulyono introduced model of game theory and real option for analyzing manufacturer strategy selection of technology investment to reduce environmental risk of hazardous material and carbon emission. All these studies, however, still discuss problems of commercial enterprise and supply chain.

To utilize the power of option-game in relief material humanitarian logistic, we design model of option-game contract pricing, describe interaction between suppliers, and maximize benefit of the suppliers. Our study is different with literature presented previously in few ways such as: we employ option contract combined with game theory to overcome an issue of inaccurate information in relief material logistic, describe possible supplier strategies and maximize their benefit, and coherently incorporate the possibility of using contract pricing and wholesale pricing.

3. Option Game Model

Even relief logistic operation characterized by many suppliers and many buyers [8], we consider condition where there are two suppliers (duopoly) competing each other to get maximum benefit from relief material order. The supplier can be a manufacturer or wholesaler of relief material such as: tents, foods, drinking water, clothes, and other emergency necessities. There is certainly one buyer involved in the contract with supplier, but role of the buyer is not our focus in this research. The work that discussed about interaction of buyer and supplier can be found in Liang [6].

We propose a single-period two-stage supply contract between supplier and a buyer for disaster logistic operation. Expected payoff of the supplier, which is value of option contract, becomes input for option games. The buyer places an initial order of product to the supplier with an option contract that can be exercised as calls and puts at the specified time. This opportunity made the buyer had an ability to increase and decrease the initial order according to the newest forecast of the product demand. The supplier commits to provide the products up to the agreed quantity with all the options exercised as calls. Basic notations for our model are as follows:

- Q = quantity of initial order
- D = demand of product
- q = quantity of option exercised ($-a \leq a_n \leq a$)
- P = present value of product price/unit
- R = value of option contract
- m = maturity date
- σ = annual fluctuation of material price
- r = risk free rate
- O = option price/unit
- G = exercise price/unit
- H = holding cost
- V = intrinsic value of un-purchased unit
- α = probability of disaster occurrence

At the beginning of the contract, the buyer offers to buy Q number of product for disaster preparation with an option price O and exercise price G. This option will be expired on m periods. After expiration, value of the product will become V. In this model, we assume that option will be exercised when disaster occurs and vice versa.

Occurrence of disaster is stated by probability of α . Equation 1 and 2 show mathematical model of supplier payoff at maturity date and before maturity date.

$$R = \alpha [(G - P_m)(Q \pm q) + O(Q \pm q) - H(Q + q)] + (1 - \alpha)[O(Q \pm q)] + (V - P_m)(Q \pm q) - H(Q \pm q)$$

$$R = \alpha [(G - P_s)(Q \pm q) + O(Q \pm q) - H(Q + q)] + (1 - \alpha)[O(Q \pm q)] + (P_0 - \frac{P_0 - V}{t} - P_s)(Q \pm q) - H(Q \pm q)$$

At maturity date, if supplier believed that the buyer will exercised the option due to occurrence of disaster (probability α), the value of payoff is defined by difference between current product price and exercise price, option price, and holding cost. On the contrary, the value of payoff is defined by difference between current product price and salvage value, option price, and holding cost. Before maturity date, the model to calculate payoff of the supplier is almost same except that salvage value of product is replaced by intrinsic value of product.

Since market situation is characterized by duopoly, there are two supplier who try to maximize their payoff by applying two strategies such as: cooperating through option contract and directly sale their product to free market. If both of the suppliers are willing to cooperate then order of the product will be equally split it through option contract. In addition, if both of the suppliers are willing to sale directly then product will be sale through free competition basis. Finally, if only one supplier is willing to cooperate while the other chooses direct sale then supplier who cooperate will pre-empt the demand. This situation is best illustrated as a prisoner dilemma game as shown at Figure 1.

		Supplier A	
		Contract	Direct Sales
Supplier B	Contract	Sharing	Pre-empt
	Direct Sales	Pre-empt	Free market

Fig. 1. Option Game Strategy

4. Results and Discussion

Flood occurred in 500 sub-districts in Jakarta, the capital city of Indonesia, in January 2013. It equals to 41 kilometre square area or 8 per cent of area of Jakarta. Based on the historical data, this flood disaster in Jakarta isn't the first time. In 1996, 2002, and 2007, Jakarta also experiences it. The flood in January 2013 led to a state of emergency from January 17th-27th so that the national resources can be mobilized to support flood disaster in Jakarta. The flood was caused by high rainfall since December 2012, poor drainage systems, and some embankment collapse.

The disaster caused a lot of negative impacts, which are financial loss, casualties, and refugees. Financial loss could come from loss in business area. The examples are delayed goods distribution, stop of production due to lack of power supply, additional salary payments to workers who were forced off during the flood, damage to the building and vehicle, etc. The amount of financial loss can be obtained from insurance claim. Based on explanation from General Insurance Association of Indonesia, claim in 2002 was 1.5 trillion rupiah and rose to 2.1 trillion rupiah in 2007. In flood disaster in January 2013, there were 20 people of casualties and 33.502 of refugees. This distribution of refugees located in 68 points.

In Indonesia, there is a government organization called National Disaster Management Agency whose duty is to provide guidance and direction for disaster management that include emergency response, rehabilitation, and reconstruction. This organization manages logistical needs after disaster. They plan, budget, procure, store, distribute, use, maintenance, and remove all the logistic needed. For the 2013 flood disaster, the organization provided 15.4 billion rupiah for emergency funds, such as kitchen equipment (300 packets), tents roll (800), blankets (1450), mattresses (350), body bags (20 pack), nine boats, two trail bike, tent for post (20), four sanitation cars, two generators, and four camps for refugees.

For the logistic procurement, the system used by National Disaster Management Agency is auction system for pre and post-disaster, while it is direct appointment for procurement at the time of disaster. We will try to apply our proposed method as described in section 3 to the case of flood disaster in Jakarta. Suppose the National Disaster Management Agency analyse 3 cases for procurement of tents roll. Since there are two supplier (A, B), each supplier allows to choose cooperate, making contract with buyer, or

choose direct sales on the occurrence of disaster.

Case 1: Contract, Contract

There are two suppliers that win the auction, which are supplier A and supplier B. Each supplier will supply half of tents roll initial requirement, which is 800. The price of each tent is 175,000 rupiah in the contract. The buyer, which is National Disaster Management Agency make the contract in t_0 , for example in the beginning of March 2012, with the supplier A and B to supply amount of tent of $\frac{1}{2} Q_0$ each, which is 400 each. During the dry season in Indonesia from March (t_0) until end of August (t_1), the buyer can consider whether they will enhance or reduce the quantity of contract to the range between $400+q$ and $400-q$. The quantity of q is decided in the contract, which is 10 each. In the beginning of September, when the rainy season in Indonesia starts, the buyer must decide whether they will increase or reduce the quantity of contract. Suppose National Disaster Management Agency increase tent roll demand to 410. The contract will be exercised during rainy season from September until the end of February. The maturity date. t_M , is the time when the contract will be expired, which is end of February. This condition is depicted in figure below.

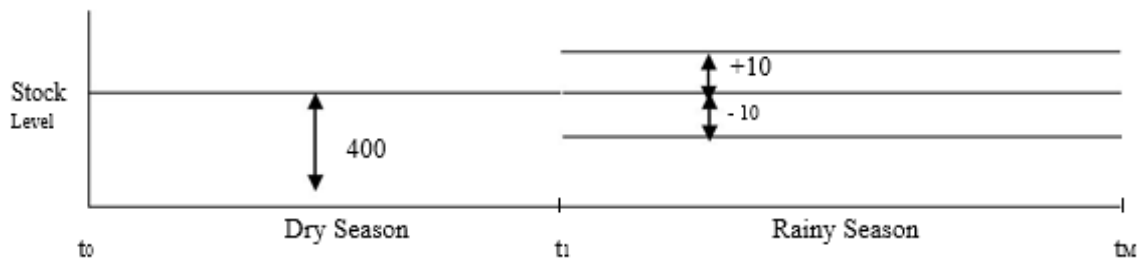


Fig. 2. Case illustration of post disaster logistic option contrac

Flood disaster can occur at the time of maturity or before at the time maturity. Suppose the flood occur at the time maturity. The actual demand is 850 of tent roll. Because each supplier supply just for 410 of tent rolls, then there is a gap between demand and requirement in the contract, which is $850 - (410 \times 2) = 30$. National Disaster Management Agency will appoint directly to supplier A and B to fulfil this gap. Each supplier will supply half of the gap. The value of each variable will be

Table 1. Variable Value for Each Case

Demand	850
α	0.7
G	Rp 175,000
P0	Rp 175,000
Pm	Rp 177,000
Pt	Rp176,000
Q (contract, contract)	400
Q (contract, direct sales)	800
q (contract, contract)	10
q (contract, direct sales)	20
O	Rp 10,000
H	175
V	Rp160,000
t	10

The value of payoff is Rp1,393,250. Suppose that the disaster occur in end of December. The intrinsic value of tent roll will be different between end of December and end of February, so that it will affect the value of payoff. The value of payoff if two suppliers do contract is Rp3,448,750.

Case 2: Contract, Direct sales

There are just one supplier win the auction so that all amount of demand of tent roll which is 820 will

be supplied by supplier A. National Disaster Management Agency will appoint directly to supplier A and B to fulfil the gap between real demand and requirement in the contract. Each supplier will supply half of the gap. The value of payoff at the time of maturity will be Rp1,426,500 for supplier A and Rp30,000 for supplier B. Suppose that the disaster occur in end of December. The value of payoff if two suppliers do contract is Rp3,532,500.

Case 3: Direct sales, Direct sales

The National Disaster Management Agency doesn't hold the auction. They purchase required tent roll when the disaster occurred without any contract. Each supplier A and B will supply half of demand of tent roll. At the time of maturity, the value of payoff will be Rp520,625. Suppose that the disaster occur in end of December. The value of payoff if two suppliers do contract is Rp223,125.

		A	
		Contract	Direct Sales
B	Contract	(Rp 1,393,250 , Rp 1,393,250)	(Rp 1,426,500 , Rp 30,000)
	Direct Sales	(Rp 30,000 , Rp 1,426,500)	(Rp 520,625 , Rp 520,625)

Fig. 3. Value of the Game Theory at the time of maturity

		A	
		Contract	Direct Sales
B	Contract	(Rp 3,448,750 , Rp 3,448,750)	(Rp 3,532,500 , Rp 15,000)
	Direct Sales	(Rp 15,000 , Rp 3,532,500)	(Rp 223,125 , Rp 223,125)

Fig. 4. Value of the Game Theory before the time of Maturity

5. Conclusion

The proposed model of option game contract had shown its applicability in planning for post disaster logistic procurement. The value of option contract, represented in the sharing strategy of the proposed model, is positioned as the highest compared with the other option such as: pre-emption and free market. Here, the interaction of supplier in game based option contract is well illustrated with the case study of flood disaster occurring in the capital city of Indonesia on 2013. Further research could be directed to the applicability of proposed model to various catastrophic events and integration with other aspects of post disaster operations.

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Coordination of Planting Decision in Contract Farming

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Abstract

Globalization has change the way we do business. It is also has impact on agricultural business, especially in the implementation of farming activities. Traditional farming activities are still implemented in the field, especially by small scale farmers. The small scale farmers decide what to plant, when to harvest only based on their needs, intuition, or other farmers decision. They do not implement cultivation and harvest scheduling, because the small scale farmers face high uncertainty on demand and price. The high uncertainty make farmers should face high risk in their business. Contract farming is one of alternative that can change the way small scale farmers doing their business. Previous study emphasized on the implementation of contract farming, but do not address the dynamics behavior of farmers to fulfill the contract farming requirement. The contract farming lowered the uncertainty by informing the market demand that should be fulfilled and price that will be received by small scale farmers. This paper simulates farmers planting decisions on fulfilling the contract farming. Agent based modeling and simulation is used as methodology to capture the interactions between farmers in order to fulfill the customer needs written in the contract. The simulation results shows that to fulfill the requirements written in the contract namely the sustain demand fulfillment, farmers should change the traditional way of farming, and implementing cultivation and harvest scheduling. The simulation result also illustrate that by implementing the cultivation and harvest scheduling, the uncertainty of farmers production can be reduced. It is shown in the low fluctuation of farmers' production and the farmers' service level.

Keywords: Contract farming; Agent based modelling and simulation; Planting decisions; Cultivation and harvest scheduling

1. Introduction

The current development of globalization has directed the market system to grow more closely to a free market. In such market, there will be little to no intervention from government, thus leaving the agreement between sellers and the customers to decide prices of a product. Most customers, of course, will go to the sellers that can offer the cheapest price. This might hurt small scale sellers, who cannot offer prices as cheap as the big companies.

The growth of free market system affects a number of fields. One of them is agriculture, and the effects can be seen affecting the small scale farmers. Most of these marginalized farmers still use the traditional ways of farming.

It can be seen from farmers' planting and harvesting decision. These marginalized farmers usually looking at their neighbors in deciding what products to plant, and do not have plan related to when to plant, and how much to plant. Moreover, these farmers do not have plan related to when to harvest, and how much to harvest in a period. Usually harvest time happen in a short period, selective harvesting is not implemented. These farmers also lack of knowledge and information about the current technology in farming.

In practice, most of small farmers sell their agriculture products to intermediaries. In this partnership, there is information gap about demand and price. Farmers do not have bargaining power to push demand and set the selling price to intermediaries. Not to mention, for these farmers, there are high uncertainty and high risk, as they do not know the market demand and the prices might fluctuate based on the amount of products in the market. The more agriculture products available in the market, the lower the price will be.

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With this condition it is hard to increase the welfare of small farmers.

Agreement between more than one party involving farming in a land has happened since ancient times. This contract, called sharecropping, happened between landowners and farmers, as the ownership of the land belongs to the landowners and farmers only worked to grow crops. This is different from contract farming which involves firms and farmers who have their own lands.

There are several ways proposed to help these farmers and one of them is contract farming. According to Prowse (2012), contract farming is “*a contractual arrangement for a fixed term between a farmer and a firm, agreed verbally or in writing before production begins, which provides resources to the farmer and/or specifies one or more conditions of production, in addition to one or more marketing conditions, for agricultural production on land owned or controlled by the farmer, which is non-transferable and gives the firm, not the farmer, exclusive rights and legal title to the crop.*” Moreover, according to Rehber (2007), contract farming happens when farmers and firms make a contractual arrangement involving conditions of production and marketing of an agricultural product and the contract is non-transferable. The conditions of production may include products type and characteristics, farming schedule, and the use of specific farming techniques and resources. As for the marketing conditions, usually it includes fixed price for the products and paying time. These conditions may help farmers in obtaining more stable product prices and knowledge about current farming techniques, making the market in agricultural products more structured. This contract farming also require interdependency of farmers and firm to fulfill the contract requirement.

People started applying the concept of contract farming around 100 years ago. The first occurrence was on the nineteenth century, applied by the Japanese in Taiwan (Little and Watts, 1994). It was also used in Europe, specifically the seed industry, before the Second World War (Rehber, 2007). Since then, the contract farming had begun to become a widely-used form of contractual agriculture economy, accounting up to 39% of US’ agricultural production total value in 2001 (Young and Hobbs, 2002).

The use of contract farming in other areas of the world also increased quite significantly, especially in Southeast Asia. In Indonesia, the contract farming is spread by the government through the Federal Land Development Agency (FELDA) (Rehber, 2007). In Malaysia, the contract farming mostly involves state-promoted out-grower arrangements (Morrison et al., 2006). 90% of cotton and fresh milk, and over 40% of rice and tea in Vietnam also comes from contract farming (UNCTAD, 2009).

While theoretically contract farming sounds like the perfect solution, the implementation in real life conditions is not that easy. There are failed attempts of implementing contract farming, and there are also the successful attempts. One of the factors to the success of the implementation is the farmers’ willingness and commitment to follow the conditions of contract, especially involving farming process. Previous study has not been addressed how to understand the dynamics behavior of farmers to fulfill the contract farming requirement. Thus, this paper wants to simulate the farmers’ planting decision in fulfilling the contract farmer requirement. This paper uses farmers cluster in Pangalengan, West Java, Indonesia as a case study to simulate the contract farming implementation and its impact to farmers’ decision. Agent based modeling and simulation is used as a research methodology, in order to capture the interaction between farmers and their market in implementing the contract farming.

The paper is organized as follows: First two conceptual realms, contract farming and agent based modeling and simulation are discussed as literature review. It is followed by explanation of the model used, the flowchart, assumption, and software used in the model is presented. Next, the result of simulation is discussed. In conclusion, the effect of contract farming to farmers’ farming decision described in the simulation is explained.

2. Agent Based Modeling and Simulation

Agent based modeling is constructed by combining the two systems, so that the holistic view of real world problem situation can be captured. The agent based modeling has a constructivism as soft system, assume system exist in the real world and do have a clear purpose and well-defined boundaries as described in hard system. Furthermore, according to the relationship between the researcher and the researched, separation of real world and system world is not very clear because the problem root definition is not clearly defined by the grounded investigation of real world situation. In addition, agent based modeling has systemic approach which based on rational or irrational agent behavior involved by its interaction with other agents and environment. This methodology also able to measures, assesses, and improves the situation by itself through the time. However, the changes that are proposed by agent based modeling usually do not check the feasibility and desirability of these changes in the real world.

Furthermore, Macy and Miller (2002) classify agent based modeling as a combination of micro and macro simulation. Micro simulation is related to bottom-up approach which simulates the evolution of decision taken by agents/actors through time which is usually described in the soft system. While macro

level is related to holistic approach which model the dynamics of systems, which is related to the hard system. Agent based approach is very useful to simulate the unpredictability and dynamics of agriculture supply chain.

The specific characteristics of agent based modeling are the use of agents that interact within an environment (Gilbert, 2008), and analyze the behavior of agents. In agent based modeling, agents are described as having four important features (Wooldridge and Jennings, 1995):

- Autonomy; which explains that agent has the capability to do whatever it is programmed to do in its current situation and carry out tasks by itself and has no external intervention.
- Social; ability describes agent has ability to interact with other agents
- Reactivity; agent responds to any action taken by other agents or able to react to stimuli coming from its environment.
- Pro-activeness; agent not only acts in response to other action or to its environment, but also acts based on goal that the agent wants to pursue.

Other characteristics of agent also explained by Gilbert (2008):

- Perception. Agent can perceive their environment and the presence of other agents in its neighborhood.
- Performance. An agent has ability to move within a space in its environment, communicate with other agents, and interact with other agents or its environment.
- Memory. Agent are capable of memorize their perception of their previous states and actions.
- Policy. Each agent has a set of rules, heuristics, and strategies that determine what kind of behaviors that agent will now carry out.

The other specific characteristic of agent based simulation is the analysis of agent's behavior. The agent characteristics are already explained, in the following the characteristics of behavior are presented.

- Rational or irrational. Agent can act rationally which has stable preferences, and always choose the optimal solution. On the other hand, agent can act or behave irrationally. It happens because agent is bounded rationality, has limited cognitive capacity, lack of information, and has constraints that influence agent's decision (Gilbert, 2008) .
- Cognitive. Cognitive factors needs to be defined to study the mental processes that underlie behavior, including thinking, deciding, reasoning (Gino and Pisano, 2008).
- Bias. All about cognitive errors in intuitive judgement. Behavior or decision that taken by agent can result on deviations from normative decision theory (Loch and Wu, 2005).
- Heuristics. It is a mental shorcus that produce fast, intuitive judgment. The behavior or decision taken by agent commonly use probability judgement, and intuitive decision (Gilbert, 2008).
- Emotions. Emotional responses to events, have an important role to play in explaining human behavior (Gilbert, 2008).

3. The Model

In this research ReLogo was use, a simple version of Repast, a Java-Groovy-based programming language for the agent-based modeling and simulation (<http://www.repast.sourceforge.net>). It is an open-source simulation framework for agent-based modeling, based on Java programming language. Basically the Java version of Repast itself is supposed to be used by users familiar with Java and in need for advanced complex simulations. For new users with limited knowledge in Java, it is suggested to use Relogo, a simpler version of Repast which is based on Groovy, a programming framework for Java. While in this simulation the customization of some agents' actions is needed, an advanced complex simulation is overused. Thus, we chose Relogo in this simulation. The program simulates farmers in planting tomatoes, harvesting them until the tomatoes reach dying age, sending them to farmers association (KATATA) and receiving payments from both, structured and traditional markets through KATATA.

Values for the variables in this simulation are derived from interviewing the manager of KATATA, head of farmers, and farmers' advisor, conducting on-site observations, and searching for secondary data especially involving tomato prices in local markets. Each interview takes 30-120 minutes. The simulation flow is also made to represent the real condition that are:

- The presence of traditional market with fluctuating prices and no fixed demand.
- The presence of structured market with fixed prices and demand.
- Differences in farmer's decision of following the standard of procedure (SOP) and the impact to their crops. KATATA itself has their contract with a structured market, in the form of contract farming.

From the contract, KATATA obtains fixed price and demand for various crops, including tomatoes. There are also new standards for the crops to get accepted by the firm, which leads them to making some adjustments in their farming method: new cultivating method and implementing farming schedule.

Thus, in the simulation’s initialization, there are one structured market and one traditional market. The structured market has an initial demand that is 3 tons of tomatoes, making each of the farmers’ plant for approximately 0.6 tons of tomatoes. The structured market’s price for tomatoes is Rp 7.750 for each kilogram. The traditional market does not have certain demand and only receives products from farmers that are not accepted by the structured market. The price in traditional market is randomized using the Gaussian random number generator, with the minimum price of Rp 200 for each kilograms and the maximum price of Rp 10.000 for each kilogram.

In real life practice, the farmers also have to use several resources, such as fertilizer, in certain standards to ensure their crops meet the firm’s standards (SOP). From the interviews, obtained the data that approximately 40% farmers will fully follow the SOP, 30% will follow half of the SOP and 30% won’t follow the SOP at all. So, in this simulation we have 50 farmers divided into 5 groups. In each group, there are 4 farmers fully following the SOP, 3 farmers following half of the SOP, and 3 farmers not following the SOP at all. This SOP decision will affect the number of products matching the structured market’s standards and the production cost:

- If the farmer fully follows the SOP, 80% of the products will match the standards but it will cost them Rp 6.000 for each tree (1 tree = 2 kilograms of tomatoes)
- If the farmer only follows half of the SOP, 30% of the products will match the standards and it cost them Rp 4.000 for each tree
- If the farmer does not follow the SOP at all, only 10% of the products will match the standards and it will cost them Rp 3.000 for each tree.

The numbers of crops matching firm’s standards for each SOP decision are obtained from the interviews. These numbers already includes the effect of various conditions to the crops, including the weather conditions. The simulation’s flow can be seen in Figure 1.

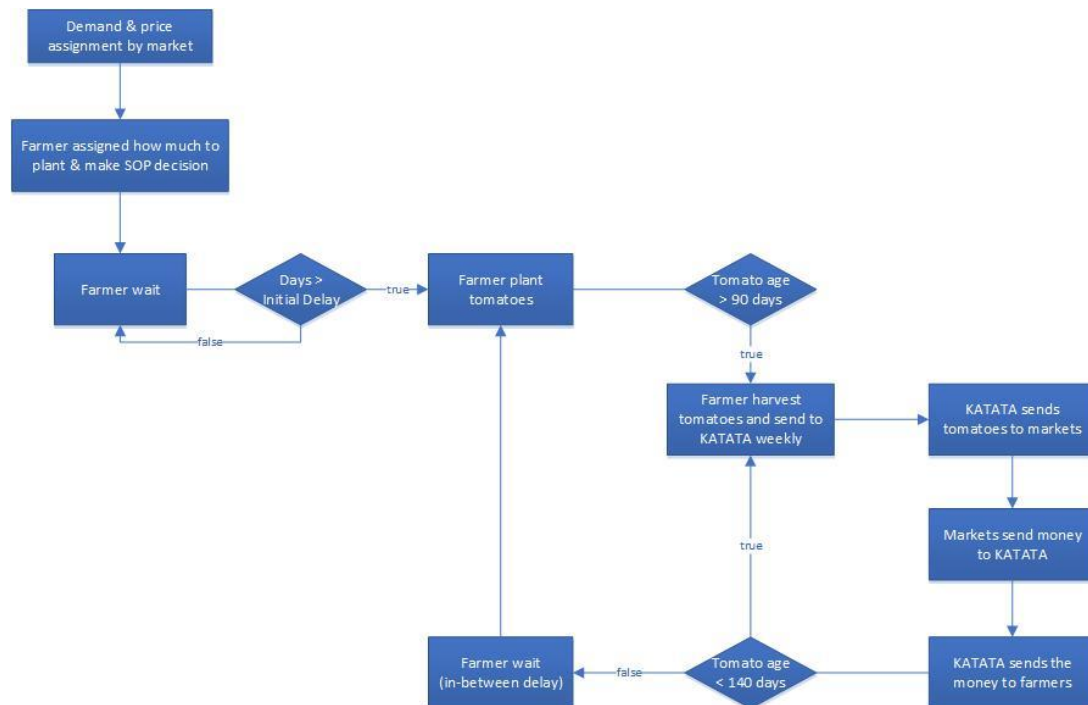


Figure 1. Simulation flow

First, farmers wait before their initial delay has passed. Initial delay is the number of days the farmers need to wait before starting to plant their crops. When the scheduling option is used, each group will have 28 days of initial delay from the previous group. For example, if group 1 has 0 days delay, group 2 will have 28 days delay, group 3 will have 56 days delay, and so on. If the scheduling option isn’t used, each group will have randomized delay, however still in the multiples of 7 days to ensure the days can be

counted in weeks. After the farmers plant their crops, they wait for 90 days until their tomatoes are ripe and ready to be harvested.

In the real practice, the tomatoes are harvested twice a week to ensure the product's quality. However, to simplify the interaction with the markets, the tomatoes are harvested only once a week in this simulation. While the tomatoes are still harvestable, the farmers repeat the process of sending tomatoes to KATATA and receiving money from KATATA. KATATA also repeat the process of sending tomatoes to structured and traditional market, and sending the money from both markets to the farmers.

After the tomatoes are not harvestable anymore, the farmers wait for 9 days (the in-between delay) from the time when their tomatoes die, before they start planting tomatoes again. Then, the overall processes are repeated again until desired number of days (or ticks, in the program) is reached. To validate the model, the simulation results are confirmed to the managers of KATATA.

4. Simulation Results and Discussion

This study simulates three different scenarios related to the implementation of contract farming, as can be seen in Figure 2-7.

Table 1. Contract farming scenario of agent based simulation

Attributes	Scenarios		
	No contract farming	Contract farming without scheduling	Contract farming with scheduling
Setting-up	Guess	React	React and plan
Planting decision	There is no plan related to when to plant, what to plant, how much to plant	There is no plan related to when to plant, what to plant, how much to plant	Planting scheduling is defined
Harvest decision	Harvest when farmers need money	Harvest based on contract farming period requirement	Harvest scheduling is defined
Performance	Profit based on market price	Profit based on on-grade quantity	Profit based on on-grade quantity
		Service level	Service level

The scenarios that want to simulate in this paper are independent farmers that do not have contract farming with their customer/buyer; contract farming without scheduling, and contract farming with scheduling. These three scenarios have different characteristics, especially their relation with setting-up farming, planting decision, harvest decision, and farming performance. Description of three scenarios with the descriptions can be seen in Table 1.

Independent farmers with no contract farmers are characterized by guessing the market demand to decide when to plant, what to plant, and how much to plant. The decisions are only based on intuition, not based on an advanced planning. Moreover, harvest decision is only based on farmers' need for money. In addition, in this scenario, farmers' performance only measured based on their profit from selling the agricultural product to market with fluctuated price.

Second scenario is characterized by implementation of contract farming between farmers and their customers. However, the contract farming is not followed by the use of planning and scheduling related to planting and harvesting decisions. The decisions of when to plant, what to plant, and how much to plant are farmers reaction of what already mentioned in the contract farming without have any advanced planning. While the decisions of how much to harvest and when to harvest is based on contract farming requirement. Moreover, farmers' performance is based on service level and profit of farmers on-grade supply.

Similar with the second scenario, the third scenario is characterized by implementation of contract farming between farmers and their customers. However, in this third scenario, the contract farming is followed by the use of planning and scheduling related to planting and harvesting decisions. The decisions of when to plant, what to plant, and how much to plant are farmers reaction of what already mentioned in the contract farming by develop an advanced planning of planting and harvesting. While the decisions of how much to harvest and when to harvest is based on contract farming requirement. Moreover, farmers' performance is based on service level and profit of farmers on-grade supply.

In the next stage, the three scenarios are simulated using agent based simulation. The performance of each scenario is compared and interdependencies, farmers commitment, and contract farming requirement

are analyzed. The simulation results for those three situations are presented below.

4.1. Simulation result for no contract farming

Farmers' partnership with no contract farming is an illustration of farmers' partnership with intermediaries to fulfill traditional market. In this partnership, the quantity of demand and price are not known in advanced. With this kind of situation farmers should be faced risk that all of their agriculture product will not be purchased by intermediaries, or the agriculture products will be sold with low price, and make farmers lose a lot of money.

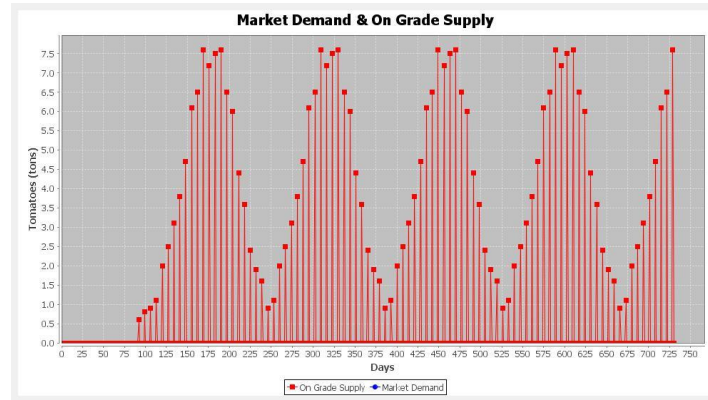


Figure 2. Simulation result for on-grade supply of no contract farming

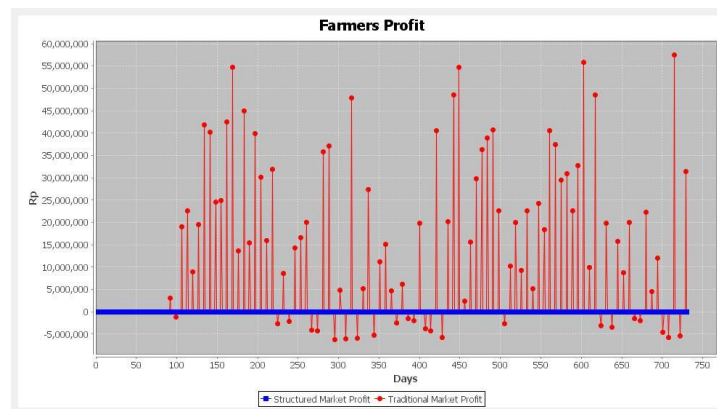


Figure 3. Simulation result for farmers profit in no contract farming

The simulation result for this situation which can be seen in Figure 2 show that with no contract farming that inform the customer demand, farmers cannot make planning related to their planting decisions. Farmers' decision related to what to plant, when to plant, and how much to plant only based on their experience in the past or to other farmers decision. Without planting planning, farmers cannot have sustainable supply for their customer, because farmers also do not have sustain and continue demand from their customer. Moreover, in this situation, farmers only implement their traditional ways of farming without consider applying new technology or knowledge to improve their productivity. This situation happens because farmers have no incentive if they change their current farming activities. Moreover, there is no partnership mechanism that encourages farmers to adjust or improve their farming activities or planting and harvesting decisions.

The simulation result in Figure 2 shows that farmers' harvest yield is very fluctuate. There is period when farmers plant same commodity, and harvest in the same time, which result a high supply of agriculture product. On the other hand, there is period when farmers supply is low, because farmers who plant the commodity is very limited. The extreme result shows that there is period when farmers cannot supply the agriculture product to their customers because in that period there is no farmers plant the commodity.

The simulation results are confirmed to KATATA manager and farmers' advisor as a validation process. KATATA manager and farmers' advisor agree that when contract farming is not implemented,

situation which illustrated in the simulation result is happened. Farmers planting decision is based on their neighbor decision, and harvest without implementing the harvest selective. Sometimes early harvesting is applied, because farmers need money for their daily life. Extreme situation happens when farmers do not harvest their agriculture product, because market price is very low, so that the harvesting cost can make farmers suffer from greater loss. In the first scenario simulation, farmers' profit is very fluctuating, as can be seen in Figure 3.

4.2. Simulation result for contract farming without scheduling

Contract farming illustrates farmers' partnership with structured market. In the contract farming, the demand quantity of agriculture product with its price is clearly mentioned (Arshinder and Deshmukh, 2008). The demand quantity is relative fixed in every period, so that farmers can have planting planning to fulfill the demand in each period. The key of this contract farming is sustainable and continue demand, and zero fluctuation of demand and price. In the beginning of contract farming implementation, it is hard for farmers to shift their traditional ways of farming to more well-planned farming. The most basic way to have sustained and continue supply of agriculture products is by implementing planting and harvest scheduling. However, in the beginning of contract farming, farmers still do not know how to have planting and harvest scheduling.

Simulation result is Figure 4 shows the comparison between demand mention in contract farming and farmer s' on-grade supply to fulfill the contract farming requirement. The simulation result show farmers almost fulfill the service level as required in contract farming. However, the on-grade supply is still fluctuating. There are several periods when farmers cannot fulfill contract farming demand. The fluctuation of on-grade supply occurs because farmers do not implement planting and harvesting scheduling.

Compare with market price, the price that agreed in contract farming is relative stable. In Figure 5, it can be seen that the average profit obtain from contract farming price in structured market is higher than average profit of market price in traditional market. Moreover, with contract farming, farmers' loss can be avoided, because the contract farming price is stable, so that farmers can have more accurate calculation of their revenue. Differ from market price that can be very low, so that can make farmers loss a lot of money.

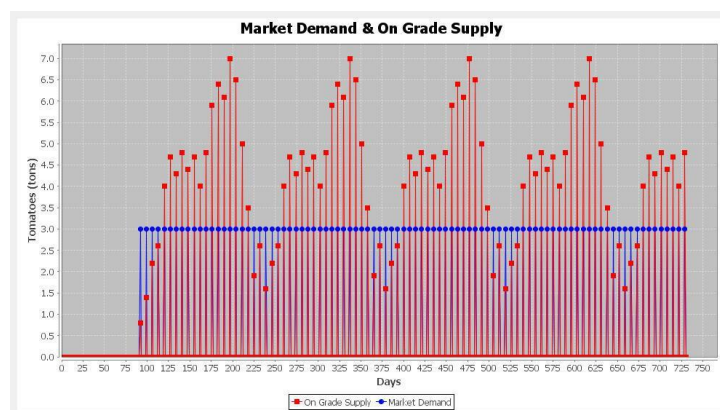


Figure 4. Simulation result for service level of contract farming without scheduling

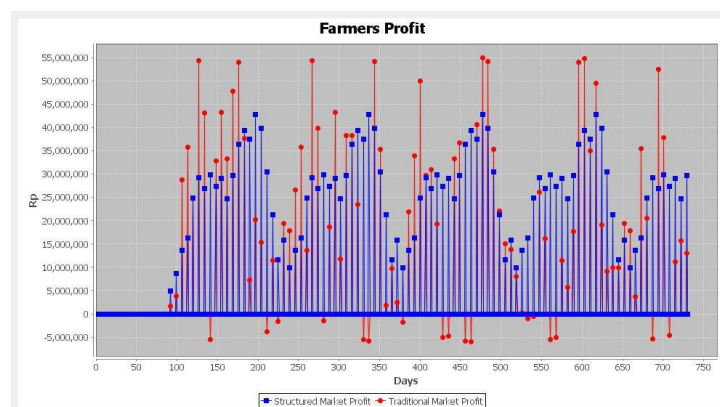


Figure 5. Simulation result for farmers profit in contract farming without scheduling

Same as previous simulation results, the simulation results of second scenario are validated by having confirmation with KATATA manager and farmers' advisor. They confirmed that the simulation results are in accordance with KATATA situation, when the contract farming of structured market is just implemented. Having partnership with structured market is new experience for KATATA, especially the structured market's complex requirements. The contract farming mentions the detail demand requirement. Agriculture product characteristics, namely product weight, color, and shape is mentioned in the contract farming. The quantity of agriculture product that should be supplied in every period is also mentioned. The price that farmers get from implementing contract farming is stable and higher than the average of market price. Farmers realize that with contract farming their profit is increase. However, with the complex requirement of contract farming compare with the requirement of traditional market, farmers realize that they should improve their farming activities. With the assistance of farmers' advisor, farmers slowly change their planting decisions.

4.3. Simulation result for contract farming with scheduling

Differ from the second scenario, the third scenario shows that farmers already past the adaptation process and have adjusted their farming activities by developing planting and harvest scheduling to fulfill the contract farming requirement. Farmers should work together to arrange their planting and harvest scheduling. Farmer should inform other farmers when to plant, what to plant, and how much to plant, so that they will have continue and sustain agriculture supply. The simulation result in Figure 6 shows that with planting and harvest scheduling, most of the time farmers can fulfill their structured market demand.

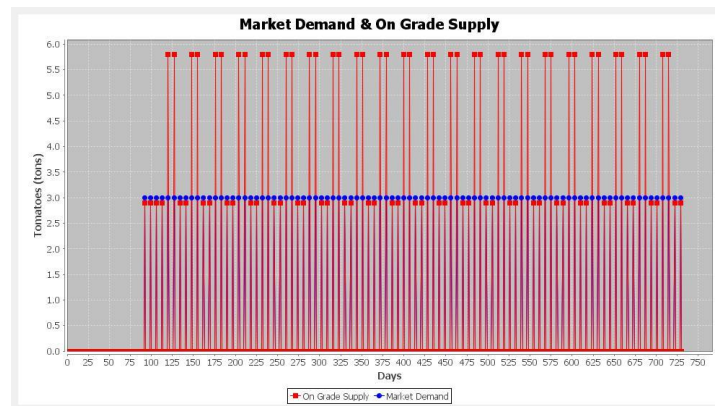


Figure 6. Simulation result for service level of contract farming with scheduling

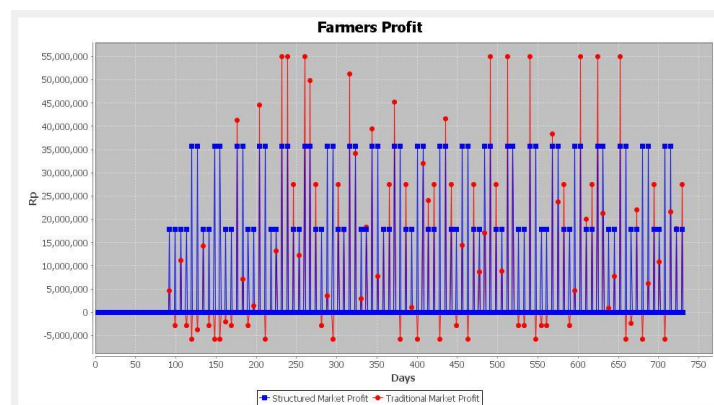


Figure 7. Simulation result for farmers profit in contract farming with scheduling

Moreover, Figure 6 shows farmers relative stable supply to structured market. In each period, farmers can fulfill demand requirement that mention in contract farming. KATATA confirmed that the simulation results are in accordance with what happen in KATATA after implementing planting and harvesting scheduling. The stable demand in the contract farming, farmers can develop planting planning. Farmers can make planning related to how much to plant, when to plant, when to harvest, and how much to harvest.

Using planting and harvest scheduling, farmers that joined KATATA should coordinate their planting decisions. There is commitment of farmers to fulfill the contract farming requirement, because both farmers and structured market experience the benefit from this partnership mechanism. Farmers gain benefit from higher profit compare with their partnership with intermediaries, which can be seen in Figure 7. Structured market gains benefit from higher margin because they get supply from farmers not from intermediaries. Moreover, structured market can get higher quality because the distribution chain is shorter.

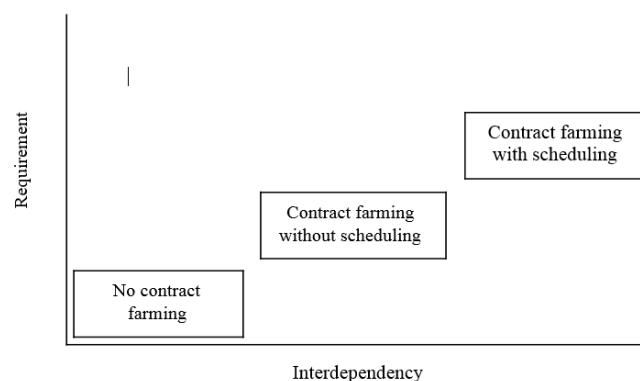


Figure 8. The level of interdependency and requirement in each scenario

The simulation result of each scenario illustrates the different level of interdependency and requirement, as can be seen in Figure 8. Without contract farming, interdependency between farmers and their consumers is very limited, there is no bonding and incentive that can make farmers evaluate their farming activities to improve harvesting quantity and quality. The demand requirement in this partnership requirement is very loose. Moreover, with contract farming, interdependency between farmers and structured market is higher than traditional market that does not implement contract farming. The contract farming encourages farmers to have supply target that should be fulfilled with higher revenue. In the second scenario, interdependency has occurred but still in the early stage, because farmers still in adaptation process of the new partnership mechanism and the requirement can be negotiated. This situation also confirmed by Stringer and Sang (2009) and Burer et al.(2008). The simulation result from third scenario shows that the interdependency between farmers and structured market is well developed, and the requirement is high and should be fulfilled by farmers. This situation have also illustrated by Kuwornu et al. (2009), and Zylbersztajn and Miele (2005).

5. Conclusions

The simulation results of three scenarios illustrate that a stable supply of agriculture product can be achieved when contact farming is implemented and affect farmers' planting decisions. The contract farming makes farmers eager to improve their farming activities by developing planting and harvest scheduling. The comparisons of farmers' profit from the three scenarios show that the lowest farmers' profit is gained from farmers' partnership with intermediaries to fulfill traditional market requirement. The highest profit is achieved by implementing contract farming. Differ from market price that always fluctuating, the price of contract farming is stable and higher than average market price. Moreover, planting and harvest scheduling makes farmers to create a stable supply, and stable profit.

Interdependencies between farmers and their customers are higher when implementing the contract farming. The contract farming coordinates farmers to fulfill the contract farming requirement. The higher interdependencies shows in the contract farming implementation, because farmers experience benefit from the stable price and higher average market price, and also from the stable demand, so that farmers can have planting and harvesting scheduling in advanced. The contract farming also makes farmers improve their farming activities, because farmers have commitment to improve their productivity and quality that never discuss when farmers supply the intermediaries for traditional market.

Differ from previous studies that examined contract arrangements by assessing the interaction among actors (Kuwornu et al., 2009; Chambers and King, 2002), this study have been modeled, proven the contract farming implementation in coordinate farmers' planting decision, and showed the difference level of interdependency and requirement have impact on farmers' performance when implementing contract farming. This research also has implication to practice, by informing that in order to fulfill the contract

farming requirement and has good performance of service level and profit, farmer should have more intense interaction with other farmer and its customer. Farmers should be supervised or need advisor related to the improvement on knowledge and technology so that farmers can improve their farming activities or planting decisions to enter a more valuable market.

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Supply Chain Management for A Circular Economy

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Abstract

The growing concern for environment has pushed the industries to move towards a more environmentally friendly economy framework. This has shown in the growing number of studies about circular economy. In contrast with the traditional economy framework of processing resource and discarding the waste to environment, the circular economy concept is more concerned about the incorporation of recycle concept; how to make the waste of an industrial process become the resource for other processes just like in feedback-rich systems to lead for a more sustainable economy. This difference makes the two have different workflows and, as a result, makes further differences in the supply chain and supply chain management for each system. This paper discusses the differences of the supply chain in linear economy and circular economy model based on the SCOR framework stages and how the differences would possibly apply in the case of cassava farming.

Keywords: Circular economy; Sustainable economy; Supply chain; Supply chain management; Cassava farming

1. Introduction

Up until 2015, China was the world's fastest-growing major economy (Schwartz & Abrams, 2015), supported by the high productivity in their industry of various sectors. The high amount of activity also requires an equally high amount of energy to support it and, at the same time, produces high amount of waste that may potentially become dangerous for the environment. As the fossil fuels, the common energy source for industries, are not renewable and the use would contrast the current global push to decrease carbon emissions to prevent global warming, various studies about how to maintain the high amount of activity and using energy sources that are environmentally friendly were conducted (Su, Heshmati, & Geng, 2013; Geng & Zhijie, 2014; Zhang et.al., 2013). All of them are based on a particular concept called circular economy.

The concept of circular economy emerged about twenty-seven years ago, in a book written by Pearce and Turner. According to Peace and Turner (1989), the traditional economy system (called open-ended) was not concerned in the concept of recycle and made the environment as a place to discard all the waste of the process. Meanwhile, the circular economy is more concerned about how to incorporate the feedback-rich systems, especially living systems, in economy (EM Foundation, 2012). In this system, the waste of a process would be used as the resource for another process, which in turn would provide the resource for the original process or other processes. The incorporation of these systems is hoped to lead the economy growing to a sustainable economy, having the ability to produce indefinitely just like the way some nature systems do.

As the circular economy becomes a possible solution that might lead to a more environmentally friendly economy, more countries start to recognize the importance of transitioning to the concept from the traditional linear economy concept. In the *Manifesto for a Resource Efficient Europe*, it was stated by the European Commission that Europe Union (EU) would adapt the circular economy concept for their own economy system. Researches for transitioning the current economy system to the circular economy are also getting supported by the EU in the Horizon 2020, their research and innovation program (EU, 2013).

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The concern for environmental issues is also starting to be recognized more in Indonesia. In Indonesia, the use of fossil fuels accounted for 65.9% of the total energy consumption, according to the World Bank's data of fossil fuel energy in 2013 (The World Bank, 2014). This resulted in 0.5 billion tons of CO₂ emission in 2014 (Olivier et al., 2015). As Indonesia is targeting 29% carbon emission reduction in 2030 (Indonesia INDC, 2015) while also aiming for a better economy growth, it is a good idea to incorporate the concept of circular economy for various industries.

To support the transition to a circular economy system, there are several aspects of the economy that have to be adjusted. One of them is the supply chain and supply chain management of various industries. As the supply chain management is related to „the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities“ (Council of Supply Chain Management Professionals, 2015), and the circular economy is concerned in changing the traditional linear system of processing resources and consuming products, it is necessary to make adjustments to the supply chain system and its management in various industries in Indonesia in order to shift the current system towards the circular economy system.

However, there are still only a few studies related to the application of supply chain management in a circular economy. Thus, the purpose of this paper is to analyze the process of a circular economy and the adjustments needed for a supply chain to be able to support the circular economy system. The adjustments stem from the form of specific parameters needed by the supply chain to support the circular economy system, which make it different from the linear supply chain management.

2. Linear Economy and Circular Economy

2.1. Linear Economy

The traditional economy is also known as the linear economy concept, or the cradle-to-grave system. The workflow of this concept can be seen in figure 1, derived from the article about the problem in the current economy system by Cradle² Organization (‘‘Problem: Our ‘‘Take, Make, Waste’’ Economy’’, 2012). At first, the industry would take resources from various sources, most of them are natural resources. After that, the resources would be processed and these processes would result in products. At this stage, the processes usually also produce some waste that would get discarded to nature. The products resulted from the industrial processes would then get consumed or used by the customers, and the consumption of these products would lead to even more waste. When a product is no longer used, it would become a waste too. This process would get repeated in various industries, making the unusable wastes piling up and the natural resources used for the processes dwindling in numbers.



Fig. 1. Workflow of traditional economy industrial process.

Other than the obvious effect this process workflow has on nature, it is also affecting the potential amount of jobs. According to Goldstein and Electricis (2011), the use of recycling in the economy would lead to a total of 2.3 million jobs, especially jobs related to suppliers in the recycling sector. This means that the use of the traditional economy process is also letting go of the chance to have these potential jobs available, which would have helped a lot of unemployed people should they have been available. Thus, not only is it dangerous for the natural environment, this traditional economy workflow is also preventing the emergence of various jobs.

2.2. Circular Economy

As stated in the introduction, the circular economy concept is about how to incorporate the feedback-rich systems, especially living systems, in the economy (EM Foundation, 2012). Living systems are made as models for this concept for their idea of having none of the waste of a process remain as a waste. Thus, in a circular economy, the waste of a process, whether it is a production process or a consumption process, would be used as a resource for other processes. These other processes would then provide the resources for the original process, preferably the whole resources. This workflow can be observed in nature, for example,

as the waste or corpses of animals would be decomposed by bacteria and the result would become the nutrients for plants which would become the source of food for the animals. This would lead to the sustainability in economy, where the diversity of materials and processes makes the economy produces and provide resources for itself indefinitely. The workflow of a circular economy framework is represented in figure 2 (adapted from EM Foundation, 2012).

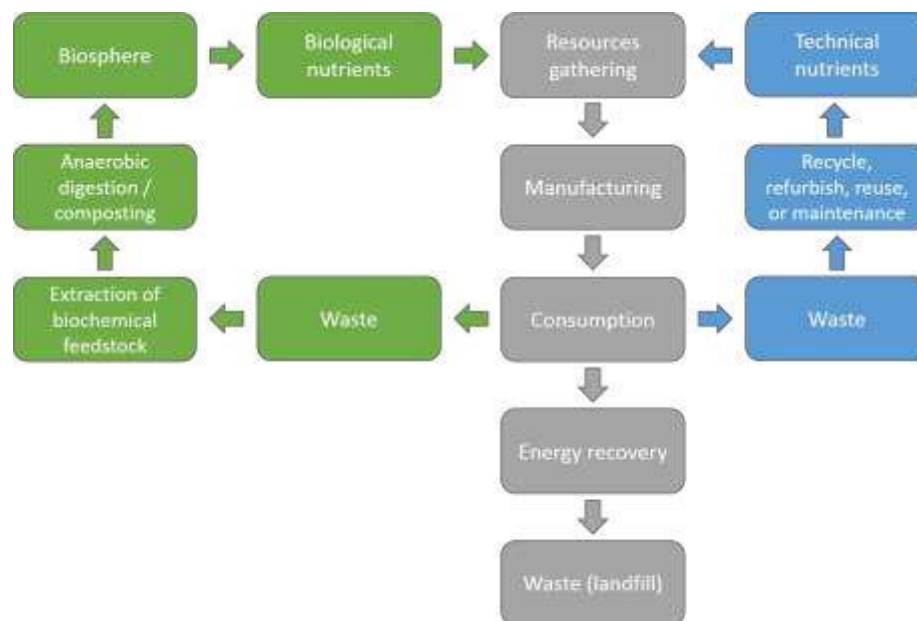


Fig. 2. Workflow of circular economy framework

According to the Ellen MacArthur Foundation report (2012), there are several principles that become the base of circular economy concept:

1. Design out waste

The result of production and consumption would not become wastes if they are designed to become resources for other process cycle. The biological results can be composted and used as a natural resource for other cycle. The technical results, mostly man-made materials, can be used again for other production with minimal energy and highest quality retention.
2. Build resilience through diversity

The diversity of systems and materials which have many connections, just like the natural systems that keep adapting to their environments, would be more resilient when facing the changes in the current fast-evolving world, compared to the systems that are built only for efficiency.
3. Rely on energy from renewable sources

Compared to traditional economy which runs mostly on unrenewable natural sources for efficiency, the systems based on circular economy should aim to run on renewable sources. Examples of these renewable sources are the wind energy or geothermal energy.
4. Think in „systems“

The flow and connection between each parts in the economy system should support the ability to give feedbacks to other parts, with the result of the system being not necessarily proportional to the input. This kind of system would support the regenerative concept rather than focusing on one or more parts at a time.
5. Waste is food

This concept is particularly similar to the design out waste principle; it focuses on how to the ability to have both biological and technical materials and products flow back to their respective cycles: biological to the biosphere and technical back to their production cycle.

According to ING Economics Department (2015), the differences between linear economy and circular economy can be measured through several variables. The variables along with how each variables are applied on each economy system are presented in table 1. Basically, the linear economy and circular economy are different based on their attitude towards nature and production, closing loops of material and

energy flow, how the product life extension is supported or not, performance of the economy, how earnings are made in each system, values and principles used as the base, and how the supply chain acts in each economy.

Table 1. Linear economy and circular economy differences.

Variables	Linear Economy	Circular Economy
Attitude towards nature	Forcing nature to produce more	Doing more with what nature can produce
Attitude towards production	Take, make, and waste	Reduce, reuse, and recycle
Closing loops	One lifetime use of products, components, materials, and energy	Materials and energy flow infinitely in cycles through the economy
Product life extension	Products become obsolete while they are still usable	Product life is extended in new applications of products serve as valuable inputs for other products
Performance economy	Consumers buy goods	Accessibility and performance instead of ownership are leading in many consumption markets. Consumers increasingly share products
Earnings model	Producers determine sales price of products	Producers charge price for the use of the product
Multiple values and principles	Money is the dominant value in business models	Business models are based on multiple values (financial alongside environmental and social values)
Supply chain	Companies improve efficiencies in isolation of each other	Companies work together to increase value along the supply chain. Risk and benefits are shared upstream and downstream.

3. Supply Chain and Supply Chain Management

According to the Council of Supply Chain Management Professionals (2015), the supply chain is composed of all activities involved in sourcing, procurement, and logistics; and the supply chain management is the planning and management process of all those activities. In that way, the supply chain management “integrates supply and demand management within and across companies” (CSCMP, 2015). Related to the workflow of industrial process in figure 1, the supply chain would be involved in the extraction of the resources, the processing of the resources to make the product, the delivery of the products to the costumers, and the way customers can give feedbacks related to the product (including to return the product).

While there are several frameworks that can be used in creating the supply chain model for an industry, the one commonly used in the supply chain management is the Supply-Chain Operations Reference (SCOR) model. It is adapted by the Supply-Chain Council (SCC) and was originally developed by PRTM, a management consulting firm which is now part of the PricewaterhouseCoopers LLP (PwC). This framework (“SCOR Framework”, n.d.) consists of several processes, with explanation for each processes was provided by Ayers (2006):

1. Plan
The processes categorized in this stage are involved in developing the plan of actions for obtaining the resources, processing the resources to make products, and delivering the products to the customers.
1. Source
This stage includes the processes involved in gathering the resources to produce goods and services.
2. Make
The processes in this stage are involved in the processing of the resources to make the products.
3. Deliver
This stage includes the processes involved in delivering the products (goods and services) to the customers. Most of them are related to the order management, transportation management, and distribution management.
4. Use and Return
The processes in this stage are typically part of the customer support, related to customers returning the

product and how the returned products would be received.

The way these stages and processes are related to each other would vary depending on the workflow of each industry. As the circular economy differs from the linear economy in their workflow, each of them would have different supply chains to support their activities. This would be discussed in part 4.

4. Supply Chain in Linear and Circular Economy

As mentioned in part 3, there are several stages in which the processes of a supply chain can be categorized in. The way these stages are related to each other and the processes that composed each stage would be different for each industry, but general frameworks can be found in both the linear and circular economy process. This part would discuss the processes found in each framework, and how they are categorized into the stages in the SCOR framework.

Figure 1 is one way to represent the linear economy framework. The workflow of a linear economy system generally doesn't support the way to give feedbacks, thus resulting in the way the stages all work linearly in the process. While also considering the way linear economy behaves according to table 1, the stages of SCOR for this framework would be as follows:

1. Plan
The planning involves obtaining resources only from nature, making products considered useful only for one lifetime, focusing only on the company's task in the supply chain and considering only financial values for the business models.
2. Source
Obtaining the resources from nature without giving back to nature, will force nature to produce more to support the resource gathering processes.
3. Make
Manufacturing processes only consider how to make products efficiently and effectively. The products are mostly designed to be used only for a lifetime.
4. Deliver
The processes would include the regular order, transportation, and distribution management.
5. Use and Return
Consumers buy goods and consume it, with some products having a return system for defective products. However, there are no concern towards how the wastes of product consumption by the consumers are handled. Most of the wastes produced in consumption go straight to the landfill, some of them still in fact would be usable.

As the community's concern towards environment issues is growing, several businesses started to adapt different types of supply chain in their productions. Archetypes of the loops adapted in their supply chain are represented in figure 3. Going from bottom to top, supply chain's way of adapting circular economy's methods might go in steps: open cascade, partially open regional loop, and closed regional loop at the end. To support the circular economy in a circular supply chain, a supply chain should be able to support the closed-loop system, where products that have been consumed are reused to become other products. According to Krikke et.al. (2001), the closed loop system in supply chain particularly emphasizes on reusing the materials involved in the production process.

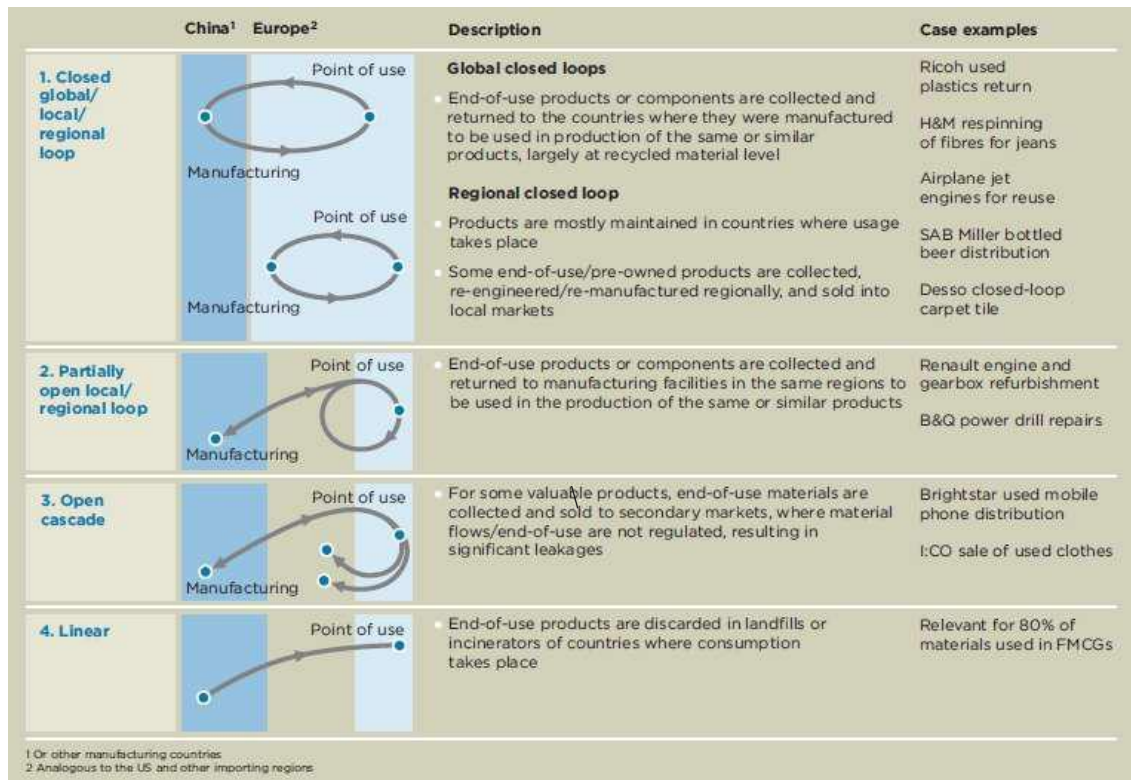


Fig. 3. Archetypes of supply chains and loops. Source: Ellen MacArthur Foundation (2014).

Other than the closed-loop system, the circular supply chain should also support the way circular economy behaves towards variables represented in table 1. This would lead to SCOR stages as follows:

1. Plan
Planning for circularity, on how consumption results can be processed to enter the biosphere safely or recycled into other products. Design for products and manufacturing processes would include how the products should be so they can become new inputs for other product. The planning processes would also involve environmental and social values in designing their business processes, other than the financial values. Companies would also consider working together, especially to support the way consumption results are returned and processed to become resources.
2. Source
This would involve minimum resource gathering from the nature, as most of the resources should come from the reduce, reuse, and recycling processes. Most of the resources are obtained from the wastes of product consumption.
3. Make
The processes would consider making products that would be able to be further processed into new resources after they are consumed. Wastes produced in the manufacturing processes would also go through the recycling process to become new resources.
4. Deliver
This stage includes the processes involved in delivering the products (goods and services) to the customers. This stage also would not differ much from the linear economy.
5. Use, Return, and Recycle
This stage is the most important stage in circular economy framework, as it is the part which differ the circular economy from the linear economy greatly. The circular economy is concerned not only in the return of a defective product, but also the way wastes produced by the consumption of a product are managed. In figure 2, the biological wastes from consumption would be processed by the extraction of biochemical feedstock and the anaerobic digestion/composting processes, and then returned to the biosphere to become resources. The technical wastes would go through the recycle, refurbish, reuse, or maintenance processes according to their condition. Should the wastes not able to go through all of those processes, both for biological and technical wastes, they would undergo the energy recovery processes and finally end up in the landfill, in which the leakage of wastes that really must go to the landfill would be minimized.

The summary of the differences between linear and circular economy using SCOR stages is represented in table 2. Other than the SCOR stages, the difference is also evident in how the circular economy framework is composed of several loops, as compared to the linear economy which only have linearly-aligned stages. This difference is also represented in the name for each economy framework.

Table 2. Supply chain in linear and circular economy compared by SCOR stages.

SCOR Stages	Linear supply chain	Circular supply chain
Plan	<ul style="list-style-type: none"> - Planning for linearity. - Resources from nature, forcing nature to produce more. - Products designed to be useful in one lifetime. - Consider only financial values. - Focusing on the company's task in the supply chain only. 	<ul style="list-style-type: none"> - Planning for circularity in the form of closed-loop system. - Minimum input from nature, most from recycle - Products designed to become new resources - Consider environmental, social, and financial values. - Focuses on working together along the supply chain, especially on material flows.
Source	Obtaining the resources from natural resources, force nature to produce more and more.	<ul style="list-style-type: none"> - Gathering the biological resources from biosphere. - Obtaining resources from reuse, refurbish, and recycle processes. - Processing biological wastes in extraction of biochemical feedstock and anaerobic digestion/composting processes.
Make	<ul style="list-style-type: none"> - Manufactured products designed to be used only in one lifetime. - Wastes are disposed to landfill immediately. 	<ul style="list-style-type: none"> - Results of the manufacturing processes are products that might later be processed to become new resources. - Wastes might go through recycling processes.
Deliver Use, return, and recycle	Order, transportation, and distribution management. Defective product return processes.	<ul style="list-style-type: none"> Order, transportation, and distribution management. - Defective product return processes. - Extraction of biochemical feedstock and anaerobic digestion/composting for biological wastes of consumption. - Maintenance, reuse, refurbish, and recycle for the technical wastes of consumption. - Energy recovery processes. - Disposing the wastes that cannot be processed in the landfill.

5. Study Example: Cassava Farming

The difference between linear and circular economy in their SCOR stages could also be applied in the cassava farming industry. As it is the main source for tapioca starch and a good carbohydrate resource, cassava has been farmed in Indonesia since 1810 (Payer, 1997). While the carbohydrate and tapioca source is its roots, and some parts of the stems can be used as the seedlings for future plantings, other part of the cassava plants would generally be processed as waste, especially the leaves. However, it might be not the case if the cassava farming is done in circular economy framework. With the circular economy framework, the wastes of cassava farming such as the leaves, leftover stems, and even the peels can be utilized for other functions.

Typically, the cassava farming would consist of the stages in linear economy supply chain framework. The SCOR stages would be as follows, and demonstrated in figure 4:

1. Plan
The processes in planning when to start farming, what kind of resources needed (seedlings, fertilizer, pesticide), farm location and the suitability of its soil to farm cassava, harvesting method, waste disposal methods.
2. Source
The processes in gathering the seedlings, fertilizer, and pesticide. All of them are most likely provided by other industry.
3. Make
The processes of farming and harvesting the cassava roots, and manufacturing the roots to other products (tapioca starch, cassava chips, etc). Wastes produced in this stage, such as the leaves and the peels, would be disposed by burning or other disposal methods.
4. Deliver
The processes of delivering the cassava products to consumers.
5. Return
There is most likely no return process for the wastes produced by the customers of cassava products.

The incorporation of circular economy system would possibly make differences in the stages that is:

1. **Make – Processing harvest wastes**
The leaf wastes produced in the harvesting stage can be processed to make cassava hay, which can be used as animal feed. Other biological wastes, such as the stems that cannot be used as seedlings, would undergo the composting processes.
2. **Return – Processing consumption wastes**
The consumption of cassava hay as animal feed would result in animal biological wastes. These wastes can be processed by the anaerobic digestion/composting processes.
3. **Source – Obtaining the fertilizer and the seedlings**
The anaerobic digestion/composting processes conducted in the make and return stage would possibly be a source of fertilizer for the cassava farming, particularly in the form of organic fertilizers. From the characteristics of a cassava plant, the seedlings for cassava farming could also be obtained from the upper stems of a cassava plant, gathered in the harvesting processes.

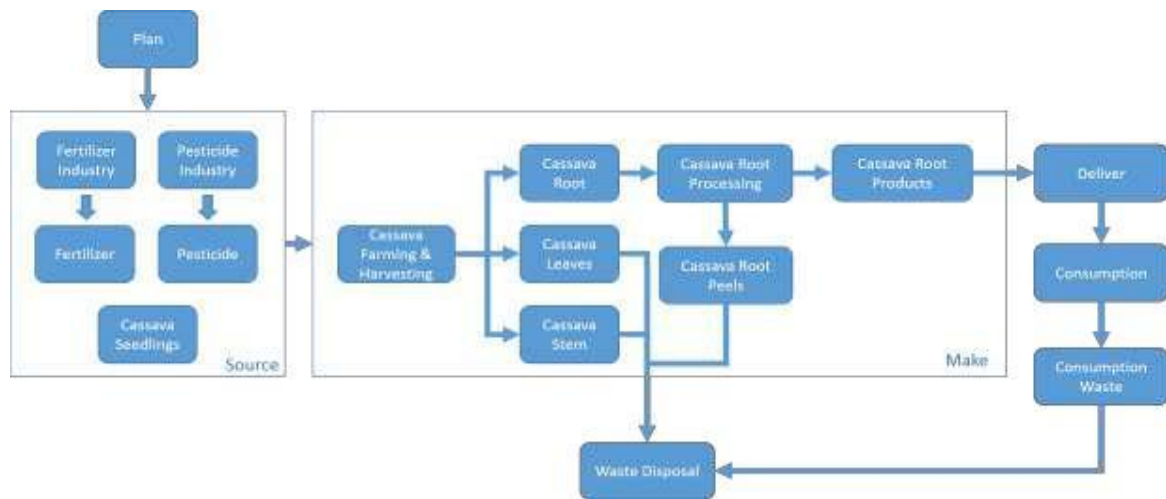


Fig. 4. Linear supply chain in cassava farming

Those differences would result in the circular economy supply chain model presented in figure 5. In line with the circular economy main principle, the number of wastes that have to go to the waste disposal is minimized. Most of the wastes are processed to make other products or resources for the succeeding farming cycles, even the wastes produced in the consumption process of the cassava products (particularly consumption of the cassava hay).

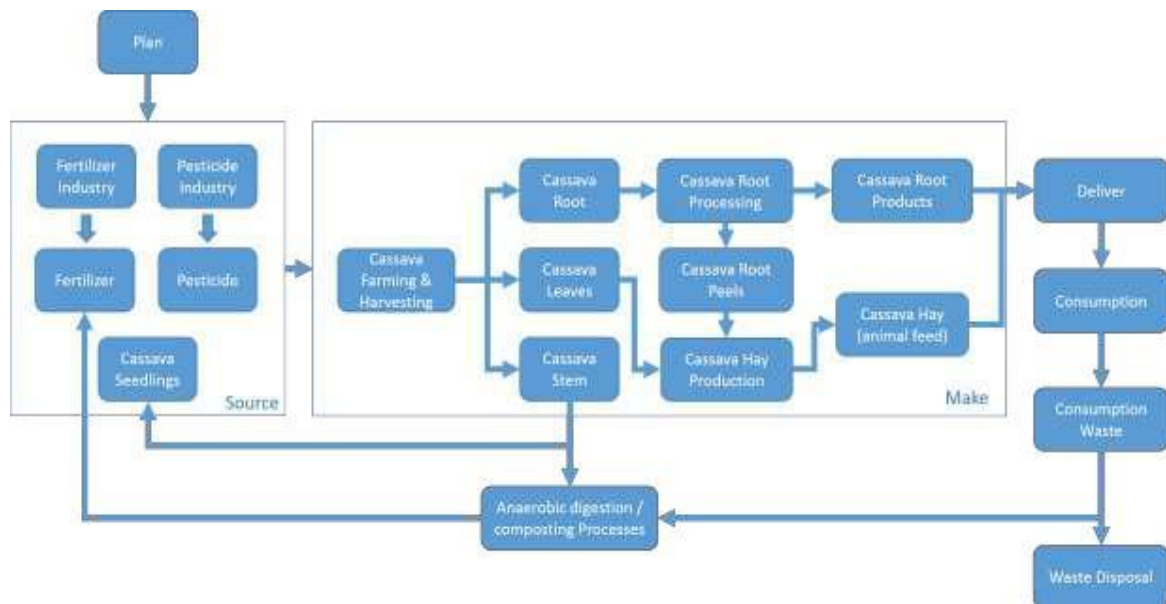


Fig. 5. Circular supply chain in cassava farming

6. Discussion

As demonstrated in the example of cassava farming, the incorporation of circular economy concept in supply chain changes the traditional linear supply chain by adding a number of processes to the supply chain, particularly in the area of processing wastes to become something usable. Other than decreasing the amount of energy needed to dispose the wastes, these processes would also help industries to gain values from those wastes that were only considered as useless and can only be disposed before.

Several industries are starting to consider the possibility of changing their supply chain processes to fit the circular supply chain system, one of them is IKEA. In an interview, the company's chief sustainability officer stated that IKEA is considering to build a system where people can resell their used products, and those products can be reused by other people or recycled to make other products (Hullinger, 2016). As new system would be introduced, this might lead to some changes to the business model of the industry. According to Hansen (2016), there are several steps needed for a business to change their traditional supply chain to a circular supply chain: transitioning from linear to circular business models, using digital technology to coordinate and keep track of the materials flow, and assessing suppliers to ensure that they also have the common goal that is moving towards the circular supply chain.

According to Accenture (2014), there are five business models that supports the circular economy. The first model is circular supplies. This model is concerned on how companies should gain their resources from fully renewable, recyclable, or biodegradable inputs. Next is the resource recovery business model, recovering useful products from manufacturing processes or product consumption to become resources for other products' lifecycle.

There is also the product life extension model, which emphasizes on extending the lifecycle of a product through repairing, upgrading, and reselling processes. Sharing platforms, another business model needed to support the circular economy, would increase the utilization rate of the products by having users sharing the utilization of ownership of a product. And finally, in the product as service model, companies no longer see the reuseability or the long-lifetime of a product as a threat to business – they would give revenues and possibly reduce costs instead.

Coordination and tracking of the materials involved in the supply chain might lead to further research on the aspects needed by the supply chain to support to circular economy. According to the Tradeshift (2013), tracking the materials flow would require a system that supports data exchange between businesses across the supply chain. These data would also need to be managed in relation to their lifecycles. As a way to ensure the suppliers have common goals of using the circular economy concept, certification for the suppliers especially for their material standards and material gathering methods is needed.

The circular supply chain is different from the linear supply chain in the way wastes of production and consumption stages are processed: wastes are simply disposed in linear economy, while in circular economy wastes are processed to further become resources for the original production processes. In cassava farming, this difference is most evident in the way wastes from the harvest, manufacture, and consumption of cassava plant might be processed to become the fertilizers and seedlings for succeeding cassava farming cycles. Transitioning from the linear business models to the circular business model is speculated to generate relationships between cassava farmers and the new actors. However, as it has not been tested in practice, the real impact of this transition still needs to be researched upon.

There is also the question of whether the circular supply chain would be able to bring fairness for the actors in the supply chain. As most of the circular supply chain concepts discussed in this article are still heavily dominated by companies' role, from the planning to the return and recycling processes, it might be not possible yet to achieve fairness for all actors in the supply chain. However, according to Doepel (2014), there are the possibilities of creating local production in circular economy form, with each households being able to process their own wastes themselves and saving money through utilizing the processed wastes. If the process is done this way, consumers would have more values as they do not have to depend on the companies so much and this might lead to better fairness in the supply chain, particularly for the customers. The way this system engages the underserved populations, particularly the local households, might lead towards the incorporation of the social supply chain.

7. Conclusions

The circular economy supply chain is different from the linear economy supply chain in the way wastes of production and consumption stages are processed: wastes are simply disposed in linear economy, while

in circular economy wastes are processed to further become resources for the original production processes. In cassava farming, this difference is most evident in the way wastes from the harvest, manufacture, and consumption of cassava plant might be processed to become the fertilizers and seedlings for succeeding cassava farming cycles. Transitioning from the linear business models to the circular business model is speculated to generate relationships between cassava farmers and the new actors. However, as it has not been tested in practice, the real impact of this transition still needs to be researched upon.

There is also a possibility for future research related to the system needed to support the circular supply chain. This system should be able to support the exchange of data between actors involved in the supply chain, particularly the data related to material flow. Other than a system for data exchange, future research might also include the certification for suppliers, based on their readiness to support the circular supply chain. Also, as the circular supply chain should also consider the social values, the relation between circular supply chain and social supply chain could also be further researched upon.

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Logistic Sharing: An Innovative Freight Transport Solution for Small and Medium Enterprise

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Abstract

Logistics are generally complex with different activities within itself or spread over other organizations. One of the most popular strategies to reduce cost of freight transportation is logistics sharing, which is a complex problem due to involvement of many stakeholders. Logistic sharing provides new and innovative ways to improve supply chain coordination, reduce overall cost and improve social management of the supply process. The current freight operations are extremely expensive due to the empty return. For these reasons, a decision support system is needed to enhance or predict the system optimum and the best strategies of each stakeholder in the context of logistics sharing schemas. In this paper a conceptual design of logistic sharing applicable to small and medium industry is made and a framework of coordination mechanisms of logistic activities is proposed. For small and medium-sized enterprises (SMEs), logistics sharing is one of the most significant challenges of modern operation. Growing numbers of SMEs are under pressure of large manufacturing enterprises (LMEs). SMEs have to change their traditional management styles, both operationally and organizationally, replacing them with collaborative systems that help increase the speed and fluidity of physical and information flows.

Keywords: Logistics Sharing, Coordination Mechanism, Supply Chain Management, Small Medium Enterprise, Logistics Strategy

1. Introduction

Small and medium enterprises (SMEs) have a very vital role in development and economic growth (Singh, et al 1999) since they are recognize as a source of employment and income growth as well as poverty alleviation (Spicer & Sadler-Smith, 2006 in Rakicevic, et al 2016). SMEs are considered by their tight resources, thus they faced a huge obstacle from increasing globalization and rapid technological change (Hoffmann and Schlosser, 2001). Despite their tight resource, there are many constraint that SMEs have to confront, such as access to formal finance (Beck and Kunt, 2006) as well as constraint in their operation and growth (Berger and Udell, 1998). These constraints might prevent SMEs from growing to their optimal size, thus, it is critical to understand obstacles to SMEs' operation and growth (Berger and Udell, 1998).

Regarding SMEs operations, one strategy to reduce costs and keeping the budget is through cutting transport logistics cost (Heizer, 2014). Logistics is important since it occurs in several functions in operations such as in procurement, production and distribution (Jaehn, 2016). Meanwhile, according to Palvia (1997) the use of information technology in various fields is expected to increase the value added of the goods or services produced (Palvia, 1997) thus eventually it will increase the profit. For logistics and supply chain, information technology is particularly applicable in the materials handling, order processing, and shipping. Application of information technology in the field of logistics and supply chain, known as e-logistics and e-scm. The application of this technology is not limited to large-scale industries, but also

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needed by small and medium-scale industries (SMEs). Implementation of information technology in SMEs is of course very different from the large-scale industries considering the limited resources they have and the lack of application of the latest management techniques in the SMEs such as forecasting, financial analysis, and others (Sabouri, et al, 2011 and Blili, et al, 1993)

In an effort to save logistics costs, some SMEs can collaborate in logistics activities, especially the delivery of goods. This collaboration activity known as logistic sharing (Thiengburanathum, et al, 2010). In simple terms this means that the activity of inventory and shipments of some SMEs are combined before reaching the final consumer. Without the support of information technology and reliable management logistic sharing, it will bring negative effects include a decrease in customer satisfaction and a decrease in the value of such activities. To obtain optimum results from the logistic sharing and avoid negative impacts, it is necessary to map the factors that influence the success of such activities for SMEs. In addition, the operating parameter of logistic sharing that support cost reduction and improved customer satisfaction also need to be determined. These parameters include delivery quantity, type of goods, the value of the capitalization of the goods, the distance to customers and others.

In this paper, we will give a review on logistic sharing which is applicable to small and medium industry and also propose a framework of coordination mechanisms of logistic activities among SMEs.

2. Literature Review

While the term of sharing economy has just been around for several years, the existence of sharing-based communities can be traced for over a century ago. The oldest form of sharing economy can be found in co-op during the ninetieth century. The members of co-op share resources based on common interest and for achieving common prosperity. Thanks to the advancement of digital technologies, the sharing activities have been skyrocketed in the recent years. Many web-based start-ups companies were flourishing in the recent decade, offering extended range of services for broader area as well as wider types of clients.

Yet, due to this divergence, no formal definition of sharing economy has been defined. Schor (2014) divided sharing economy activities into four categories, i.e. recirculation of goods – providing platforms for selling and buying used goods, increased utilization of durable assets by renting unused goods or properties, exchange of services, and sharing of productive assets for production instead of consumption. The sharing platform for these categories can be for profit or non-profit. Further, the sharing scheme can be business-to-peer or peer-to-peer. While in the first scheme service providers would operate like any ordinary business that maximizing revenue per transaction, in the second scheme, service providers are given flexibilities in terms of choosing trades based on their needs, and setting rates and availability (Schor, 2014)

Sundararajan (2014) explained the economic impact of peer-to-peer businesses. Firstly, the growing peer-to-peer businesses will lead to expansion in consumption. The peer-to-peer businesses created by new digital platforms are creating new consumption experiences of higher quality and greater variety that are likely to stimulate economic growth. Secondly, they will create productivity gains. The peer-to-peer businesses enabled by these new platforms can lead to more efficient use of physical capital by tapping into assets that are not being fully utilized. Thirdly, they will boost entrepreneurship and innovation. For many individuals, the relatively low-risk micro-entrepreneurship allowed by peer-to-peer business may be the first step to broader entrepreneurship, perhaps an “on-ramp” of sorts to freelancing or starting an independent business, by generating supplemental income, extending expertise and creating a broader professional network. Fourth, the peer-to-peer business facilitated by new platforms shifts labor from more narrowly specialized activities to a broader range of activities. As peer-to-peer business starts to constitute an increasing fraction of the economy, it seems important that these be updated to reflect work that is not considered by the worker as traditional “employment”. And lastly, peer-to-peer business will shift the asset markets. Many people will restrain from owning assets since they can rent it for less expensive price and in more convenient way. However, many others will purchase the assets due to the supplementary income opportunities offered to them by the peer-to-peer rental marketplace. The net effect remains unclear.

The sharing logistic may benefit all parties in the supply chain. From the transport provider point of view, the implementation of sharing logistic may increase their revenue and space utilization of their freight transport. As for the transport users, both producers and consumer of the goods, sharing logistic may reduce

the cost of logistic, which lower the product price without sacrificing the profit margin. Thus the value of logistic sharing is basically the present value of the associated cost that could be reduced over time.

Beyond that, logistic sharing literally means risk sharing. Santosa et al. (2015) developed a risk sharing model that they claimed would not only distribute the risks, but would also reduce the price gaps among supply chain members. In their framework, the contribution of added value on each supply chain groups are calculated using Hayami approach and the risks are evaluated using risk index model. Then stakeholder performance on each group are calculated using DEA method and the optimum price are generated based on stakeholder risk and performance by using risk sharing model.

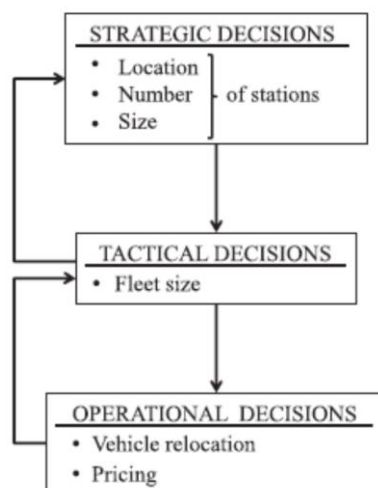


Figure 1. Decision Hierarchy in Logistic Sharing

3. Conceptual Framework

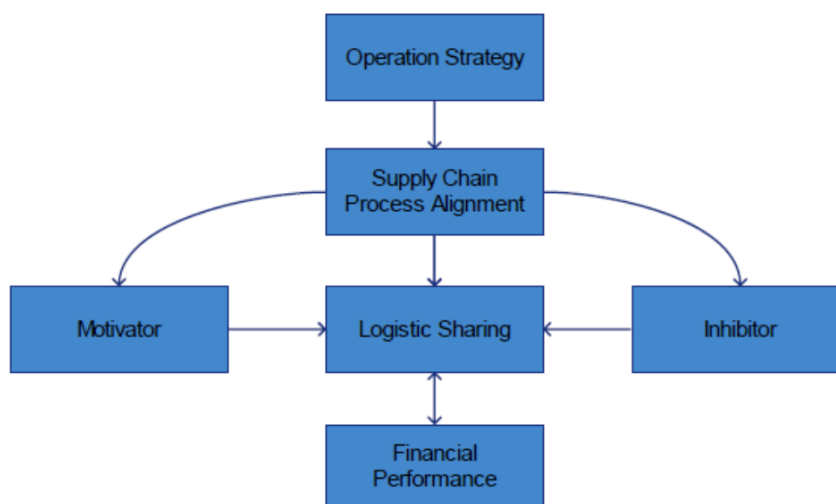


Figure 2. Conceptual Framework of Logistic Sharing for SME

Several strategies and logistics models have been developed in order to increase the supply chain effectiveness. Collaboration is one of the most promising areas of study in supply chain management (Lambert et al., 1996; Barrat, 2004; Min et al., 2005; Simatupang and Sridharan, 2005; Lambert, 2008). In supply chain management, collaboration can take place at several stages of the chain and with different levels of interaction. These different levels of interaction can be classified as follows, by Crainic and

Laporte (1997) for freight transportation and by Baglin et al. (2009) for collaborative logistics:

- Transactional collaboration
- Informational collaboration
- Decisional collaboration

Although in a narrow sense the word “sharing” refers to the joint or the alternating use of inherently finite resources, both material and immaterial, it can also refer to the process of dividing and distributing. In logistics, the main shared resources are information, infrastructure, management/planning tools, vehicles and human resources. In transportation and logistics sharing, operational decisions are in general individually made. Tactical and strategic decisions can be made by different actors or groups. We can define three types of transportation and logistics sharing approaches:

- Non-collaborative sharing: the shared resources are managed by their users independently. There is no collaboration between these users.
- Collaborative sharing with hierarchical decision making: the shared resources are commonly managed by their users but the main decision processes are hierarchic.
- Collaborative sharing with non-hierarchical decision making: this type of sharing differs from the above in the fact that the different users take part into the decision processes.

Our research focus on the third type of sharing where each user (in this case small and medium enterprise) can be considered as a reasoning community (Evangelou and Karacapilidis, 2007; Yearwood and Stranieri, 2009) having different points of view and decision values at different planning stages under partnership contract. We construct conceptual framework taking into account the logistics principles and applying them to small medium enterprise in order to define the main organisational and socio-economic aspects of a logistics sharing community (Figure 2).

4. Value Co-creation in Logistic Sharing

Logistic Value Stream

Logistic is an essential function within business. Literatures have been contributed in defining and describing of how logistics creates value, in which categorized into two groups. The first group defines logistic value based on the attributes of the creation, such as time and place utility (Mentzer, 1996; Mentzer et al., 1989; Perreault and Russ, 1974). Therefore, the definition is more traditional by underlying the attributes of the company’s product/service offering that lead to utility creation through logistics value, i.e. part of a product’s value is the company’s ability to deliver the right product in the right amount at the right place at the right time for the right customer in the right condition at the right price (Mentzer, 1996; Coyle et al., 1992; Shapiro and Heskett, 1985; Stock and Lambert, 1987). Second group define the logistics value focus more on the marketplace, customer service, core competences and competitive advantage. La Londe and Zinszer (1976) for instance, highlights three components on logistic that create values for customer (i.e., an activity to satisfy customers’ needs, performance measures to ensure customer satisfaction, and a philosophy of firm-wide commitment). Further, relating customer service in the logistics service context, Mentzer et al.(1989) argue that there are two elements in service delivery: marketing customer service (MCS) and physical distribution service (PDS).

Co-creation

Despite on satisfying logistic provider, current literatures have been shifted toward to satisfying the customer through the delivery of relevant attributes as the cornerstone in successful logistics strategies. The concept of delighting the customer is moving into mainstream logistics (Mentzer, 1996; Global Logistics Research Team, 1995). However, when the relevant attributes are fulfilled and able to satisfying customer’s need, this will lead to firm’s value creation. With respect to Mentzer (1996), hierarchy model for the example group is proposed based on real case aims to identify attributes needed from customer’s perspective, benefit and value for firms.

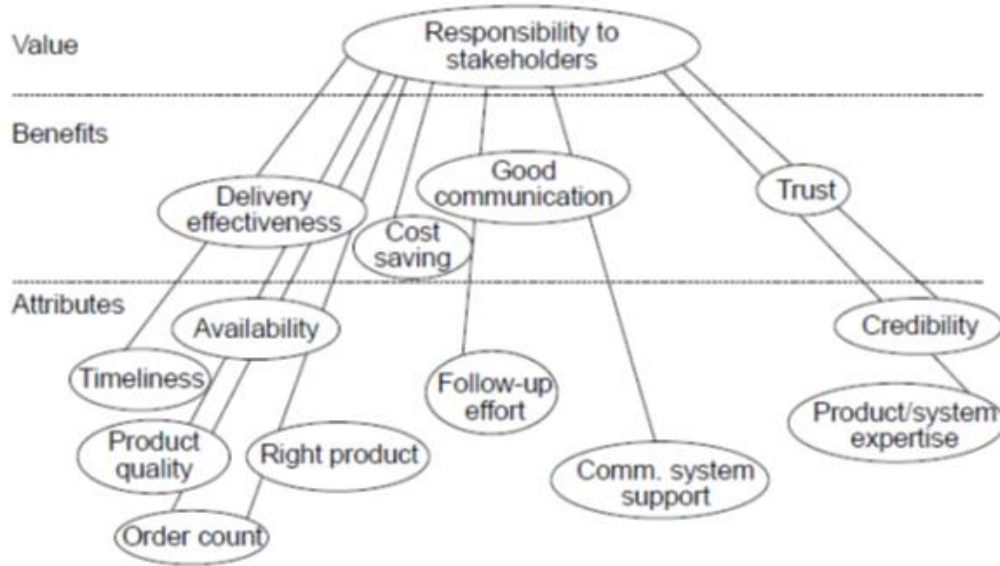


Figure 3. Hierarchy model for group value creation

Possible implementation of co-creation in logistic sharing for SME

Although that the logistic sharing is still becoming a new issue in Indonesia, there are several possible implementation in the context of SMEs. Firstly, on 2016, the Indonesian government launch a warehouse-sharing scheme aimed at improving competitiveness by reducing the cost of moving goods around the sprawling archipelago (Setiaji, 2016). Meaning that companies permits to operate warehouses, or what the government calls logistics centres (Setiaji, 2016). Further, companies can store their goods in the shared warehouse for up to three years and still receive tax incentives, compared with only one year for goods kept in a normal warehouse in a bonded zone, while the logistics centres will also free up some space at warehouses in congested ports and help with efforts to speed up custom clearance (Setiaji, 2016). Overall, this scheme may result to lower logistic cost.

Secondly, possible implementation is related to share information managed by a logistic provider to propose sharing solutions in a context related to small medium enterprise business. In this case, data knowledge sharing related to logistic processes are needed to ensure the share information can provide value for the groups. With regards to Thiengburanathum (2011), the implementation of this scheme can be start by developing database and CRM software (customer relation management) which covers information such as location of origin, destination, transportation mode, path, price, track and trace capability, etc. The following figure shows the

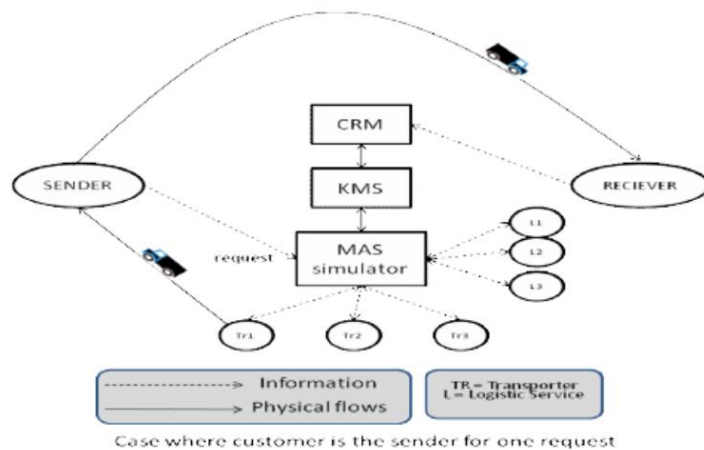


Figure 4. Information sharing scheme

Thirdly, the infrastructure and human resources sharing. This type of scheme requires detail contract among the SMEs. Technically, it is described as a demand-driven vehicle-sharing arrangement, in which travelers share a vehicle either simultaneously (e.g. ride-sharing) or over time (e.g. car sharing or bike sharing), and in the process share the cost of the journey, thereby creating a hybrid between private vehicle use and mass or public transport (Anne, 2008). Other than economic value, shared transportation infrastructure is taking on increasing importance as a key strategy for reducing greenhouse gas and other emissions from the transport sector in the face of the global climate emergency by finding ways of getting more intensive use of vehicles on the road.

5. Conclusion

Logistics sharing is becoming a popular approach to reduce the distribution costs of a product for small and medium enterprise. However, the subject has not been deeply studied in the literature. In this research, we presented the main concepts of logistics sharing in the freight distribution sector, focusing on collaborating transportation-based sharing approaches especially for small and medium business. We presented logistic sharing as co-creation activities for the development of a sharing-based information systems and we proposed an interrelated factors for analyzing its strategic and operational decisions.

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Business Sustainability of Family Enterprises: A Case Study of Succession Planning in Family Businesses in Bandung, Indonesia

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Abstract

Family businesses are important aspects in developing the economy of a country, as the majority of small and medium enterprises are owned by families. It is estimated that 70 to 80 per cent of European enterprises are family ones and 40 to 50 per cent of all employees work in family businesses (Mandl, 2008). In the United States, family enterprises represent 80 per cent of all business organisations and employ more than 50 per cent of all employees (McCann, DeMoss, Dascher & Barnett, 2003). An important aspect of a family business is succession. It can be the most challenging part in a family business' life cycle. Succession is identified as one of the major problems family businesses are dealing with (Morris et al., 1997; Miller et al., 2003; Sharma et al., 2003). Poe (1980) observes many business owners were too busy in keeping their businesses alive to worry about succession, plus they lacked confidence in their children to take over the business. Cliffe (1998) notes that only about one third of family businesses have succession plans in place. Some research findings indicated that only 24 to 30 per cent of first generation family businesses survive to the second (Kets de Vries, 1993; Morris et al., 1997; Miller et al., 2003) and less than 10 per cent succeeded to the third family generation (Le Breton-Miller, Miller, & Steier, 2004). This study is conducted to find out how three different types of family businesses are dealing with issues in relation to business sustainability. For this research, we are focusing our attention to the succession planning of each of the businesses, where this is the aspect that we think is the key towards the sustainability of a family business.

Keywords: family business; succession planning; business sustainability; sustainable business; entrepreneurship

1. Introduction

Family businesses are important aspects in developing the economy of a country, as the majority of small and medium enterprises are owned by families. It is estimated that 70 to 80 percent of European enterprises are family ones and 40 to 50 percent of all employees work in family businesses (Mandl, 2008). In the United States, family enterprises represent 80 percent of all business organisations and employ more than 50 percent of all employees (McCann, DeMoss, Dascher & Barnett, 2003).

A business that is managed by family members is called family business. It involves activities of family members to achieve the goals of the business. According to Poza (2010), a family business is a business that 15 percent of ownership control owned by two or more members of a family or a partnership of family, the business strategic is influenced by family members on the management of the firm, concerns for family relationship and there is a possibility of continuity across generation. A family business can also be defined as a business that is owned and the majority of rules conducted were made by members of a group who are "emotionally related" (Carsrud, 1994). Hollander and Elman (1988) propose that the literature on family businesses focuses on four main areas: the rational approach, the founder approach, the phase and stage approach, and the systems approach. Other definition the existence of a family business is determined by the ownership of the business in the hand of a certain family (Mroczkowski and Tanewski, 2004).

The characteristic of a family business is that the business is run by family members. There is a

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possibility for other members of the family to join and develop their careers within the business. Each family member has different talent that might be developed through different areas in the business. The business itself ought to support the family members to cultivate their talents to keep the business growing and to maintain the wealth of the family.

An important aspect of a family business is succession. It can be the most challenging part in a family business' life cycle. Succession is identified as one of the major problems family businesses are dealing with (Morris et al., 1997; Miller et al., 2003; Sharma et al., 2003). Poe (1980) observes many business owners were too busy in keeping their businesses alive to worry about succession, plus they lacked confidence in their children to take over the business. Cliffe (1998) notes that only about one third of family businesses have succession plans in place. Some research findings indicated that only 24 to 30 percent of first generation family businesses survive to the second (Kets de Vries, 1993; Morris et al., 1997; Miller et al., 2003) and less than 10 percent succeeded to the third family generation (Le Breton-Miller, Miller, & Steier, 2004).

Not too dissimilar with other types of business, business strategy is too a crucial aspect in a family business, as this is the basis of formulation on how the company can be successful in achieving their goals. The success of a company is affected by how mature the business plan and business strategy of the company. Without a careful planning of business strategy, a company will not have references in what it does. The strategy must be developed with all of the family members who own the business. Every member should give their contributions to the developing concept of the business to fulfill the values of the company and to synchronise the goals.

In keeping the business sustainable, a family business should be open to changes. In order to survive the changes, a family business should consider new business developments. One way for a family business to cope with the changes is to develop a new venture for the business.

Family businesses are different from other type of business because of the overlap between the family and business systems, and the dual relationships and obligations that the overlap implies (Gersick et al., 1997). Gersick's statement emphasise about the "overlap" between two different worlds: a business and a family are representations of almost all of the continuing family businesses. It is both an opportunity and a challenge to manage those two things at the same time without sacrificing one of them. Family enterprises throughout the world represent almost every major company that contributes to the world economy for decades. They even contribute a lot to the GDP, which means that they also play a part in giving prosperity to a lot of people in various places. The big contribution of family businesses to the world economy comes with a big price.

This study is conducted to find out how three different types of family businesses are dealing with issues in relation to business sustainability. For this research, we are focusing our attention to the succession planning of each of the businesses, where this is the aspect that we think is the key towards the sustainability of a family business. And not to mention that the three family businesses investigated were from different type of industries.

2. Literature Review

Succession is the process of family business rebirth, it is marks by the transfer of control to the next family generation (Duh, 2015). It involves the passing of business ownership and management from a "senior" to a "junior" generation so that control of the enterprise continues, and is ultimately perpetuated, in the family (Brockhaus 2004). Family business succession should be seen rather as a process than an event of transferring ownership and leadership control to a successor (Overview of Family Business, 2009). Rothwell (2001) defined succession planning as any effort designed to ensure the continued effective performance of an organization, division, department, or work group by making provision for the development, replacement, and strategic application of key people over time.

Caudron (1996) lists three important objectives in succession planning, which are ensuring leadership continuity; identifying gaps in capabilities, future skills, and management development processes; and maximising and diversifying the pool of executive candidates. Chaimahawong et al.'s (2012) research found that there are four determinants i.e. the personal factor, the intra-family relationship factors, the context factors, and the financial factors as key factors affecting the process of business succession and post succession of family firms.

Solomon, Breneunlin, & Panattoni (2011) state that there are four key influence that potentially facilitate or constrain the successful succession:

1. The influence of business within, business with high differentiation (sense of self outside of business and less controlling) and high trust (open to outside influence) is considered to be facilitating succession meanwhile low differentiation business and low trust business will be a

- constrained in succession;
2. The influence of the marriage, gender-flexible marriage (open to role renegotiation) is considered to be facilitating succession while gender-rigid marriage (stuck in roles that no longer serve the couple) is a constrained to the succession;
 3. The adult children influence, natural successor of the business help is facilitating the succession and the absence of natural successor can be a constrained in succession; and
 4. The influence of retirement vision, the incumbent owner who is ready for retirement, being open and curios about retirement can help the succession to be success rather than incumbent owner who is fearful of retirement.

In selecting successors, nepotism is suggested to be a reason for realising succession within a family (Gersick et al., 1997), and second, a family member as a potential successor is especially preferred in those family businesses where family business's specific knowledge is considered highly relevant for gaining competitive advantage (Bjuggren & Sound, 2001; Royer, Simons, Boyd, & Rafferty, 2008).

Handler (1994) suggests a need of mutual role adjustment between a predecessor and a successor: a predecessor evolves from the role of monarch over delegator to advisor and a successor in turn evolves from helper over manager to leader. Lansberg (1999) contended that leaders of family businesses needed to share ideas about the success and continuation of the family business with the next generation. The incumbent must facilitate the inter-generation transfer of knowledge to the successor and generally help the successor become credible with the key stakeholders (Barach, Gantinsky, Carson, & Doochin, 1988; Irons, 1984).

3. Methodology

For this research, we are using several methods when we conducted the study. The first is a review of the literatures. According to Becker (1986), there are effective ways of using the literature. For one thing, scholars must say something new while connecting what they say to what's already been said, and this must be done in such a way that people will understand the point. They must say something at least minimally new. Becker gives an example in doing a woodworking project, perhaps making a table.

You have designed it and cut out some of the parts. Fortunately, you needn't make all the parts yourself. Some are standard sizes and shapes – lengths of two by four, for instance – available at any lumberyard. Some have already been designed and made by other people – drawer pulls and turned legs. All you have to do is fit them into places you left for them, knowing that they were available. That is the best way to use the literature (Becker, 1986).

Atkinson and Coffey (2004) figure that it is important to realize that documentary reality does not consist of descriptions of the social world that can be used directly as evidence about it. One certainly cannot assume that documentary accounts are 'accurate' portrayals in that sense. Rather, they construct their own kinds of reality. It is, therefore, important to approach them as texts. Texts are constructed according to conventions that are themselves part of a documentary reality. Hence, rather than ask whether an account is true, or whether it can be used as 'valid' evidence about a research setting, it is more fruitful to ask ourselves questions about the form and function of texts themselves.

In order to understand why persons act as they do we need to understand the meaning and significance they give to their actions (Jones, 1985). The depth interview is one way – not the only way and often used most appropriately in conjunction with other ways – of doing so. For to understand other persons' constructions of reality we would do well to ask them (rather than assume we can know merely by observing their overt behaviour) and to ask them in such a way that they can tell us in their terms (rather than those imposed rigidly and a priori by ourselves) and in a depth which addresses the rich context that is the substance of their meanings (rather than through isolated fragments squeezed onto a few lines of paper).

The issue of structure is closely related to that of 'interviewer bias'. An interview is a complicated, shifting, social process occurring between two individual human beings, which can never be exactly replicated. This does not mean that there are no guidelines as may be instanced by bringing the issues of structure and bias together. It has already been argued that a high level of ambiguity is not a good way for researchers to know what data they are getting nor for making interviewees feel comfortable. Open-ended questions are used extensively in depth interviews because they give greater freedom for respondents to answer in their own terms rather than within the tramlines of set alternatives in 'closed' questions.

There cannot be definitive rules about the use of open-ended questions, leading and loaded questions, disagreement with respondents, and so on. What is crucial is that researchers choose their actions with a

self-conscious awareness of why they are making them, what the effects are likely to be upon that relationship – and indeed whether their own theories and values are getting in the way of understanding those of the respondents (Jones, 1985: 48-49).

For this research, interviews were conducted with three family businesses in Bandung, Indonesia. The first family business was in the mobile and gadget accessories, “Tricell,” a family with two daughters, which have been doing the business since the husband (Mr Rusli) and his wife were in their first year of university, in 1994. And the second family was a family of three children, two daughters and a son. The focus of this family business was in the creative industries, in the sectors of clothing and printing, “Kaos Gurita.” One thing to note that the owners of Kaos Gurita (Mrs Eka and Mr Adrian) are relatively the same age with Mr Rusli and his wife, and their business was somewhat had the same time span with Tricell. The last interviewee was Mr Komar, the owner of Batik Komar in Bandung, who had been involved in batik business longer than the two previous respondents. He is the 5th generation of batik trader originated from Cirebon, and with his wife and four children, now they are expanding their batik business in Bandung, despite the fact that they started doing the business in 1998, reasonably at the same time with two other respondents.

4. Discussion and Analysis

Family business succession should be seen rather as a process than an event of transferring ownership and leadership control to a successor (Overview of Family Business, 2009). Often this inhibited the transfer of control of the company from the first to the second generation while the incumbent was alive (Barnes & Hershon, 1976).

Arnoff and Ward (1998) identify three characteristics in family-owned businesses which were committed to the continuity of their business: (a) they believed owning the business helped serve their families’ missions, (b) they were proud of the values exemplified by the business, and (c) they believed the business was contributing intrinsic value to society. Research done by Lee, Jasper, & Goebel (2003) found that business owners with written succession plans had businesses with higher incomes and more employees, they were also older, worked longer hours in the business, and had fewer children in the family than those without written succession plans. This finding is proved by Batik Komar. Among the three family businesses, Batik Komar is the only one who has succession planning. Batik Komar is the oldest, work longer hours in the business, and has higher incomes even though they are a family with four children. Batik Komar is also a business with the longest historical record, as Batik has been their family business for generations. Mr Komar is the 5th generation of batik trader in his family business.

“Alhamdulillah, now this is the 5th generation and 6th generation has been managed by Putri, my daughter..... I came from family with eight siblings and my brothers and sisters also have Batik businesses. And my family are 95 percent in Trusmi, where Trusmi is known as Batik territory and Batik showrooms in Trusmi, Cirebon, Indonesia, are owned by my family”

His children have been involved in the business since they were young. One of which is bringing them to Batik showrooms. He deliberately only brings his children and not bring any staff during showroom. Their children were decorating Batik Komar showroom kiosk. Putri as the first child is the successor of the business, she is the one who show interest in batik different from his three other children. Mr. Komar has prepared her education to be aligned with the business. She entered Arts high school and Faculty of Arts and Design in ITB. Since she was young when she was in elementary school, she has started to batik with the employees. When his father draws batik pattern, she copied his father drawing until she can make it by herself. Mr. Komar is now challenging Putri to create a new Batik brand under Batik Komar Brand. She is creating a fusion of Batik and dyeing technique from Japan, “Shibotik.”

“Putri have tried to batik since she was in elementary school because there were a lot of “pembatik,” so she followed them. She knew I drew at night, she asked me for a drawing for her to be copied, and at later times she finally can make it by herself.”

Different from Batik Komar, Tricell and Kaos Gurita do not have succession planning, as the owners will give their children freedom in whether they want to success the business or creating their own business. Tricell especially do not want their children to inherit their business because they are not sure of the

industry longevity even though their first child thinks of inheriting the business. Tricell is a family with two children.

“When she was asked, ‘What is your dream?’ She answered, ‘I want to succeed father’s business,’ which meant she wanted to inherit Tricell. I wanted to laugh so I said to her ‘Do not think of succeeding this business, just go to school and when you find your passion, go for it because in the future it is not certain that Tricell would still be exist. I mean that now, there is a market for mobile accessories but we do not know about it in the future.’”

Even though they do not want their children to inherit their business, they still want their children to become entrepreneurs so that they do not have to work for anyone else. To make their children interested in business, they involve their children in their business. The involvement is happened not because they want their children to success their business but for them to learn how to do the business in case in the future they want to make a business. Instead of teaching the children to inherit their business, they prefer to teach them the value in running the business. One of which is bringing them to the kiosk to be a cashier so they learn how to manage money. Their concern with their children is the education. To show how important education is and to be a good role model in education, Mr Rusli attempts to get the highest degree in education, he is currently taking his doctoral degree in law.

The owners of Kaos Gurita are allowing their children whether they want to inherit the business or creating their own businesses. They are a family with three children. They prefer their children become entrepreneur even though they give their children freedom to do anything they want. As long as it is beneficial, they let their children to do whatever they want.

5. Conclusion

Assessing how three family businesses in Bandung that are managed and run by the families, each of the business have different characteristics. It is reasonable as all of the businesses come from different industry, one is from mobile and gadget accessories industry (Tricell), one is from printing and clothing industry (Kaos Gurita), and one is from batik industry (Batik Komar).

In terms of succession planning, Tricell and Kaos Gurita do not have a plan for succession, they are not preparing their children to become the successors. But they still encourage their children to become entrepreneurs even though they do not want their children to inherit their businesses. Instead of teaching their children about their businesses, they teach their children the value of entrepreneurship. Meanwhile Batik Komar is preparing the eldest child to become successor. The education of the oldest daughter is aligned with the family business.

For a recommendation, we think that Tricell and Kaos Gurita needs to make a succession plan even though they are freeing their children in choosing the path. They still prefer their children to become entrepreneurs, even though their children are not obliged to inherit their business. Because of it, they still need succession planning so they can transfer their business knowledge to their children. The succession planning will help their children when they create their own business, it will lessen the trial and error in running the business as they have the guidance and knowledge. It will also help them when suddenly their parents pass away or left their business.

These three businesses are run and managed differently as they come from different industry. The different background also differentiates their views of the business and how they develop the business. The limitation of this study is that this study cannot be generalised as the sample use was only from Bandung.

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Empirical Evidence of Disposition Effects in Making Investment Decision: Case of Different Gender and Indonesia's Ethnic Diversities

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Abstract

In the world of investment, there is a situation when people have the willingness to give away their profitable investment too soon and keeping their losing investment in a long time. That irrational behavior is named the disposition effect. One of the previous studies explained this behavior was conducted by Jaakko Aspara and Arvid O.I. Hoffmann (2015). They studied how shifting feelings of personal responsibility reverses the disposition effect. There are three treatments that they used to reverse the disposition effect. However, this study will focus on one treatment which is to give understanding to people that their winning investment occurs due to external factor while their unprofitable investment occurs because of an internal factor. In this study, there will be separate calculation between gender to meet this study's objectives which are to determine the impact of disposition effect regarding their gender, if there is a gender bias in the treatment to reverse the disposition effect, and if the treatment used by the previous study is applicable in Indonesia. The gender factor is done to acknowledge how gender's reaction towards the treatment and disposition effect. Moreover, this study was conducted in Indonesia which has many differences in the ethnic group which have their own culture. It might affect their perception towards the treatment.

Keywords: behavior finance; disposition effect; gender

1. Introduction

The world of finance today is very different compared to the old days. In these days, people don't only try to figure out what people are doing but also why people are doing it. This is one of the reasons that behavioral finance was born. Moreover, behavioral finance is now on the market to answer why people act irrational, something that classic economic or finance theory could not have solved.

Many studies already paid attention about this irrational behavior in the financial decision. Long times ago, classic economic said that people will choose actions that will generate the highest expected return for them. However, in the recent study by Daniel Kahneman and Amos Tversky (1979) stated that people don't always follow the maximum expected return because they weight loss more compared to win. In that sense, sometimes people have irrational behavior that can't be explained by past economic and finance theory. Behavioral finance was born to answer why people do irrational things.

In the investment area, there are a lot of irrational behavior that investor could do. In this study, disposition effect will be the major focus to be discussed. The disposition effect itself refers to the tendency that investor hold their profitable investment too soon while keeping their losing investment in a long time. This behavior somehow doesn't make any sense for the classical theory because people should sell their

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unprofitable investment soon while keeping their profitable investment grows, that is the reason it is included to one of the irrational behavior in behavioral finance.

In the previous study which was made by Aspara and Hoffmann (2015). They used three treatments that could reverse their disposition effect. First, the realization of their winning is from the external treatment while their loss is due to internal treatment. Second, the perception that the money invested is not their money. And last, the additional motivation excluding financial motive when investing. This study will focus on the first treatment which is the perception if investor gains profit is due to an external factor and if the investor has loss is due to internal factor (their own fault).

This study will also provide gender as an additional treatment. A recent study has explained that there are some gender perceptions differences in the investment area. A study conducted by K.C. Mishra and Mary J. Metlida (2015) is one of the examples. That study said that men are more overconfident than women while making the investment. However, there has not been any study that divides male and female about their reactions towards the disposition effect especially in Indonesia, which has unique demographic since Indonesia has many tribes.

The study here will investigate which gender has a tendency to have disposition effect and their responses according to the treatment that Aspara and Hoffmann (2015) explained based on gender. If there is a huge different in the perception of the treatment to reverse the disposition effect, it could help people to learn that each gender should have a different investment strategy, especially in Indonesia. Moreover, this study also offers demographic aspects because Indonesia is a big and diverse country.

2. Literature Review

In the classic economy theory, people will choose the option that gives them highest utility value. However, there have been many situations that people actually doesn't choose that option. People put more weight in an outcome that gives them certainty than probable outcomes (Kahneman and Tversky, 1979). In Kahneman and Tversky study, they offer situation that people could have 50% chance to get 1,000 and 50% to get nothing or 450 for sure (Israeli currency). People should choose the 50%-50% option if they are rational because it gives them highest expected utility. However, people doesn't always choose that option proving that people have certain irrational behavior that could not be calculated. Nowadays, there have been many studies about irrational behavior that people have that could hamper their portfolio. One of them is disposition effect.

Disposition effect refers to the tendency that investor has when they want to hold their losing investment in a long time while selling their winning investment too soon (Sherif and Statman, 1985). Some of the studies have already conducted research to reverse the disposition effect. Giving rational warnings and emotional warnings (Dobrich, Wollersheim, Sporrle, and Welppe, 2014), reducing saliency information (Frydman and Rangel, 2014), changing perceptions about profitable investment that occurred because of external factor while losing investment due to internal factor, changing perceptions that investor invest by using someone's else money, and additional motive besides financial motive (Aspara and Hoffmann, 2015) are all used to reverse disposition effect. This study will concentrate about the factor that Aspara and Hoffmann (2015) observe, the changing of an internal and external factor.

The changing of perception when somebody lose their investment and win their investment by Aspara and Hoffmann could be paraphrased by changing the self-attribution bias. Self-attribution itself is the tendency for an investor to declare themselves as the factor when they win and to point external factor when they lose. Investors with above-median returns agree to claim their performance regarding their investment skills (Hoffmann and Post, 2014). These previous studies show that people have the willingness to claim their ability when they win.

There have been many studies about gender differences in financial decision making. Men are more overconfidence than women (Barber and Odean, 2001) (Mishra and Metilda, 2015), and female investors have a higher disposition effect (Rau, 2014). Regarding overconfidence, people could suffer more in disposition effect if they are more overconfidence (Chu and Jang, 2012). The correlation between these three studies is a bit contradictory because if men are more overconfidence than women, they should suffer more in disposition effect however female investors have a higher disposition effect regarding Rau. However, a bit contradictory result might result because overconfidence and gender don't play a significant role in under certain information, meanwhile, traders who are more overconfidence (male) trade more when information is uncertain (Yang and Zhu, 2016). This study will not cover up about why male and female differ in overconfidence and what the effect of overconfidence, however, this study see this Yang and Zhu's (2016) findings as a hint that gender has differences in financial decision making.

People and market in Indonesia have uniqueness. This condition can be seen in some of the findings. Contrarian strategy in stock investment is found to be more profitable in Indonesian market (Pattipeilohy and Koesrindartoto, 2015). The policy that government used when they wanted to limit their credit card ownership also resulted in different ways, the increasing of credit card owners, transaction, and value of the transaction (Hasanah and Koesrindartoto, 2015). Moreover, the one that influence index movement in crisis is not bank investors, however, foreign investor and non-bank investor (Gusdinar and Koesrindartoto, 2014).

Indonesia people’s behavior is unique. However, there haven’t been many studies that observe about Indonesian investors’ behavior. A study an emerging capital market lik Indonesia is critical because irrational traders’ action in emerging capital market overcomes the action from the rational investor (Oprean and Tanasescu, 2014). This study also gives a separate calculation regarding their gender. The previous study by Aspara and Hoffmann (2015) put gender as one of their covariates. However, there has been many studies that show that gender differs in financial decision making. Although the previous paper said that the covariates don't give any significant change, this paper would like to examine about how far gender differs in their disposition effect and about their gender’s response when they are faced to reversed self-attribution in Indonesia.

This study’s hypothesis will be both people in Indonesia would have the tendency towards disposition effect (H1) because in emerging capital market it is very hard to find a perfect imformation market. So there would be so much room for irrational trader. The next hypothesis is female would be more affected by our reverse disposition effect treatment because female is less confidence than male (H2), that means this study assumes, when they were given the treatment, they would feel wrong and sell the stock immediately. Our last hypothesis about how this treatment works in Indonesia is that the Aspara and Hoffmann (2015) study’s treatment could also be applied in Indonesia (H3) because this study assumes that people in Indonesia also have the self-attribution bias, so when that bias is reversed, then it could reverse the disposition effect.

3. Methodology

3.1. Study Design

This study use Aspara and Hoffmann (2015) treatment for the survey. However, there would be differences in analyzing the data. This study will use the first treatment which is giving the internal factor as a reason why they lost, and external factor why they win. There would be some unrelated questions between the situation before and after the treatment.



Figure 1 Survey (before treatment)

Figure 1 shows that investor has invested in PT XXX and PT YYY, Rp 18.000.000,00 and Rp 12.000.000,00 respectively. After one year, his/her investment in PT XXX and PT YYY become Rp 16.500.000,00 and Rp 14.000.000,00. After that they are asked about their willingness to hold each of the two stocks on a scale of 1 to 7, which number 1 shows their strong willingness to sell the stock (not to hold) while number 7 shows their strong willingness to hold the stock.

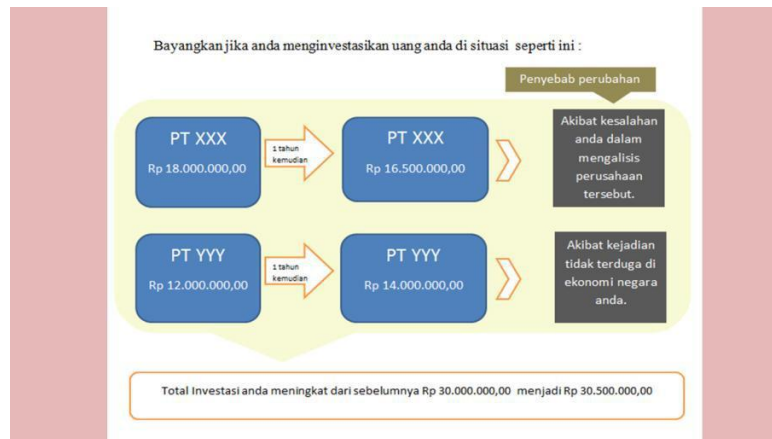


Figure 2 Survey (before treatment)

This is the second picture where the treatment to reverse the disposition effect has been given. Figure 2 shows that investor has invested in PT XXX and PT YYY, Rp 18.000.000,00 and Rp 12.000.000,00 respectively. After one year, his/her investment in PT XXX and PT YYY become Rp 16.500.000,00 (because his false analysis) and Rp 14.000.000,00 (because the unpredicted economy condition in that country). After that, they are asked about their willingness to hold each of the two stocks on a scale of 1 to 7, which number 1 shows their strong willingness to sell the stock (not to hold) while number 7 shows their strong willingness to hold the stock.

They are also asked about their opinion regarding their investment skill in the scale of 1 – 5 while the higher number indicates that they have higher skill than average investor in the market. Moreover, this study also provides the list of demographic data for the respondents to analyze how far the differences in demographic affect people's behavior.

3.2. Data Analysis

This study used t-test and linear regression to analyze the data. t – test will be used to acknowledge the differences between male and female regarding their financial decision in disposition effect. Meanwhile, linear regression will be used to show which part of demographic that could make the financial decision different regarding their t-test results. The linear regression itself contains eight linear regressions. All their willingness to hold for each stock and each situation will be regressed separately by each gender. This study regressed age, domicile, ethnicity, income, investment experience, and investment skills (note: some variables are excluded due to data limitation). Finally, the result of this study will show if the treatment could be applied in Indonesia or not.

The model of our linear regressions are:

$$Y(\text{male}) = \alpha_0 + \alpha_1x_1 + \alpha_2x_2 + \alpha_3x_3 + \alpha_4x_4 + \alpha_5x_5 + \alpha_6x_6 \quad [\text{eq. 3.1}]$$

$$Y(\text{female}) = \alpha_0 + \alpha_1x_1 + \alpha_2x_2 + \alpha_3x_3 + \alpha_4x_4 + \alpha_5x_5 + \alpha_6x_6 \quad [\text{eq. 3.2}]$$

In this eq3.1 and eq3.2 equation, x1 stands for age, x2 stands for domicile, x3 stands for ethnicity, x4 stands for income, x5 stands for investment experience, and x6 stands for investment skills.

4. Analysis

The demographic of respondents is shown in Table 1. This study's respondents have slightly more male than female. Moreover, respondents are mainly in their young age (17-22) and Tiong Hoa. Aligned with their young age, the majority of this study's respondents are single and students who have income less than Rp 5.000.001. Meanwhile, this study's respondents mostly live in Jakarta and Bandung.

Table 1. Demographic I

Criteria	Description	Quantity	%
Gender	Male	71	58.70%
	Female	50	41.30%
Age	17 - 22 years old	80	66.12%
	23 - 28 years old	21	17.36%
	29 - 32 years old	7	5.79%
	33 - 38 years old	4	3.31%
	39 - 43 years old	0	0.00%
	> 43 years old	9	7.44%
Domicile	Jakarta	59	48.76%
	Bandung	49	40.50%
	Others	13	10.74%
Ethnicity	Bali	1	0.83%
	Batak	8	6.61%
	Bugis	2	1.65%
	Jawa	22	18.18%
	Sunda	8	6.61%
	Tionghoa	71	58.68%
	Others	9	7.44%
Income	Rp 0 - Rp 5.000.000	84	69.42%
	Rp 5.000.001 - Rp 10.000.000	18	14.88%
	Rp 10.000.001 - Rp 15.000.000	5	4.13%
	Rp 15.000.001 - Rp 25.000.000	6	4.96%
	> Rp 25.000.000	8	6.61%
Marital Status	Below five years	103	85.12%
	Married	18	14.88%
Investment Experience	Not yet	54	44.63%
	Below five years	58	47.93%
	More than five years	9	7.44%
Occupation	Financial Lecturer	1	0.83%
	Financial Employee	15	12.40%
	Non-financial Employee	19	15.70%
	Students	69	57.02%
	Entrepreneur	11	9.09%
	Others	6	4.96%
	Last Major Education	Science (High School)	40
Social (High School)		16	13.22%
Economic		16	13.22%
Entrepreneurship		1	0.83%
Social		3	2.48%
Computer		5	4.13%

	Management	14	11.57%
	Technic	8	6.61%
	Others	18	14.88%
Investment Skills (Compared to others)	1 (Far below average)	20	16.53%
	2 (Below average)	41	33.88%
	3 (Average)	36	29.75%
	4 (Above average)	20	16.53%
	5 (Far above average)	4	3.31%

On their trading experience side, respondents who have traded in the capital market is slightly more than those who haven't tried yet, even though only a few of them have already been in the capital market for more than five years. For their last degree education, mainly they diverse in many different areas but this study's respondents mainly have high school degree in science.

Figure 3 and Figure 4 show the result of our survey. The results are both male and female don't get any disposition effect because both of them are willing to hold winning stock more than losing stock. So they don't suffer any disposition effect.

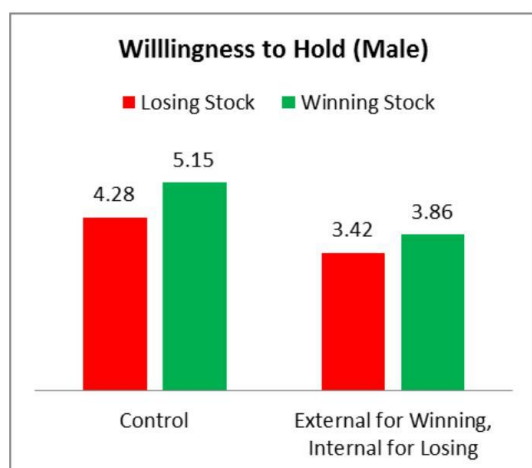


Figure 3 Willingness to Hold (Male)

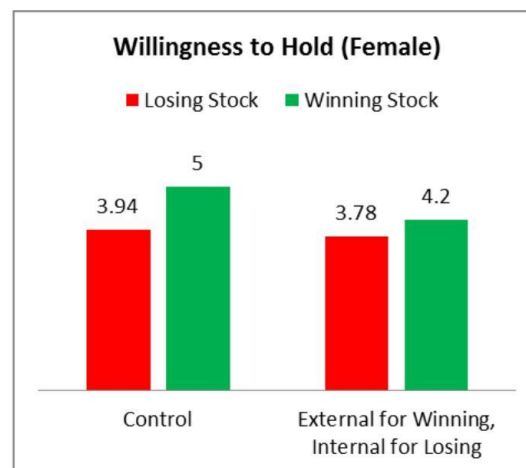


Figure 4 Willingness to Hold (Female)

After the treatment, both male and female still don't have any disposition effect. However, both of their willingness to hold to both of the stocks decreased. Moreover, the difference between the willingness to hold winning stock and losing stock are also decreasing, meaning that they are now as not as rational as before the treatment.

Table 2. T-test Result

One-Sample Test							
Test Value = 0							
t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference			
				Lower	Upper		
t-test 1	ym1	18.223	70	0	4.28169	3.8131	4.7503
	ym3	15.796	70	0	3.42254	2.9904	3.8547

t-test 2	yf1	17.051	49	0	3.94	3.4756	4.4044
	yf3	14.858	49	0	3.78	3.2687	4.2913
t-test 3	ym2	23.11	70	0	5.15493	4.71	5.5998
	ym4	16.854	70	0	3.85915	3.4025	4.3158
t-test 4	yf2	21.38	49	0	5	4.53	5.47
	yf4	17.205	49	0	4.2	3.7094	4.6906
t-test 5	ym1	18.223	70	0	4.28169	3.8131	4.7503
	yf1	17.051	49	0	3.94	3.4756	4.4044
t-test 6	ym2	23.11	70	0	5.15493	4.71	5.5998
	yf2	21.38	49	0	5	4.53	5.47
t-test 7	ym3	15.796	70	0	3.42254	2.9904	3.8547
	yf3	14.858	49	0	3.78	3.2687	4.2913
t-test 8	ym4	16.854	70	0	3.85915	3.4025	4.3158
	yf4	17.205	49	0	4.2	3.7094	4.6906

- ym1 = male control (losing stock)
- ym2 = male control (winning stock)
- ym3 = male treatment (losing stock)
- ym4 = male treatment (winning stock)
- yf1 = female control (losing stock)
- yf2 = female control (winning stock)
- yf3 = female treatment (losing stock)
- yf4 = female treatment (winning stock)

The t – test result in Table 2 shows that male and female didn't suffer disposition effect (both of gender have higher mean in winning stock than losing stock). In the male control results, ym1 is 4.28 while ym2 is 5.15 (ym1 < ym2). Meanwhile in female control results, yf1 is 3.94 while yf2 is 5 (yf1 < yf2). On the male treatment results, ym3 is 3.59 while ym4 is 3.86 (ym3 < ym4). On the other hand, for the female treatment results, yf3 is 3.78 while yf4 is 4.2 (yf3 < yf4).

Moreover, for the t-test male part, there is a significant difference in this some situations. Those are ym1 & ym3 and ym2 & ym4. This study assumes that the difference between ym1 & ym3 and ym2 & ym4 is significant because the male has a tendency not to have as high as overconfidence as they should be. In this study, the male has score averagely 2.8 out of 5 for their investment skills, while the female is only 2.2. This study's male respondents who have investment skill not as high as expected might be due to the trading experience that our respondents have. There are only 6 of our male respondents have more than five

years of experience. In this case, they also don't believe about their investment skill, so when this study gave them the treatment, they might think about their fault so seriously, resulting big significant increase in their willingness to sell after the treatment that this study gave.

Meanwhile, female only differs significantly in yf2 & yf4 situation. This study assumes this result is due to the investment skill that female has which is only 2.2. Because they too don't believe about their investment skills, they try to use external factor when making decision. When female are in their winning stock option, the results of unexpected economic environment, which is an external factor, makes them become aware. On the other side, when the female has faced a situation when they hold losing stock, they don't really feel anything because when they are told that it is their fault, they also understand that their investment skill is not sufficient. So they just tend to sell it immediately.

Regarding the differences between male and female when they are faced with a similar situation (ym1 & yf1, ym2 & yf2, ym3 & yf3, ym4 & yf4), they don't have a significant difference in mean difference. However from the situation, ym1 and ym2 are bigger than yf1 and yf2 while ym3 and ym3 are smaller than yf3 and yf4. In this case, this study supposed that the treatment is more affecting male compared to female. This study assumes this might be the result of the differences between experience in male and female. Male respondents are mainly people who have below five years of experience (54.9%) while people who have more than five years of experience are (8.45%), and people who haven't traded is (36.65%). On the other side, our female respondents mainly haven't been into the capital market yet (56%), only 3% has more than five years of experience, and 38% of them have experiences below five years. This study's treatment is based on the reverse of self-attribution, so people who have more experience in capital market (which is male) suffer more because their self-attribution are reversed.

After the t – test results, this study would see the results of linear regression to examine which part of demographic data that is very significant to influence differences in decision making that t – test results showed by male and female. The linear regression shows some of the demographic that affect significantly to the decision made by respondents.

Table 3. OLS (Male) (* * refers to significant 5%)

Variable	OLS 1 (ym1)		OLS 2 (ym2)		OLS 3 (ym3)		OLS 4 (ym4)	
Constant	11.924598	(4.8454)	5.6709	(4.2064)	2.422	(4.455)	11.6965	(4.6687)
Age	-0.111944	(0.2733)	0.2869	(0.2372)	0.0824**	(0.2513)	0.1352	(0.2633)
Jakarta	-0.390961	(0.8289)	0.1336	(0.7196)	1.6147	(0.7621)	-1.1363	(0.7987)
Bandung	-1.251501	(0.8336)	0.7689	(0.7237)	0.9299	(0.7664)	-0.6471	(0.8032)
Bali								
Bugis	-2.335648	(2.233)	2.0592	(1.9385)	0.8352	(2.0531)	-1.395	(2.1516)
Jawa	-0.729109	(0.8979)	-1.4692	(0.7795)	-0.3564	(0.8255)	-0.9363	(0.8651)
Sunda	-0.084331	(1.1109)	-2.0719**	(0.9644)	-0.6703	(1.0214)	-1.2685	(1.0704)
Tionghoa	-0.67445	(0.8258)	-0.4658	(0.7169)	-0.9539	(0.7592)	-1.024	(0.7956)
Income	-0.363396	(0.3632)	-0.8562**	(0.3153)	-0.3256	(0.3339)	-0.4687	(0.3499)
Investment								
Experience	0.1872	(0.2293)	0.1098	(0.1991)	-0.1136	(0.2108)	0.0735	(0.221)
Investment Skills	-0.20921	(-0.2478)	0.555**	(0.2151)	-0.0722	(0.2278)	0.2188	(0.2387)
r-squared	0.1403		0.2811		0.1454		0.1596	

Table 4. OLS (Female) (** refers to significant 5%)

Variable	OLS 5 (yf1)		OLS 6 (yf2)		OLS 7 (yf3)		OLS 8 (yf4)	
Constant	-2.5755	(4.9406)	9.8719	(5.3786)	-0.1273	(5.604)	9.593	(5.3013)
Age	0.6546	(0.3406)	0.1751	(0.3707)	0.2271	(0.3863)	-0.4226	(0.3654)
Jakarta	1.1741	(1.2046)	-0.4386	(1.3114)	1.2665	(1.3663)	-0.7181	(1.2925)
Bandung	1.2961	(1.177)	-0.2008	(1.2813)	1.4829	(1.3351)	-0.2267	(1.2629)
Bali	-0.1768	(1.7064)	-0.6577	(1.8577)	-2.0955	(1.9356)	-1.5227	(1.831)
Bugis	-1.1944	(1.7096)	0.7495	(1.8611)	0.0632	(1.9391)	0.7277	(1.8344)
Jawa	** 1.9618	(0.8742)	** -2.4276	(0.9517)	0.4116	(0.9916)	** -2.4641	(0.938)
Sunda	-0.2211	(1.3715)	-0.2924	(1.493)	0.9887	(1.5556)	0.3143	(1.4716)
Tionghoa	0.7541	(0.6449)	-0.7513	(0.7021)	0.1	(0.7315)	-0.843	(0.692)
Income	-0.4465	(0.3042)	-0.2302	(0.3311)	** -0.7598	(0.345)	0.1209	(0.3264)
Investment Experience	0.3482	(0.2902)	-0.1496	(0.316)	0.0393	(0.3292)	0.1186	(0.3114)
Investment Skills	0.0384	(0.2715)	0.286	(0.2956)	0.4633	(0.308)	0.3745	(0.2914)
r-squared	0.3425		0.2393		0.3022		0.3217	

Table 3 shows that male is more affected by their demographic in winning stock when they haven't been given treatment. With our previous t-test result, this is compliance because the majority of the male has experience in stock trading. They already understood about capital market. So, when they aren't given treatment, they tend to act about what they usually do (regarding of their background). So, they might suffer due to the demographic result before the treatment. However, when they are given the treatment, male mostly feel similar, so there is no significant demographic that affect them because the reverse self-attribution has already affected them. For the demographic aspect of male, one of the significant aspects is Sunda (a tribe in Indonesia), these results show that particular tribe could have their own tendency. Moreover, it could be seen that income for male has a negative relation to their willingness to hold winning stock before treatment. This results could occur because when people has higher income, they tend to trade more money in the capital market, so when they have slight profit, they tend to sell it immediately. Meanwhile, investment skill is positively related to their willingness to hold winning stock before treatment because male who have higher investment skill will know about the capital market, so they might not suffer disposition effect. So, they willingness to hold their winning stock will increase in compliance of higher investment skill.

However after the treatment, there is no specific demographic (only age) that affects the decision of male. That means, if the older is the man, they will have a tendency to hold losing stock more. So, they become more irrational. Mostly, older people also don't trade as often as a young man do, their objective is also mainly for investment, so even their stock is losing, they tend to hold it because they are more into a long-term investment.

On the other side, Table 4 shows female are all affected by the disposition effect, especially for Javanese girl. For the winning stock, Java became the significant factor for both situations (before and after treatment) meanwhile for losing stock, Java is the significant factor for before treatment situation. In before treatment case, it could be seen that Javanese female is positively related to losing stock and negatively related to winning stock. This might be due to that Javanese female is more easy-going than other ethnics. Therefore, even they lose, they still want to wait, and while they win, they already accept their profit. Meanwhile, Javanese female is affected significantly too in winning stock after treatment might be due to the fact that Javanese is an ethnic that is well-known as their kindness and their softness, so when this study

said that it is their fault when doing analysis, they suffer it significantly. Moreover, Javanese female's results are contrary with our total respondents' results. For our Javanese female's result, they actually suffer disposition effect both for before and after treatment ($yf1 = 5$, $yf2 = 3.5$, $yf3 = 4.33$, and $yf4 = 2.83$). It could be seen that both $yf1$ and $yf3$ are both higher than $yf2$ and $yf4$. Meanwhile, income becomes the significant factor that is negatively related to after treatment in the losing stock for female. These also may answer why female differ significantly in $yf2$ and $yf4$ in t-test results. Moreover, it might be because the perception of Indonesian female that when they have marriage, they will become the one who hold the cash flow of their family, according to that, so when they have lower income, they tend to sell their losing stock to minimize their loss.

5. Discussion and Conclusion

5.1. Results

This study's results show that people in Indonesia both male and female don't have the tendency towards disposition effect. They are rational. In this sense, this study's first and second hypotheses are directly rejected. Moreover, female, especially for Javanese female, is affected by demographic aspects in almost all situations except situation in after the treatment in losing stock. The treatment that was used is also not applicable in Indonesia because the treatment's effect is making the people less rational. All of the empirical evidence rejected the hypothesis of this study. This study assumes that the cause of this rejection is because respondents of Aspara and Hoffmann (2015) are Finland people who have different culture and behavior compared to Indonesian people.

5.2. Limitation and Future Research

This study's respondents are the majority in their young age, meaning that they are still students and not an active investor. Future research could use this as an opportunity to search new result if the respondents are dominated by the active investor because they might differ on their perception regarding losing and winning stocks. Future research could use the higher initial investment to analyze if higher initial investment could affect the behavior of Indonesian people.

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The Redefinition of Potential Market in Hijab Fashion Industry: Both Factor and Cluster Analysis Approaches in Bandung City

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Abstract

The Fashion as one of creative industries has significantly contributed to Gross Domestic Product (GDP) of Bandung city. Hijab fashion in particular is currently being discussed for its noteworthy growth in recent years. The emergence of various hijab trends encourages innovation and creativity of Moslem fashion designer to catch up with the modernity and style, but within the Islamic corridor. The problem arises from hijab fashion industry nowadays is market determination in order to focus its strength essentially on the potential market. Referred to the problem, this study aims to identify factors driving consumers into hijab fashion and how those factors form the market segmentation based on demographic, behaviour and psychographic aspects. This study is mostly performed by employing factor and cluster analysis methods to analyse the data obtained from questionnaires distributed to 129 hijab fashion consumers in Bandung city. Conclusively, this study summarizes that there are 4 factors emerged among hijab fashion consumers in Bandung city with Opinion Leader as the most important factor and there are 5 segments of the market which are Majority, Active People, Conventional, Trendsetter, Ignorance. The results of factors and clusters propose a concept of redefinition of potential market in the industry.

Keywords: Hijab Fashion, Market segmentation, Cluster Analysis, Factor Analysis, Service Science

1. Introduction

The Ministry of Tourism and Creative Economy (2015) published the report that shows an increase in numbers of creative industry sector to 10.8% in Indonesia. The percentage is resulted from the contribution of several sub-sectors: 33% of culinary, 28% of fashion, and 15% of craft. Since 2005, hijab fashion industry started to exist and grow about 7% annually. National movement on Islamic value proposition is one of the driving factors of hijab fashion industry debut to the fashion market as a whole. Let alone this awakening phenomenon did not escape from the potential talent of Indonesia that 87% of the population is Moslem consumers. Build upon the confidence in the sub-sectors contribution and the rapid Islamic value proposition among Moslem consumers, hijab fashion industry cannot be subordinated or even underestimated. Such an unpolished gem, this industry keeps an enormous potential than what it may seem.

Moslem consumer as the potency of hijab fashion industry is one good thing. However, the current movement made by the actors involved in the industry from designers, entrepreneurs, and wholesalers is to popularize hijab with some modifications. Although they are made within Islamic corridors, the modesty concepts slightly change into a more modern, stylish, and colorful dimension. Thus, the consumers can regroup and the market can resegment because of it. Referring to that matter, this study aims to identify factors driving consumers into hijab fashion and how those factors form the market segmentation based on demographic, behavior and psychographic aspects. Bandung city is one of the cities in Indonesia which fully supports the development of creative Industry as there are 400 outlets of creative industry (Herawati, 2014) running in the city. Based on data from the Ministry of Industry and Trade of Bandung (2012) states that the fashion sector provided the largest contribution to GDP of Bandung city amounted to 12.45%, and one of the fashion business that develop rapidly is hijab fashion. Considering the high spirit and business dynamics of hijab fashion industry, Bandung city is chosen to be the most appropriate case of this study.

129 questionnaires were distributed to hijab fashion consumers in Bandung and the data were analyzed using factor and cluster analysis approaches in SPSS software. The results were interpreted in terms of factors driving consumers into hijab fashion and how those factors form the redefined market segmentation. The results show that it is urgent for hijab fashion industry in Indonesia to redefine the potential market and thus reset the marketing strategy to focus their strength and gain more from the business.

2. Market Segmentation of Hijab Fashion Customer

Each company has different ability to serve the different market segment. Marketers identify market segments, selecting one or more segments, and develop the mix marketing and adapted to each segment. According to Art Weinstein (1987) suggests the definition of market segmentation as a process of dividing the market into segmentation from potential customers with similar characteristics that indicate similarities to customer behavior. The company have specialize in serving a particular market segment, will be superior in controlling the market McDonald and Dunbar (1995). The market segmentation is an attempt to classify the market, from heterogeneous markets into parts of homogeneous markets. If the market is more homogeneous, then marketers can determine consumers' characteristics, consumers' needs, as well as their desire for a product. Companies, which develop a strategy that be adapted to a specific type customer, is more successful than companies with a single strategy in the market (Cooper, 1994). With this marketing strategy, companies can gain a better position in the competition, because they are likely to produce products and develop marketing programs that correspond to the target market. As suggested by Loudon and Della Bitta (1993) that by dividing the market will facilitate the effectiveness development of marketing programs for a specific segment.

According to Kotler (2004) there are four major segmentation variables for consumer markets, namely geographical segmentation is conducted by dividing the market into geographic units as diverse as country, state, region, province, city or neighborhood. Demographical segmentation, the market is divided into groups based on demographic variables that are the most popular basis for distinguishing customer groups. Psychographic segmentation is segmentation based on lifestyle and personality. Lifestyle reflects how people spend time and money in daily activities, interests and opinions (Kasali, 2005). Activities are work, hobbies, shopping, sports and social activities. Interest is relates to food, fashion, family, and leisure. Opinion is about their self, social issues, business and products. Kotler and Amrstrong (2008) stated that lifestyle is the pattern of person life realized in psychographic. Lifestyle covers something more than just a social class or personality, but a lifestyle featuring patterns of action and interaction in the world as a whole person.

Based on Kotler 2000 explains that the consumer behavior is a process of decision-making by the customer to buy, starting from the stimulation of marketing, consisting of product is the product of what is proper demand by consumers both in quality and quantity. Price is how much the price as consumers sacrifice in obtaining the benefits of the desired product. Distribution (Place) is how the distribution of product into the end consumers. Promotions are communicated so that the benefits of the product can be delivered to consumers. Diffusion of innovation is a process spread ideas that are new in an attempt to change a society that occurs continuously from one place to another, from one period to the period following, of a certain field to another field to a group of members of the social system (Rogers, 2003). He also describes in accepting an innovation there are several typologies of adoption ideal recipients are innovators are groups of people who are brave and ready to try new things. Usually these people are those who have a dynamic lifestyle in urban areas that have a lot of friends or relations. Early adopter category is generating more opinions than other categories. They are always looking for information about innovation. For early, majority category adopters, they compromise carefully before making the decision to adopt the innovation, even in a long period of time. People like these recommend the important function to show the rest of the community that an innovation is worth. While late majority group is more cautious about the function of an innovation. They waited until most people have tried and adopt innovations before they make a decision. Laggard is the group that was the last to adopt innovations. They are more traditional, and reluctant to try new things. When this group have just adopted a new innovation, most people actually have been much adopt other innovations.

3. Methodology

3.1. Method

Factor analysis is a interdependence technique, where there is no division of variables into independent variables and dependent variable. This analysis provides the tools to analyze the structure of correlation

between a large number of variables to explain the fit correlation between the variables, which are assumed to represent the dimensions in the data (Hair, 2010). A factor analysis is used to group multiple variables that has similarities to be a factor, so it is possible from several attributes that affect the variable component can be summarized into a few main factors. Factor analysis is often conducted not only in the final analysis of the work of statistical or processing of data, but also it can be a stages or steps between the initial step in most statistical method that are larger or more complex. Factor analysis is used in this research as an input in building cluster analysis, where the factor or a new variable that is formed is used as an input to the analysis grouping against a set of data. The factor score in this analysis used as input data to perform cluster analysis.

Cluster analysis was chosen to conduct this study because it is an important tool for data analysis and has been widely applied in many area (Wen, et.al, 2009). Cluster analysis is the multivariate technique to classify individuals into cluster based on certain characteristics and enables researchers to place a variable or object into sub-groups or clusters. Cluster analysis can be applied to the variables or objects such as people, products, places and others. Cluster analysis is widely used in marketing research (Kinnear and Taylor, 1995). Cluster analysis is used to classify objects or cases (respondents) in a relatively homogeneous group called clusters, object or cases in each group tend to resemble each other and differ greatly (not the same) with the object of other. Therefore, cluster analysis is best suited for understanding how the market segmentation hijab fashion in Bandung.

This research conducted using both factor and cluster analysis, which in the preliminary research used literature review to find the attributes that will be used. The data collected by using questionnaire from sample survey. Figure 1 is a conceptual model for this study, illustrating the step process to find the conclusion of the market segmentation for women consumer in Bandung.



Figure 1 Conceptual Model

3.2 Population and Sample

Population is the region generalization which consists of object or subject that has qualities and characteristics defined by the researchers to be studied and drawn conclusions (Sugiyono, 2008). The population of this study is women consumers in Bandung. The sample was defined as part of the number and characteristics possessed by the population. Samples are taken by 100 respondents considered to represent the entire population. These considerations are supported by the opinions Roscoe in Sekaran (2006) states that a sample size of more than 30 and less than 500 is appropriate for most research. So the sample size is too big or too small will not help the research project.

3.3 Data Collection

The sampling method is used convenience sampling in which members of the sample selected because they are easy to reach. Convenience sampling is nonprobability sampling, where each unit in the population do not have the same chance to be selected as the sample. Initial testing of the questionnaire carried out by using 30 respondents to determine the validity and reliability of the questionnaire. Item or question invalid and unreliable aborted. Furthermore, the final questionnaires were distributed to 129 respondents, which is considered to represent the population as a whole.

3.4 Data Measurement Technique

Measurement scale is a conclusion that is used as a reference for determining the length of the short interval in the measuring instrument. If the measuring tool is used, it will produce quantitative data. The measurement scale in this study is Likert scale. Likert scale used to measure behavior, diffusion, and psychograph are referred to as the variables. Every item answer using a Likert scale has a *gradation* from very positive to very negative. The range of the scale used to measure the degree of strongly agree to strongly disagree to any variable in this study is 4 (four) to 1 (one), i.e. the level of weighted from strongly agree to strongly disagree.

4. Result and Analysis

This study, there are 129 women respondents. These respondents were chosen by convenience sampling. Range of age for respondents are 15-23 years old (48.1%), 24-32 years old (11.6%), 33-41 years old (15.5%) and >42 years old (24.8%). Most of the respondents are student (50.4%) student/college, (35.7%) workers, (8.5%) entrepreneurs (2.3%) housewives. Majority respondent 22.5% expenses less than 5 hundreds Rupiahs per month, 38.8% between 5 hundreds to 2.5 million Rupiahs per month, 20.2% between 2.5 to 4 million Rupiahs per month, 10.1% between 4 to 6 million Rupiahs per month, 8.5% more than 6 million Rupiahs per month.

4.1. Factor Analysis

Based on factor analysis result, the Kaiser-Meyer-Olkin and Bartlett's Test for all variable showed 0.721 (sig. <0.05). It means that these variables deserve to be analyzed further. Then analyzed the anti-image correlation, all variables showed MSA above 0.5. It means that all variables have high correlation to be factored and can be predicted for further analysis. The communality results for all variables are more than 0.0. It means the variables are not correlated with other variables but these variables have similarities with other variables in group.

The potential markets scales were subjected to exploratory factor analysis with principal component analysis and with factor loading equal to or greater than 0.5. The reliable coefficient (Conbarch's α) varied from 0.62 to 0.90 which is acceptable for constructs. The factor of the potential market and the reliability coefficient appear in the Table 1. Factor score is a calculation the value of each observation or score each factor. This factor score demonstrated a combination of individual response to several variable factors. In this study a score factor is used as input data to perform cluster analysis and varimax rotation to identify the number of factors to extract. The four main factors emerged, namely, Opinion Leader, Consumer behavior, Lifestyle and Conventional. The principal component analysis selected only variables with factor loading equal to or greater than 0.5. The reliable coefficient (Conbarch's α) varied from 0.62 to 0.90 which is acceptable for constructs. The factor of the potential market and the reliability coefficient appear in the Table 1. Factor score is a calculation the value of each observation or score each factor. This factor score demonstrated a combination of individual response to several variable factors. In this study a score factor is used as input data to perform cluster analysis.

Table 1 Factor loading and reliability coefficient

	Component				Reliability (Conbarch's α)
	1	2	3	4	
activities			.833		0.908
interest			.574		0.695
opinion	.635				0.627
product		.661			0.621
promotion		.761			0.711
Price		.478			0.708
Place		.864			0.84
Innovator	.825				0.632
adopter	.731				0.776
majority				.771	0.641
laggards				.631	0.895

This study is based on the result questioners emerged four important factor, namely, Opinion Leader, Consumer behavior, Lifestyle and Conventional. Characteristics for Opinion leader are willing to experience new ideas, have dynamic lifestyle, willing to buy new product and have many opinion on new product. These factors amounted to 30.7%. The second factor named consumer behavior, it related to Kotler (2000) stated that marketing stimuli for consumer behavior consist of product, price, promotion and place. The consumer behavior factor amounted to 11.82%. The third factor is named lifestyle consist of variable activities and interest. Lifestyle factor potential customer thought about the importance of appearance then it can support their activity and also increase their confidence level. These factors amounted 10.07%.

Ultimately, factor is conventional because actively waiting recommendation, hesitate use new product, late knowing new product and reluctant on new product. Conventional factor amounted to 9.74%.

Factor Opinion Leader as the most dominant factors indicates that potential customer are very concerned about new products then give recommendation and influence their friend to use the new product. Potential customer in hijab fashion in Bandung area is very open with new product innovations. From these descriptions, the sensitivity of the consumer hijab fashion in Bandung is not on amount of the rupiahs or price.

4.2 Cluster Analysis

K-Men Cluster method used to determine the market of hijab fashion in Bandung. This method aims classifying objects such that the distance of each object in the group center or within the group is the minimum. To analyze the variables which can be used to distinguish between clusters used ANOVA output and the result showed that all variables have significant value of less than 0.05, so that all indicators can be used to distinguish between clusters formed.

Table 2 Characteristic per Cluster

<i>Cluster 1 (Majority)</i>	<i>Cluster 2 (Active)</i>	<i>Cluster 3 (Conventional)</i>	<i>Cluster 4 (Trendsetter)</i>	<i>Cluster 5 (Ignorance)</i>
majority	activities	product price place laggards	interest opinion promotion Innovator adopter	-
45 people	10 people	15 people	8 people	51 people

The cluster analysis based on the observed results has 5 types for the customer in hijab fashion. These five types are presented in the following (Table 2).

Cluster 1 (Majority). The first cluster of consumer is named the consumer “majority” because they late to use new product, doubt to use new product and they wait opinion from other consumer. A number of respondent for these group is 45 people (34.8%) with age range from 15-23 years old and purchase expenses between 150 – 200 hundreds rupiahs per month.

Cluster 2 (Active People). These group less considering about lifestyle. For them the appearance is important and using hijab can support their daily activities. A number of respondent is 10 people (7.7%). Most of them have age range between 33-41 years old and they are active as a workers or entrepreneur. The purchase expenses around 350 hundreds rupiahs per month.

Cluster 3 (Conventional). This group dominated by 15 people (11.62%) women with age above 42 years old. These cluster have the same characteristics with laggards segment in consumer adoption level whereas most of them are very late using new products. At that age, the consumer usually reluctant to use new product, only focus on the quality of product, price and place expectation.

Cluster 4 (Trendsetter). The fourth cluster is named “Trendsetter” because these group have the similar characteristic with innovator and adopter in consumer adoption level wherever sometimes they can be a first group who purchase a new product but they are not only a first group who tried the innovation. However they can called as the earliest group who adopt in product life cycle. These category has the highest level rather than others because their presence can give great influence for others adopter. These group is dominated women with age range 24-32 years old and purchase expenses 350 hundreds rupiahs per month. A number of respondent is 8 people (6.2%).

Cluster 5 (Ignorance). Profile respondent for cluster 5 has age range between 15-23 years old with purchase expenses between 150 – 200 hundreds rupiahs per month. A number of respondent is 51 people (39.5%). These groups do not show domination or prominent variable. Because they are not concerned with all the variables that apply the reflection then the cluster 5 named “Cluster Ignorance”.

5. Conclusion

The result of this study related to the research question, which are, the factors driving consumer into hijab fashion are 4 important factor. Those factor are “Opinion Leader”, “Consumer behavior”, “Lifestyle” and “Conventional”. Consumers’ trend with factor “Opinion Leader” as the most dominant factor shows

that to influence potential customer to arise willingness of consumers buying for hijab fashion in Bandung. The type consumer will be very open to share their opinion related new products, willing to have new experience for product innovation, have so many comments on new product. The interesting part is that consumer sensitivity hijab fashion in contextual Bandung is not about the price or the amount of rupiahs.

Those factors form also redefined the market segmentation for hijab fashion. The market segmentation of hijab fashion can be segmented into five clusters, namely Cluster 1 (Majority), they late to use new product. Cluster 2 (Active People) are the group which is less considering about lifestyle. Cluster 3 (Conventional) are reluctant to use new product, while Cluster 4 (Trendsetter) is great influencer to others. Cluster 5 (Ignorance) these groups do not show domination or prominent variable.

Each differ segment has its own lifestyle characteristics and preferences. As more women are active and have no specific preferences. These women faithfully buy hijab because they just want. This segments can make the marketers more efficient as they put the choice in the hands of providers. Based on the finding, nowadays, is urgent for hijab fashion industry in Bandung to redefine the potential market because of the market has been changed. Thus they must reset the marketing strategy to focus their strength and also gain more from the business.

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Assessing The Financial Performance of Coal Company in Indonesia – A Case Study of PT Adaro Energy Tbk Compared to Its Competitors

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Abstract

Coal industry of Indonesia is one of the biggest coal exporters in the world (Indonesia Investment, 2016). Coal industry is one of the largest contributor for Indonesia's GDP which is 14.27 % from total of export value 2014. According to Indonesia Investment, at least 27% of the total world energy output and more than 39% of electricity energy generated by coal-fired power plant. This shows that the coal industry gives a high contribution for the world energy resources. As one of the biggest exporter of coal that mostly exported to China and India, Indonesia is unfortunately relying much on the international market.

This study will assess the financial performance of PT Adaro Energy Tbk as the second-biggest producer of coal in Indonesia's coal industry. It will be compared to its top four biggest competitors based on the production volume that are PT Bumi Resources Tbk, PT Indo Tambangraya Megah Tbk, Indika Energy Tbk, and PT Bukit Asam (Persero) Tbk. The assessment will be done with the Financial Ratio Analysis and DuPont System of Analysis. Two types of analysis will be used which are Time Series Analysis used to analyze PT Adaro Energy Tbk's own financial performance trend and Cross Section used to compare PT Adaro Energy Tbk's performance to its competitors. Data from 2011 – 2014 will be used in this study.

The study will focus on the effect of fluctuated world coal prices which caused by the decreasing of the coal demand of China as the biggest coal consumers in the world that lead to the excess supply of coal in the international market and the President's Economy Policy Package of generating 35.000 MW Power Plant (which started in 2014) on the financial performance of PT Adaro Energy Tbk compared to its competitors' performances. The study's objective is to assess the financial performance of PT Adaro Energy Tbk and to propose some recommendations that can improve PT Adaro Energy Tbk's performance.

Keywords: Financial, Ratio, DuPont, Performance, Coal Industry

1. Introduction

1.1. Research Background

Global economy is still remaining unfavorable with growth rates in developed nations still out of stable in 2014. European economies remained unstable and most of developed countries failed to achieve their projected economic growth. China, the world's economic growth locomotive for the last two decades in 2014, only conducted to achieve a 7.3% economic growth, lower from the preceding year which was 7.7% (Wong, 2015).

For the very first time since 2008, the global thermal coal trade decreased. It primarily caused by the decrease in China demand since China also faces the slow economic growth for the last decades. Chinese import growth dropped year-on-year, with total imports declining by 22Mt to 230Mt. It is or the first time in the last five years. China decreases its import coal quotas in order to protect their local coal companies and also to reduce the pollution occurred in their countries by starting to move to use alternative energy

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(Himawan I. Q., 2016). As China is the main thermal coal importer in Asia which consumes about 47% of world coal, China remains as the market maker in the industry, and Chinese domestic market price has become more influential to the seaborne thermal coal prices. Thus, it really affects to the world coal prices. Although India is the first biggest thermal coal importer before China, the growth of India's coal imports in 2014 was not enough to offset the decline in China's coal imports. In addition, there is an issue indicates that India will also decrease its coal quotas in order to secure its domestic market (Soda, 2016). Meanwhile, the global production has increased in recent years, causing the excess supply rise and the coal prices down year by year. Therefore, the prospect for global coal is still full of uncertainty for the parties engaged in the coal sector.

Being part of the world economy, Indonesia was also affected by the global economic slowdown. The economic growth of Indonesia in 2014 recorded at 5.00%, lower from the preceding year which was 5.60% growth (World Bank, 2016). Thus, this slowing economic growth and China decisions also affected the national coal industry since Indonesia is the one of the biggest coal exporters in the world based on BP Statistical Review of World Energy.

The Pacific coal price that represented by the Global Coal Newcastle index, were decreased by 17% in 2014. Indonesian coal prices which represented by ICI3 (The Indonesian Coal Index) similarly declined by just 9% in the same period. The declining of world thermal coal prices causes the seaborne coal demand increased by less than 20 Mt in 2014, the lowest growth in the past five years. It also causes the Indonesian exports down by 10Mt. Consequently, the coal companies in Indonesia have to lower its production targets. According to the Indonesian Coal Mining Association (ICMA), the world coal price crisis has made 70% of coal mining companies in Indonesia suffer from losses; even 40% of players had to close down their business. It happened because most local coal companies in Indonesia exports its coal production more than 50% of their total production. Therefore, most coal companies in Indonesia are terribly depending on export markets.

As the second biggest coal producer in Indonesia, Adaro Energy also suffered due to the fall of world coal prices. As 78% of the coal sales of Adaro were coming from exporting coal in 2014, Adaro is belong to one of the coal companies that terribly depends on export markets. Although the sales volume increases 7% to 57Mt from preceding year, this only increase the revenue by 1% to US\$3,325 million as the effect of fall of the coal price by 5%. The increase of the sales volume was actually helped by the growing of Indian's coal demand by 27Mt to 163Mt that covered the declining of China's coal demand by 23Mt to 227 Mt in 2014. However, the growing of Indian's coal demand may not last longer since India would also secure its domestic coal market.

The other top 4 biggest coal producers in Indonesia are also suffered by the crisis. It is because the percentage sales to the export markets were up to 90% which are Bumi Resources Tbk 73.3%, Indika Energy Tbk 72.3%, Indo Tambangraya Megah Tbk 87%, and Bukit Asam Tbk 48.2%. It showed that Bukit Asam Tbk had smallest percentage of coal sales to the export markets since Bukit Asam Tbk is a Stated-Owned Enterprises (BUMN) that more focuses the sales on domestic market.

Since the fluctuation of world coal prices have not show a good signal for the next few years, diversification needs to be done by the coal companies in order to retrieve from this uncertainty condition. The Indonesia's government program of generating 35.000 MW electricity in the next 5 years is one of critical strategy alternatives as it requires 291 new power plants and will create an elevation to domestic fuel demand. Therefore, the government needs the private coal companies and Independent Power Producers (IPPs) to have contribution in 74 projects with a total capacity of 25,904 MW in building the power plants and supplying the coal as the fuel of the power plants (PT PLN (Persero), 2016). The government's program is expected to restore the uncertainty condition of Indonesia coal industry. Fortunately, Adaro began diversified its business into power five years ago by creating subsidiary named PT Adaro Power. Therefore, it would help Adaro to suffer from this fluctuated condition of coal industry.

Referring to the phenomenon above, a good financial management becomes one of the most important things to sustain in this fluctuation condition. Thus, the author would analyze the financial performance of PT Adaro Energy Tbk itself and compare it to its competitors by using Financial Ratios and DuPont Analysis. In addition, the author could give some recommendations for PT Adaro Energy Tbk for the future.

1.2. Research Question

- 1) How is the financial performance of PT Adaro Energy Tbk compared to its competitors within the year of 2010 to 2014?
- 2) What recommendation can be given to PT Adaro Energy Tbk to improve their performance according to the financial analysis?

2. Literature Review

In this chapter, the researcher will breakdown the literature review for assessing the financial performance of PT Adaro Energy, Tbk within 2010-2014. The literature review will be based on book "Principal of Managerial Finance" by Lawrence J. Gitman and Chad J. Zutter.

2.1 Coal

Coal is a valuable energy resources for power plant and useful for fuel principal of cement and steel production. However, coal is has also negative characteristic that called as a energy resources that gain pollution caused by the high content of carbon. The other energy resources such as natural gas is less pollution but more vulnerable to the price fluctuation in the international market. Therefore, more industries in the world are shifting their focus to coal industry in Indonesia (Indonesia Investment, 2016).

2.2 Coal Industry in Indonesia

Indonesia's the top 10 of the world's biggest coal producers and exporters in 2015 based on BP Statistical Review of World Energy 2015. Indonesian coal reserves are estimated to last around 83 years if the current rate of production is to be continued based on the information presented by the Indonesian Ministry of Energy (Indonesia Investment, 2016). According to the most recent BP Statistical Review of World Energy, Indonesia coal reserves is in the 10th place with the amount 3.1 percent of total proven global coal reserves. Most of the coals produced are categorized as low calorie coal. Coal reserves in Indonesia are mostly located in South Sumatra, South Borneo, and East Borneo.

The big amounts of the producers are more likely consists of only a few big companies and the others are many small players located in Sumatra and Kalimantan. From the total of the coal production in each year, domestic market consumes only small portion while up to 70%-80% of the total coal production are exported mostly to China, India, and East Asia region.

2.3 Annual Report

An annual report is annual publication that public corporations must provide to shareholders to describe their operations and financial conditions on a fiscal year basis. Typically, an annual report will contain the following sections; Financial Highlights, Letter to the Shareholders, Narrative Text, Graphics, and Photos, Management's Discussion and Analysis, Financial Statements, Notes to Financial Statements, Auditor's Report, Summary Financial Data, Corporate Information.

2.4 Financial Statement

Financial Statements provides information on the resource available for management, how the resources were being financed, and what the accomplishment of the company. The financial statements consist of income statement, balance sheet, and statement of shareholder's equity and statement of cash flows. The information provided by those financial statements can be used to calculate the financial ratios and to analyze the performance of a firm. Analysts use financial ratios because numbers in isolation typically convey little meaning. Thus, ratios are intended to provide meaningful relationship between individual values in the financial statement (Reilly, Brown, 2006). In this research, the financial ratio used to evaluate PT Adaro Energy Tbk performance using historical data from 2010-2014.

2.5 Financial Ratio

Ratio analysis involves methods of calculating and interpreting financial ratios to analyze and monitor the firm's performance. The basic inputs to ratio analysis are the firm's income statement and balance sheet (Gitman & Zutter, 2009). In ratio analysis, there are two types of ratio comparisons, which are cross-sectional analysis and time-series analysis. A cross-sectional analysis is a comparison of different firm's financial ratio at the same time (Gitman & Zutter, 2009). This type of analysis is usually called as benchmarking. While time-series analysis is a comparison of current to past performance of a firm and assesses the firm's progress over time (Gitman & Zutter, 2009).

Basically, Ratio Analysis can be divided into five categories: Liquidity Ratios, Activity Ratios, Debt Ratios, Profitability Ratios, and Market Ratios. Liquidity, activity and debt ratios primarily measure risk, profitability measures return, and market ratios measure both risk and return (Gitman & Zutter, 2009).

2.5.1 Liquidity Ratios

Liquidity Ratios measures the firm's ability to pay its bills over the short run as they come due.

Liquidity Ratios consists of Current Ratio and Quick Ratio.

- Current ratio

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} \quad (1)$$

- Quick Ratio

$$\text{Quick Ratio} = \frac{\text{Current Assets}-\text{Inventory}}{\text{Current Liabilities}} \quad (2)$$

2.5.2 Activity Ratios

Activity Ratios measure the speed with which various accounts are converted into sales or cash— inflows and outflows (Gitman & Zutter, 2009).

- Inventory Turnover

$$\text{Inventory Turnover} = \frac{\text{Cost of Good Sold}}{\text{Inventory}} \quad (3)$$

- Average Collection Period

$$\text{Average Collection Period} = \frac{\text{Account Receivable}}{\text{Average sales per day}} \quad (4)$$

- Average Payment Period

$$\text{Average Payment Period} = \frac{\text{Accounts Payable}}{\text{Average purchases per day}} \quad (5)$$

- Total Asset Turnover

$$\text{Total Asset Turnover} = \frac{\text{Sales}}{\text{Total Assets}} \quad (6)$$

2.5.3 Debt Ratios

Debt Ratios indicates the investor's money being used to generate profits from sales. The more debt the company has, the greater the risk of being unable to meet its debt payments.

In general, the more debt the company uses in to their total assets, the greater its financial leverage. Financial leverage is the magnification of risk and return through the use of fixed-cost financing such as debt and preferred stock (Gitman & Zutter, 2009).

- Debt Ratio

$$\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}} \quad (7)$$

- Times Interest Earned Ratio

$$\text{Times Interest Earned Ratio} = \frac{\text{Earnings before interest and taxes}}{\text{taxes}} \quad (8)$$

- Fix Coverage Payment Ratio

$$\begin{aligned} \text{Fixed-Payment Coverage Ratio} \\ = \frac{\text{Earnings before interest and taxes} + \text{lease payments}}{\text{Interest} + \text{Lease payments} + \\ \{(\text{Principal Payments} + \text{preferred stock dividends})x \left(\frac{1}{1-\tau}\right)\}} \end{aligned} \quad (9)$$

2.5.4 Profitability Ratios

Profitability ratio measures how well the company has operated during the year. In other words, it measures the ability of a company to obtain profits.

- Gross Profit Margin

$$\text{Gross Profit Margin} = \frac{\text{Sales}-\text{Cost of Good Sold}}{\text{Sales}} \quad (10)$$

- Operating Profit Margin

$$\text{Operating Profit Margin} = \frac{\text{Operating Profits}}{\text{Sales}} \quad (11)$$

- Net Profit Margin

$$\text{Net Profit Margin} = \frac{\text{Profit After Tax}}{\text{Sales}} \quad (12)$$

- Return On Asset

$$\text{Return on Total Assets} = \frac{\text{Profit before tax}}{\text{Total Assets}} \quad (13)$$

- Return On Investment

$$\text{Return on Equity} = \frac{\text{Profit After Tax}}{\text{Shareholders' Equity}} \quad (14)$$

- *Earnings per Share*

$$\text{Earning per Share} = \frac{\text{Earning available for common stockholders}}{\text{Number of shares of common stock outstanding}} \quad (15)$$

2.5.5 Market Ratios

Market ratios relate the firm's market value, as measured by its current share price, to certain accounting values (Gitman & Zutter, 2009). The ratio gives the investors perception about how the firm is doing in the marketplace in terms of risk and return. There are two widely quoted market ratios, which are price/earnings ratio and market/book ratio.

- *Price/Earnings Ratio*

$$P/E \text{ Ratio} = \frac{\text{Market price per share of common stock}}{\text{Earnings per share}} \quad (16)$$

- *Market/Book Ratio*

$$M/B \text{ Ratio} = \frac{\text{Market price per share of common stock}}{\text{Book value per share of common stock}} \quad (17)$$

2.6 DuPont Analysis

DuPont system of analysis is used to dissect the firm's financial statements and to assess its financial condition. It merges the income statement and balance sheet into two summary measures of profitability, return on total assets (ROA) and return on common equity (ROE) (Gitman & Zutter, 2009).

The first thing to calculate in the DuPont system is return on total assets (ROA). It uses to indicate how efficiently the firm has used its assets to generate sales (Gitman & Zutter, 2009). The formula is:

$$ROA = \text{Net Profit Margin} \times \text{Total asset turnover} \quad (18)$$

Or the breakdown formula is;

$$ROA = \frac{\text{Earnings available for common stockholders}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total assets}} = \frac{\text{Earnings available for common stockholders}}{\text{Total assets}} \quad (19)$$

The second thing to do is calculate the return on equity (ROE) of the firm by multiplying the return on assets with the financial leverage multiplier (FLM). The use of financial leverage multiplier (FLM) is to convert ROA into the ROE reflects the impact of financial leverage on owners' return (Gitman & Zutter, 2009). The formula is:

$$ROE = ROA \times FLM$$

$$ROE = \frac{\text{Earnings available for common stockholders}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Common stock equity}} = \frac{\text{Earnings available for common stockholders}}{\text{Common stock equity}} \quad (20)$$

3. Research Methodology

Research will be done by the analyzing financial ratio of PT Adaro Energy, Tbk within 2010-2014 compared to its competitors. The research will start by collecting data related to annual financial reports of each company that will be used to calculate the financial ratios. The method that will be use to calculate the ratios is ratio analysis. In Addition, the author will also use DuPont Analysis to assess the financial condition. The output of the analysis will become the conclusion of the research and recommendation for further research.

4. Data Analysis

4.1. Time-series Analysis

PT Adaro Energy Tbk 's financial performance will be analyzed by using time-series analysis and compare the result to its competitors by using cross-section analysis. The data from 2010 to 2014 will be used to assess the financial performance of the company. The financial performance can be calculated and determined by using Financial Ratio and DuPont Analysis.

4.1.1 Ratio Analysis

Table 26. Adaro's Financial Ratios

Financial Ratios		2014	2013	2012	2011	2010
Liquidity	Current Ratio	1.64	1.77	1.57	1.67	1.72
	Quick-Acid Current Ratio	1.52	1.64	1.50	1.60	1.67
Activity	Inventory Turnover	26.93	24.73	41.56	48.99	58.95
	Average Collection Period	31.34	34.39	46.48	43.15	36.99
	Average Payment Period	49.19	46.97	48.03	55.39	51.86
	Total Asset Turnover	0.52	0.49	0.56	0.70	0.61
Debt	Debt Ratio	0.49	0.53	0.55	0.57	0.55
	Times Interest Earned Ratios	2.70	4.64	7.03	9.37	5.55
Profitability	Gross Profit Margin	0.22	0.23	0.28	0.36	0.30
	Operating Profit Margin	0.15	0.16	0.22	0.32	0.26
	Net Profit Margin	0.06	0.07	0.10	0.14	0.09
	Revenue on total assets (ROA)	2.86%	3.42%	5.73%	9.76%	5.52%
	Return on common equity (ROE)	5.62%	7.18%	12.80%	22.61%	12.15%
	Earnings per share (EPS)	0.0057	0.0072	0.0120	0.0173	0.0077
Market	Price/earnings (P/E) Ratio	15.04	12.29	13.65	10.55	44.22
	Market/book (M/B) Ratio	0.82	0.89	1.76	2.56	4.35

Liquidity

From Liquidity aspects, the basic measures are current and quick ratio. As we can see from Table 1 above, Adaro shows a slightly stable in both current and quick ratio with a little decrease in 2010 to 2012, then slightly increase in 2013 but then decrease again in 2014. In conclusion, Adaro's ability in meet its short tem obligation has decrease from 2010 to 2014. However, the ratio is still positive that means Adaro still can fulfill its obligations.

Activity

Basically, activity ratios may give information about company's efficiency in managing various accounts that converted into sales or cash. Activity ratio includes inventory turnover, average collection period, average payment period, and total asset turnover. For inventory turnover, it shows a significant decrease from 2010 to 2014. In 2010, the average age of Adaro's inventory is about 7 days (365/58.95) while in 2014 the average age of Adaro's inventory is doubled into 14 days (365/26.93). It happened because of the

increase of the cost of good sold due to the removal of overburden that makes a longer overburden hauling distances. The decrease means that Adaro's inventory has becoming less liquid for the last five years. Adaro's Average Collection Period from 2010 to 2014 is 38 days in average. It means the company manages its receivables well since the value of the average collection period is in standard value (30-90 days). Start from 2010 to 2012, there is a significant increase due to the increase in coal sold, in-line with the higher production and sales for 2011. As the sales decreased from 2012 to 2014 it causes the average collection period of Adaro decreases. However, this ratio is meaningful only if it's compared to the company's credit terms. Average payment period is a ratio that calculate how long the company pay its obligation. The higher the ratio the greater benefit gained by the company. The ratio tend to be fluctuated in the rapid range between 49 days to 52 days. The average payment period for the last five years is about 51 days. Again, this ratio is meaningful only in relation to the average credit term extended of a firm. This ratio may be one of lenders consideration since it provides insight into the firm's bill-paying patterns. Total asset turnover indicates the efficiency of a firm use its assets to generate sales. The total asset turnover of Adaro tends to be declined for the last five years. It means that the company has been less efficient using its assets to generate sales. Although in 2011 the net sales of Adaro was increasing 46.7% from the previous year which make the total asset turnover increases, it didn't last for long due to the decreased of sales value until 2014. The decrease is mainly due to the lower Average Selling Price (ASP) of coal.

Debt

Debt ratio will show the comparison of the total assets that is financed by the outside company. The higher the ratio means the greater the risk for the company. Because it shows that the company uses a big amount of loan money to generating profits. From the graph above, Adaro tends to decreases its asset financed by the liabilities from 55% to 49%. It means 49% of the total assets financed by liabilities. In 2011, Adaro increases its total assets by adding some new investment of heavy equipment. As a consequence, the total liabilities also increased 31.9% primarily because of the greater loan amounts to purchase the heavy equipment resulting the higher debt ratio. Although the total assets of Adaro is increasing in the following year after 2011 due to the additional of fixed assets, the total liabilities decreases as the maturities is due. Thus, it makes the debt ratio lower. Times interest earned ratios measures the firm ability to pay its contractual interest payments. The higher its value means that the firm has good ability in fulfill its interest obligations because the firm has enough money to fulfill its contractual interest payments. Adaro's times interest earned ratios is significantly declining from 2010 to 2014. Although the ratio declines, the value is still positives in between 3.0 – 5.0 that still acceptable. But in 2014, the value is 2.70 which in unacceptable. Adaro should be aware with this condition.

Profitability

Profitability ratios is ratio used for assess the ability of the company to generate profit compared to its several business costs. As we can see from the Table 1 above, the profit margin are tend to be declining for the last five years. Gross profit margin of Adaro tends to be declining over the last five years. In 2011, the revenue of Adaro increases 46.7% due to the increase in sales that makes the value of gross profit margin increases 36% from US\$ 829 million to US\$ 1,428 million. However, the gross profit margin of Adaro was declining after 2011. Although the sales of Adaro increases, the average selling price (ASP) of coal is declining due to the global economy crisis that makes the gross profit gained by Adaro decreases significantly. Thus, the gross profit margin of Adaro is also decreasing. Operating Profit Margin of Adaro also tends to be declining over the last five years. In 2011, Adaro succeed to increase 80.4% of their operating profit that makes the margins strengthened to 32.2%. It caused by the growth of the revenues and also Adaro were able to control the costs. However, as the revenue decreases continuously while the costs increased, the operating income of Adaro declined significantly which makes the margins also declined for the year after 2011. Net Profit Margin of Adaro has the same pattern like other profit margin. The lower net income was mainly caused by the lower Average Selling Price (ASP) of coal and other charges. Even though the sales was actually increases, but the earnings from the sales is not enough to offset the higher costs. Thus, the net profit margin of Adaro is declining over the last five years. For ROA and ROE of Adaro, it shows significant decreases both ROA and ROE from 2010 to 2014. In 2011, Adaro increases its total assets by adding some investments in fixed assets and the sales of Adaro in 2011 also increases up to 46.7% from the preceding year which makes the value of both ROA and ROE increases significantly to 9.8% for ROA and 22.6% for ROE. Although both ROA and ROE of Adaro increases from 2010 to 2011, Adaro has failed to maintain its improvement because the ratio after 2011 was still decreasing. It means that the amount of Adaro's total asset and total equity are getting higher but Adaro cannot generate it into profits. An earnings per share is the allocation of company's profit to each outstanding share of common stock. The Earnings per Share (EPS) of Adaro from 2010 to 2014 is fluctuated but still decreasing. In 2011, Adaro succeed to increase 122.6% of its earnings per share. It was the result of the increase in Adaro's net

sales that makes their net income significantly raised to US\$ 552 million from US\$ 247 million. However, since the Average Selling Price (ASP) of coal decreases in the following year, Adaro can't help to gain higher net income causing their Earnings per Share (EPS) fall significantly.

Market

As we can see from Table 1 above, the P/E Ratio of Adaro is significantly decreasing from 2010 to 2014. It might be affected by the global crisis economy that affected the world coal market especially Indonesia which is one of the largest exporter of coal in the world. However, the result of P/E Ratio for the last five years may affect the investor expectations of investing in Adaro. The M/B Ratio of Adaro from 2010 to 2014 is also significantly decreasing. The market price per share of Adaro is decreasing year to year due to the effect happened in the world coal market which is the global economy crisis.

4.1.2 DuPont Analysis

Table 27. Adaro's DuPont Analysis

DuPont Analysis	2010	2011	2012	2013	2014
Net Profit Margin	0.09	0.14	0.10	0.07	0.06
Total Asset Turnover	0.61	0.70	0.56	0.49	0.52
Equity Multiplier	2.20	2.32	2.23	2.10	1.97
ROA	0.06	0.10	0.06	0.03	0.03
ROE	0.12	0.23	0.13	0.07	0.06

The calculation using DuPont Analysis will be resulted in the breaks parts of ROA and ROE. DuPont analysis enables the analyst to understand the source of return of a company's performance over the 5 years. It tells us that ROE affected by three things, which are operating efficiency (profit margin), asset-use efficiency (total asset turnover), and financial leverage (the equity multiplier). Based on ROE, Adaro has fluctuated ROE over the last 5 years. The range is a bit large in between 5% - 23%. Adaro succeed to have higher ROE in 2011. However, Adaro couldn't maintain its ROE well which makes the ROE fell significantly year by year after 2011 to 5.62% at the end of the year 2014. Adaro's Net Profit Margin has fell over the last 5 years. The Net Profit Margin only increases in 2011 due to the big sales volumes and robust average selling price (ASP) of coal. However, the Net Profit Margin decreases after 2011 as the effect of global economy crisis affected the coal market that makes the average selling price (ASP) fell. The Adaro's total asset turnover is decreasing but quite consistent. It means that Adaro's is less efficient in using its assets to generate sales. The decrease caused by the decrease of average selling price (ASP) of coal that makes the value of sales fell. The equity multiplier of Adaro is quite high but decreasing over the last 5 years. Adaro's low ROE and high Equity Multiplier means that big portions of returns are coming from the artificial leveraging. Thus, it's a good movement of Adaro to decrease its equity multiplier over the last 5 years in order to avoid the possibility of being hit hard in a bad economy such as global economy crisis. In conclusion, it looks like Adaro has weak net profit margin and asset turnover that shows Adaro was not good in terms of their sales performance and profit margin as the impact of global economic crisis. This must be such a signal for Adaro to find other alternatives to increase their sales performance or decrease production costs. Fortunately, Adaro has shown an anticipative policy in terms of their leverage as the decreasing of their debt portion in order to face the future uncertain condition. However, this conclusion will be useless unless it is compared to its competitors that will use in Cross-Section Analysis.

4.2 Cross-section Analysis

4.2.1 Ratio Analysis

Table 28. Financial Ratio of 5 Companies in 2014

Category	Financial Ratio	5- Companies Industry Average	ADRO	PTBA	INDY	ITMG	BUMI
Liquidity	Current Ratio	1.54	1.64	2.08	2.09	1.56	0.35
	Quick-Acid Current Ratio	1.37	1.52	1.79	2.06	1.15	0.33
Activity	Inventory Turnover	26.99	26.93	8.76	69.76	10.24	19.24
	Average Collection Period	48.80	31.34	40.17	56.06	32.01	84.42
	Average Payment Period	50.48	49.19	15.22	40.12	39.19	108.67
	Total Asset Turnover	0.76	0.52	0.88	0.48	1.49	0.43
Debt	Debt Ratio	0.59	0.49	0.41	0.60	0.31	1.11
	Times Interest Earned Ratios	18.64	2.70	55.92	1.03	32.91	0.64
Profitability	Earnings per share (EPS in US\$)	0.0477	0.0057	0.0741	-0.0059	0.1772	-0.0128
	Revenue on total assets (ROA)	4.80%	2.86%	14.34%	-1.33%	15.31%	-7.20%
	Return on common equity	-2.96%	5.62%	24.49%	-3.35%	22.28%	-63.83%
	Gross Profit Margin	0.21	0.22	0.31	0.15	0.21	0.17
	Operating Profit Margin	0.10	0.15	0.18	0.03	0.12	0.0226
	Net Profit Margin	0.03	0.06	0.16	-0.03	0.10	-0.17
Market	Price/earnings (P/E) Ratio	5.58	15.04	14.29	-7.77	6.98	-0.61
	Market/book (M/B) Ratio	1.12	0.82	3.32	0.23	1.55	-0.32

Liquidity

In liquidity aspects, Adaro have positive value and both current and quick ratio values are above the industry average meaning that Adaro performs well in liquidity aspects. However, Indika Energy shows the highest result for both current ratio and quick ratio. It means that Indika Energy manages its current assets well to meet its obligation. Although all companies has positives ratio, it shows that Bumi Resources has the lowest ratio among others and the ratio is under Industry Average value. Thus, Bumi Resources has to struggle to meet its obligation in 2014.

Activity

In Activity aspects, each company has its strength and weakness. For Adaro, Adaro has highest value in average collection period. The company performed well since they can collect its receivables within 32 days in average. Bumi Resources is the worst among others in average collection period and total asset turnover but the best in average payment period. Bumi Resources is able to pay its payables within 109 days in average. However, Bumi Resources can't balance its payment period with its collection period. Bukit Asam has the lowest score in Average Payment Period. Bukit Asam pays it payable really fast which is in 16 days. Besides, Bukit Asam collects its receivables quite long in 41 days higher than the industry average. Indika Energy has the highest score in inventory turnover. And for Indo Tambangraya Megah, all

its ratios are under the industry average value except for its total asset turnover. It means that they efficiently use its asset to generate sales.

Debt

In Debt aspects, Bumi Resources has the highest score in debt ratio. It means that Bumi Resources proportion of total assets financed by the firm's creditors is the biggest among others companies. The value is double from the industry average. Thus, Bumi Resources has the highest risk whenever bad economy hits coal industry. Adaro's debt ratio is neither high nor low. Thus, Adaro has good performance in maintaining its assets, which financed by the creditors. While for Time interest earned ratio, Bukit Asam and Indo Tambangraya Megah has the highest score that means that they are excellent in fulfilling its interest payments. Although Adaro, Indika Energy, and Bumi Resources have low ratio and way below the industry average, the values are still positive which means they also good in fulfilling their interest payments. However, Indika Energy should be concern with its lowest time interest earned ratio since the coal market is in unstable and fluctuated condition.

Profitability

In profitability aspects, Adaro performed well since the value of all ratios are positives. Unfortunately, the Return on Asset (ROA) of Adaro is the lowest among others meaning that Adaro is less efficient in using its assets to generate sales. However, Bukit Asam is overall shows the best in all aspects among other companies. It might because Bukit Asam is the only one BUMN Company and the target market of Bukit Asam is mostly for domestic market. Thus, their performance didn't really affected by the fluctuation of world coal market. Indo Tambangraya Megah also shows a good performance in all aspects since all the values is almost above the industry average. They have the highest earnings per share compared to others. Indika Energy and Bumi Resources shows negative values in all aspects except for gross profit margin and operating profit margin. It happened because their net income for the year 2014 is a loss. It means that Indika Energy and Bumi Resources perform worst among others.

Market

In market aspects, which can be seen from P/E ratio, Adaro has the highest value in 2014 compared to other companies and also to the industry average. It means that the investors still have high confidence for investing in Adaro in this fluctuated condition. It applied also for Bukit Asam since the ratio is also higher than the industry average. Although Indo Tambangraya Megah has a lower value than the industry average, the value is still positives meaning that some investors still confidence to invest in Indo Tambangraya Megah. Meanwhile, Indika Energy and Bumi Resources shows a negative ratio because of their market price decreased significantly in 2014.

4.2.2 DuPont Analysis

Table 29. DuPont Analysis of 5 Companies

2014	ADRO	PTBA	ITMG	INDY	BUMI
Net Profit Margin	0.06	0.16	0.10	-0.03	-0.17
Total Asset Turnover	0.52	0.88	1.49	0.48	0.43
Equity Multiplier	1.97	1.71	1.45	2.51	8.87
ROA	2.86%	14.34%	15.31%	-1.33%	-7.17%
ROE	5.62%	24.49%	22.28%	-3.35%	-63.56%

In this DuPont Analysis, Adaro will be compared to other competitors in order to know how good is the performance of Adaro in 2014. Based on ROE, Adaro has the lowest positive value of ROE among others. The difference between Adaro and other companies is quite high. It happened because the net income for the year of 2014 of Adaro decreased by 21% from the previous year. However, Indika Energy and Bumi Resources shows negative values of the Return on Equity (ROE). It happened because their net income for the year 2014 is a loss. In this crisis condition, they should be aware to generate shareholder's equity, otherwise they will lose their investors and makes the condition even worst. Operating Efficiency can be seen based on the company's net profit margin. Based on the table above, Bukit Asam has the highest net

profit margin meaning that the company is efficiently use its operating to generate sales. Even though Adaro is not the best among others, they are still in the 3rd rank position right after Indo Tambangraya Megah. The loss suffered by Indika Energy and Bumi Resources are due to the high operating expenses and other income/expenses. Thus, the net loss for the year 2014 for both companies makes their net profit margin negative. The negative value means that both companies are less efficient in running their activities. Asset-use efficiency in DuPont Analysis can be seen based on the company's total asset turnover. All companies show a positive value for total asset turnover in 2014 meaning that the companies use its assets efficiently to generate sales. However, Indo Tambangraya Megah has the highest total asset turnover among others while Bumi Resources has the lowest total asset turnover compared to others. Even though Adaro is not the lowest, the value of its total asset turnover is below the average. It might because Adaro is still less efficient in using its new assets of heavy equipment for generating sales. By calculating the equity multiplier of each company, financial leverage of each company can be known. The equity multiplier can show how does the company manage to finance its asset, whether by using equity or debt. Higher equity multiplier does not mean a good company. It depends on how the company finances its asset. Bumi Resources has the highest equity multiplier in 2014 meaning that the company uses more debt to finance its asset. The value is higher than the industry average. This is not a good condition because Bumi Resources has the highest risk of being hit hard by the bad economy condition such as this global crisis economy. Unlike Bumi Resources, the other four companies have a normal equity multiplier value means that the companies have almost the same risk. And within this fluctuated condition, Adaro took the best decision to lower its equity multiplier in 2014.

5. Conclusion and Recommendation

In this part, the result from the previous chapter will be concluded in order to answer the research questions and recommendations will also be given based on the analytical result and the conclusion.

1.1. Conclusion

Based on financial analysis using financial ratio and DuPont analysis methods, overall it shows that in 2010 – 2014, Adaro Energy has not performed quite well. It can be concluded from the result of the financial ratio analysis which is shown from most of the ratio declined from 2010 to 2014. The market ratio of Adaro is significantly decreasing. This may affect to the investor willingness to invest in Adaro. However, the liquidity ratio is still above 1 which means that Adaro still can fulfill its obligation. And the profitability ratio values are still positive meaning that Adaro still generates profits in this uncertain condition of world coal market.

Compared with other competitors, Adaro Energy has no negative value unlike Indika Energy and Bumi Resources. In liquidity aspects, although the values of Adaro's ratio are above the industry average, Bukit Asam and Indika Energy performed better than Adaro Energy. In activity aspects, Adaro is neither the best nor the worst performance among the others. Adaro's activity ratio is still acceptable since it's close to the industry average. Although Adaro has small value in Debt aspects, the value is still positive means that Adaro is still can fulfill its payables. While in profitability aspects, Adaro has the lowest value of both ROA and ROE means that Adaro is less efficient in using its assets and equity to generate sales. And for the market ratio, Adaro has the highest value in P/E Ratio compared to others which means that the investors still confidence to invest in Adaro although the condition of world coal market is fluctuated and unstable.

1.2. Recommendation

Managing Costs and Expenses

In this fluctuated and unstable condition, Adaro could reduce its costs and expenses to gain higher profit margin and also to make the inventory turnover faster. This can be done by decreasing the production of coal to avoid excess inventory or by starting to focus on other revenue streams such as generating power plant with Adaro's subsidiaries.

Focus on Selling High-Margin Product

In 2014, 64% of Adaro revenue gained from the coal sales. It such a huge number since the condition of world coal market is still unstable and fluctuating. Fortunately, Adaro has subsidiary named PT Adaro Power and there is a government program of generating 35.000 MW power plants in Indonesia 2014-2019. Thus, Adaro can take this chance to gain bigger proportion of revenue from generating power plant in Indonesia.

Improve Operating Efficiency

Based on DuPont Analysis, it shows that Adaro Energy has small value of its ROA and ROE compared to the other two companies that has the highest value. Adaro Energy needs to increase its net profit margin that may result a higher ROA and ROE. It is not feasible for Adaro Energy to rely much on selling coal in this uncertain world coal market. Thus, it is better for Adaro Energy to increase its net profit margin by diversification. Or Adaro Energy can shift their market into domestic market instead of selling the coal abroad such as become the supplier for power plant companies or even improve their performance as the power plant company itself.

Increasing Earnings Available for Common Stockholders

It showed that the Earnings per share (EPS) and the Price/Earning Ratio of Adaro were significantly declining from 2010 to 2014. If the value is still decreasing in the future, the investor would less confidence to invest in Adaro Energy. Thus, Adaro need to increase its Earnings Available for Common Stockholders in order to secure the confidence of Adaro's investors for the future. Adaro could increases it's Earning Available for Common Stockholders by increasing its sales revenue from its subsidiaries beside the revenue of coal sales.

Besides giving recommendations for improving Adaro Energy's financial performance, there will be recommendation that can be used for further research, which is:

Use Moody's Framework Method

For further research, Moody's Framework Method can be used to helps companies, investors, and other interested market participants to understand how key qualitative and quantitative risk characteristics are likely to affect rating outcomes for companies in the coal industry. This also can be use to know the international rating of the company as the main object of the research.

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The Financial Performance Assessment of PT Indosat Tbk Against Other National Mobile Operators in Indonesia

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Abstract

The telecom business has assumed an essential part in the advancement of Indonesia's economy over the last few years. One of the telecom divisions in Indonesia is mobile network, and it has become one of the tools for Indonesia to be comparable to developed country and also to reach rural, less populated areas in the country. Starting in 2013, Indonesia was the world's third-biggest telecom market as far in the mobile telecommunication industry, with 322.9 million cellular subscriptions at the end of 2015, 99% of them are prepaid users. This means a 127.7% penetration of Indonesia's total population.

This study will assess the financial performance of PT Indosat Tbk (20.3% market share) as the runner up in Indonesia telecommunication industry. It will be compared to its top two biggest competitors, PT Telekomunikasi Selular (45.1% market share) and PT XL Axiata Tbk (19.2% market share). The assessment will be done with Financial Ratio Analysis and DuPont System of Analysis. Time Series will be used to analyze PT Indosat Tbk's own financial performance trend and Cross Section will be used to compare PT Indosat Tbk's performance to its competitors. Data from 2011-2015 will be used in this study. The study will focus on the effect of the new government's regulation regarding infrastructure sharing and the Interconnection Regime (that was applied in 2012) on the financial performance of PT Indosat Tbk compared to its competitors' performances. The study's objective is to assess the financial performance of PT Indosat Tbk and to propose some recommendations that can improve PT Indosat Tbk's performance.

The analysis shows that PT Indosat Tbk's performance is declining in almost every aspect throughout these 5 years, the biggest indicator being the net loss suffered from 2013-2015. The recommendation given is for PT Indosat Tbk to utilize the infrastructure sharing regulation to be more efficient in using their capital expenditure while maintaining their quality of service and to charge more for off-network SMS in order to cover interconnection rate and to discourage people to send off-network SMS.

Keywords: Financial Performance, Ratio Analysis, DuPont Analysis, Telecommunication Industry

1. Introduction

1.1 Research Background

Currently, the top three-telecommunication companies in Indonesia are PT Indosat Tbk, PT Telekomunikasi Selular, and PT XL Axiata Tbk. According to Buddecom's Indonesia Major Telecommunication Operators report, these top-three operators (or frequently called "The Big Three" by the media) account for just over 84% of the Indonesian mobile market share and about 95% of revenue share making it rather unnecessary to compare PT Indosat Tbk's financial performance with the smaller players such as PT Hutchison 3 Indonesia and Smartfren Telecom.

The focus of this paper is PT Indosat Tbk, which was founded in 1967, and merged with its subsidiaries, Satelindo, IM3 Ooredoo and Bimagraha by 2003. The customer base of PT Indosat Tbk at the end of 2014 is 63 million subscribers, runner up from PT Telekomunikasi Selular. In 2015, the brand

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Indosat officially renamed into Indosat Ooredoo.

PT Indosat Tbk has two top-competitors, with PT Telekomunikasi Selular as the number one telecommunication company in Indonesia and PT XL Axiata Tbk which is the closest competitor to PT Indosat Tbk. PT Telekomunikasi Selular, a subsidiary of PT Telekomunikasi Indonesia Tbk (65%) and Singapore Telecom Mobile Pte Ltd(35%), has been operating since 1995. At the end of 2014, the subscribers of PT Telekomunikasi Selular Tbk was 140,5 million. PT XL Axiata Tbk used to be called PT Excelcomindo Pratama Tbk before it signed the agreement to acquire Axis Telekom Indonesia on September 26th 2013. Group Bernhard owns 66.55% of PT XL Axiata Tbk's shares and the public owns the rest. At the end of 2014, PT XL Axiata Tbk held customer base of 50 million subscribers.

The significant phenomenon in Indonesia's telecommunication industry is about the government policy that has just been regulated in early 2016 by the Ministry of Communications and Information Technology. The regulation will allow telecommunication providers to share their infrastructure, means that more than one provider can use one Base Transceiver Station (BTS). This regulation can benefit the smaller players of telecommunication providers and at the same time becomes a threat for the dominant player.

Mr Kristiono, the leader of Mastel (Masyarakat Telematika Indonesia) and also a former director of PT Telkom Indonesia, stated that the benefit of network/infrastructure sharing regulation will allow the provider to be more efficient in using their capital expenditure, but the disadvantage is the decreasing of quality of service (QoS) of the provider. (Noor) So far, there are five method of infrastructure sharing, which are CME Sharing, Multi Operator Radio Access Network (MORAN), Multi Operator Core Network (MOCN), Roaming, dan Mobile Virtual Network Operator (MVNO).

Starting in 2016, PT Indosat Tbk and PT XL Axiata Tbk shares their infrastructure by doing Multi Operator Radio Access Network (MORAN) method in four cities, which are Banyumas, Surakarta, Batam, and Banjarmasin., allowing each provider to save around 20% of their capital expenditure. However, if the providers do the Multi Operator Core Network (MOCN), they can save up to 50% for each provider. (Noor)

The second phenomenon is the interconnection regime. Interconnection is essential for operators to be able to communicate across networks, without it, subscribers of two different operators would not be able to communicate with each other. To make this happen, operators charge a rate to each other, it is called Interconnection Rate. Interconnection rate applied to both mobile calls and Short Message Service (SMS).

Before June 1st 2012, the regulation for SMS tariff was "Senders Keep All". For example, when a Telkomsel user sends an SMS to other provider's user, the tariff will go 100% for Telkomsel. On December 12th 2011, the Government, through BRTI, publish Surat No. 262/BRTI/XII/2011 that changed the tariff for short message services or SMS from the "sender keeps all" scheme into "cost-based scheme". This regime proves the saying "incumbent always win", with Telkomsel profiting even more from this rule. Telkomsel, having the biggest market share in the country, benefit from having other provider's users sending interconnection SMS to Telkomsel's users. If this regime still continue to be imposed, it is hard for PT Indosat Tbk to compete with PT Telekomunikasi Selular as the playing field is not leveled, due too much gap in the number of market share, especially outside Java.

The purpose of this study is to clarify the financial performance of PT Indosat Tbk compared to its top-two competitors, PT Telekomunikasi Selular and PT XL Axiata Tbk. The methods that will be used are financial ratio analysis and DuPont Analysis. Ratio analysis involves methods of calculating and interpreting financial ratios to analyze and monitor the firm's performance, and generally divided into Liquidity Ratios, Activity Ratios, Debt Ratios, Profitability Ratios, and Market Ratios.

1.2 Research Question

Relating to those phenomenons, the research questions that this paper aims to answer are:

1. How is the financial performance of PT Indosat Tbk compared to other companies in Indonesia of which operates in the telecommunication industry?
2. What recommendation can be given to PT Indosat Tbk to improve their performance according to the financial analysis?

2. Literature Review

In this chapter, the researcher will breakdown the literature review for assessing the financial performance of PT Indosat Tbk within 2010-2014. The literature review will be based on book "Principal of Managerial Finance" by Lawrence J. Gitman and Chad J. Zutter.

2.1 Telecommunication Industry in Indonesia

The regulation regarding telecommunication industry in Indonesia is written on Undang-Undang Republik Indonesia No. 36/1999. Telecommunications is transmitting and receiving of information in the

form of signs, signals, writing, images, sounds and sound through cable, optical, radio or other electromagnetic systems; Telecommunications equipment is any apparatus used in telecommunications equipment; Telecommunication equipment is a telecommunication tool that allows telecommunications; Telecommunication facilities and infrastructure are all things that enable and support the functioning of telecommunications.

According to the same Undang Undang, telecommunication services are the service to meet the telecommunication needs using telecommunication networks, telecommunications operation is the provision of telecommunications services and thus allowing the implementation of telecommunications; while telecommunications operator form in Indonesia is either an individual, cooperative, locally-owned enterprises, state-owned enterprises, private enterprises, government agencies, defense agencies band security of the state.

2.2 Annual Report

An annual report is annual publication that public corporations must provide to shareholders to describe their operations and financial conditions on a fiscal year basis. Typically, an annual report will contain the following sections: (Investopedia, 2015)

- Financial Highlights
- Letter to the Shareholders
- Narrative Text, Graphics, and Photos
- Management's Discussion and Analysis
- Financial Statements
- Notes to Financial Statements
- Auditor's Report
- Summary Financial Data
- Corporate Information

2.3 Financial Statement

Financial Statements provides information on the resource available for management, how the resources were being financed, and what the accomplishment of the company. The financial statements consist of income statement, balance sheet, and statement of shareholder's equity and statement of cash flows. The information provided by those financial statements can be used to calculate the financial ratios and to analyze the performance of a firm. Analysts use financial ratios because numbers in isolation typically convey little meaning. Thus, ratios are intended to provide meaningful relationship between individual values in the financial statement (Reilly, Brown, 2006). In this research, the financial ratio used to evaluate PT Indosat Tbk performance using historical data from 2010-2014.

2.4 Financial Ratio

Ratio analysis involves methods of calculating and interpreting financial ratios to analyze and monitor the firm's performance. The basic inputs to ratio analysis are the firm's income statement and balance sheet (Gitman, 2012). In ratio analysis, there are two types of ratio comparisons, which are cross-sectional analysis and time-series analysis. A cross-sectional analysis is a comparison of different firm's financial ratio at the same time (Gitman, 2012). This type of analysis is usually called as benchmarking. While time-series analysis is a comparison of current to past performance of a firm and assesses the firm's progress over time (Gitman, 2012).

Basically, Ratio Analysis can be divided into five categories: Liquidity Ratios, Activity Ratios, Debt Ratios, Profitability Ratios, and Market Ratios. Liquidity, activity and debt ratios primarily measure risk, profitability measures return, and market ratios measure both risk and return (Gitman, 2012).

2.4.1 Liquidity Ratios

Liquidity Ratios measures the firm's ability to pay its bills over the short run as they come due. Liquidity Ratios consists of Current Ratio and Quick Ratio.

- Current ratio

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} \quad (21)$$

- Quick Ratio

$$\text{Quick Ratio} = \frac{\text{Current Assets}-\text{Inventory}}{\text{Current Liabilities}} \quad (22)$$

2.4.2 Activity Ratios

Activity Ratios measure the speed with which various accounts are converted into sales or cash—inflows and outflows (Gitman, 2012).

- Inventory Turnover

$$\text{Inventory Turnover} = \frac{\text{Cost of Good Sold}}{\text{Inventory}} \quad (23)$$

- Average Collection Period

$$\text{Average Collection Period} = \frac{\text{Account Receivable}}{\text{Average sales per day}} \quad (24)$$

- Average Payment Period

$$\text{Average Payment Period} = \frac{\text{Accounts Payable}}{\text{Average purchases per day}} \quad (25)$$

- Total Asset Turnover

$$\text{Total Asset Turnover} = \frac{\text{Sales}}{\text{Total Assets}} \quad (26)$$

2.4.3 Debt Ratios

Debt Ratios indicates the investor's money being used to generate profits from sales. The more debt the company has, the greater the risk of being unable to meet its debt payments.

In general, the more debt the company uses in to their total assets, the greater its financial leverage. Financial leverage is the magnification of risk and return through the use of fixed-cost financing such as debt and preferred stock (Gitman, 2012).

- Debt Ratio

$$\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}} \quad (27)$$

- Times Interest Earned Ratio

$$\text{Times Interest Earned Ratio} = \frac{\text{Earnings before interest and taxes}}{\text{taxes}} \quad (28)$$

- Fix Coverage Payment Ratio

$$\begin{aligned} \text{Fixed-Payment Coverage Ratio} \\ = \frac{\text{Earnings before interest and taxes} + \text{lease payments}}{\text{Interest} + \text{Lease payments} + \\ \{(\text{Principal Payments} + \text{preferred stock dividends}) \times \left(\frac{1}{1-\tau}\right)\}} \end{aligned} \quad (29)$$

2.4.4 Profitability Ratios

Profitability ratio measures how well the company has operated during the year. In other words, it measures the ability of a company to obtain profits.

- Gross Profit Margin

$$\text{Gross Profit Margin} = \frac{\text{Sales}-\text{Cost of Good Sold}}{\text{Sales}} \quad (30)$$

- Operating Profit Margin

$$\text{Operating Profit Margin} = \frac{\text{Operating Profits}}{\text{Sales}} \quad (31)$$

- Net Profit Margin

$$\text{Net Profit Margin} = \frac{\text{Profit After Tax}}{\text{Sales}} \quad (32)$$

- Return On Asset

$$\text{Return on Total Assets} = \frac{\text{Profit before tax}}{\text{Total Assets}} \quad (33)$$

- Return On Investment

$$\text{Return on Equity} = \frac{\text{Profit After Tax}}{\text{Shareholders' Equity}} \quad (34)$$

- Earnings per Share

$$\text{Earning per Share} = \frac{\text{Earning available for common stockholders}}{\text{Number of shares of common stock outstanding}} \quad (35)$$

2.4.5 Market Ratios

Market ratios relate the firm's market value, as measured by its current share price, to certain accounting values (Gitman, 2012). The ratio gives the investors perception about how the firm is doing in the marketplace in terms of risk and return. There are two widely quoted market ratios, which are price/earnings ratio and market/book ratio.

- Price/Earnings Ratio

$$P/E \text{ Ratio} = \frac{\text{Market price per share of common stock}}{\text{Earnings per share}} \quad (36)$$

- Market/Book Ratio

$$M/B \text{ Ratio} = \frac{\text{Market price per share of common stock}}{\text{Book value per share of common stock}} \quad (37)$$

2.5 DuPont Analysis

DuPont system of analysis is used to dissect the firm's financial statements and to assess its financial condition. It merges the income statement and balance sheet into two summary measures of profitability, return on total assets (ROA) and return on common equity (ROE) (Gitman, 2012).

The first thing to calculate in the DuPont system is return on total assets (ROA). It uses to indicate how efficiently the firm has used its assets to generate sales (Gitman, 2012). The formula is:

$$ROA = \text{Net Profit Margin} \times \text{Total asset turnover} \quad (38)$$

Or the breakdown formula is;

$$ROA = \frac{\text{Earnings available for common stockholders}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total assets}} = \frac{\text{Earnings available for common stockholders}}{\text{Total assets}} \quad (39)$$

The second thing to do is calculate the return on equity (ROE) of the firm by multiplying the return on assets with the financial leverage multiplier (FLM). The use of financial leverage multiplier (FLM) is to convert ROA into the ROE reflects the impact of financial leverage on owners' return (Gitman, 2012). The formula is:

$$ROE = ROA \times FLM$$

$$ROE = \frac{\text{Earnings available for common stockholders}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Common stock equity}} = \frac{\text{Earnings available for common stockholders}}{\text{Common stock equity}} \quad (40)$$

3. Methodology

The research will be done through analyzing the financial ratio of PT Indosat Tbk in comparison to its top two competitors, PT Telekomunikasi Selular and PT XL Axiata Tbk. Identifying the problem statement will be the first step of the research, followed by reviewing literature that is relevant to the subject. Afterward, collection of the required data will be done; this data will include annual financial report of each company. Then, financial ratio analysis will be used to evaluate the financial performance of each company. Next, the result of the financial calculation of PT Indosat Tbk will be compared to its top two competitors, PT Telekomunikasi Selular and PT XL Axiata Tbk. Finally; the output of the analysis will become the conclusion of the research and can be developed to be recommendation for future research.

4. Data Analysis

PT Indosat Tbk's financial performance will be analyzed using time-series analysis and the result will be compared to its competitors, PT XL Axiata Tbk and PT Telekomunikasi Selular by using cross-section analysis. The data from 2011 to 2015 will be used to assess the financial performance of the company. The financial performance can be calculated and determined by using Financial Ratio and DuPont Analysis.

4.1 Time-Series Analysis

4.1.1 Financial Ratio Analysis

Below is the calculation of PT Indosat Tbk's financial ratio:

Categories	Financial Ratios	2011	2012	2013	2014	2015
Liquidity	Current Ratio	0.55	0.75	0.53	0.41	0.49
	Quick Ratio	0.54	0.75	0.53	0.40	0.49
	Inventory Turnover	99.98	169.45	276.54	210.67	285.01
	Average Collection Period	25.66	33.56	34.96	31.84	37.23
Activity	Average Payment Period	15.35	9.50	12.44	24.22	24.87
	Total Assets Turnover	0.39	0.41	0.44	0.45	0.48
Debt	Debt Ratio	0.64	0.65	0.70	0.73	0.76
	Times Interest Earned Ratio	1.58	1.09	0.64	0.76	0.96
	Fixed-Payment Coverage Ratio	1.49	1.08	0.70	0.80	0.96
	Gross Profit Margin	0.63	0.60	0.58	0.57	0.58
Profitability	Operating Profit Margin	0.15	0.14	0.05	0.07	0.09
	Net Profit Margin	0.05	0.02	-0.11	-0.08	-0.04
	Earnings per Share (EPS)	171.61	89.70	-490.71	-341.93	-214.11
	Return on Total Asset (ROA)	0.02	0.01	-0.05	-0.03	-0.02
Market	Return on Current Equity (ROE)	0.05	0.03	-0.16	-0.13	-0.09
	Price/Earning Ratio (P/E Ratio)	32.92	71.91	-8.46	-11.84	-20.08
	Market/Book Ratio (M/B Ratio)	1.63	1.81	1.37	1.55	1.68

4.1.1.1 Liquidity Ratio

The basic measures for liquidity are current and quick ratio. They differ in the way quick ratio exclude inventory in its calculation because inventory is actually less liquid. Thus, quick ratio shows the company's ability to meet its short-term obligation without inventory consideration. The graph above shown that PT Indosat Tbk had an upturn and downturn over the years for both ratio. It decreased quite significantly from 2011 to 2012, but it quickly declined in 2013 and kept declining in 2013 until it finally increased 0.09 point in 2015.

4.1.1.2 Activity Ratio

Activity ratios will give information on company's efficiency in managing various accounts that are converted into sales or cash – both inflows and outflows.

- Inventory Turnover

The inventory turnover of PT Indosat Tbk measures the activity or liquidity of the firm's inventory. The result shows quite significant increase from 2011 up to 2013, decrease slightly in 2014 and bounce back in 2015. However, inventory turnover shows a little value for companies in service industry such as telecommunication in comparison with companies that actually makes and sells goods. From the inventory turnover, we can get the average age of inventory by dividing 365 with the inventory turnover of each year. The chart shows that the average age of inventory in PT Indosat

Tbk decrease every year except in 2014, meaning that the company sells its inventory in average of 2 days in the time span of 5 years.

- **Average Collection Period**
The average collection period of PT Indosat Tbk on the course of 5 years is quite stable. This means that the day PT Indosat Tbk takes to collect account receivable is stable from 2011-2015.
- **Average Payment Period**
The average payment period of PT Indosat Tbk from 2011 to 2012 decrease around 38% but it kept increasing afterwards. It means that the amount of time PT Indosat Tbk takes to pay its account payable is increasing over time from 2012 to 2015. However, this does not necessarily mean PT Indosat Tbk is not capable to pay its account payable in time, as the number is relative to the credit terms given by its suppliers.
- **Total Asset Turnover**
The asset turnover of PT Indosat Tbk is rising steadily from 2011 to 2015, indicating that the firm's getting more efficient in using its asset to generate sales.

4.1.1.3 Debt Ratio

- **Debt Ratio**
The debt ratio of PT Indosat Tbk is increasing every year from 2011-2015. The debt ratio from increased 12.16% over the course of 5 years. This means that the proportion of total assets financed by the firm's creditors increased every year.
- **Times Interest Earned Ratio**
The times interest earned ratio of PT Indosat Tbk decrease from 2011 to 2013, however, it increase from 2013 up to 2015. This means that from 2011 to 2013, the ability of the firm to fulfill its interest obligation is decreasing, but it increased again from 2013 to 2015, even though the 2015 ratio (0.96) is still below the 2011 ratio (1.58).
- **Fixed-Payment Coverage Ratio**
The fixed payment coverage ratio shows the firm's ability to meet fixed-payment obligation, for PT Indosat Tbk, it is the lease payment. It decrease from 2011 to 2013, however, it increase from 2013 up to 2015. This means that from 2011 to 2013, the ability of the firm to fulfill its fixed-payment obligation is decreasing, but it increased again from 2013 to 2015, even though the 2015 ratio (0.96) is still below the 2011 ratio (1.49).

4.1.1.4 Profitability Ratio

- **Gross Profit Margin**
The gross profit margin of PT Indosat Tbk decrease steadily from 2011 to 2014 but it increased slightly of 0.01 point from 2014 to 2015. It means that the percentage of each sales dollar remaining after the firm has paid for its cost of service is decreasing from 2011-2014, but it got better from 2014 to 2015.
- **Operating Profit Margin**
The operating profit margin of PT Indosat Tbk decrease from 2011 to 2013, but it increased from 2013 to 2015. Because the higher the operating profit margin is better, we can conclude that the PT Indosat Tbk's performance in earning "pure profit" on each sales rupiah worsen from 2011 to 2013 but it gets better from 2013 to 2015.
- **Net Profit Margin**
The net profit margin is a commonly referred measure of the firm's success with respect to earnings on sales. The net profit margin decrease from 2011-2013 until it reaches negative value due to net loss the company suffered on financial year 2013. The net profit margin gets better from 2013 to 2015 even though they still suffer from net loss every year.
- **Earnings per Share**
The earnings per share also decrease quite significantly from 2011 to 2013 due to the decreasing earning available for common stockholder. Starting in 2013 to 2015, there is no earnings that can be distributed to each outstanding share of common stock due to net loss suffered by PT Indosat Tbk.
- **Return on Asset**
Return on asset of PT Indosat Tbk decreased from 2011 to 2013, when it reaches negative value. It increase slightly from 2013 to 2015 even though the value is still negative due to net loss suffered by PT Indosat Tbk on the financial year 2013-2015. This means that PT Indosat Tbk's performance in managing its asset to generate profit is worsen from 2011-2013 but got better in 2013-2015.
- **Return on Equity**
Return on equity of PT Indosat Tbk decreased from 2011 to 2013, when it reaches negative value. It increase slightly from 2013 to 2015 even though the value is still negative due to net loss suffered by PT Indosat Tbk on the financial year 2013-2015. This means that PT Indosat Tbk could not

distribute return to common stockholders from 2013-2015.

4.1.1.5 Market Ratio

- **Price/Earning Ratio**
The P/E ratio of PT Indosat Tbk increased from 2011 to 2012, but it significantly dropped from 2012 to 2013 and continued to decrease until 2015. This means that the amount that investors' confidence on PT Indosat Tbk's performance got better from 2011 to 2012 but it steadily worsen from 2012 to 2015.
- **Market/Book Ratio**
PT Indosat Tbk's Market/Book Ratio is slightly stable, with the most notable decreasing of ratio value from 2012 to 2013. This ratio provides an assessment of how the investors view the firm's performance, meaning that from 2012 to 2013, the stock of the firm was not expected to perform well, but the stock's performance was expected to be better from 2013 to 2015. The value above 1 meaning that the investors pay PT Indosat Tbk's stock for more than its book value.

4.1.2 DuPont Analysis

DuPont analysis tells us that ROE is affected by three things, which are operating efficiency (profit margin), asset-use efficiency (total asset turnover), and financial leverage (the equity multiplier).

Table 2. PT Indosat Tbk DuPont Analysis Calculation

ROE DuPont Analysis					
Formula	2011	2012	2013	2014	2015
Net Profit/Sales	0.045	0.022	-0.112	-0.077	-0.043
Sales/Total Assets	0.394	0.406	0.438	0.452	0.483
Total Assets/Total Equity	2.773	2.847	3.301	3.724	4.176
ROE	4.96%	2.51%	-16.14%	-12.99%	-8.77%

*The negative value(s) is not included in the industry average calculation

In ROA analysis of PT Indosat Tbk, the value decreased from 2011 to 2013 due to decreasing net profit margin. It increase slightly from 2013 to 2015 even though the value is still negative due to net loss suffered by PT Indosat Tbk on the financial year 2013-2015. This means that PT Indosat Tbk's performance in managing its asset to generate profit is worsen from 2011-2013 but got better in 2013-2015.

Return on equity DuPont analysis of PT Indosat Tbk shows the significance of financial leverage to the firm's performance. It showed the value decreasing from 2011 to 2013, when it reaches negative value. It increases slightly from 2013 to 2015 even though the value is still negative due to net loss suffered by PT Indosat Tbk on the financial year 2013-2015. This means that PT Indosat Tbk could not distribute return to common stockholders from 2013-2015.

4.2 Cross Section Analysis

Cross section analysis will be used to compare PT Indosat Tbk's performance with its top two competitors, PT XL Axiata Tbk and PT Telekomunikasi Selular in 2015.

4.2.1. Financial Ratio Analysis

Table 3. Cross-section Financial Ratio Analysis

Categories	Financial Ratios	3-Companies Industry Average	PT Ooredoo Tbk	Indosat Tbk	PT XL Axiata Tbk	PT Telekomunikasi Selular
Liquidity	Current Ratio	0.84	0.49		0.64	1.39
	Quick Ratio	0.84	0.49		0.64	1.38
Activity	Inventory Turnover	154.68	285.01		146.97	32.06

	Average Collection Period	21.89	37.23	14.70	13.75
	Average Payment Period	548.73	24.87	166.13	1455.20
	Total Assets Turnover	0.59	0.48	0.39	0.90
Debt	Debt Ratio	0.64	0.76	0.76	0.39
	Times Interest Earned Ratio	0.81**	0.96	0.67	(N/A)
	Fixed Payment Coverage Ratio	0.92**	0.96	0.88	(N/A)
Profitability	Gross Profit Margin	0.68	0.58	0.49	0.96
	Operating Profit Margin	0.26	0.09	0.14	0.56
	Net Profit Margin	0.29*	-0.04	-0.00111	0.29
	Earnings per Share (EPS)	122,901,098,901*	-214	-100	122,901,098,901
	Return on Total Asset (ROA)	0.27*	-0.02	-0.0004	0.27
	Return on Current Equity (ROE)	0.43*	-0.09	0.00	0.43
Market	Price/Earning Ratio (P/E Ratio)	(N/A)***	-20.08	-29.76	(N/A)
	Market/Book Ratio (M/B Ratio)	1.80**	1.68	1.91	(N/A)

*The negative value(s) is not included in the industry average calculation

**Unavailable data is not included in the industry average calculation

***The negative value(s) and unavailable data are not included in the industry average calculation

■ = The largest value among the companies

4.2.1.1. Liquidity Ratio

In both ratio, PT Indosat Tbk's performance is way below the industry average, around 58% of the industry average. The high number of industry average is caused by PT Telekomunikasi Selular's ratio that is almost thrice of PT Indosat Tbk's ratio.

4.2.1.2. Activity Ratio

In both average collection period and inventory turnover, PT Indosat Tbk is way above the industry average. This indicated that PT Indosat Tbk is better than its competitors in collecting account receivable, but high inventory turnover can indicate that PT Indosat Tbk is inefficient in managing its inventories. For average payment period and total asset turnover, PT Telekomunikasi Selular has the highest value, significantly higher than PT Indosat Tbk's. This means that PT Indosat Tbk's time to pay their account payable is better than its competitors, but PT Telekomunikasi Selular is more efficient in using its asset than PT Indosat Tbk.

4.2.1.3. Debt Ratio

For debt ratio, most calculation excluded PT Telekomunikasi Selular as they do not provide enough data in their financial reports. Compared to PT XL Axiata Tbk, PT Indosat Tbk's ratio is higher in all three ratios. This means that PT Indosat Tbk proportion of total assets financed by the firm's creditors is the biggest compared to PT XL Axiata Tbk, but PT Indosat Tbk is better at fulfilling its obligations, referring to the times-interest earned ratio and fixed-payment coverage ratio.

4.2.1.4. Profitability Ratio

In all profitability ratio, PT Telekomunikasi Selular performs best among its competitors. This is because PT Telekomunikasi Selular did not suffer from net loss every year and its net profit is increasing instead of decreasing. The earnings per share value of PT Telekomunikasi Selular is extremely higher than its competitors due to PT Telekomunikasi Selular's status as private company, meaning that its shares are privately owned instead of publicly traded.

4.2.1.5. Market Ratio

For debt ratio, all calculation excluded PT Telekomunikasi Selular as they are not a public company. Price earning ratio of PT Indosat Tbk is better than PT XL Axiata Tbk even though both are negative. However, market/book ratio of PT XL Axiata Tbk is better than PT Indosat Tbk, meaning that the investors are willing to pay more than its book value for PT XL Axiata Tbk's shares compared to PT Indosat Tbk.

4.2.2. DuPont Analysis

Table 4. Cross-section DuPont Analysis

ROE DuPont Analysis				
Formula	3- Companies Industry Average	PT Indosat Tbk	PT XL Axiata Tbk	PT Telekomunikasi Selular
Net Profit/Sales	0.294	-0.043	-0.001	0.294
Sales/Total Assets	0.592	0.483	0.389	0.904
Total Assets/Total Equity	3.328	4.176	4.176	1.633
ROE	43.43%*	-8.77%	-0.18%	43.43%

*The negative value(s) is not included in the industry average calculation

In 2015, the return on equity of PT Indosat Tbk and PT XL Axiata were negative because of the net loss they suffer in that financial year. The negative value means that PT Indosat Tbk and PT XL Axiata Tbk could not distribute earning to its common stockholders. On the contrary, PT Telekomunikasi Selular's return on equity reached 43.43% due to its high net profit and its high financial leverage.

5. Conclusion and Recommendation

5.1 Conclusion

Based on some financial ratios analytical methods that have been used, overall it Shows that in 2011–2015, PT Indosat Tbk has not performed quite well. It can be concluded from net loss that it suffered from 2013-2015, resulting in mostly negative profitability ratio. It also resulted in PT Indosat Tbk could not distribute return to its investors due to net loss. However, the market book ratio of PT Indosat Tbk is still above 1, meaning that investors still value PT Indosat Tbk's stock more than its book value. In addition, liquidity ratio of PT Indosat Tbk is relatively stable compared to its fluctuating trend in other ratios. Compared with other companies, PT Indosat Tbk still falls behind PT Telekomunikasi Selular in almost every aspects, but PT Indosat Tbk's market ratio is still better than PT XL Axiata Tbk (but it is to be noted that PT Telekomunikasi Selular is excluded in this calculation).

In conclusion, PT Indosat Tbk's performance is declining in almost every aspect throughout these 5 years, the biggest indicator being the net loss suffered from 2013-2015.

5.2 Recommendation

Based on the conclusion above, some recommendations that can be given to improve PT Indosat Tbk's

financial performance are:

More Efficient on Managing Capital Expenditure

The cost of infrastructure can be decreased by implementing the new regulation in which PT Indosat Tbk can share Base Transceiver Station (BTS), but they can still use their own spectrum. We can see that PT Telekomunikasi Selular still dominate in Indonesia's telecommunication industry, therefore PT Indosat Tbk can cooperate with other smaller player, which is PT XL Axiata Tbk, to do infrastructure sharing. If PT Indosat Tbk and PT XL Axiata Tbk manage to share their infrastructure throughout Indonesia using Multi Operator Core Network (MOCN) once the regulation is official, they can save up to 50% of their capital expenditure for each provider. The remaining capital expenditure can be used for other means such as marketing cost, which can result in acquiring new customers.

Overcoming Interconnection Rate

One of the ways for PT Indosat Tbk to increase their sales revenue can be through looking at the level of price and tariff. One of the most damaging cost is the interconnection rate, for PT Indosat Tbk does not have market share as big as PT Telekomunikasi Selular. PT Indosat Tbk keeps suffering from having to pay the interconnection rate, resulting in loss of up to 532 billion rupiah in 2014 alone. The recommendation is for PT Indosat Tbk to recover the loss from off-network SMS by charging a higher price for customers who send off-network SMS, but maintaining the price of on-network SMS. This will hopefully encourage customers to only send on-network SMS, which will ultimately reduce interconnection cost.

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Financial Performance Analysis of PT Agung Podomoro Land Tbk Related to The Crisis of Property Industry in Indonesia

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Abstract

Exchange The growth of property business started in 2010, which in that year the property business started the increasing phase. This happened because of the higher demand by consumers that mainly from upper middle class citizens in buying and investing property. The phase from 2010 until 2013 was the greatest phase of property industry. In year 2014, the rate of property was getting higher that made the market saturated and reach the stage of overvalued. This led 2015 as the worst year of property business. PT Agung Podomoro Land Tbk is one of the leading property companies in Indonesia. PT Agung Podomoro Land Tbk was highlighted for its superblock concept, which combining office, residence, and shopping centre in one place. PT Agung Podomoro Land Tbk has won several awards for its performance especially as one the best public listed companies in property industry.

This study will analyse the financial performance of property industry, which focus on PT Agung Podomoro Land Tbk as the 5th rank of Golden Developer from Indonesia Property Watch in 2014. The company will be compared to its big competitors in property industry such as PT Lippo Karawaci Tbk, PT Ciputra Development Tbk, PT Bumi Serpong Damai Tbk, and PT Pakuwon Jati Tbk. The data will be taken from year 2011 to year 2015. There are two main methods used in analysing the performance, which are Financial Ratio Analysis and DuPont System of Analysis. Although PT Agung Podomoro Land Tbk was a market leader in developing middle-class apartment, the growth in market price of PT Agung Podomoro Land Tbk was underperformed compares to growth in market price of The Property, Real Estate, and Building Construction Index and Jakarta Composite Index (IHSG). Also, in 2014 the growth in market price of PT Agung Podomoro Land Tbk was -12.99%, which is the lowest between its other 4 big competitors. This study will be focus on analysing the performance of PT Agung Podomoro Land Tbk in time before the crisis in property industry, when it showed symptoms of crisis, and when the crisis happened by using financial performance analysis.

Keywords: Financial Performance; Agung Podomoro Land; Property; Financial Ratio; CAGR; DuPont

1. Introduction

1.1 Research Background

The growth of property business started in 2010, this happened because of the higher demand by consumers in buying and investing property that mainly from upper middle class citizens. Their needs of residence, office, and shopping centre for their living were increased. As in 2010, Indonesian property rate was the most convenient to investors compares to other ASEAN countries. This led to prediction of property business will be very promising industry for the next 2-3 years after. Property business was excellent In 2013, the amount of new developers that entered the property industry rose up because of saw the big opportunity came from the trend of industry. In fact, the government was able to fulfil people needs for only 50,000 housing units with the price lower than Rp80, 000,000 per unit (BisnisUKM, 2012). The rest of housing development was handled by the private companies, which led to new big opportunity for new developers to entered the market. The increased of new developers was brought property business

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to its peak in 2013. The growth of recovered national economy was also the factor that led increasing. The phase from 2010 until 2013 was the greatest phase of property industry, in fact the rate of properties increased 30% - 40% increased each of year. The good growth of property business from 2010 to 2014 was caused by the economic growth and price adjustment in ASEAN countries.

In 2014, property industry showed symptoms of declining phase. First, the presence of tight monetary policy by Bank Indonesia and mortgage loan that get tightened. Second, new amendment for Loan To Value policy by Bank Indonesia which contributed in the delaying and cancelling of property plan purchased by the upper middle class consumers. Third, the rate of properties was keep increasing from 2013 which made the market saturated and entered the stage of overvalued. Forth, there are problems in Indonesia such as; current account deficit, the falling value of rupiah, and the falling of stock market. In addition, these problems made the growth of property slowed down.

2015 was the worst year of the property business. The selling of properties was decreased into 30% for the upper middle class. In the research conduct by Indonesian Property Watch (IPW) sales in the middle and upper class respectively fell into 36.9% and 31.8% (Maulana, 2015). Also, there was a survey conducted by Bank Indonesia predicted that these two segment would be growth no more than 4% by the end 2015. However, selling for lower middle class was increased 57%.

In 2014, there are 5 companies that awarded as the Golden Developer from Indonesian Property Watch. The companies are PT Agung Podomoro Land Tbk, PT Lippo Karawaci Tbk, PT Ciputra Development Tbk, PT Bumi Serpong Damai Tbk, and PT Pakuwon Jati Tbk. These companies have highest values in asset value, equity, revenue, profit, and growth.

PT Agung Podomoro Land Tbk was highlighted of its superbloc concept, which combining office, residence, and shopping centre in one place (Company at Glance, 2012). PT Agung Podomoro Land Tbk has specialty in building apartment in big cities in Indonesia, their segment is middle class market. Podomoro City, one of the highlighted projects of PT Agung Podomoro Land Tbk, achieved Golden Trophy Awards 2015 for its location, development, marketing, and management. (Indonesia Property Watch, 2015)

The problem that highlighted of PT Agung Podomoro Land Tbk was its market price below both of the Jakarta Composite Index (IHSG) and property industry for the year 2011 to 2015 (Indonesia Stock Exchange, 2015). This research will assess the financial performance of Agung Podomoro Land Tbk to discover the root cause of this problem as well as the base of building recommendation.

1.2. Research Questions

1. How is the financial performance of PT Agung Podomoro Land Tbk for the year 2011- 2015?
2. What are the factors affecting underperform of APLN compares to its industry?
3. What is the recommendation to improve the financial performance PT Agung Podomoro Land Tbk?

2. Literature Review

2.1 Financial Ratios

Financial ratios consist of ratios that used to measure the performance of the company in the selected period. The ratios can be compared and analyzed after getting data from financial statement of company, which can be compared to other companies. Financial ratios give advantage in evaluating company's performance and gives recommendations in order to make a better performance of the company. These formulation below based on Gitman (2013).

2.2.1 Liquidity Ratios

Liquidity ratios used to determine the company's ability to pay its short-term obligation or debt. These ratios can give an early sign if the company has a bad financial condition, problem in cash flow, and leads to be bankrupt.

- Current ratio

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} \quad (41)$$

- Quick Ratio

$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}} \quad (42)$$

2.2.2 Activity Ratios

Activity ratios are ratios that measure the effectiveness of the company in utilizing all the resources such as asset, leverage or other balance sheet accounts. These ratios involve a comparison between the level of sales and investments in various types of assets.

- Inventory Turnover

$$\text{Inventory Turnover} = \frac{\text{Cost of Good Sold}}{\text{Inventory}} \quad (43)$$

- Average Collection Period

$$\text{Average Collection Period} = \frac{\text{Account Receivable}}{\text{Average sales per day}} \quad (44)$$

- Average Payment Period

$$\text{Average Payment Period} = \frac{\text{Accounts Payable}}{\text{Average purchases per day}} \quad (45)$$

- Total Asset Turnover

$$\text{Total Asset Turnover} = \frac{\text{Sales}}{\text{Total Assets}} \quad (46)$$

2.2.3 Debt Ratios

Debt ratios are ratios that measure company's ability in fulfill their long – term obligations. Debt ratios are really important to know the financial health of a company.

- Debt Ratio

$$\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}} \quad (47)$$

- Times Interest Earned Ratio

$$\text{Times Interest Earned Ratio} = \frac{\text{Earnings before interest and taxes}}{\text{taxes}} \quad (48)$$

2.2.4 Profitability Ratios

Profitability ratios measures the ability of company in generating earnings as compared to its expenses and other relevant cost incurred during in period of time. It can be also defined as the ability of a company to generates profit related to company's assets, sales, and equity.

- Gross Profit Margin

$$\text{Gross Profit Margin} = \frac{\text{Sales} - \text{Cost of Good Sold}}{\text{Sales}} \quad (9)$$

- Operating Profit Margin

$$\text{Operating Profit Margin} = \frac{\text{Operating Profits}}{\text{Sales}} \quad (10)$$

- Net Profit Margin

$$\text{Net Profit Margin} = \frac{\text{Profit After Tax}}{\text{Sales}} \quad (11)$$

- Return On Asset

$$\text{Return on Total Assets} = \frac{\text{Profit before tax}}{\text{Total Assets}} \quad (12)$$

- Return On Investment

$$\text{Return on Equity} = \frac{\text{Profit After Tax}}{\text{Shareholders' Equity}} \quad (13)$$

- Earnings per Share

$$\text{Earning per Share} = \frac{\text{Earning available for common stockholders}}{\text{Number of shares of common stock outstanding}} \quad (14)$$

2.2.5 Market Ratios

Market ratios give information about investor's perception towards company in terms of risk and return in marketplace. Market ratios can only be used for a company that has been selling its shares in the capital market.

- Price/Earnings Ratio

$$P/E \text{ Ratio} = \frac{\text{Market price per share of common stock}}{\text{Earnings per share}} \tag{15}$$

- Market/Book Ratio

$$M/B \text{ Ratio} = \frac{\text{Market price per share of common stock}}{\text{Book value per share of common stock}} \tag{16}$$

2.3 DuPont Analysis

DuPont system of analysis is a method to measure the firm’s performance and financial condition. There are two formulas that being used in DuPont system analysis .The first formula in the DuPont system is return on total assets (ROA) which indicates how efficient the firm has used its assets to generate the sales. The formula is:

$$ROA = \text{Net Profit Margin} \times \text{Total asset turnover} \tag{17}$$

The second formula is calculating the return on equity (ROE) of the firm by multiplying the return on assets with the financial leverage multiplier (FLM). Financial leverage multiplier (FLM) used to convert ROA into the ROE reflects the impact of financial leverage on owners’ return. The formula is:

$$ROE = \frac{ROA \times FLM}{\text{Total assets}} \times \frac{\text{Earnings available for common stockholders}}{\text{Common stock equity}} = \frac{\text{Earnings available for common stockholders}}{\text{Common stock equity}} \tag{18}$$

3. Methodology

This research will mainly focus on analyzing PT Agung Podomoro Land Tbk. Researcher will collect the data of the main company and its competitor from their annual reports in year 2011 - 2015. The data of competitors and sector will be use as benchmark of comparison. Researcher will analyze the financial performance of the company by using two main analyses that are time series analysis and cross-section analysis. In two main analyses, researcher will use the financial ratios analysis and DuPont system analysis. The result of analysis will be use for making conclusion and giving useful recommendation for the further research and the main company.

4. Data Analysis

4.1 Time Series Analysis

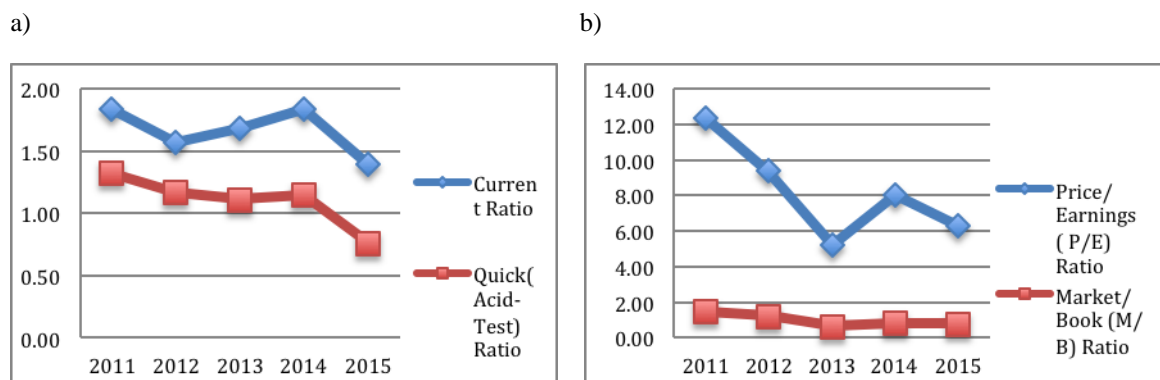


Figure.1. (a) Liquidity Ratios (b) Market Ratios

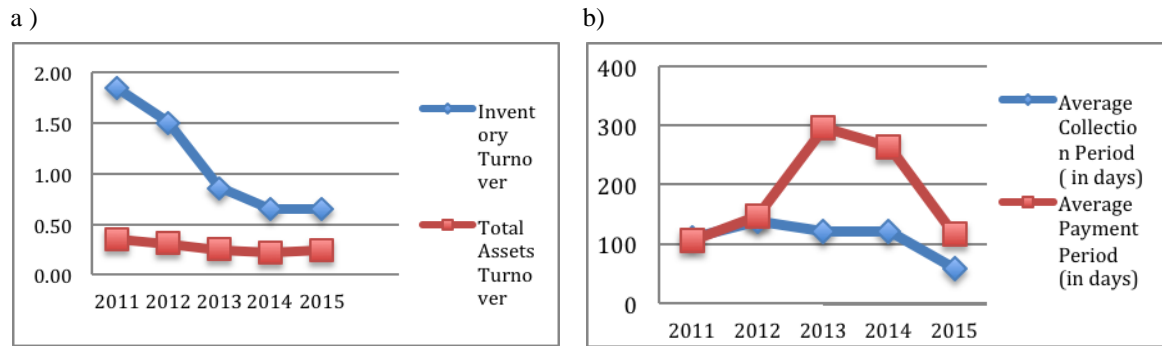


Figure 2. (a) Activity Ratios (b) Activity Ratios

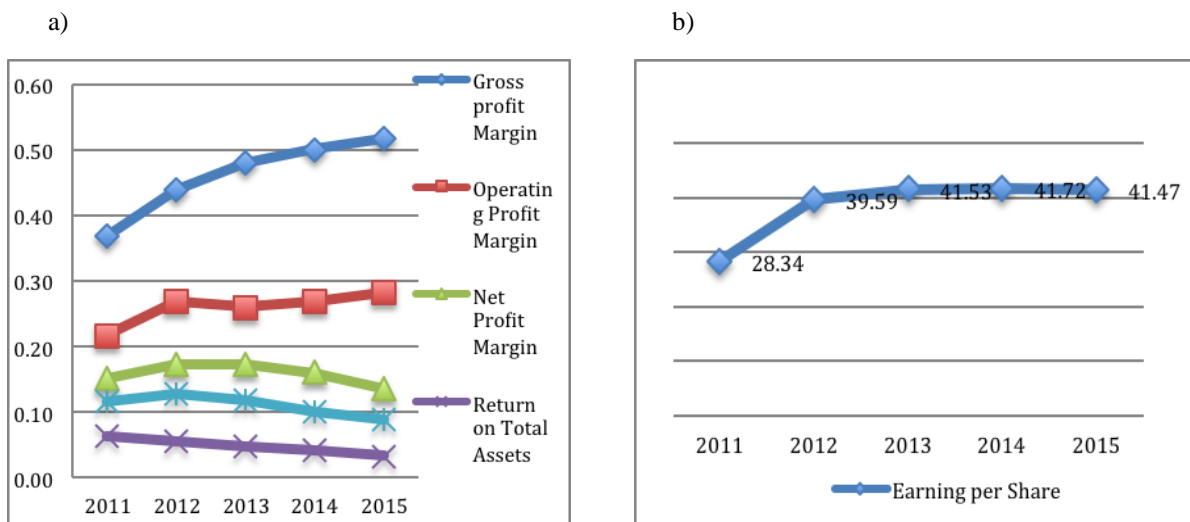


Figure 3. (a) Profitability Ratios (b) Profitability Ratios

4.1.1 Financial Ratio Analysis

4.1.1.1 Liquidity Ratios

The current ratio of PT Agung Podomoro Land Tbk was decreasing from 2011 – 2012, but it increased from 2013 to 2014. PT Agung Podomoro Land Tbk reached its highest current ratio in 2014. This means in 2014 PT Agung Podomoro Land Tbk has the good ability to fulfil its short-term obligations, although year 2014 was defined as the worst year of property. In 2015, the ratio was once again decreased. The quick ratio is constantly declining each year from 2011- 2015. Although it was declining, the company still can fulfil the short - term obligation because the ratio is still positive.

4.1.1.2 Activity Ratios

The inventory turnover of PT Agung Podomoro Land Tbk was significantly declining from the 2011 to 2014. This because the inventories of the company were increasing meanwhile the cost of good sold was stabled. The average collection period was increasing from 2011 to 2012, after that decreased in 2013, and remained stable in 2014. The ratio significantly decreasing from 2014 to 2015, this means PT Agung Podomoro Land Tbk was performed better in collecting its receivables by resulting a shorter days to collect. The longest days taken by PT Agung Podomoro Land Tbk to fulfill debt is from 2013 to 2014, because in these two years the account payable was higher than other years. Total asset turnover showed the ability of company to generate it sales by using the total asset of the company. The ratio was declining from 2011 to 2014, while in 2015 the ratio was slightly increased. This because of the total asset of PT Agung Podomoro Land Tbk was constantly increasing from 2011 to 2015.

4.1.1.3 Debt Ratios

PT Agung Podomoro Land Tbk's debt ratio was increasing in the recent four years, while in 2015 the ratio slightly decreased. The increasing of debt ratio influenced by both of company's total liabilities and total asset that was constantly increasing from 2011 to 2015. The times interest ratio of this company was increasing from 2011 to 2013 and slightly decreasing from 2014 to 2015, it shows that the company has a low ability to pay its interest.

4.1.1.4 Profitability Ratios

The gross profit margin was constantly increased from 2011 to 2015. This affected by the increasing both of gross profit and sales from 2011 to 2015. The increased of gross profit was driven by recurring revenues and sales recognition. The operating profit margin was increased in 2012 for 5 %. This may affected by the expansion of the company into growing second tier cities in Indonesia such as Bali, Balikpapan, Makassar, Karawang, Bandung, and Batam. This showed the company successfully strengthening its position as reliable property company in Indonesia for its main activity performance in constructing property. The net profit margin of PT Agung Podomoro Land Tbk was in the range 14 % - 17 % in the last five years. The net profit margin was increased in 2012 and remained stable until 2013. This because of in 2012 the sales and revenues was increased 22.6% and in 2013 the tax expense was decreased 21%. The earning per share of the company was constantly increasing from 2011 to 2014 and slightly increased in 2015. This means the company could maintain the relation with the investors because of the company has higher dividend to be distributed to investors in the recent 5 five years. The return on total assets of PT Agung Podomoro Land Tbk was constantly decreasing from 2011 to 2015. This means the company was not well maintaining the ability to utilize the assets for generating profit. Same as return on asset, return of equity of PT Agung Podomoro Land Tbk in the last five years was constantly decreasing. This happened because of the total equity was constantly increasing from 2011 to 2015. This means the company has a low ability to generate profits from using its own capital and earnings that available for common stockholders.

4.1.1.5 Market Ratios

PT Agung Podomoro Land Tbk shows a bad trend, which is significantly decreasing from 2011 to 2013. This means the company was not able to manage its performance so that the level of investor's confidence gets lowered from year to year. Same as price / earnings ratio, the company shows a declining trend from 2011 to 2013 for market to book ratio. The company able slightly rose up in 2014 but then back to decrease in 2015. The market price per share of PT Agung Podomoro Land Tbk was increased from 2011 to 2012 then significantly fell 72% in 2013.

4.1.2 DuPont System of Analysis

Table 1. DuPont System of Analysis

PT Agung Podomoro Land Tbk					
	2011	2012	2013	2014	2015
Net Profit Margin	0.18	0.18	0.19	0.19	0.19
Total Asset Turnover	0.35	0.31	0.25	0.22	0.24
Equity Multiplier	2.16	2.39	2.73	2.81	2.71
ROA	6.32%	5.54%	4.73%	4.15%	4.55%
ROE	11.5%	12.8%	11.8%	10.1%	8.9 %

PT Agung Podomoro Land Tbk's operating efficiency defined by net profit margin. The net profit margin of PT Agung Podomoro Land Tbk's was relatively stable. The range of ratio was between 0.18 and 0.19 from years to years. The total asset turnover of PT Agung Podomoro Land Tbk's was constantly declining from 2011 to 2015. From 2011 to 2014 the equity multiplier of PT Agung Podomoro Land Tbk was increased, while in 2015 the ratio was slightly decreased. The highest financial leverage condition was in 2014; this means the company use more debt to finance the asset. In summary, PT Agung Podomoro Land Tbk has the highest ROE in 2012. The dominant factor that constructed ROE in 2012 was Total Asset Turnover, which indicates the asset-use efficiency.

4.2 Cross- Section Analysis

4.2.1 Financial Ratio Analysis

Table 2. Financial Ratio Analysis

		2015					
	Financial Ratio	Sector	APLN	CTRA	LPKR	BSDE	PWON
	Current Ratio	2.76	1.39	1.57	6.91	2.73	1.22
Liquidity	Quick (acid-test) Ratio	1.29	0.76	0.63	2.70	1.67	0.71
	Inventory Turnover	0.50	0.65	0.50	0.23	0.24	0.87
	Average Collection Period (in days)	38	58	42	59	8	21
	Average Payment Period (in days)	75	115	88	60	74	37
Activity	Total Assets Turnover	0.23	0.24	0.29	0.22	0.17	0.25
	Debt Ratio	0.51	0.63	0.50	0.54	0.39	0.50
Debt	Times Interest Earned Ratio	4.85	2.28	5.41	5.72	4.67	6.19
	Gross Profit Margin	0.56	0.52	0.50	0.44	0.75	0.58
	Operating Profit Margin	0.33	0.28	0.31	0.16	0.41	0.49
	Net Profit Margin	0.23	0.19	0.23	0.07	0.38	0.30
	Earning Per Share	69.36	54.54	114.39	26.73	121.90	29.25
	Return on Total Assets (in %)	5%	5%	7%	1%	7%	8%
Profitability	Return on Common Equity (in %)	11%	12%	13%	3%	11%	15%
	Price/earnings (P/E) Ratio	20.75	8.05	11.67	38.72	14.77	16.96
Market	Market/book (M/B) Ratio	1.71	0.75	2.44	1.26	1.57	2.53

4.2.1.1 Liquidity Ratios

All of the company PT Lippo Karawaci Tbk had the highest both current ratio and quick (acid –test) ratio for the year 2015 compared to other companies and the sector. This means PT Lippo Karawaci Tbk has best ability in paying the short – term obligations by having sufficient short-term assets. The performance of PT Agung Podomoro Land Tbk was in 4th rank and underperformed towards sector's ratio. Meanwhile, PT Agung Podomoro Land Tbk has the lowest performance compared to other companies also the sector.

4.2.1.2 Activity Ratios

The highest inventory turnover was PT Pakuwon Jati Tbk, while PT Agung Podomoro Land Tbk was on the 2nd rank compared to other companies. Both of PT Pakuwon Jati Tbk and PT Agung Podomoro Land Tbk were performing better than overall companies in the same sector. The fastest average collection period was PT Bumi Serpong Damai Tbk, the ratio of this company was really contrast compared to other companies and sector. PT Agung Podomoro Land Tbk took 50 days longer that PT Bumi Serpong Damai Tbk. PT Agung Podomoro Land Tbk took the longest period to pay its account payable compared to other companies and the sector. The gap between average payment period of PT Agung Podomoro Land Tbk and sector was quite high. The average payment period of sector was only 75 days. The total asset turnover of PT Agung Podomoro Land Tbk was on the 3rd rank, but it was better than the sector.

4.2.1.3 Debt Ratios

PT Agung Podomoro Land Tbk has the highest number of debt to asset ratio which also higher than the sector. This result indicates that PT Agung Podomoro Land Tbk has a higher risk to not fulfill the obligations. The highest times interest earned ratio was PT Pakuwon Jati Tbk. This means PT Pakuwon Jati Tbk had the best performance in fulfilling the annual interest by using the earning before income and taxes they had in 2015.

4.2.1.4 Profitability Ratios

The highest gross profit margin was PT Bumi Serpong Damai Tbk while PT Agung Podomoro Land Tbk's ratio was slightly below the sector. PT Agung Podomoro Land Tbk's operating profit margin was underperforming below the sector; meanwhile PT Pakuwon Jati Tbk has the highest ratio. PT Bumi Serpong Damai Tbk has the highest ratio for both of net profit margin and earning per share, meanwhile PT Agung Podomoro Tbk was performed below the sector for both of those ratios. PT Pakuwon Jati Tbk has

the highest ratio for both of return on total assets and return on common equity, meanwhile PT Agung Podomoro Land Tbk has a lower ratio from sector for return on total asset and has a same ratio for the return on common equity.

4.2.1.5 Market Ratios

The price to earnings ratio of PT Agung Podomoro Land Tbk was underperformed in compare to other companies and the sector. The highest price to earnings ratio was PT Lippo Karawaci Tbk with 8 times higher than PT Agung Podomoro Land Tbk. The score of all companies were greater than 1 in market to book ratio which means the market value of companies were greater than the valuation of equity in the financial statement. Meanwhile PT Agung Podomoro Land Tbk was the lowest score among other companies and the sector and the value was lower than 1.

4.2.2 DuPont System of Analysis

Table 3. DuPont System of Analysis

	2015				
	APLN	CTRA	LPKR	BSDE	PWON
Net Profit Margin	0.19	0.23	0.07	0.38	0.30
Total Asset Turnover	0.24	0.29	0.22	0.17	0.25
Equity Multiplier	2.71	2.01	2.18	1.63	1.99
ROA	3.29%	4.89%	1.30%	5.94%	6.72%
ROE	8.92%	9.84%	2.83%	9.68%	13.35%

The highest net profit margin for 2015 between five companies is PT Bumi Serpong Damai Tbk. PT Bumi Serpong Damai Tbk was the company that has biggest earning available for common stocks in 2015 among other companies. The highest total asset turnover was PT Ciputra Development Tbk. Sales of the company was in the 2nd rank compares to other companies. This means PT Ciputra Development Tbk was effectively utilize the asset in generating sales. The greater equity multiplier means the higher financial leverage of a company. PT Agung Podomoro Land Tbk was the company that has a highest equity multiplier between other companies in 2015. A company with high leverage might be vulnerable in the change of economic condition. In summary, three of five property companies have their own dominant advantage in an effort of getting return for their companies for the year 2015. PT Bumi Serpong Damai Tbk has a good performance in operating efficiency; meanwhile PT Ciputra Development Tbk was good at asset-use efficiency. PT Agung Podomoro Land Tbk has the financial leverage as the dominant factor that improved its ROE.

5. Conclusion and Recommendation

5.1 Conclusion

The liquidity ratios of PT Agung Podomoro Land Tbk were fluctuated. PT Agung Podomoro Land Tbk could increase the current ratio in 2014 although in that year was remarked as the worst year of property industry. PT Agung Podomoro Tbk able to gained a greater benefit from credit that lend creditors by a longer days taken to fulfill the credits. On the other hand, PT Agung Podomoro Land Tbk was having a low ability in replacing inventory over the last five years.

PT Agung Podomoro Land Tbk was taking quite high risk by using more debt to finance its asset, also the company was taking a credit risk that represented by the ability in paying interest that get lower every years. This showed the financial condition of the company was not stable.

Although the company has more debt to be paid in every years, lower ability to fulfil the interest, and inventory that get longer to be replaced, the company was able to increase its profit from year to year. The company was also able gives higher dividend to be distributed to investors so that the company able to maintain the relation with the investors. In contrary, both of return on common asset and common equity of PT Agung Podomoro Land Tbk was declining on the last five years. This showed that the management of the company was not effective in generating profit from its available asset and having return from common stockholders' investment that put in the company.

PT Agung Podomoro Tbk's performance for the market ratio was fluctuated on the last five years. This led to the lower level of investor's confidence toward the company.

Compared to its competitor, the highlighted performance of PT Agung Podomoro land Tbk was only for its Average Payment Period that took longer than other competitors and the sectors, this means the

company able to take the risk and had full advantage in return of the credit term allowance by the creditors. However, this led to highest value of debt ratio among its competitors and sectors. This indicates the company has a high risk in not fulfilling the credits.

Each of competitors was having their own dominance for each ratio in financial ratios. PT Lippo Karawaci Tbk performed well in liquidity ratios, meanwhile PT Bumi Serpong Damai Tbk and PT Pakuwon Jati Tbk were performed well in profitability ratios.

So, there is some factors that affected underperform of PT Agung Podomoro Land Tbk compares to its industry: (1) the decision of the company in using more debt to finance the assets (2) the focus of company was expanding the projects into growing second tier cities in Indonesia, which might led to the decreased of performance in maintaining the inventory (3) The return on assets and return on equity was declining in the last five years. This might happen because the company prioritized the company's strength in liquidity and the assets that the company owned was not giving sufficient profit.

5.2 Recommendation

- There should be additional method given for the further research. Moody's framework could be use for the next research because it would make the researcher able to know the international rating of the companies that has been choose as the object of research. Also, the Compound Growth Annual Rate (CAGR) could be use in this research to gives information about the growth of ratios from year to year.
- For the next research, the researcher could add more companies in property industry. This will help the research more detail and widen.
- To have benchmark in analyzing the value of ratios, there should be optimal ratio given for each ratio that had been calculated.
- Due to the declining ROA and ROE for the last five year of PT Agung Podomoro Land Tbk, the company should make the asset and the equity more effective, this could be done by more selective in buying asset. In every year, the increasing of investment in properties increased the total assets. From the Dupont System of Analysis in 2015, the net profit margin of PT Agung Podomoro Land Tbk should be able reach into 0.30. Although the trend of net profit margin of the company for the last five years was increasing, PT Agung Podomoro Land Tbk still has to increase the sales and revenues by increase the selling units of apartments. This also a suggestion related to the loan-to-value policy that already revised in the middle 2015. This amendment of policy was giving a new hope for property industry sector to increase the sales of property because of the lower of credit mortgage loans for apartments.
- The availability of REIT (Real Estate Investment Trust) would help the company to performs better in solvability / debt ratios. This because REIT would be used to help the company to fulfill the obligations. REIT also gives opportunity to have funds directly from the capital market that could be use in develop on going projects of the company. As financing alternatives, REIT also gives the good effect to develop the property market in Indonesia

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Proposed Business Strategy for New Artpreneurship (Study Case: Jemari Design Studio)

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Abstract

Jemari design studio was established in Bandung. Start from a hobby to paint, founder saw a great opportunity on it. She then tried to combine art as the form of hand painted watercolor design with the concept of entrepreneurship. Jemari offers a method of enjoying paintings through usable products for people's daily activities. Jemari launched its first collection in November 2015 at art market in Jakarta. Jemari encountered some problems in the next four months of its operations. Jemari's sales and income did not meet the expectation. Some products also have not been sold at Jemari consignment store partner. As the result, the financial problem comes up and the production cycle becomes disrupted. Jemari also could not promote the products effectively. This research aims to find the alternative strategies that can help Jemari to generate income, doing production, and promotion effectively. Author collected data through literature reviews, direct interviews and observe potential target customers and competitors. The external and internal analysis are conducted in this research. In external analysis there are three business benchmarks, PEST model, and Porter's 5 forces. In internal analysis there are business segmenting, targeting, and positioning, business model canvas, and marketing mix 7Ps. Then, the TOWS matrix analysis performed to get the best alternative strategies that can be applied to solve the problems. The result showed various alternative strategies obtained and can be classified into three categories of market penetration strategy, product development strategy, and market development strategy. Those three categories of strategy will be arranged into one interrelated strategy that could be implemented as Jemari's business plan for the next one year. The main result of this strategy is adding new service as balancer of all the business activities. For an artpreneurship, offering services as business strategy can become a good solution to solve the financial problem.

Keywords: design; artpreneurship; entrepreneurship; business strategy; creative industry

1. Introduction

The opportunity to run a business in Indonesia is open widely. Government of Indonesia provides full supports for those who want to start a business, especially in creative industry. Formerly, Indonesia has Ministry of Tourism and Creative Economy that concerns about tourism and creative industry development. Creative Economy Agency of Indonesia was established in early 2015 to give more attention to take care any related things about creative industry. Creative industry in Indonesia shows a significant contribution to Indonesia's economic growth. The total amount of Indonesian GDP for the year of 2013 was around 9524.7 trillion rupiahs. Creative economy sector has contributed about 7.05 percent to GDP, employed 11.8 million labours and created 5.4 million businesses. In 2012 to 2013, Indonesia's creative economy growth increased from 4.47 percent to 5.76 percent (Kemenpar, 2014). Creative Economy Agency of Indonesia has 16 subsectors development that was written on President Decree No 72 Year 2015; there are architecture, interior design, visual communication design, product design, film animation and video, photography, craft, culinary, music, mode, application and game developer, publishing, advertising, television and radio, performing art, and fine art.

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Art should be related with entrepreneurship or business to increase the value and be accepted in the market. According to Oxford Dictionary, Art defined as use the imagination to express ideas or feelings, particularly in painting, drawing or sculpture. But, not everyone have willingness to buy the art which is has no more functional values besides as decoration. The fact is that art should have more value in functional and economic aspect. J. Schumpeter in his book, *The Theory of Economic Development*, suggested that *an entrepreneur as innovator that creates profit opportunities by devising a new product, a new production process, or a new marketing strategy* (Tülüce & Yurtkur, 2015). Using the definition of art and entrepreneur above, it leads to the term of artpreneurship which can be defined as a process to pursue the opportunities and create profit through arts by transforming it into new valuable and usable products that may help to improve the lives of people and contribute to the national income. Creativity and innovation are also needed in the process of product designing, production, and marketing strategy to promote and offer the arts to the market

This research will be focused on design subsector. Author wants to combine design as the part of art with the concept of entrepreneurship. In Italian word "*disegno*" as design means drawing, sketches, plans, illustration or scheme. The difference between design and art is art as artist' self expressions while design creates something more valuable and useful to solve problems (Kemenparekraf, 2014). The object of this research is Jemari Design Studio that applied a hand painted watercolor design into usable products that have financial value. This business concept will be called as artpreneurship. Nowadays, many places are open to show and to sell creative products such as art market or exhibition, retail space, and e-commerce in Indonesia. In the recent years, there are several art markets or exhibitions were held which focused on creative products and activities to attract domestic or foreign people attention. That places would be helpful for new business in creative industry and can be used as suitable places to promote and to sell their product and finally reach target customers effectively.

Jemari Design Studio launched its first collection at Catalyst Art Market Jakarta in November 2015. The core business of Jemari is design and printed goods. The design is inspired by nature with sweet, cute and fresh design concept that can bring happiness. Jemari also want to bring the name of Indonesia through the brand and products locally and globally. Jemari's current products are tote bag, pouch, and notebook with three design series; Herbs Garden, Fungi Island, and Rain Forest. Jemari uses Instagram as media to promote the products. Jemari collaborated with Printerous.com and it has another three design series named; Flamingo Garden, Black Little Swan Garden, and Sea Garden. The products are tote bag, notebook, throw pillow, phone case, and art prints. Jemari already has one consignment store partner at Bali named ODD (Original Design & Delight). Besides offer product, it offers service for designing personal gift and business kit.

As a new business, Jemari faced some issues. Jemari is still at introduction phase in industrial life cycle. People's awareness to the brand and sales growth are still low. Jemari also has limited capital that causes lack of quantity in production. Current distribution channels of Jemari still not effective and there are several products that have not been sold at partner store. All the activities at Jemari also are done by founder itself and sometimes she could not be focus and finished her works properly. The objectives of this research are to find the right business strategy to fix the business issue and develop new ideal business model for Jemari's better future. The period of this research start from November 2015 to April 2016. This research will generate business strategy and new business model. The business strategy will describe directly as business strategy for Jemari Design Studio without divide it into functional or operational level because the overall business activities were still done by founder itself.

2. Business Issue Exploration

The conceptual framework that is used in this research start from brief description about all aspect in Jemari Design Studio including the company's history, vision and mission, products, and distribution channel. Then, the next step is describing several business issues that happened for the last four months. The second step consists of an industry analysis, external analysis, and internal analysis. The data were collected from literature reviews, direct interview, and observation of the target customers also competitors. All data from previous analysis will be used as an input to set SWOT analysis includes strengths, weaknesses, opportunities, and threats. TOWS Matrix Analysis is useful to generate possible alternative strategy for business problem solution by the matching process of internal and external factors.

2.1. Industry Analysis

Author did industry analysis to gather some important information and turn it into the opportunities and

strengths of Jemari. In this industry analysis, Jemari did business benchmark and analysed market situation about the availability of market places in current time.

2.1.1. Business Benchmarks

Author chooses three brands as business benchmarks from three different business areas, there are international, national and regional area. The international area could be represented by Rifle Paper Co from Florida that has already spread the channels all over the world. The second one as national area is Kelly's Wrapping Paper from Indonesia and has already distributed the products to Singapore and South Korea. The last is Big Bear and Bird that also from Indonesia but still exist in regional area of Indonesia such as Jakarta, Bandung, Surabaya, and several other cities.

2.1.2. Marketing Channels

Kemenparekraf (2015) divided market channel into four types; commercial, e-commerce, company's showroom, and exhibition or art market. Commercial means where product presented directly at the place while trade happen such as department store, concept store, or wholesaler. Company's showroom is a place that owned by company to show and sell their products such as IKEA. E-commerce is used to show, promote, and sell products through social media, company's website, or e-commerce companies such as Instagram, Facebook, bobobobo.com, and Printerous.com. The last one is exhibition as a place where people like crafter or artist can show their products directly to target customers. There are two types of exhibition; exhibition for general products such as Market Museum and exhibition for specific products like INACRAFT.

2.2. External Analysis

Company's external review will be described by using PEST analysis and Porter 5's Forces Analysis. PEST includes Politic, Economic, Social, and Technology. Next is Porter 5's Forces Analysis that will be described about competing forces of company among competitors, buyers, and suppliers in current industry condition. These external reviews are helpful to gather all the opportunities that company can use and all the threats that should be avoided. And all information that gathered can be processed into specific strategy to reach company's objectives.

2.2.1. PEST Analysis

PEST analysis explains political, economic, social, and technology factors in macro environmental scope. It will describe about the current political conditions in Indonesia about creative economy, the economic conditions, social factors, and technology factors.

- **Political:** Government is trying to encourage the growth of creative economy. In order to optimize the growth, Creative Agency of Indonesia was established in 2015. It is no longer fused together with Ministry of Tourism. The regulation about creative economy was declared in Presidential Decree No. 72 Year 2015. Government also started to cooperate and to tie partnership with some overseas parties. Bandung as one of creative city in Indonesia also collaborated with South Korea to open Little Bandung in Seoul. Others activities that held to help creative economy growing are arts or creative markets and exhibitions like INACRAFT, contest of entrepreneurship, facility to get fund, or free access to join at exhibition.
- **Economic:** Indonesian economic condition is getting better from year by year. Based on report from Ministry of Tourism and Creative Economy in 2014, creative economy contributed around 7 percent to National GDP from 2012 to 2013. Creative economy also absorbed 11.8 million workers and created 5.4 million new businesses in 2013 (Kemenpar, 2014). And starting from 2015, Creative Economy Agency must bring creative economy to contribute around 13 percent of National GDP in 2019 (Marketeers, 2016). Clearly that becomes an opportunity for creative businesses that could help contribute to Indonesia economic growth by employ local craftsmanship, using local material, and increase the sales of creative local products in local or global areas.

- **Social:** Numbers of current working age and incoming workforces are large in Indonesia. There are more than 60% of its residents aged 20 to 65 years old and 27% are aged below 15 years old. Moreover, there are 74 million Middle Class and Affluent Consumer in 2012 that will be double to 141 million people in 2020. Their monthly household expenditure is between 2 million for middle class, 3 million for middle up class, and 5 million or more for affluent class (BCG Review, 2013). The appearances of millennial generation also affect the business environment. Millennial generation who born in 1980 to 2000 are more aware with brand that can give social impact for universe (Marketeers, 2014). Furthermore, many people in urban area currently have interest to spend their weekend on craft or art workshop. Some places that offer workshop are 2Madisson, Mau Belajar Apa, Ganara Art Space, and Club Kemang.
- **Technology:** New technology creates important roles and changes many aspects in business industries includes production process, products itself, communication, and others. Internet helps Jemari to run the business. There are around 88.1 million people from 252.4 million of total population are using Internet in 2013. Mostly dominated with women 51% with ages around 18 to 25 years old with 49% and 26 to 35 years old with 33.8% (APJII, 2015). It becomes advantage for Jemari to engage and reach more customers through social media. Currently, the machines of digital printing textile also use environmental friendly ink that is safe for children.

2.2.2. Porter's 5 Forces

The intensity of competition among firms varies widely across industries. Porter's Five Forces Model of competitive is a widely used approach to develop strategies in many industries. The five forces includes rivalry among competition, potential entry of new competitors, potential development of substitute products, bargaining power of suppliers, and bargaining power of customers (David, 2009: 146).

- **Bargaining Power of Supplier:** The bargaining power of supplier is at high level. There are many suppliers available in the market. It is easy to switch to the great one. The ordinary parts such as zipper, textile, and paper are easy to find. However, the best suppliers are still needed for specific material such as printed textile and paper. Jemari should be more selective to choose suppliers with best materials and able to give the best result. Sometimes, some suppliers can force Jemari with slow process or produce defect products. Jemari is also considered as a small buyer compared with others. Suppliers (printing paper, printing textile, and tailor) have no effect from Jemari because of minimum order quantity. So, the payment, production process, and delivery are depends on suppliers. Jemari have no power in flexibility of payment and delivery.
- **Bargaining Power of Consumers:** The bargaining power of consumer or buyer is moderate. It is because many related businesses also produce similar product as Jemari. They can find or choose others brand if they want. Although there are some competitors and buyers can switch to them, the designs are very different from each brand. Some customers who have same taste and characteristic as Jemari's designs will be back to choose Jemari. Buyers also have considerable influence in the price that Jemari charge. But the price is still controlled by Jemari based on product quality and customers demand. Also, customers will get discount only at certain time or events. The power of buyers is moderate because they could not find the designs of Jemari in other brands even the products are relatively the same.
- **Potential Entry of New Competitors:** Threat of new entrants is in high level. It is easy to enter the market because of some conditions. First, there is no specific regulation from government to start small business. People freely open new business anytime and anywhere. They can sell the products through internet without tax that should be paid. Everyone can start run business with minimum capital. They just need passion on it. Many market places also open to help them to promote or sell their products. Some business even did not design their own products and choose to outsource some young designer. For Jemari, maintain the design concept is a must. Jemari must creates unique design that become differentiation from others brand. Jemari also use hand painted watercolor technique that could not be duplicated.
- **Potential Development of Substitute Products:** The threat of substitute products is in moderate level. There are a large numbers of competitors who produce similar to Jemari's product such as

pouch, totebag, and notebook. The selling places are also similar as Jemari. They can find it at concept store, art market or exhibition, and e-commerce. There are a lot of choices that customers can choose easily. But, Jemari has different value proposition compare to competitors. Many products have almost similar design from each other. Jemari is using watercolor technique for the design that cannot be duplicated. The design and material are different and make Jemari become exclusive and unique. People can easily recognize Jemari's product based on the design.

- **Rivalry among Competing Firms:** There are some great players in this business that already launched before Jemari and have their own characteristic or value. People easily recognize them by looking at their products. So, the rivalry among existing competitor is high. All brands produce almost similar products such as tote bag, greeting card, pouch, notebook, wrapping paper, phone cases. Their strengths are based on their designs and materials. In example Rifle Paper Co that offer products with higher price but give best materials and exclusive designs. People are willing to buy Rifle's products because they can be proud to use those products. Others local brands are Kelly's Wrapping Paper with cheerful design and moderate pricing, also Big Bear and Bird with sweet design and expensive pricing. Jemari still cannot become better than them because they have more capital to promote their products such as participate in some expensive art market or exhibition. They are also already entrance to some media like magazines. Besides that, there are many small brands that launched within a year and become new competitors for Jemari. Some of them are follow the step of promotion and marketing that Jemari used. So, this tight business competition is forcing Jemari to be more innovative and creative, either to creating new design, products, or promoting the business in larger market.

2.3. Internal Analysis

Company internal review includes STP (Segmenting, Targeting, and Positioning) Analysis, Business Model Canvas Analysis, 7P's Marketing Mix Analysis, and SWOT Analysis. The data will show company's strengths and weaknesses. These strengths and weaknesses will be processed with opportunities and threats from external analysis to generate strategy to reach the business objectives.

2.3.1. Segmenting, Targeting and Positioning

For the first year, Jemari will focus on three areas in Indonesia such as Jakarta, Bandung and Bali. Jemari will use some distribution channel to reach the customers there. Jemari choose those areas because Bandung as home base of production, Jakarta full with potential customers who always thinking about their appearance, and Bali as a place where tourist gather around. Jemari's target customers are women in urban areas. Their age around 18 to 40 years old and have profession as student, housewife, worker, and others. They are in middle up class with amount of spending around Rp3.000.000 to Rp5.000.000 per month. Their psychographic characteristics are people who love art and nature with cheerful appearance. For the positioning, Jemari was compared with three benchmarks and it will be offer product with exclusive design in affordable price.

2.3.2. Business Model

A business model describes as the rationale of how an organization creates, delivers, and captures value. There are nine basic building blocks includes customer segments, value proposition, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure (Osterwalder & Pigneur, 2010). Jemari Design Studio develop canvas business model as a business's foundation.

- **Customer Segment:** The targeted customers of Jemari are women in middle class economic level who lives in urban areas such as Jakarta, Bandung, and Bali. Their ages are around 18 to 40 years old who have profession as student, worker, or housewife. They love art and nature, have feminine and cheerful character, and concern with their style. They love to collect new and unique products that could represent their style.
- **Value Propositions:** Value proposition that Jemari offers is the touch of hand painted watercolor technique for the design in each product, the nature themes includes flower and fauna with fun,

sweet, cute shapes and fresh colors, usable products, and good quality products with affordable price. Jemari wants to bring happiness through each design in the products for their customer's daily activities.

- **Channels:** Currently, Jemari is using direct and indirect channel to interact with customers. In the direct channel Jemari uses social media such as Instagram to promote and sell products directly to customers. Jemari also join art fair such as Catalyst Art Market to meet potential customers. For indirect channel, Jemari collaborates with one concept store in Bali with consignment scheme. Lastly, Jemari join with Printerous Artist Program as business-to-business partnership.
- **Customer Relationship:** Customer Relationship of Jemari happened when customers meet Jemari in art market event directly and when customers reach Jemari using email or phone number. That type of customer relationship called personal assistance, while Jemari helps customers to learn about product attributes and choose product to purchase. To get closer with them, Jemari also use social media and trying to communicate with them through sharing photos, paintings tips, and others.
- **Revenue Stream:** The revenue of Jemari is come from the sales of physical products and design services. The revenue of physical products such as tote bag, pouch, and notebook are come from the sale in art market fair, Instagram, and concept store. The revenue of design services is come from customize design services of Jemari and Printerous.com.
- **Key Resources:** Key resources of Jemari are human resource, physical, and brand. Physical in Jemari's key resource is material such as brushes and watercolor sets. There are various types and brands of brushes and watercolors. Great paintings could be created through good quality of brushes and watercolors. Second resources are human resources, Jemari needs people with good capabilities in painting, designing product, and crafting to create prototype. The last one is the brand itself. Jemari will build the brand to be known as product and services specialist in hand painted watercolor design.
- **Key Activities:** Jemari's key activities are production, design services, and sales & marketing. Jemari production processes starts from create watercolor design and printed digitally into textile or paper. The finish products are tote bag, pouch, and notebook. Jemari also did design services as key activities. Jemari created some customize design that customers requested. And another designs also made for Printerous.com. Sales and Marketing is one of important activities that should be done by Jemari. Jemari must promote and sell the products or services intensively to targeted customers
- **Key Partnerships:** Jemari's key partnerships are outsourcing (digital printing paper and textile, tailor), Material suppliers (paper, zipper, textile, etc), and Printerous.com. Jemari creates partnership with digital printing companies for paper and textile. From textile digital printing Jemari uses Digital Printing located in Jakarta. Paper digital printing could easily found in Bandung. Jemari has two places to go to printing and binding near from Jemari's location. Jemari also uses tailor to produce tote bag and pouch. Jemari's tailors are located in Bandung. Supplier materials such as zippers, textiles, book papers that Jemari needed also located in Bandung
- **Cost Structure:** Jemari's cost structures are comes from the cost of production, operational, and sales & marketing. The cost of production includes raw materials and outsourcing cost such as tailor. The operational cost is cost from transport, Internet, and others expenses related to operational activities. The sales and marketing cost such as percentage from consignment agreement, other stuffs that prepared for content marketing, and cost of art market event or exhibition.

2.3.3. Marketing Mix 7Ps

To develop a marketing strategy, company should determine their target market and marketing mix. Marketing mix defined as the set of tactical marketing tools includes product, price, place and promotion that firm blends to produce the response it wants in target market (Kotler & Armstrong, 2012). Jemari also

offer services besides products. So, Jemari will use 7Ps includes product, place, price, promotion, people, process, and physical evidence (Lovelock & Wirtz, 2011).

- **Product:** Jemari is a brand that offers products and services with the touch of hand painted watercolor design. Jemari produces usable products for daily life. At the moment, Jemari products are tote bag, pouch, and notebook. Jemari also produces other products through Printerous as business-to-business partner such as tote bag, notebook, phone case, throw pillow, art print, and more. Service is another Jemari's business activity. The customers can request to design their business kits (business cards) or personal gift (art prints and greeting cards).
- **Place:** Jemari's product places are Instagram, Printerous, ODD Bali, and art market event. The founder manages Jemari's Instagram as a free place to promote and sell products. Founder also manages a free account in Printerous.com. Jemari puts some designs there, and select the types of products that would be produced by Printerous. Printerous get fee from the production cost, and Jemari get income from design price that Jemari set personally. ODD Bali is a concept store located in Canggu, Kuta Utara, Bali that use consignment scheme to collaborate and become partner of Jemari Design Studio.
- **Price:** As a new design business, Jemari sets the prices based on value price strategy for middle up class customer segment. Current prices of Jemari's products start from Rp80.000 for notebook, Rp90.000 for pouch, and Rp200.000 for tote bag. These prices are for products that Jemari produce. For products that Jemari produce through Printerous, the prices start from Rp125.000 to Rp814.000. And Jemari's design services start from Rp250.000 per design.
- **Promotion:** The promotion that Jemari has been done is participating at Catalyst Art Market and offering special price. Jemari also get free promotion spaces twice in Printerous' Instagram and e-mail subscription. There is also a payday promotion event, Printerous give 15% discount plus free shipping cost for customers.
- **People:** Jemari stand only with one person as a founder and an employee. Founder of Jemari did all task in business start from design, production, promotion, and deliver the products to customers. The founder has ability to design the products, painting, crafting, and marketing. The founder also participated in particular painting workshop to increase her painting skills and capability.
- **Processes:** Jemari tries to give the best services for the customers. But, currently Jemari still lack of times management in services process. Jemari cannot response and finish the order quickly. It would become a problem if Jemari could not fix it soon. For products, Jemari have a strict process to generate high quality products through slow design concept process.
- **Physical Evidence:** Jemari physical evidence includes the social media platform such as Instagram and brand's logo. Jemari manages the Instagram carefully and only gives good picture to capture target customers awareness. The logo of brand or sign also created with hand painted watercolor technique to reflect Jemari's values and characteristic. Jemari choose high quality materials to get best quality for printed papers and textiles. So, customers will satisfy by looking at the results.

2.4. Business Root Problem

The formulation to get business root problem in this research is using why-why method. It is a method of questioning the leads to the identification of the root causes of problem. A why-why conducted by asking "why?" in five times (Koripadu & Subbaiah, 2014).

Table 1. Why-Why Analysis

<p>Problem: Low sales growth</p> <ol style="list-style-type: none"> 1. Why? The awareness is still low 2. Why? We are lack of promotion 3. Why? We did not have enough in stock to be offered 4. Why? We run out of capital and budget to produce more 5. Why? We still have more stocks that have not been sold in partner store

From the analysis above, the business issues of Jemari are interrelated. And the root cause problems are obtained because there are products that still have not been sold in partner store named ODD Bali that gives negative impact to financial condition of Jemari. However, Jemari could not take the products back because they are still only four months after Jemari put the products there. Instead of take all the products back, Jemari must find solution to get more capital. So, Jemari could develop and produce new products and do promotion intensively.

3. Business Solution

After arrange internal and external factors into the SWOT analysis. The next step is matching all factors to become business alternative strategy. TOWS Matrix Analysis used to develop strategy with matching the internal (strengths and weaknesses) and external (opportunities and threats) factors. The alternative strategies as the result of TOWS Matrix analysis can be seen in Table 2.

Table 2. TOWS Matrix Analysis

Internal Factors	<p>Strengths</p> <ol style="list-style-type: none"> 1. Hand Painted Watercolor 2. Usable Products 3. Good Quality Products 4. Affordable Price 5. Brand Name (Jemari) 6. Founder Capability in Painting 	<p>Weaknesses</p> <ol style="list-style-type: none"> 1. Limited Capital 2. Low Awareness 3. Limited Production 4. Lack Human Resource 5. Lack of Distribution Channel 6. Lack of Promotion 7. Low Sales
External Factors	<p>SO Strategy</p> <ol style="list-style-type: none"> 1. Offer watercolor workshop (S1, S6, O5, O7) 2. Promote brand with tutorial watercolor painting through internet. (S1, S5, O4) 3. Add new distribution channel (S2, S3, S4,O1,O2) 	<p>WO Strategy</p> <ol style="list-style-type: none"> 1. Optimizing promotion and sales in existing e-commerce partner.(W1, W4, W5, O2,O4) 2. Develop story and experience for marketing. (W1, W2, W6, O4, O7) 3. Collaborate with other business. (W1, W2, W7, O5) 4. Hire one assistance (W1, W4, O1) 5. Offer design invitation services (W1, W3, W7, O5, O7) 6. Focus on Jemari's personal distribution channel (W1, W3, W5, O1,O4) 7. Sell defect products (W1, W3, O2) 8. Offer various types of limited edition products (W1, W3, O1,O7)
	<p>Opportunities</p> <ol style="list-style-type: none"> 1. High Demand 2. Market Places Availability 3. Many Suppliers 4. Internet Users 5. High Numbers of Working Ages 6. Government Support 7. Trend of Art and Craft 	
	<p>Threats</p> <ol style="list-style-type: none"> 1. Lead Company 2. Many Competitors 3. Depend on Key Partners 4. Expensive cost of art market or bazaar 	<p>WT Strategy</p> <ol style="list-style-type: none"> 1. Cooperate with competitors to participate at next art market/ exhibition or organize private event. (W1, W3, W6, T2, T4) 2. Develop Official Website. (W2, W3, W5, T1) 3. Find new tailor and digital printing services (paper & textile) (W1, W3, W4, T3)
	<p>ST Strategy</p> <ol style="list-style-type: none"> 1. Develop new/ current designs and products/ services (S1, S3, T1, T2) 2. Personal branding. (S1, S6, T2) 	

3.1. Alternative Strategies Recommendation

After develop TOWS Matrix Analysis and generate some alternative strategies, those strategies will be categorized into general strategy. The alternative strategy categorizing at Table 3 shows three categories of alternative strategies includes market penetration, product development, and market development that classify on intensive strategy, also human resource strategy.

Table 3. Alternative Strategy Categorizing

No	Alternative Strategy	Category
1	Promote brand with tutorial watercolor painting through internet.	Market Penetration
2	Optimizing promotion and sales in existing e-commerce partner	
3	Develop story and experience for marketing.	
4	Collaborate with other business.	
5	Focus on Jemari's personal distribution channel	
6	Personal branding.	
7	Cooperate with competitors to participate at next art market/ exhibition or organize private event.	
8	Selling defect products	
9	Offer watercolor workshop	
10	Develop new/ current designs and products/ services	Product Development
11	Offer design invitations services	
12	Find new tailor and digital printing services (paper & textile)	
13	Offer various types of limited edition products	
14	Add new distribution channel	Market Development
15	Develop Official Website	Market Development
16	Hire one assistance	Human Resource

With market penetration, Jemari can increase the market share from current products or new products and services with bigger marketing efforts such as create content of marketing and participate in art market or exhibition. Product development would be done by improving or modifying current products and trying to develop new products or services. Market development can help Jemari to reach more potential customers through new channels. Those strategies will help Jemari to create awareness and push sales growth. To complete develop new business strategy, human resources also important to be considered. Jemari need an assistant to make process of business become more effective and efficient. The alternative strategies above are interrelated to give best result for business growth. Jemari will use those strategies as the guide to be success. The detailed of each alternative strategy are:

- Market Penetration:** Jemari will develop stories and offer an experience to the customers through social media. The stories are "Mom's Garden" and "Wander Around". Jemari will give contents like photos or videos include the examples of watercolor painting, tips and tricks to paint, types of watercolors kits, and more. Painting competition also will be held in certain time through Instagram such as paint the flower in their garden or their wander moments at that time. Jemari also will give some experience for the customers to build their own garden by giving them some seeds as give away events and they must report it through watercolour painting to Jemari's Instagram. And Jemari will offer experience to send a greeting card through postman as giveaway event. Watercolor workshops divided into two categories basic painting in paper or other media and learn how to transform painting into products like scarf. Jemari's marketing content will be all about art and nature. Jemari also plan to participate at least on three art market or exhibition within a year. The places to promote its products are potential area that can be a destination for local people to spend their weekend or as tourist destination.
- Product Development:** Jemari will modify the current products with added new attribute like pocket on tote bag or change the lining into brighter color. Jemari also develop new products includes watercolor book and rolling pouch. And the main focus in product development strategy

is produce invitation design for wedding and any occasion as a new service. Jemari new design theme are The Nature of Indonesia that will be dominated with flowers or common shapes like circle and square with various kinds of colors based on the trend in 2016/ 17 includes olive green, ocean blue, rose quartz, violet, and more. The products will be produce as limited edition with various types of products.

- **Market Development:** Jemari will not added new partner like consignment store until 2017. Jemari will make the internal activities in business become stable like financial, production, and sales. New channels that will be added are e-commerce platform like Qlapa.com to offer products and Bridestory.com to offer invitation design service. And as the final is develops new official website to wider the market locally or globally. It also helps Jemari to show all portfolios easily and make it looked more credible and trusted.
- **Human Resource:** To help all those strategies, Jemari will hire one assistant. So, owner can work more focus and finish the jobs properly. The assistant will help in operational process such as take care of the products in warehouse, quality control, product packing, deliver products, and helper on events.

3.2. New Business Model

After analyzing all external and internal factors and developing new strategy for the business. Business model of Jemari get a little bit improvement. New business model of Jemari can be seen in Fig.1 below.

Key Partners Outsourcing (Paper printing, textile printing, tailor) Material Supplier (book paper, zipper, textile, etc) Printerous.com	Key Activities Production Design Sales & Marketing Workshop	Value Proposition Hand Painted- Watercolor Design Nature of Indonesia- Themes Fresh & Sweet Usable Good Quality Affordable Price Environmental Friendly Limited Products	Customer Relationship Social Media Personal Assistance Self Services Customer Care in Website	Customer Segment Middle Class Urban Women Age 20 – 35 Art & Nature Lover Cheerful
	Key Resources Human Resource Brand Physical Resource Website		Distribution Channels Social Media Concept Store E-commerce Art Market/ Exhibition Messaging Apps Website	
Cost Structure Production Operational Sales and Marketing		Revenue Stream Physical Product Design Services Workshop		

Fig. 1. New Business Model Of Jemari

- **Customer segment:** Target customers of Jemari still same as previous business model. However, the range of their ages were changed become 20 to 35 years old. That changed because Jemari will more focus to promote and sell the products through Internet. Furthermore, the target is not only for feminine women, but also for everyone who love and have interest in art and Jemari’s design such as art collectors who loves to collect product art based.
- **Value preposition:** The changes in value preposition are the colors of design and product will be brighter than previous ones with fresh and sweet design that able to make people smile. The design also will be applied into good quality of textile with environmental friendly ink that safe for children. Besides, Jemari will offer design that focus on the nature of Indonesia to bring the name

of Indonesia through its brand “*Jemari*”. The products also will produce as limited edition in various types of products.

- **Channels:** Jemari will not add new consignment store. Jemari will focus on managing Instagram and Steller. Also adding new e-commerce platform such as Bridestory.com to offer invitation design services and Qlapa.com to offer products. Line@ will be prepared for direct communication to customers. This year Jemari will be participated at least in three art markets or exhibitions. And the last is launching official website to reach more target in local or global area.
- **Customer relationship:** Jemari will manage social media such as Instagram and Steller. Jemari will communicate with customers through videos, photos, and comments posted there. Direct communication to build relationship also can happen through events like art market or exhibition and personal chat at line@. Jemari will answer customer questions directly. The new one is using customer care in website. Customer or partners can send their questions from Jemari’s website.
- **Revenue stream:** Jemari will no longer to get revenue from personal gift service. Jemari will focus on offering design for invitation as a new service such as wedding and any other occasions for the next one year. Jemari also will get revenue from workshop as new stream of revenue.
- **Key resources:** Website will be added as one of key resource of Jemari. Website is needed to do all tasks in business like offer value proposition, reach market, maintain relationship, get revenue, and go global early.
- **Key activities:** Jemari add workshop as new activities in Jemari business, and it will be held at least three times within a year. Jemari also will focus on offering invitation design service and no longer accept commission for personal gift design.
- **Key partners:** Jemari will start to find new partners for printing paper and tailor that can give and produce great products without defect.
- **Cost structure:** Jemari will add expense for assistant salary in operational cost, and also the expense for art market or exhibition for this year will be well prepared. Besides, the cost of production will be used to prepare prototype of new products and invitation design.

4. Conclusion

As a new business with limited capital and only lean on skill of painting, founder finally found the right strategies to solve the current problems within this year. Jemari will focus on three categories of strategy from previous result which are interrelated to each others. Then, Jemari choose the major strategies from each three categories of alternative strategy, there are:

- **Product development:** Jemari will focus to develop design invitation for wedding or any other occasion.
- **Market penetration:** Promote to offer design invitation through Jemari’s Instagram intensively with the story of Mom’s Garden and Wander Around.
- **Market development:** Sign up at Bridestory.com as design invitation vendor to wider the market.

In conclusion Jemari should increase the capital by develop new services and increase the marketing efforts to offer it. Besides, Jemari also need to find new market places where target customers gather around. It is a risky situation to rely on only to produce and offering products. It would be better to offer services to balance the business expense and revenue. The revenue from design services could help to run the other alternative strategies. So, as a new artpreneurship, produce products with good value are not enough. Jemari need to offer services, workshop, collaborate with other business, personal branding, and promote the business intensively in creative way. Jemari also has to find new partner for e-commerce and offline store that more credible and active in promotion.

Jemari's business model also already refined. There are some improvements in almost all nine building blocks. The changes includes the ages and characteristic of customer segments, value proposition about the design that would be more focus on the Nature of Indonesia Themes, environmental friendly materials, also produce various types of limited edition products, the main focus of distribution channels within a year that will only use e-commerce and art market or exhibition, customer relationships that will be more engaged through social media and website, new revenue stream from design invitation and workshop, develop website as new key resource, added workshop as new activities and remove personal gift design from service, searching new partners for printing paper and tailor, and lastly is to prepare the budget for participate at art market or exhibition and held a workshop as cost structure for sales and marketing. Participate at art market or exhibition and offer workshop could be become the best way to wider the market scope and reach more potential customers.

5. Implementation Plan

For a better implementation of strategies, Jemari set an action plan for activities start from April 2016 to March 2017. This action plan includes strategies and action that would be taken based on the alternative strategy describe before.

Table 4. Jemari's Action Plan 2016 – 2017

Category	Alternative Strategies	Action
Market Penetration	Focus on current channels	Promote and selling products on Instagram
		Promote on Steller and start to operate Line@
	Watercolor tutorial, stories, and experiences	Photos & videos painting tutorial & stories
		Giveaway event
	Optimizing Printerous.com	New design
		Direct selling at art market
		Post photos at media social
	Collaborate with local business	Designing business kits (three client in 2016)
	Personal branding	Participate at competition, workshop, or artist contribution event
	Collaborate with competitors (participate at art market/ exhibition) *still on survey	PopCon Asia 2016
		Pasar – Pasaran Bali
		Catalyst Art Market
		Bridestory
Selling defect product	Garage sale	
Offer watercolor painting workshop	Basic watercolour painting with theme "Gardening"	
	Painting and make your own scarf	
Product Development	New design and products	New design and product prototype
		Produce new products
		Modified current products prototype

Category	Alternative Strategies	Action
		Produce modified product
		Design invitation prototype
	New key partners	New printed paper sampling
		New printed textile sampling
		New tailor sampling
Market Development	New distribution channels	Join with Qlapa.com
		Join with Bridestory.com
	Develop new website	Launch official website
HR	Hire one assistant	Hire one assistant for operational activities

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A preliminary study of Transjakarta's passenger's social interaction using sentiment analysis

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Abstract

Commuters are making decision through available information which could be obtained from social media. Furthermore, commuters are suggested to choose the travel mode based on related opinion given on social media and within the interaction occurred. In line with that, this paper intends to explore opinion given on the Twitter statuses of Jakarta's resident toward Transjakarta as one of the main public transport provider in the city. The opinion on Twitter is gained through text data mining process which expectedly can give insight about Transjakarta. This opinion on twitter will be used to analyze the Transjakarta's passenger number. As the result, the negative opinion lied on Twitter does not give a significant impact to the Transjakarta's number of passengers.

Keywords: commuters' opinion; Transjakarta; decision making process; social interaction; text data mining; sentiment analysis

1. Background

Jakarta is the most populated city in Indonesia. Hence, the city develops complex transportation system to support the citizen's activities. Various mode of public transport such as Transjakarta and commuter line create a set of transportation mode alternatives.

The population growth of Jakarta's urban nowadays is going to the oversaturated condition. Since Jakarta is the capital city which almost of all the economic circulation apprehended there, all the newcomers tend to depend their lives and seeking for job in accordance to improving their degree of lives in that city. As a consequence, as per mentioned earlier, Jakarta is now becoming overcrowded which causes several impact into numerous facets. Similar to other metropolitan cities worldwide, one of the impact which is a product of the overloaded citizen in that city is traffic jam.

Traffic jam in capital city is a serious problem that has to be dealt by decision makers such as local governments and ministers. It is because transportation issue in capital city holds the crucial impact to the whole country. Besides, since the atmosphere of Jakarta is very dynamic, which people have to mobile every day in sufficing their needs, the appropriate public transportation is also required. The traffic itself causes some urban reluctant to use their own vehicles in term of transporting themselves into the workplace. They try to reduce the stress caused by traffic – during a long journey from origin to destination – through changing the transportation mode to use; public transportation over the motorization. Transjakarta as the bus rapid transit service of PT Transportasi Jakarta is one of the alternatives.

In deciding travel mode (e.g. route choice, mode of transport public choice, and departure time choice), instead of depend on their own opinion alone, commuters also need information which previous study already suggest that the commuters obtain the information from social interaction (Sunitiyoso, 2016). Commuters interact with each other through social media to making decision in accordance to commuting choices.

Social interaction as source of information is not new concept in transportation study. The interaction can be assisted by the usage of social media since it can provide commuters to post and share travel-related personal experiences, opinions, and comments in which can inform other commuters. Besides, it also

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mediates experiences among commuters since they use social media to depict, and relive their trips (Xiang & Gretzel, 2010). Thus, social media can be used in creating image of an issue either it is positive or negative and also the online word-of-mouth for travel-related experiences. The type of interaction in social media is varied. It also applies to Twitter as one of social media. In Twitter, interaction can be one way (depicted by Twitter statuses containing information which can be retweeted frequently as it is interesting) and two-way (depicted by Twitter statuses in response-form such as reply) (Naveed, et al., 2011). The interaction done in social media can be a consideration of decision maker to develop effective policy. Deeper social interaction study among commuters opens up the advancement for decision maker in improving their strategy. Evolution of technology bring social interaction into new frontier.

Online social media is widely used as formed of new wave of interaction. Online social media simplify the interaction between service or product provider and customer. Feedback of the service or product can obtain instantly and faster reaction from the providers to address the issue. PT. Transjakarta as public transport provider exploit this feature to disperse information for commuters and gather responses of their services. Twitter as one of the most used social media in Indonesia is used by Transjakarta to disseminate information to users. Alongside Transjakarta official account, there is also community generated content twitter account to support additional information.

Individuals do not know which choice is the best of his interest so that they decide to explore different choices in the beginning and become involved in more goal oriented behavior at later stage. However, this way is only effective if the decision maker in the stationary environment. As most transport environments are non-stationary, travelers may try different choices occasionally and later to develop an adaptive behavior with the process of learning. The concept of individual learning suggests that individuals learn from their experience and utilizes an adaptive decision making process to cope with uncertain situation (for a review, see Arentze and Timmermans, 2005). The effects of social information on travellers' behavior are relevant to the existence of social interaction and social learning between them.

Research to investigate the commuter's opinion toward Transjakarta services is a first step to study commuter's social interaction. Twitter provides extensive data of commuter's sentiment. This sentiment treated as preliminary information in commuter's behavior. Text data mining approach provide researcher tools to analyze the great number of twitter feed. Depth of the analysis is provided by contextual analysis.

Transjakarta is the icon and the backbone of the Jakarta public transport. First operated in 2004, transjakarta is the first Bus Rapid System (BRT) in Southeast Asia. Beginning of the operation, Transjakarta only served 1 corridor, until recently, the 12th corridor is operated. Since its operation, Transjakarta's passenger increased steadily. Although the increasing demand, Transjakarta limited resources the passenger's number reach Transjakarta's maximal capacity. Figure 1 showed the steady passenger number of Transjakarta during 2011-2014 although addition 2 new corridor in 2011 and 2013.

Various factors have been discussed as potential factor in resulting the Transjakarta passenger number. Study regarding the behavior of the public transport passenger in social media is still rare. Deeper investigation need to learn about the passenger's behavior toward Transjakarta.

The rest of paper is organized as follow. First part in this paper will discussed about the literature review of commuter behavior and social interaction regarding to commuter behavior. Second part will focus on the text data mining analysis procedure. Last part of this paper will discuss about the result and implication on next research. The rest of paper is organized as follow. First part in this paper will discussed about the literature review of commuter behavior and social interaction regarding to commuter behavior. Second part will focus on the text data mining analysis procedure. Last part of this paper will discuss about the result and implication on next research.

2. Literature Review

Transportation system studies use term traveler and commuter terms interchangeably. However, they are different in term of daily routines. While travelers transport from the origin to their destination without any time-bound, commuters transport from particular origin to destination repeatedly. Or in other words, they do travel in routines. Moreover, in their daily routines, commuters make decision regarding to the travel choices. This decision however is heavily affected by experience and information that is available. Experience of the commuters accumulate as the commuters spend more time using public transport. That experience later on forms tacit knowledge to make better decision in travel. In other hand, to develop such as knowledge, commuters need a prolonged period of time. Furthermore, high uncertainty and the dynamics situation of public transport induce commuters to collect information as fast as possible and reliable as well.

The information assisting them in unleashing the uncertainty and dynamics transport problem can be

gained through maintaining one-way communication from ATIS (Advanced Traveler Information System)(Kaplan & Haenlein, 2010). Besides, it can also be attained by the social interaction among them. As transport, system can deliberately be considered as social phenomena, social interaction among commuters becomes foremost. Assisted by digital era today's, social interaction can be captured through social media. Several social media (e.g. Waze, Traffi, Twitter, etc) are used to facilitate commuters in trading the information related to real-time traffic situation are able to untie the limitation of commuters' cognitive process attained by their lack of experiences. Thus, by using social media, the tactical decision related to the travel choices can be made (Bregman, 2013). Social media is tricky; many information can be obtained no matter it is important or not. As a consequence, commuters may feel oversaturated by too much information. However, the use of social media in sharing information of commuting experiences is important due to its real-time feature, for the decision making process of commuters in relation with travel choices.

Antecedent works had discussed about the use of social media in transport system. Collins, Hasan, Ukkusuri are one of them. They studied about the use of social media, Twitter in particular, in measuring satisfaction of public transportation users (Collins, C., Hasan, S., & Ukkusuri, S. V., 2013). In doing so, they used sentiment analysis to capture emotion of those users stated in their Twitter statuses that represents whether they were satisfied or not to on certain provider of transit riding (L train). That work resulted that social media usage is rather to express negative statement or complaint in case of L train. As this study were conducted in Chicago, a relevant similar study in obtaining the opinion of commuters in Jakarta need to be conducted as well so that the relation between those opinion and number of public transportation can be found out.

The availability and accessibility of the data has result in increasing number of research using text data mining. Text data mining utilizes the development of computing power and capability to analyze text data. Some of the common text data mining analysis is information extraction, text summarization, question answering, and sentiment analysis (Gandomi & Haider, 2014). Sentiment analysis is technique analyze people's opinion toward services or products. Moreover, mining user's opinion improve service's provider response time to surfaced problem. User statuses was suggested become user generated surveillance data for L train case in Chicago (Collins, C., Hasan, S., & Ukkusuri, S. V., 2013). That research was using natural language program (NLP) and SentiStrength software to analyze twitter statuses of L train user and analyze the term occurrence weighted to document occurrence. Besides, there is another method in text data mining namely SVM (Support Vector Machine) which is acknowledged coping a wide range problem with magnificent generalization performance. SVM has been applied in many discipline consists of bioinformatics, image detection, credit rating, etc. It is revealed that SVM is useful in classifying the case in problems observed due to its generalization performance as compared to other classifiers such as linear discriminant classifier and neural networks (Huang, Chen, Hsu, Chen, & Wu, 2004). Credit rating analysis with support vector machines and neural networks: a market comparative study. *Decision support systems*, 37(4), 543-558.). In addition, SVM is independent in term of its learning ability due to its dimensionality of the feature space.

3. Methodology

Social media has generated extensive data from user. Moreover, Twitter, the popular social media platform which limited the user to generate statuses to 140 characters attracted large number of users. This unique feature of Twitter attracted users to create their personal statuses frequently. This form of interaction is named microblogging. Furthermore, Twitter users frequently posted their opinion toward public service and product. Such opinion opens the opportunity for service provider to receive direct feedback from their user, cut the hierarchical process of common suggestion process through customer relation or public relation. These opinions from Twitter however are commonly used to be analyzed to some extent, one of the analysis made is namely text data analysis.

Combination of three text data analysis was used in this paper. This combination aimed to make deep understanding in social media of Transjakarta user. Transjakarta, beside Commuter Line, is main commuter's mode of transport to workplace or going around. In addition, Twitter is considered as the selected social media to be analyzed because in Jakarta, it outreaches many users. Therefore, the Twitter statuses of Transjakarta -- assumed from the commuter -- can be used for the analysis. Total of 3500 twitter statuses were gathered using *twitteR*, a software package providing Twitter analysis in R, statistics software. These twitter statuses then are divided into two sets of data, the first set contains 500 Twitter

statuses, are assigned as training data to create SVM (Support Vector Machine) model which become a benchmark for the next model. The rest of statuses, 3000 Twitter statuses, are prepared to be input into the model that were generated from training data set. All the process of the data mining process done in Rapidminer software. Further explanation about particular methods used will be explained in respective sections as follows.

1.1. Term Frequency - Inverse Document Frequency (TF-IDF)

This research analyzes Twitter statuses regarding to word “transjakarta” and “busway”. The data generated from the query tokenized by length, and non-letters to break sentences into individual word. This process is followed by filtering stopwords. Stopword is unimportant and meaningless word that occur in the sentence. Filtered words counted using TF-IDF (term frequency inverse document frequency). TD-IDF is a numerical statistic that is intended to reflect the word importance in a document. The most occurring word in the data set will give the most word used by twitter user along with word transjakarta or busway.

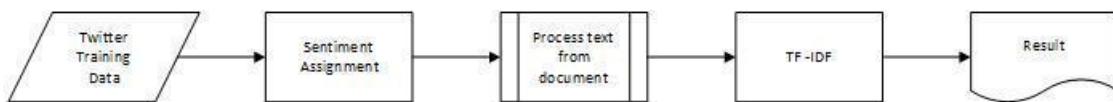


Figure 1. Term frequency inverse document frequency process

1.2. Frequent Pattern Growth (FP-Growth)

FP-growth algorithm is result of apriori algorithm development. This algorithm designed to determine frequent item set from the prepared data set. Compared to apriori and eclat, FP-growth result on more optimized and efficient result (Borgelt, 2005). The characteristics of FP-growth algorithm its extract frequent item set from FP-tree which generated from the data set. FP-growth method implemented in this research is pre-defined algorithm from Rapidminer. Min support, min number of itemsets, max number of retries, and max item sets to 0.95, 100, 15, and - 1 respectively. Result of the FP-growth process become input for association rule process to generate word that most associated in the data set. This processes aimed to analyzing word or phrase that associated with Transjakarta or Busway. Associated word will describe what the sentiment toward transjakarta. For create association rules, the input parameters are, criterion using confidence, min confidence 0.8, gain theta 2, and laplace k 1.

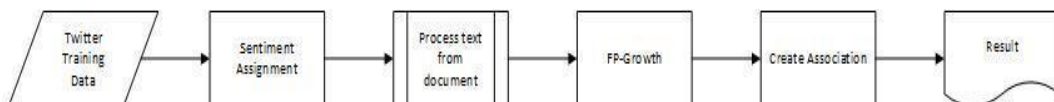


Figure 2. FP-growth and association rule process

1.3. Support Vector Machine (SVM)

Second method that is used in this research was classifying sentiment with SVM (support vector machine) technique. SVM is popular method in sentiment analysis. Previous study has used SVM to mine opinion hotel review (Xu, X., & Li, Y. ,2016), and movie review (Mullen, T., & Collier, N. ,2004). SVM classifying sentiment based on trained data that we input to the model. 500 twitter that has been classified into positive, negative, neutral, and not related sentiment was inserted to SVM. This research applying SVM linear process which is predefined in Rapidminer. Kernel cache, C, converge epsilon, and max iterations sets to 200, 0.0, 0.001, and 100000, respectively.

FP-Growth and association rule process resulted on associated word with “Transjakarta” and “Busway” in our twitter statuses data set. This association result support TF-IDF result, the associated words are “separator”, “mampang”, and “busway”. Association showed on Rule 3, 4, 5, 6, 7, 8, and 9 with support around 0.2 and confidence above 0.9. Similar with TD-IDF result, association rule result indicated that twitter statuses dataset mostly contained incident news that occur in mampang. Word that associated with opinion and sentiment toward

Transjakarta didn’t emerge from the analysis.

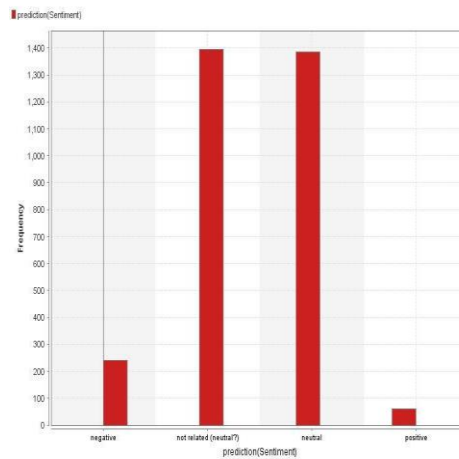


Figure 6. Sentiment prediction result

The sentiment analysis on our twitter statuses data set, mostly discussed something not related to the busway in term of public transport and discussed anecdote instead. Another frequent sentiment found is neutral which means generally Twitter statuses obtained are formed in news. This is in line with the first result discussing term of occurrence in which accident news is popped out. Followed by negative Twitter statuses and the least sentiment to be appeared is positive sentiment. Furthermore, if we take out unrelated and neutral sentiment, negative sentiment will dominate the passenger opinion toward “transjakarta” and “busway” word. In short, sentiment of Transjakarta for word “tranjakarta” and “busway” is negative. Mostly negative comment dominated by complaint, and suggestion with negative comment. This phenomenon is an impact of people behavior that tend to express their complaint if the reality does not meet their expectation, in other hand if the service is good or standard the consumer takes it for granted.

Although the sentiment is negative, it did not affect Transjakarta’s number of passenger. Annual passenger number in 2011-2014 period is stagnant. Furthermore, the addition of new corridor did not generate increase on number of passenger. The availability of real time passenger is limited, thus we extrapolated from government official statement in news agency. This data indicated there is little correlation between number of passenger and the sentiment or social interaction in Transjakarta. Although the social interaction in social media is not main driver of number of passenger. Public transport able to improve and get direct feedback from social media, and explore the travel decision. Thus, it will improve the quality and experience of the passenger. This factors are not necessarily impact on passenger number since it was an infrastructure domain.



Figure 7. Transjakarta passenger number (2010 - 2016)

5. Conclusion

Social interaction among commuters is not relatively new issue to be studied. Whilst, it can be depicted in social media, specifically Twitter which is mostly used in Indonesia. Some types of interaction in social media are lied as it is also suggested by previous studies, namely one-way interaction through information Twitter statuses and two-way interaction to responded Twitter statuses. In this study, the interactions found on Twitter mostly dominated by information Twitter statuses given by both commuters and Transjakarta's official account which inform the accident happened in busway separator in Mampang. It is also retweet statuses frequently. Besides, sentiment of Twitter statuses is also analyzed. From this study, the frequent sentiment appeared (after excluding information and not-related Twitter statuses), is negative Twitter statuses in which capturing the negative opinion of commuters toward Transjakarta. However, the fact that negative comments did not affect the number of Transjakarta which can be concluded from Figure 7.

This study limits in number of Twitter statuses analyzed since we aimed for preliminary study of social interaction in social media. Furthermore, the more Twitter statuses used, the more representative models gotten. It is prospective for further study to develop this model in text data mining using higher number in Twitter statuses. Beside, this model can be replicated to analyze other provider of transportation which is also frequently used by commuters in Jakarta, namely commuter line, which is not included in this study.

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The Determinants Influencing Liquidity Risk using Loan Funding Ratio (LFR): Evidence from 19 Commercial Banks in Indonesia for Period 2008 – 2014

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Abstract

In September 2008, financial crisis events happened in U.S created panic in credit markets affected the liquidity of banking in Indonesia. The unexpected crisis created loss in financial markets show the importance of adequate liquidity risk measurement and management to minimize the risk of inadequate liquidity. The aim for this paper is to identify the determinants of liquidity risk using Loan to Funding Ratio (LFR) which is an adjusted ratio from Loan to Deposit Ratio based on *Peraturan Bank Indonesia* Number 17/11/PBI/2015. The analysis is performed using secondary data that published by *Otoritas Jasa Keuangan* in the period of January 2008 until December 2014. The banks data that are used in this research is 19 banks which has capital of at least IDR 5 trillion. This research used ordinary least square (OLS) test performed by Eviews 8 for analysing the data. With Loan Funding Ratio as the dependent variable this research aim to find the correlation and how big the impact of : Five Credit Quality Category (Current Credit, Special Mention Credit, Substandard Credit, Doubtful Credit, Loss Credit), External Funding Ratio (EFR), and Capital Adequacy Ratio (CAR). The result have revealed that CTEA (Current Credit), SMTEA (Special Mention Credit), SSTEA (Substandard Credit), DTEA (Doubtful Credit), EFR (External Funding Ratio), and CAR (Capital Adequacy Ratio) is significant to Loan Funding Ratio (LFR) and LTEA (Loss Credit) has no significant relation to LFR. CTEA has positive and significant relation with LFR. SMTEA, SSTEA, DTEA, EFR and CAR has negative and significant relation with LFR. This research also indicates that CTEA, SMTEA, SSTEA, DTEA, LTEA, and CAR as independent variables can explain 77.64% of Loan to Funding Ratio (LFR) as the dependent variable, where 22.36% is explained by other variables.

Keywords: Banks, Loan Funding Ratio, Capital Adequacy Ratio, Current Credit, Special Mention Credit, Substandard Credit, Doubtful Credit, Loss Credit, External Funding Ratio, Indonesia

1. Introduction

Liquidity management is a fairly complex problem in the operations of the bank. According on Bank International Settlements on 2008, liquidity is defines as a bank's ability to acquire funds required to meet obligators when due without incurring any substantial losses. Liquidity risk arises when there is a mismatch maturities between deposits and loans managed by the bank. Thus the bank failed in rush to liquefy their money.

Indonesia has experienced a liquidity risk caused by the subprime mortgage crisis of Lehman Brothers and Northern Rock Bank in 2008. Due to the financial crisis in the United Stated, Indonesia's government felt the need to add capital to three state-owned banks namely: Bank Mandiri, Bank BNI, and Bank BRI in 2009. This done to anticipate the systematic risk as a result of the subprime mortgage crisis. Another case happened on Bank Century as their Third Party Funds declined precipitously and *Lembaga Penjaminan Simpanan* (LPS) provide capital assistance amounting to Rp 6.7 Trillion in 2009.

Loan to Deposit Ratio (LDR) is a ratio related to liquidity aspect. Based on Bank Indonesia Regulation Number 15/15/PBI/2013 Loan Deposit Ratio or LDR is a ratio given to third party in Rupiah and foreign

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currencies, excluding loans to other banks, third party funds such as checking, savings, and time-deposits in rupiah and foreign exchange. Since August 2015 based on Bank Indonesia Regulation Number 17 of 2013, Loan to Deposit Ratio converted into Loan to Funding Ratio (LFR). This rule requires banks to place liquidity in the form of securities in order to maintain the liquidity of banks in Indonesia.

Liquidity itself can be affected by various factors. One of the factor that cannot be separated from the banking world is the credit quality. As credit is one of the bank activity that contribute revenue for its business, credit is really important and contains many risk that might affect the health of the bank. Based on Bank Indonesia, there are five categories of credit quality which are: Current, Special Mention, Substandard, Doubtful, and Loss. The Substandard, Doubtful, and Loss Credit can cause problems for the banks because it can lead bank to reluctance giving credit to other parties because the bank need to cover the loss, thereby affecting the credit granted by the bank and will affect the Loan Funding Ratio. Beside of that, the performing loans consisted of current loans and special mention loans is also interesting to see the correlation with Loan Funding Ratio. Deposits is required in the bank to run its operations smoothly. Bank using funds from third party to be places in posts that can generate profits for the bank and one of them is a credit which can affect the Loan Funding Ratio (LFR).

Testing the factors that can influence Loan Funding Ratio (LDR) is interesting to see because LFR is a new ratio that has not been applied in Indonesia and does not have the historical data yet.

2. Literature Review, Research Framework, Hypothesis

2.1. Literature Review

According to the Indonesia Law Number 10 in 2008, banks are business entities that raise funds from the public in the form of deposits and distribute to the public in the form of credit in order to improve people's living standard.

Loan Deposit Ratio (LDR) is a ratio that associated with liquidity aspect in the banking company. LDR is a ratio between the total credits given by the banks to other party to the funds received. LDR is used to measure the amount of funds distributed in the form of credit. Based on Bank Indonesia Regulation Number 17 of 2013, Loan Deposit Ratio (LDR) change into Loan Funding Ratio (LFR). In the LFR, the ratio is calculated between the total credit given to the funds received and the securities the bank holds that could be converted into funds. The purpose of the LFR itself is an indicator to determine the level of vulnerability of the bank. Funds and securities owned by the banks will affect the credit provided by the bank. The higher the ratio indicates the low capacity of the bank concerned the liquidity, because the amount of funds required to finance the credit is greater.

Bank as a business unit have variety of risks. One of the risk faced by the bank is the risk of loss credit whereas the banks already give the money to the other party however the other party failed to pay back to the bank. This risk is called credit risk. Asset quality of a bank consists of two: Performing Loans and Non-Performing Loans. Performing loans consisted of current credit special mention credit. The Non-Performing loans are loans classified as troubled to the bank because there are no funds coming either in the form of payment of principal even the interest on the loan of credit jammed. It would affect the loss of income from the sector credit and bank would loss the trust of the people for not being able to manage the clients' funds safe.

According to Kashmir (2004), in lending the money to the public the third party funds had the largest contribution from some other sources of funding. The banks can gain funding by their own capital, loan from another institution, sell obligations/securities, and earn deposits. The number of the deposits collected by the bank will affect the credit undertaken by the bank. There are several types of public funds which are demand deposit, saving deposit, and time deposit.

Capital Adequacy Ratio is the bank's ability to maintain sufficient capital and the ability of bank management to identify, measure, monitor, and control risks that arise that could affect the amount of capital (Kuncoro, 2002). The higher the CAR, the bank has greater financial resources that are able to be used to giving loans to other party.

Below is the previous research that already conducted and has relation with the topic of this research:

Table 1. Previous Studies

No	Title	Variables	Result
1.	<i>Analisis Faktor – Faktor yang Mempengaruhi Loan Deposit Ratio Bank Swasta Nasional di Bank Indonesia</i> (Agustina & Anthony, 2013).	Dependent Variable : Loan Deposit Ratio Independent Variable: - Net Interest Margin - Operating Expenses to Operating Income - Interest Rate - Capital Adequacy Ratio	NIM, Operating Expenses to Operating Income, and Interest Rate has positive and significant toward LDR. CAR has no significant toward LDR.
2.	Determinants of Liquidity Risk of Commercial Banks in Kenya (Fredrick & Leonard, 2015)	Dependent Variable: Loan Deposit Ratio (LDR) Independent Variable: - Capital Adequacy Ratio - Liquid Asset Ratio - Ownership Type - Leverage - Size	CAR and Leverage has positive significant toward LDR. LAR, OWNT, and Size has no significant toward LDR.
3.	<i>Faktor-Faktor yang Mempengaruhi Loan Deposit Ratio</i> (Martha, 2015)	Dependent Variable: Loan Deposit Ratio (LDR) Independent Variable: - Third Party Funds - Non-Performing Loan Short term - Non-Performing Loan Long Term - Capital Adequacy Ratio	In the long term, CAR has no significant to LDR however in short term CAR has positive significant toward LDR. Third Party Funds has positive significant toward LDR, however in short-term it has no significant toward LDR. NPL has negative significant toward LDR and has positive and significant in short-term.
4.	Analysis of the Effect of Capital, Credit Risk and Profitability to Implementation Banking Intermediation Function (Buchory, 2014)	Dependent Variable: Loan Deposit Ratio (LDR) Independent Variable: - Capital Adequacy Ratio - Non-Performing Loan - Return on Asset	CAR and ROA has positive and significant toward LDR. NPL has no significant toward LDR.

2.2. Research Framework

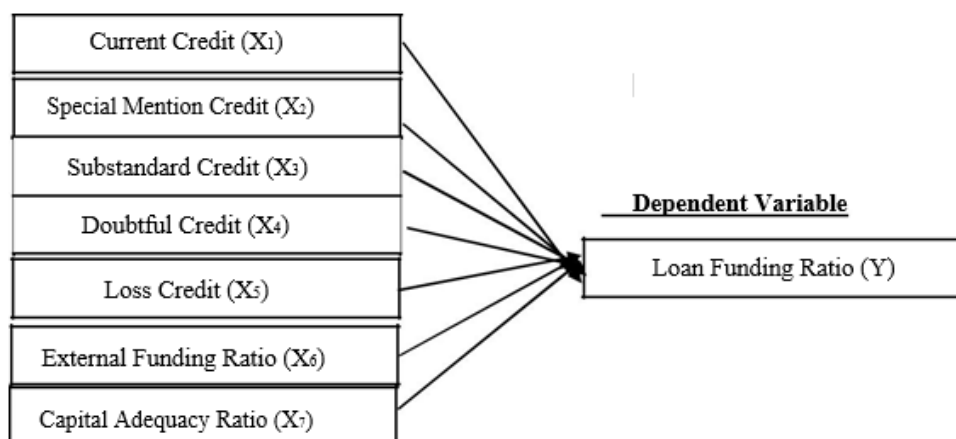


Figure 1 Research Framework

2.3. Hypothesis

Based on the literature review and previous study, the hypothesis of this research are:

- H.1. Current Credit has positive significant toward Loan Funding Ratio (LFR).
- H.2. Special Mention Credit has positive significant toward Loan Funding Ratio (LFR).

- H.3. Substandard Credit has negative significant toward Loan Funding Ratio (LFR).
- H.4. Doubtful Credit has negative significant toward Loan Funding Ratio (LFR).
- H.5. Loss Credit has negative significant toward Loan Funding Ratio (LFR).
- H.6. External Funding Ratio (EFR) has positive significant toward Loan Funding Ratio (LFR).
- H.7. Capital Adequacy Ratio (CAR) has positive significant toward Loan Funding Ratio (LFR).

3. Research Methodology

3.1. Research Design

This research is categorized as descriptive analytical research as the aims of this research is to get the big picture from bank specific internal variables influence to the liquidity aspect of the bank. To test the research hypothesis, the author use the verification method by using statistical analysis to determine the level of significant and compare the result with the hypothesis. The research is quantitative approach that use statistical methods to find the result. The method used in this research is Ordinary Least Squares (OLS). To calculate the regression model, there are several assumption to satisfy the requirement. The assumption needed is BLUE (Best Linear Unbiased Estimator) which consists of multicollinearity test, heteroscedasticity test, autocorrelation test, and normality test.

Below is the explanation of each of the assumption test:

Table 2. Classic Assumption Test Explanation

No	Name	Explanation
1.	Multicollinearity Test	Multicollinearity is a test done to see the relationship condition whether it has linear relationship or a high correlation between each of variables independent in the regression model. The method to see if there is any multicollinearity is using pair-wise correlations whereas if the numbers coefficient between the two variables exceeds 0.8 then multicollinearity occurs.
2.	Heteroscedasticity Test	There are two ways to do the heteroscedasticity which are informal and formal ways. The informal method is used by see the nature of the problem in the graphical method. If there is a pattern recur within the graphic then there is heteroscedasticity on the data. While formal method is detecting using one of an available methods that calculating a function such as park test, glejser test, spearman's rank correlation test, goldfield-quandy yesy, breusch-pagan-godfrey test, or white general heteroscedasticity test (Irawan, 2013).
3.	Autocorrelation Test	Autocorrelation test aims to determine whether there is a correlation between the variables of members on certain period. According to Irawan (2013), autocorrelation can be detected by using graphical method, Bruesch Godfrey test, or durbin-watson test.
4.	Normality Test	According to Ghazali (2011), there are two ways to detect the residual is normal distribution or not, namely Graphic Analysis which can be done by looking at the graphic available and Statistic Analysis by using Jarque-Bera test. Jarque-Bera analyze : H0 : The residual is normally distributed H1 : The residual is nor normally distributed If the value of Jarque-Bera exceeds chi square value, then the residual is normal.

Table 3. Operationalization and Measurement of Model

Variable	Definition of Variable	Formula	Scale
Dependent Variable			
Loan to Funding Ratio	This ratio is used to know the bank's ability to distribute credit by its deposit and securities.	= $\frac{\text{---}}{\text{+}}$	Ratio
Independent Variable			
Current Credit	This ratio is used to know the condition of current credit of the bank divided by its earning asset.	= $\frac{\text{---}}{\text{g}}$	Ratio
Special Mention Credit	This ratio is used to know the condition of special mention credit of the bank divided by its earning asset.	= $\frac{\text{---}}{\text{---}}$	Ratio
Substandard Credit	This ratio is used to know the condition of substandard credit of the bank divided by its earning asset.	= $\frac{\text{---}}{\text{---}}$	Ratio
Doubtful Credit	This ratio is used to know the condition of doubtful credit of the bank divided by its earning asset.	= $\frac{\text{---}}{\text{a}}$	Ratio
Loss Credit	This ratio is used to know the condition of loss credit of the bank divided by its earning asset.	= $\frac{\text{---}}{\text{---}}$	Ratio
External Funding Ratio	This ratio is used to measure ratio between the total third party funds to total asset.	= $h \frac{\text{---}}{\text{---}}$	Ratio
Capital Adequacy Ratio	This ratio is used to know bank's ability to maintain sufficient capital by its risk weighted asset.	= $\frac{\text{---}}{\text{h}}$	Ratio

3.5. Sources of Data

The data in this research is collected on the secondary data which comes from income statement, balance sheet, commitment & contingent, and quality of productive assets report. The detail of the source and type of data used in this research is below:

Table 4. Sources and Type of Data

No	Data	Type of Data	Source
1.	Financial Statement Monthly from 15 banks in BUKU 3 period January 2008 – December 2015	Secondary Data	Otoritas Jasa Keuangan
2.	Financial Statement Monthly from 4 banks in BUKU 4 period January 2008 – December 2015.	Secondary Data	Otoritas Jasa Keuangan

4. The Findings

1. Classical Linear Assumption Test

Multicollinearity Test

Table 5. Multicollinearity Test Result

	DTEA	CAR	CTEA	EFR	LTEA	LFR	STE A	STE A
DTEA	1.000000	-0.231666	-0.181653	0.044320	0.385046	-0.052447	0.227757	0.441243
CAR	-0.231666	1.000000	0.067534	-0.444661	-0.342203	0.272628	0.073675	-0.022591
CTEA	-0.181653	0.067534	1.000000	0.043229	-0.255593	0.015268	-0.114306	-0.293593
EFR	0.044320	-0.444661	0.043229	1.000000	0.290761	-0.780296	-0.221832	-0.089669
LTEA	0.385046	-0.342203	-0.255593	0.290761	1.000000	-0.180164	0.128800	0.482569
LFR	-0.052447	0.272628	0.015268	-0.780296	-0.180164	1.000000	0.151967	0.134840
SSTEA	0.227757	0.073675	-0.114306	-0.221832	0.128800	0.151967	1.000000	0.281099
SMTEA	0.441243	-0.022591	-0.293593	-0.089669	0.482569	0.134840	0.281099	1.000000

This research indicates no multicollinearity by using pair-wise test. The table shows that there is no correlation value higher than 0.8, which indicates that there is no multicollinearity between each variable.

Table 6. Heteroscedasticity Test Result

Heteroskedasticity Test: White

F-statistic	29.27195	Prob. F(7,1580)	0.0000
Obs*R-squared	182.2995	Prob. Chi-Square(7)	0.0000
Scaled explained SS	1000.610	Prob. Chi-Square(7)	0.0000

This research use white-test to analyze the indication of heteroscedasticity. If p-value Obs*R-square higher than the significant value then there's no homoscedasticity and so does the opposite of it. The result show that there's no heteroscedasticity as Obs*R-square (182.2995) is higher than the significant level (0.05).

Table 7. Autocorrelation Test Result

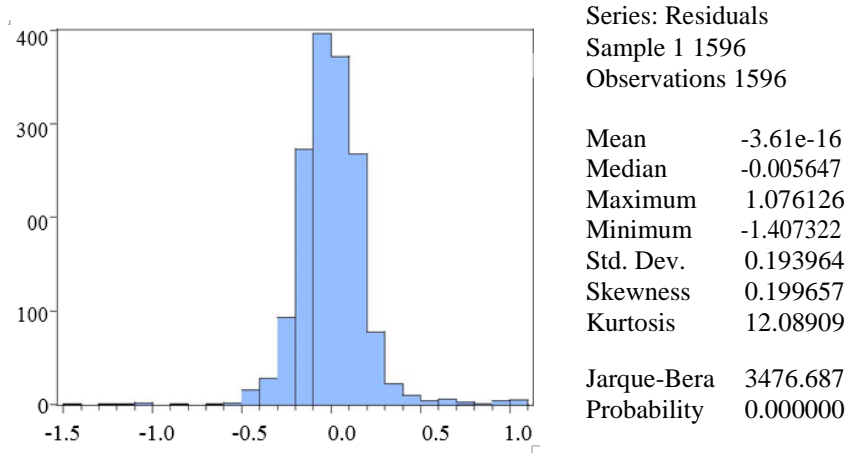
Breusch-Godfrey Serial Correlation LM Test:

F-statistic	740.9185	Prob. F(2,1578)	0.0000
Obs*R-squared	769.0466	Prob. Chi-Square(2)	0.0000

This research use Breush-Godfrey to test the autocorrelation. The data used in this research indicates of no autocorrelation as the Obs*R-squared (769.0466) is higher than the significant level (0.05).

3.2. Normality Test

Table 8. Normality Test Result



Based on the graph above the data is not normal distributed as the Jarque-Bera exceed the number of chi-value. However based on McClave and Sincich (2008), if the panel data exceed the n of 30 it indicates as a ‘large’ sample size varies. It state that sample size greater than 30 would be considered large enough to apply the central limit theory and assumed as normal. This research used 1596 sample size thus it considered to be “**large**” data and can be assumed as normal distributed.

4.2. Regression Analysis

Regression Result

Table 9. Regression Result

Dependent Variable: LFR
 Method: Panel EGLS (Cross-section weights)
 Sample: 2008M01 2014M12
 Periods included: 84
 Cross-sections included: 19
 Total panel (unbalanced) observations: 1596
 Linear estimation after one-step weighting matrix
 White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.797845	0.157835	11.39067	0
CAR	-0.965914	0.072498	-13.32335	0
CTEA	0.157456	0.062845	2.505451	0.0123
DTEA	-5.626284	1.033598	-5.443397	0
EFR	-1.180018	0.174483	-6.762926	0
SSTEA	-4.773547	0.768142	-6.214405	0
LTEA	-0.286022	0.330782	-0.864682	0.3873
SMTEA	-0.833442	0.27495	-3.031247	0.0025

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared 0.776418 Mean dependent var 1.372894

Adjusted R-squared	0.772833	S.D. dependent var	0.648883
S.E. of regression	0.144549	Sum squared resid	32.5744
F-statistic	216.5537	Durbin-Watson stat	0.636711
Prob(F-statistic)	0		

Based on the regression done on Table 4.5.the equation model is:

$$= 1.797845 - 0.965914 + 0.157456 - 5.626284 - 1.180018 - 4.773547 - \frac{0.286022 - 0.833442}{(4.1)}$$

The coefficient shows that CAR, DTEA, EFR, SSTEAs, LTEAs, and SMTEAs has negative value to LFR. It means that the changes in CAR variable has a value of regression coefficient of -0.965914. The negative coefficient means that any increase in CAR ratio of 1 unit will lead to reduction to Bank's LFR of 0.965914 points (with record that other independent variables are constant). Similarly with other variables that have negative values, any increase in these variables will lead reduction of the LFR. CTEA (Current Assets) has positive coefficient of 0.157456 points which means that the increase of CTEA of 1 unit will result an increase of 0.156456 LFR.

4.3. Coefficient of Determination

From the result of regression estimation, the value of r-squared is 0.7723665. This shows that CTEA, SMTEA, SSTEAs, DTEAs, LTEAs, and CAR as independent variables can explain 77.64% of Loan to Funding Ratio (LFR) as the dependent variable, where 22.36% is explained by other variables.

4.4. T test

To determine the significant level of each independent variable to the dependent variable the T test is needed. This test is comparing the p-value and significance level to know whether the hypothesis is rejected or not. Using 0.05 significant level, the regression model shows that CTEA (Current Credit), SMTEA (Special Mention Credit), SSTEAs (Substandard Credit), DTEAs (Doubtful Credit), and CAR (Capital Adequacy Ratio) is significant to Loan Funding Ratio (LFR) and LTEAs (Loss Credit) has no significant relation to LFR.

4.5. F test

F statistic test is a test of accuracy of the model, commonly known as 'goodness of fit'. If Prob (F-statistic) is less than the significant level then we can assume that all the parameters are allegedly different from zero. Then the model used is a good model. The result indicates that the Prob (F-statistic) is 0.0000 which is lower than the significant level of 0.05.

The Analysis

Using 0.05 significant level, the regression model shows that CTEA (Current Credit), SMTEA (Special Mention Credit), SSTEAs (Substandard Credit), DTEAs (Doubtful Credit), EFR (External Funding Ratio), and CAR (Capital Adequacy Ratio) is significant to Loan Funding Ratio (LFR) and LTEAs (Loss Credit) has no significant relation to LFR.

CTEA (Current Credit) shows that there's positive significant to LFR which is the same as the hypothesis by the author. This shows that the higher the current credit a bank has the higher a bank would be able to give credit to other party. However, the SMTEAs (Special Mention Credit) following by SSTEAs (Substandard Credit) and DTEAs (Doubtful Credit) has negative significant to relation with LFR. This shows SMTEAs, SSTEAs, and DTEAs would affect the bank's ability to giving loans as bank could not utilize the use of the deposits given by the public. The higher the SMTEAs, SSTEAs, and DTEAs the lower the Loan Funding Ratio would be. The result of SMTEAs is different from the hypothesis, this might be because the ability of bank in Indonesia manage their credit. If SMTEAs, SSTEAs, and DTEAs are not dealt with appropriately and quickly it would make the bank loss the opportunity to gain income from the credit given, thus it would decrease the profit. SMTEAs, SSTEAs, and DTEAs would affect the bank's ability to giving loans as they could not utilize the use of the deposits given by the public. Thus, the higher the special mention, substandard, and doubtful credit the lower the Loan Funding Ratio would be

EFR (External Funding Ratio) has negative and significant toward the LFR. The author assumes that it

indicates the banks tend to use the external funding to their savings rather than to distribute it to other party. Thus the higher the external funding the bank has, the lower the LFR of the bank. This result is different from Martha (2015) as her finding shows that Third Party Funds (as external funds) has positive and significant relation toward LDR. This might due because of the differences criteria the LDR and LFR has.

The regression model indicates that the CAR (Capital Adequacy Ratio) has negative and significant relation to LFR. The author assumes that this result might happen because if the LFR is high it indicates that the bank is giving quite a lot of loans to other party. When banks lend credit, it may pose by credit risk. The bigger the credit given by the bank, the greater the credit risk and thus it would affect the RWA (Risk Weighted Assets) of the bank to increase. The increase of RWA would affect the CAR to increase. The result is supported by Martha (2015) which stated that CAR has negative significant in long-term period to LDR.

5. Conclusion

CTEA (Current Credit), SMTEA (Special Mention Credit), SSTEA (Substandard Credit), DTEA (Doubtful Credit), EFR (External Funding Ratio), and CAR (Capital Adequacy Ratio) is significant to Loan Funding Ratio (LFR) and LTEA (Loss Credit) has no significant relation to LFR on 19 commercial banks that has core capital of at least IDR 5 trillion from period 2008 – 2014. This research also indicates that CTEA, SMTEA, SSTEA, DTEA, LTEA, and CAR as independent variables can explain 77.64% of Loan to Funding Ratio (LFR) as the dependent variable, where 22.36% is explained by other variables.

In order to maintain the Loan Funding Ratio (LFR) as an indicator to determine the level of vulnerability, the banks need to maintain their credit quality (from current to doubtful credit), External Funding Ratio, Net Interest Margin, and Capital Adequacy Ratio.

This study still has many limitations as this study only use 5 Credit Quality, External Funding Ratio, Capital Adequacy Ratio, and Net Interest Margin as an independent variable. There are many other variables that can be used as an indicator in determining the Loan Funding Ratio. The period observation in this study is limited to 2008 to 2014 with object of observations only 19 commercial banks with core capital of at least IDR 5 trillion.

Some suggestions to proceed to the next study are: add other variables outside 5 Credit Quality, EFR, CAR, and NIM, extend the period of observation, and increasing the population & sample of the study.

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Factors Influencing Indonesian Women Choice for Renting or Making Their Wedding Dress

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Abstract

Indonesia has many cultures that making lots of choices for Indonesia women in using wedding dress. There are traditional dress and international type of wedding dress. There are several considerations in selecting a wedding dress like the culture component include norm, myth and religion, social class, and price perspective. Most of Indonesian women prefer to making the wedding dress. The other hand, the cost is quite expensive to manufacture wedding dress is also a consideration so the be an option for them such as renting the wedding dress.

The data distributed by questionnaire to 400 unmarried women in Indonesia with age 18 until 26 years old and domicile in Jakarta and Bandung that from variety tribe. The questionnaire was using 7-point Likert scale to test the variables on research framework. The coefficient correlation of all attributes greater than 0.3. The Cronbach's alpha consist greater than 0.7. The data analyze with Path Analysis to know the relationship between culture component, social class, and price perspective towards design perspective and the design perspective towards preference of renting or making the wedding dress. Culture component (include norm, myth, and religion), social class, and perspective of price positively influence the perspective of design quality and supported by the hypothesis. Also, perspective of design quality positively influences the preference of women in Indonesia to renting or making the wedding dress. Norm, myth, religion, social class, and perspective of price have low relationship with the perspective of design quality with 30,8%. Perspective of design has high relationship with the preference of women in Indonesia to renting or making the wedding dress with 71,1%.

Keywords: wedding dress, renting vs making, culture component, price, social class

1. Introduction

Married at a young age are the current trends in Indonesia. Based on *Badan Pusat Statistik*, there are about 55.942.000 marriage couple in 2006 and also increase each year. There are about 64.771.600 marriage couple in end of 2014. About 10 years ago the average age of women who get married in Indonesia is around 27 years to 29 years. Now, the average age at marriage of women Indonesia is 19 years to 25 years. Based on the observation from forum likes KASKUS and Facebook, there are about young people plans to marry young in age 19 to 25 years old. There are undergraduate students in University that ready and have plan to be married. The phenomenon is also encountered among celebrities in Indonesia. Although at a young age many people are trying to develop their careers, a lot of celebrities in Indonesia decided to marry in young age.

One that is crucial for women when preparing the marriage ceremony is her appearance. Wedding dress is one of the most important things for a woman to support his appearance. There are several factors that influence in choosing the wedding dress. Culture components including norms prevailing in the environment, belief towards the myth in the region, and the rule of religion influencing the Indonesian

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women towards the perspective of design quality. Also, get the recognition from their social environment. The brand is one of the considerations for women in Indonesia to buy an item. Brand is often associated with the quality of goods, some women in the purchase of goods to be viewed by brand. Most of them think that luxury brand affects social class. Thus, many of Indonesian women perspective affect the demand or desire to use luxury brand from popular designers for the wedding dress. Of course, the bride should pay more can choose luxury brand or a popular designer to obtain maximum outcome wedding dress but not all of them agree to pay more expensive for the luxury wedding dress.

Ideally a wedding dress customized by bridal to fit the desires bride and wedding dress is memorable as a keepsake. On the other hand, wedding dress is perhaps the dress with the highest costs ever had a woman, especially a woman Indonesia because it is memorable expected lifetime. So that not all women in Indonesia prefer to customized the wedding dress. There are some women who prefer to rent the wedding dress from the boutique because it would be cheaper and also the budget can be allocated for other purposes.

The first method for exploratory research is netnography to determine the issue in the community now. In January 2016, the author did the observation in social media such as Instagram that existed social media in Indonesia and youtube. There are young couples married around 18 until 26 years old. The bride especially the women uploaded the wedding dress with the caption in Instagram and also tag the designer or boutique that produced the wedding dress. The price of a wedding dress is certainly expensive but the bride willing to spend money to look beautiful in their memorable day. Beautiful wedding dress is the pride for the bride.

There are celebrities who prefer to rent the wedding dress from popular designer like Hiantjen and Ivan Gunawan. Popular designers, such as Ivan Gunawan, Hian Tjen, Barli Asmara produce design wedding dress at a price of about IDR 50 million - IDR 120 million. Many famous celebrities with luxury life style like Nabila Syakieb and Chelsea Olivia rent their wedding dress by Hiantjen. Chelsea Olivia that has 6.9 million followers uploaded her luxury wedding dress from Hiantjen as famous popular designer in Indonesia. Hiantjen as popular designer in Indonesia that has 130k followers rent the wedding dress, the price of rent around IDR 24.000.000 and if buy it that the same model, the price IDR 78.000.000. Rent a wedding dress will usually be cheaper than to buy it and there is also the pride and satisfaction of use of the popular designer wedding dress.

Surely they need advice and input from families who have experience in taking care of their wedding dresses. 8 from 10 student women in Indonesia agree that the wedding dress is determined by the interference of parents and family (80%). They believe that the view of parent that always wants the best for her daughter is a prayer and blessing. Usually the parents and relatives know more about the rules that apply in selecting a wedding dress and also in accordance beliefs. In addition to religious beliefs in determining the selection of wedding dress design, some Indonesian women also believe the myths that exist in the region. According to three of the 10 student women in Indonesia, the myth can be interpreted as something sacred and if violated will cause a controversy and can also be affected by the curse.

In February-March, 2016, the author did interview with 100 young Indonesian women who is getting married, each bridal want to celebrate their wedding and of course the bridal want to looked amazing in their wedding event with the hope only once in a lifetime, one of it is wedding dress. Most of them use three types of dress at the wedding in accordance with the religion and belief most likely wearing kebaya for muslim or white dress for non muslim or red dress for chines, dress according their culture, and dress at the reception that usually used at night (66%). It is a rule of the culture or beliefs (52%), like use dress decently (57%) which if violated will be sanctioned such as the sin of trust (17%), not blessed family (41%), and judgment and gossip (42%).

Design of the wedding dress is the first priority for the bride (55%). So the beautiful design from popular designers become a major concern in determining renting wedding dress. So 35 % respondent prefer to renting it from popular designer in Indonesia and also the respondent mentions a popular designer names they like Ivan Gunawan (24%), Barli Asmara (20%) and Hiantjen (17%). They are popular designer that produces luxurious dress in Indonesia.

The other hand, the brand (8%) and designer (13%) of wedding dress can showing the social class that it's important for them (54%). Social class can to influence a person in determining which brand they will choose. With the best brands of course, there is a perspective that has high quality (32%), good outcome (27%), usually only one design (7%), design the limited quantity (1%). Also, the brand has maintaining prestige (41%).

The second priority is the price (16%). Cost is certainly a concern that needs to be considered in making (52% from 100 respondent) or 35% said that prefer to rent wedding dress because they certainly have a lot of expenses for the wedding event. Most people said that the budget for the wedding dress is IDR 5-10 million (30%) and then the budget around IDR 15-20 million (14%). Often, the cost for rent or renting is cheaper than create it.

Based on the interview with 100 respondent Indonesian women, the problem statements is there are Indonesian women a certain perspective where they prefer custom made their wedding dress to achieve the ideal wedding dress that based on their dreams with high quality and beautiful design to be accepted by their social group without paying too much money for it.

Most of Indonesian women prefer making the wedding dress with high quality and beautiful design to showing how elegance it and to accepted at their social group but do not want to pay much for it. The study consists of how culture components, social class, and the price that an Indonesian can influence the perspective of design quality. Also, how perspective of design quality influencing the Indonesian women to renting or making the wedding dress.

2. Literature Review

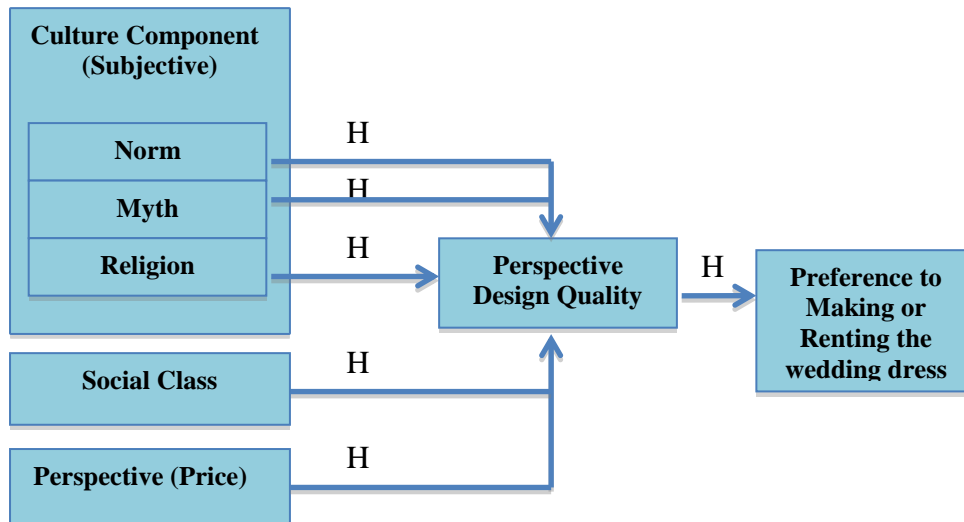


Figure 1 : Framework Of The Research

Figure explained about the conceptual framework that used in the research to define the factors that influencing Indonesian women preference to making or renting wedding dress.

2.1. Culture Component

Culture comes from the general characteristics that affect the group's response to its environment is interactive aggregate (Hofstede, 1980). The norms, beliefs, and customs of the community learning and lead to a general pattern of behaviour are part of culture (Assael, 1987). Roach-Higgins and Eicher said that to describe the characteristic of the user and ethnic identity selecting the design on the dress is very important especially for women (1992). Hamilton said that dress as a cultural symbol (1991, p. 131) that serves as an indicator of group membership.

2.1.1 Norm

Norm is something that talks about the right and wrong that applicable in the environment we live in. Norm on culture divided into two such as enacted norms and crevice norms. Enacted Norms are explicit rules, easily recognized by people inside and outside of the social unit (Prentice-Hall, 2009). While, crevice norms are learned and practiced by members of a social unit but unrecognized by non-members (Prentice-Hall, 2009).

H1: Norm positively affects women in Indonesia in choosing a wedding dress design

2.1.2 Belief

Belief is a story of important values that shared by members of a culture and that is used to teach to the next generation. It is including religion and myth.

a. *Myth*

Myths are stories that express a culture's values, and in modern times marketing messages convey these values. Many of our consumption activities including holiday observances, grooming, and gift giving are rituals (Prentice-Hall, 2009). Each city in Indonesia has story that passed down from generation to generation as ritual, prohibition and advice that called myth. Marriage ceremony is something sacred that brides are very careful in preparing its requirements such as wedding dress. Myth can influence brides especially women in choosing the design of their wedding dress.

H2: Myth positively affects women in Indonesia in choosing a wedding dress design

b. *Religion*

Wearing a white wedding dress in wedding ceremony is the norm for religious some of Indonesian people weddings. In 2003, Engstrom and Semic said that some religions may require brides to be fully covered, including shoulders, arms, and back.

A design that has a modern ethnic elements combine in the local culture and religion because marriage is something sacred both customary and religious laws. In Indonesia with the majority of the population is a special Islamic women who wear the hijab, they are resistant to linger using custom clothing according muslim fashion to meet the rules of the community where it becomes part of the group. It is not wishful thinking-party manufacturers in producing traditional wedding dress and Muslims but for showing how consumption can become a derivative of the production function as found in the analysis of Baudrillard (Svendsen, 2006: 120-121).

H3: Religion positively affects women in Indonesia in choosing a wedding dress design

2.2 Social Benefit

Social group influence is persuasion stemming from members of a group that guide another's behavior without the force of laws (Cialdini & Trost, 1998). In ideal society, an individual role as well as the values that affect how we choose to dress. The social psychology of the dress influence the dressing process. It provides an understanding of our appearance in relationship to human behavior. Fashion can represent a social class about the clothing what someone wear and how they dress.

H4: Social class positively affects women in Indonesia in choosing a wedding dress design

2.3 Price Perception

Choy and Loker said that there is one of crucial attribute that can affect a bride's wedding dress choice such as tight budget (2004). A bride must consider about the budget of wedding dress. The way of renting and making are the main differences between boutique that for renting and custom-made the wedding dresses.

Custom-made the wedding dress can be an option for brides who have a large budget. Women who have higher incomes would tend to make the wedding dress as reference images from online to have a unique look at their wedding (Choy and Lockers, 2004). Meanwhile, Tiggemann and Golder said that "people with the scheme looks very elaborated will pay more attention and devote more time, energy, and money on their appearance; namely, evidence of a greater degree of emotional investment and behavior in their appearance" (2006, 310). The other hand, the limited budget of wedding dress would limit the choice of wedding dress the bride.

H5: Price perception positively affects women in Indonesia in choosing a wedding dress design

2.4 Perspective Design Quality

Quality is a way to differentiate a product from its competitors (Porter, 1980). Product-based quality is a specific function. The different of quality reflect differences in the quantity of some product attributes such as the number of stitches per inch on a shirt or the number of cylinders in an engine (Evans and Lindsay, 1996).

There are many internal and external factors that influences the bride in choosing the wedding dress. The bride especially women choice of wedding dress influenced by family, community, and wedding

industry. Engel, Kollat and Blackwell said that the complex of values, ideas, attitudes, and other meaningful symbols created by people to shape human behavior and the artifacts of that behavior, transmitted from one generation to next (1968, p. 232).

Each people especially women have different wants and needs and also different perspective of the quality standards in choosing the wedding dress. They have different criteria to make the design looked amazing and have high quality. Almost people judge the quality of design based on the price information. Rao and Monroe said that price will be used less as an indicator of quality and more weight will be placed on the price sacrifice relationship when evaluating a product (1988).

H6: Perspective design quality positively influence women in Indonesia's in choosing borrowing or making the wedding dress

3. Methodology

This study was developed to identify factors that influence the selection of wedding dresses on Indonesian women and their preference to renting or making the wedding dress.

First, the information about recent condition in Indonesia such as young married as the trend by the article from internet. Second, the researcher do the observation in instagram and know there are celebrities and strangers married in the young age and uploaded their wedding dress with caption and tagged it to the designer account (January, 2016). Then the researcher did interview to 100 people to get more information (February, 2016). The next step was generating literature review from previous research. The result of interview and literature review needed to conduct the framework. The variables and measurement were prepared before defining the questionnaire. In April-May, 2016, the data distributed by questionnaire to 400 unmarried women in Indonesia with age 18 until 26 years old and domicile in Jakarta and Bandung that from variety culture. The questionnaire was using seven point Likert scale which 1 refer to Strongly Disagree and 7 refer to Strongly Agree to test the variables on research framework. The data analyze with Path Analysis to know the relationship between culture component including norm, religion and myth, social class, and price perspective towards design perspective and the design perspective towards preference of renting or making the wedding dress. Also, to know the factors that can influence the Indonesian women preferences to renting or making the wedding dress.

4. Analysis and Result

Indonesian citizen majority is Moslem, so naturally when the respondent of this research with the dominant Islamic religion with 297 respondents (74%). Catholic and Protestant was at number two with each consist of 40 respondents. From the total numbers of 297 women Indonesian citizens were Moslem, 166 of them use the hijab to cover her nakedness according to the teachings of their trust.

Validity and reliability test has been conducted before process the data. There are five types of questionnaire such as preference to making the wedding dress in boutique, making the luxury wedding dress in boutique by popular designer, making the wedding dress in tailor, renting the wedding dress in boutique and renting the luxury wedding dress in boutique by popular designer. There are 133 respondents who prefer to make the wedding dress in the boutique, 79 respondents who prefer to make the luxury wedding dress in boutique by popular designer. 50 respondents who prefer to make the wedding dress in tailor, 93 respondents who prefer to renting the wedding dress in boutique and 45 respondents who prefer to renting the luxury wedding dress in boutique by popular designer. 28% of respondent prefer to spend Rp 5.000.000 – Rp 10.000.000 and followed with them who prefer to spend < Rp 5.000.000, Rp 10.000.001 until Rp 15.000.000, and Rp 15.000.001 until Rp 20.000.000 with 15% each criteria.

Each preference have question about all variable (independent variable including norm, myth, religion, social class and perspective of price and as intervening variable is perspective of design). The data was analyzed by using the coefficient correlation to construct the validity test and compute Cronbach's alpha value to verify the reliability. The coefficient correlation of all attributes are greater than 0.3, ranging from 0.35 to 0.82. The indicators have stronger correlation if closer the value to 1. The result shows that the validity still acceptable. The Cronbach's alpha for all types consist greater than 0.7. To making the wedding dress in boutique is 0.8755, making the luxury wedding dress in boutique by popular designer is 0.9236, making the wedding dress in tailor is 0.8892, renting the wedding dress in boutique is 0.8824 and renting the luxury wedding dress in boutique by popular designer is 0.8441.

Norm, myth, religion, social class, and perspective of price have low relationship with the perspective of design quality with 30,8%. Perspective of design has high relationship with the preference of women in Indonesia to renting or making the wedding dress with 71,1%.

The data was defined to analyzed as the functions of five independent variables such as norms, myth, religion, social class, and perspective of price towards the perspective of design are significant ($F_{1,400} = 35,153\%$, $p < .05$).

Table 3: Coefficients of Dependent Variable

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	12,404	3,113		3,985	,000
	Norm	,450	,079	,239	5,674	,000
	Myth	,392	,054	,309	7,273	,000
	Religion	,501	,083	,256	6,029	,000
	Social	,255	,052	,209	4,871	,000
	Price	,125	,059	,090	2,120	,035

a. Dependent Variable: Design

The standardize of coefficient of norm (as $X_1 = .239$ $p < .05$) has relationship with the perspective of design. Also, Myth with (as $X_2 = .309$ $p < .05$) has relationship with the perspective of design and same with the religion that has relationship with the perspective of design with ($X_3 = .256$ $p < .05$). Both of social class (X_4) and perspective of price (X_5) have relationship with influence the perspective of design with ($X_4 = .209$ $p < .05$) and ($X_5 = .090$ $p < .05$). Five of the independent variables have the relationship with the perspective of design.

The t-value of norm (as $t_1 = 5.674$ $p < .05$) is significant influence the perspective of design. Myth with (as $t_2 = 7.273$ $p < .05$) is significant influence the perspective of design and religion is significant influence the perspective of design with ($t_3 = 6.029$ $p < .05$). Also, social class (t_4) and perspective of price (t_5) are significant influence the perspective of design with ($t_4 = 4.871$ $p < .05$) and ($t_5 = 2.12$ $p < .05$).

The perspective of design has good relationship with Indonesian women preference making or renting the wedding dress with ($X_6 = .843$ that close to 1). The t value for the variable perspective of design quality ($t_6 = 31.292$) is greater than t table, which means that variable perspective of design quality is partially giving a positive and significant influence on the preference of women in Indonesia to renting or making the wedding dress

Table 4: Coefficient Perspective Of Design Quality

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,856	1,656		,517	,606
	Design	1,085	,035	,843	31,292	,000

a. Dependent Variable: Preference

5. Conclusion and Recommendation

Based on the result, the highest percentage by Indonesian women preference to making the wedding dress in the boutique with 33% and followed by renting the wedding dress in the boutique with 23%. Norm, myth, religion, social class, and perspective of price have low relationship with the perspective of design quality with 30,8%. Perspective of design has high relationship with the preference of women in Indonesia to renting or making the wedding dress with 71,1%.

First factor that greatly affects the perspective of design is norms. It was supported by hypothesis that norm positively affects women in Indonesia in choosing a wedding dress design. Recommendation from family, friends, and environment affect the design that they choose and also the preference of making or renting the wedding dress. Like the hypothesis supported by price perception positively affects women in Indonesia in choosing a wedding dress design, the second factors that affecting the perspective of design is price. 28% of respondent prefer to spend Rp 5.000.000 – Rp 10.000.000 and followed with them who prefer

to spend < Rp 5.000.000, Rp 10.000.001 until Rp 15.000.000, and Rp 15.000.001 until Rp 20.000.000 with 15% each criteria. For respondents who prefer to spend money Rp 5 million to Rp 10 million, they can make the wedding dress in the boutique. While for respondents who prefer to spend money below Rp 5,000,000, it is advisable to renting the wedding dress by boutique if want obtain design wedding dress as they wish, but if they want to have the wedding dress as a memento, it is advisable to making the wedding dress by tailor.

Third factors that influence the perspective of design towards Indonesian women preference to making or renting the wedding dress is social class. It supported by hypothesis that social class positively affects women in Indonesia in choosing a wedding dress design. Based on survey, many of women in Indonesia feel more confident, happy, and proud when wearing a wedding dress by the popular designer to get praise and recognition of their social environment. To increase brand awareness of the brand to be known by many people or to be more popular, the boutique of wedding dress can do endorsement to some celebrity in Indonesia. Also, it can increase of the demand of it.

The fourth is myth. Indonesia with many tribes and cultures certainly have a lot of stories about myth in almost every region. Myth positively affects Indonesian women in the perspective of design for example the color, the sacredness, the story. In making the wedding dress design, the boutique has taken notice of the desire of customers to those who believe the myth for example about the design and color. The boutique can reviews their preference before making the portfolio and published the portfolio in the official account like website, instagram, facebook. It is making the designer of wedding dress looks more attractive and gained the attention of bridal as a reference for reviews their wedding dress.

Religion positively influences women in Indonesia in choosing a wedding dress design and supported by the hypothesis. Basically, Indonesian citizen majority is Moslem, so respondent of this research with the dominant Islamic religion with 74% and followed by Catholic and Protestant was at number two with each consist of 40 respondents. From the total numbers of 297 women Indonesian citizens were Moslem, 166 of them use the hijab to cover her nakedness according to the teachings of their trust. It explained that religion influences women in Indonesia in choosing the design of wedding dress. Thus, wedding dress rental service providing wedding dress in long design and closed according to the criteria of the Islamic religion to increasing demand for rental services in their boutique.

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Proposed Pricing Strategy for Fishing Net Products of CV Kurnia Agung Sejati

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Abstract

Nowadays, manufacturing industry is one of the sectors which give the big contribution to GDP in Indonesia. CV Kurnia Agung Sejati is a net manufacturer company located in Bandung, Indonesia which has a goal to create high quality of net to help fishery, aquaculture, and agriculture industry in Indonesia. CV Kurnia Agung Sejati built in 2010 and produces some variety of net for fishery, aquaculture, plantation, and agriculture, such as: fishing net, kasa net, and polynet. In this research, the company faces the problem which is facing the stagnant of sales performance that effect the slow down profit margin to the company, especially for fishing net product. So, the writer wants to focus on pricing strategy from sales of fishing net to give the best recommendation for the company to increasing their profit margin. Data analysis will be conducted from the factors that affecting price decisions, which are customer perceptions of the product's value, product costs, and other internal and external considerations in order to find the best solution of pricing decision. The proposed strategy for business solution are explained from the pricing alternatives. There are some pricing alternatives include market-skimming price, market-penetration price, and product line pricing. Finally, the best pricing alternative will be directed into implementation plan. To do the implementation plan, the product characteristics, timeline activity, and the resources requirement will be arranged in order to can implement this strategy in real situation for CV Kurnia Agung Sejati in the future.

Keyword: manufacturing, fishing net, kasa net, polynet, pricing strategy

1. Introduction

Manufacturing is one of the sectors which give the big contribution to GDP Indonesia. CV Kurnia Agung Sejati is a net manufacturer company which has a goal to create a high quality of net to help fishery and agriculture industry in Indonesia. The background of establishing a net manufacturer, because of the passion of the founder to build a factory and from the knowledge creates value and idea to produce a net product. The core business of CV Kurnia Agung Sejati is producing the variety of net for fishery, aquaculture, plantation, and agriculture. For fishery, the net gives the best foundation, strengthen, and long-using to cultivate and breed the fish in fishpond and aquaculture. For agriculture, the useful of net is protecting the plantation from insects and sun to give the best crop and harvest.

Regarding to the product in the market, company faces the problem that the increasing of the return on profit is not balanced with the increasing of sales. The company needs to do alternatives strategy to increase the sales and profit margin through pricing alternatives. There are some factors affecting pricing decision from customer perceptions of value, production cost, also some factors of external and internal environment that influence the business performance of the company will be explained in the chapter 2, 3 and 4 sections. Then, the alternatives solution and implementation plan will be presented in the chapter 5 and 6 sections. Therefore in this final project, the writer will explain the proposed pricing strategy from the introduction, conceptual framework and research methodology, data analysis, business solution, and implementation plan

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to give the best recommendation for the right implementation to increase profit margin of CV Kurnia Agung Sejati.

The appropriate pricing strategy of business customer is important to win the market and increase the profitability and sales of the company. The right implementation makes the company stronger, create the improvement, sustain and expand the business area to become more effective and efficient. Therefore, proposed pricing strategy is important to expand the business.

2. Conceptual framework

Conceptual framework is the fundamental process in formulating pricing strategy. The main issue that CV Kurnia Agung Sejati currently focus on setting new price of fishing net which is increasing or decreasing the price in order to improve the sales performance of the company that effect multiplies the profit to the company. Below, figure 1 is the conceptual framework that explains the major factors considerations in setting price decisions.

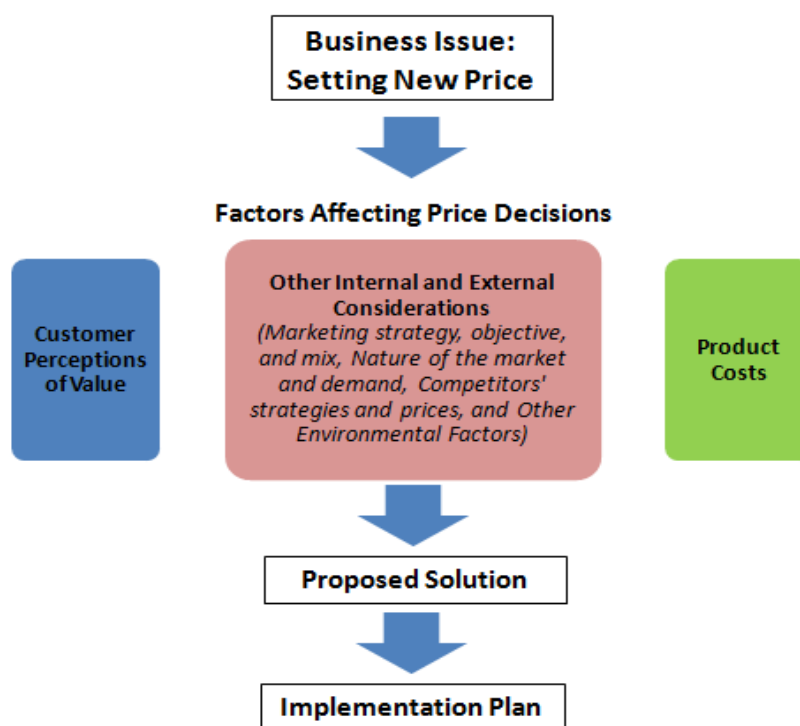


Figure 1 Conceptual Framework

3. Research methodology

Research methodology is the process used to collect information and data for the purpose of making business decisions. The methodology could be use qualitative methods or quantitative methods. This final project uses qualitative method through interview and observation then using quantitative method through survey, in order to gain an understanding of underlying reasons and opinions to develop hypotheses both the primary and secondary data. The primary data is collected from the observation and through interview direct to the owner of CV Kurnia Agung Sejati. The secondary data carries out literature review which helps to have better understanding in this research that taken from books and websites. Therefore, literature review was done in order to obtain information for the secondary data to support the primary data. The methodology and analysis below based on the factors that affecting price decisions.

3.1 Data Collection of Customer Perceptions of Value

Customer perception values is based on the value of the product creates for customers. The analyzing

consumers needs and value perceptions is important to set a price that match with consumers’ perceived value. In this research, to know the customer perception value, the researcher will analyze the data using survey with questionnaire of 150 respondents directly to the market. The questionnaires distribute to 150 of consumers of fishing net in some places to know specifically what kind of factors influence the customer perception of value. From the observation of the survey, the researcher gets the analysis and specific data to help the company to get better decision of price.

3.2 Data Collection of Other Internal and External Considerations

Internal factors affecting pricing include the company’s overall marketing strategy, objective, and marketing mix. When external considerations are include the nature of the market and demand, competitors’ strategies and prices, and other environmental factors. The researcher does the observation and secondary data to analyze the internal and external factors. The researcher observes the data directly from the company and the factory inside also the environment surrounding. From the observation of the company related to the book, the researcher analyzes more deeply the data of internal and external factors consideration of pricing decisions.

3.3 Data Collection of Product Costs

Product costs are using cost based pricing to analyze of the company product costs. The researcher uses the interview and observation methods to get the information directly from the owner of CV Kurnia Agung Sejati and observe to the factory to analyze the data. The researcher does the method of interview directly to the owner and observes in the factory situation to know more deeply about the product costs related to pricing decision.

4. Data and analysis

There are some factors affecting price decisions to CV Kurnia Agung Sejati sales performance, so in this chapter the researcher want to analyze deeply the data to get better understanding and observation in order to suggest implementation plan to the company. After some observations, survey, and interview, below describe the explanations about the research of data analysis for net product, especially fishing net.

4.1 Customer Perceptions of Value Factor

Based on Gary Amstrong and Philip Kotler (2007), in the end the customer will decide whether a product’s price is right. Pricing decision is starting with customer value. When customers buy a product, they exchange something of value such as price in order to get something of benefits of having or using the product. Good pricing begins with a complete understanding of the value that a product or service creates for customers. It means to set a price, we can add more value of the product in order to mark up their price from their value and benefits.

Firstly, we check the data is reliable, and then we can continue the observation of the 120 respondents of the questionnaire. There are some important and specific analysis is explained in the diagram below about the survey in the market.

1. “Djangkar” brand is so recognized in the market

Table 1 “Djangkar” Brand is So Recognized in the Market

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Average	8	6.7	6.7	6.7
	Agree	67	55.8	55.8	62.5
	Strongly Agree	45	37.5	37.5	100.0
	Total	120	100.0	100.0	

From the table above, most of the consumers feel agree that “Djangkar” brand is so recognized in the market. It shows 55.8 % for 67 of people agree about these statement and no respondent feels disagree about that statement.

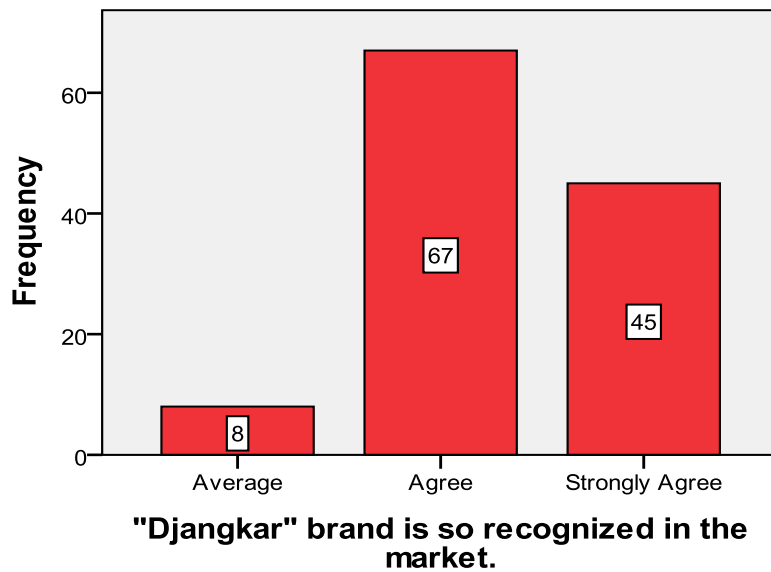


Figure. 2 “Djangkar” Brand is So Recognized in the Market

2. Fishing net of “Djangkar” brand is loved because the quality of the product

Table 2 Fishing Net of “Djangkar” Brand is Loved Because The Quality of The Product

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Average	6	5.0	5.0	5.0
	Agree	56	46.7	46.7	51.7
	Strongly Agree	58	48.3	48.3	100.0
Total		120	100.0	100.0	

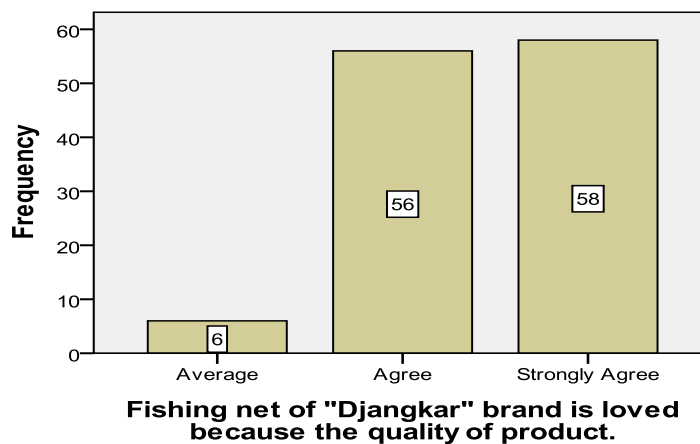


Figure 3 Fishing Net of “Djangkar” Brand is Loved Because The Quality of The Product

Consumers like to buy fishing net of “Djangkar” brand because of their quality of the product. It shows in the diagram above about 58 of consumers feel strongly agree, and 56 of consumers feel agree, and the others fell average to buy fishing net of “Djangkar” because of their quality.

3. Fishing net of “Djangkar” brand is loved because affordable price of product

Table 3 Fishing Net of “Djangkar” Brand is Loved Because Affordable Price of Product

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Average	24	20.0	20.0	20.0
	Agree	60	50.0	50.0	70.0
	Strongly Agree	36	30.0	30.0	100.0
	Total	120	100.0	100.0	

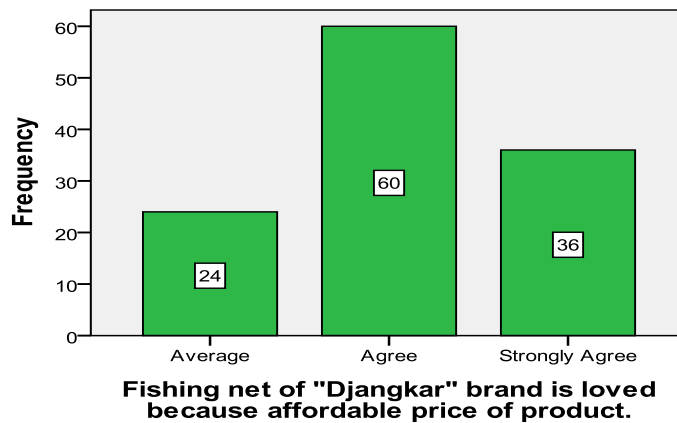


Figure 4 Fishing Net of “Djangkar” Brand is Loved Because Affordable Price of Product

From the chart above, we can see most of the consumers feel love and agree that fishing net of “Djangkar” brand is affordable price. About 60 of respondents feel agree and 36 of respondents feel strongly agree, and 24 of respondents feel average. And no respondents feel disagree or strongly disagree. It means beside the quality of the product, second consideration is because their affordable price.

Over all from the analysis above about customer perceptions of value, most of respondents are agree about the guarantee quality of fishing net for “Djangkar” product and feel satisfied use this product. “Djangkar” is also very famous and recognized by their market from their quality, very strong characteristic of net, and their price also affordable. Therefore, the society believe and loyal to “Djangkar” product. From the demographic of 120 respondents show most of male buy the fishing net from “Djangkar” brand from 31-40 years old with married status. Also most of the respondents are have senior high school education background with around Rp 1,000,000.00 - Rp 4,999,999.00. The consumers usually buy fishing net 1 or 2 times a month with most of them knows about “Djangkar” brand from their friends. The competitive competitor of “Djangkar” is Dolphin that rivalry among existing competitor in the market. We can conclude “Djangkar” brand is recommended to the other consumers and has good customer perceptions of value.

If we compare between price and quality of fishing net generally in the market, people consider first about the price, then compare with the quality for each brand. For “Djangkar” brand, CV Kurnia Agung Sejati sets the price Rp 2,600.00 per meter, when the other brand such as “Dolphin” sets higher price than “Djangkar”, and the other such as “Arwana” and “Merlin” set below “Djangkar” price. “Dolphin” sets higher price because their brand longer existing in the market than “Djangkar”. But people still prefer “Djangkar” brand because they consider about the quality of the fishing net. The consumers consider the

strengths of “Djangkar” product from their quality are guarantee and the price is also affordable. Therefore, most of the consumers keep choosing fishing net of “Djangkar” brand because already proven from their quality and price is suitable to the market needs.

If we compare between the quality from “Djangkar” brand and the other brands, what is the criteria of quality that the consumers consider for buying fishing net. The advantages from fishing net of “Djangkar” brand than the other brands are, using the pure of raw material of HDPE, which is the net becomes thicker, glow and shiny from the eye-sight, solid and strong characteristics, not easy to damaged, and can use longer for long-time period compare with the other brands.

Also, if we compare between price and quality of “Djangkar” brand itself, which one CV Kurnia Agung Sejati gives priority is from their quality. From their quality, “Djangkar” becomes more recognized and become their identity and image to win in the market compete with other competitors. Therefore, the quality is the priority of CV Kurnia Agung Sejati to give the best fishing net to the consumers with affordable price in order to everyone can use the high quality of fishing net.

So, we can conclude the market is considering about the quality first, then the price. The market is not too price sensitive, when they also consider about the quality and the advantage for long-using in the future. Also because “Djangkar” brand already famous and recognized in the market from their quality, so the consumers still buy the product although higher price than the other brands. It can say fishing net from “Djangkar” brand is very attracted in the market and become the leader of the net product.

4.2 Other Internal and External Considerations Factor

Second factor affecting price decision is other internal factor includes the company overall marketing strategy, objectives, and marketing mix. Then, the external factors include the nature of the market demand, competitors’ strategies and prices, and other environmental factors of economic, political or government, and social factor. The marketing strategy and objective of CV Kurnia Agung Sejati are selling fishing net with affordable price and increasing the sales of fishing net around Indonesia to achieve company goals and profit margin of the company. CV Kurnia Agung Sejati target market is all people who need fishing net from low to middle class. Also, the positioning of the fishing net product that differentiates with other competitor is the quality of the raw material making a high quality and strength product of fishing net.

Table 4 The Marketing Mix of CV Kurnia Agung Sejati

Marketing Mix	Categories
Product	Focus on fishing net
Price	Rp 2,600.00/meter
Place/Distribution Channels	Around Indonesia; Sumatra (Medan, Pekanbaru, Palembang), Kalimantan (Balikpapan and Banjarmasin), Sulawesi (Makassar and Kendari), Java (Jakarta and Surabaya)
Promotion	Using brand "Djangkar", mouth-to-mouth

Marketing Mix Analysis is important for the company to analyze 4Ps and focus on value of the product, price setting, and enlarge the distribution channels to increase the business performance of the company. The right marketing strategy, objective, and mix analysis of internal environment helps the company to take the right decision for future planning expands the business.

The other environmental factors also influence the pricing strategy, such as the economic condition in Indonesia when the rate of US Dollar to IDR Rupiah increased drastically, political condition when the replacement of new President and new government rules, and social trends when the sales of fishing net increased in a peak season and decreased in low season.

4.3 Product Costs Factor

Third factor is product cost factor that affecting price decisions. Product cost means CV Kurnia Agung

Sejati calculates all cost include total fixed cost and variable cost. Then add the value of product from their quality of product, set target profit, and finally set the selling price. The selling price should cover all the production cost. Also, the company still does an expansion with added new machines to maximize the quantity and reduce the unnecessary costs to create the fishing net more efficient and effectively. The purpose is increasing the sales that the company always has ready stock to fulfill the demands of the market.

5. Business solution

From business solution, we find some alternatives solution of pricing strategy then we decide the best decision of pricing strategy to do implementation plan. Below, there is the explanation about the alternatives of business solution for CV Kurnia Agung Sejati.

5.1 Alternatives Solution

According to Armstrong and Kotler (2007), the pricing decisions are subject to an incredibly complex array of customer, company, and environmental forces. Pricing strategies usually changes as the product passes through its life cycle. As the competitive environment changes, the company considers when to initiate price changes and when to respond to them. There are some pricing alternative that can match to the business solution for CV Kurnia Agung Sejati's best strategy to increase the sales of fishing net for "Djangkar" product. Below, there are some suggestion and explanation about the pricing alternatives strategy.

5.1.1 Market-Skimming Pricing

Many companies that invent new products then set high initial prices to skim revenue layer by layer from the market is called market-skimming pricing. Usually, if we do market-skimming pricing is setting higher price first for new product in certain period then follow on price with giving lower price to the market. If we use this strategy for CV Kurnia Agung Sejati, the company should produce new resegmentation product of fishing net with added more value from standard of quality to set high price. The objective to set high price is to increase return on profit of the company and maximize the profit in the short term, then catch certain small group with give more added value standard of fishing net, also create good image to the customers. We can call the new resegmentation product with "Djangkar Super".

Normally the price of fishing net is Rp 2,600.00 per meter. The company usually sells per bale, which is 1 bale is 10 roll, and 1 roll is 100 meters. It means 1 bale sells Rp 2,600,000.00. After some considerations, the best suggestion to increase the price becomes Rp 3,600,000.00 which is different Rp 1,000.00 from normally price of fishing net. The explanation why the company should set that price will be explained in business analysis solution. The differences and the uniqueness that the company offers for resegmentation product of fishing net that the consumers are still willing to pay for higher prices are:

1. Because of the higher production costs from raw material because create a high quality of fishing net needs more raw material consuming.
2. The characteristics of "Djangkar Super" are different, the texture is stronger, more solid, tighter, the net more tight, and the yarn cannot move from each hole when normal product of fishing net the yarn is easily to move.
3. "Djangkar Super" of fishing net can survive for longer time period, generally used in the sea rather than in fishponds, and also cultivate for the big fish rather than normal product.

5.1.2 Market-Penetration Pricing

Market-penetration pricing is rather than setting a high initial price, they set a low initial price in order to penetrate the market quickly and deeply to attract a large number of buyers quickly and win a large market share. Several conditions must be met for this low-price strategy to work. If CV Kurnia Agung Sejati uses this strategy, the company should set lower price of fishing net compared with other brands. If the company manages this strategy well, the advantage they get from these strategies are the company increases the sales rapidly and catch the large market of fishing net around Indonesia. But, the increasing

the sales rapidly cannot get much high return on profit because there are still many expenses and production cost we need to pay. While CV Kurnia Agung Sejati objective wants to maximize their profit and increase the profit margin for the company. CV Kurnia Agung Sejati is still growing and does some expansion that still need more investment for their R&D activity and spends many costs unpredictably. Also, we know from the finance report the company that company was growing continuously and increasing their sales each year but had slow progression return on profit. So the company should more consider to do this strategy is it suitable for this company to growing and gain more return on profit for the future.

If the company uses this strategy, the companies is still use the same characteristics of normal product of fishing net, but set lower price from Rp 2,600.00 per meter becomes Rp 2,500.00 per meter. The company usually sells per bale, which is 1 bale is 10 roll, and 1 roll is 100 meters. The explanation about decision set this price will be explained in business analysis solution. This strategy can win customers in the market easily competing with other competitors. Because of "Djangkar" brand is already recognized and has a good image in the market, so it easy to attract the consumers to buy fishing net in the big quantity, people love low price. Also, this strategy can grab easily large market around Indonesia, but remember with lower price we cannot set high profit for the product.

5.1.3 Product Line Pricing

The companies usually develop product lines rather than single products. In product line pricing, the management of the company must decide on the price steps to set between the various products in the line. The price steps should take into cost differences between the products in the line, customer evaluations of their different features, and competitors' prices. It means the company offers several options of products from basic product and more value added product with the higher price.

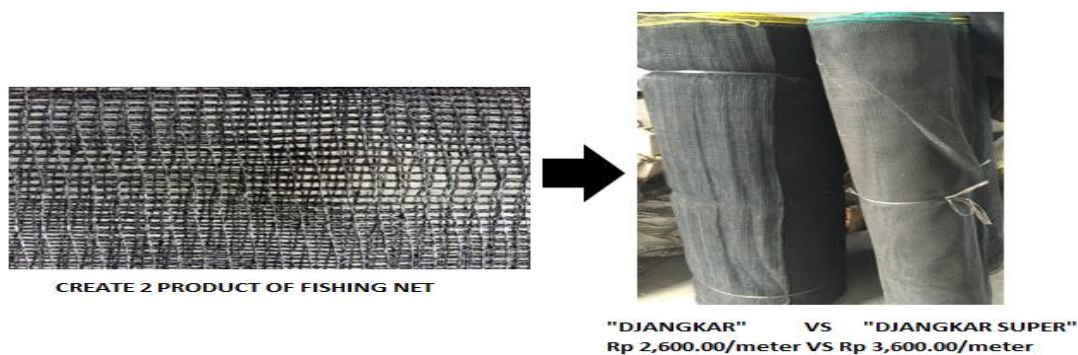


Figure 5 Product Line Pricing

In this case, if CV Kurnia Agung Sejati uses this strategy, the company can produce mix of two product of fishing net that capture larger market with different segmentation based on the usefulness. So, both of the products can enter and capture the market based on the market needs and purpose to increase the profit margin of the company. To create resegmentation product of "Djangkar Super" fishing net, the company should consider the uniqueness of this fishing net and what the advantages that consumers get if they buy the "Djangkar Super" of fishing net with higher price. From chapter 2, we know the customer's perceptions of value that consumers are attracted "Djangkar" brand from their quality, so we can set 2 different specification quality of fishing net to offer different price of fishing net. To set higher price, we need to consider too about the production cost to create new standard quality that should improve for "Djangkar Super" product.

If the company uses this strategy, the company needs to produce 2 different specification products for "Djangkar" and "Djangkar Super" of fishing net. "Djangkar" fishing net's selling price is still Rp 2,600.00 per meter and for "Djangkar Super" fishing net, the company sells Rp 3,600.00 per meter. The explanation about decision to set this price will be explained in the business analysis solution. The company usually sells per bale, which is 1 bale is 10 roll, and 1 roll is 100 meters. The criteria and the specification are same with the explanation above of market-skimming price.

5.2 Business Solution Decision

For the some alternatives prices above, the best decision suitable for CV Kurnia Agung Sejati condition currently as a net manufacturer that has purpose to increase their profit margin for the company is using product line pricing. That means the company set 2 prices for 2 products of fishing net which are normal product of fishing net and the resegmentation product of fishing net with give more value added. The purpose from this strategy is catching larger market around Indonesia from the sales of fishing net and increases the profit margin of the company. The considerations to set the price are from the product costs, the competitor’s price, the regulation from government, and other feedback from distributors about consumer objectives. The explanation will be described in the table below.

Table 5 Business Solution Decision

NO	ANALYSIS OF BUSINESS SOLUTION	FACTORS	"DJANGKAR"	COST PER METER (Rp)	"DJANGKAR SUPER"	COST PER METER (Rp)
1	PRODUCT COST		1 Roll=8 kg, waste 3%, Total= 8.24 kg	1,730.40	1 Roll=9 kg, waste 3%, Total=9.27 kg	1,946.70
		DIRECT MATERIAL Rp 21,000.00 per kg				
		DIRECT LABOR		57.04		138.50
		INDIRECT COST (OVERHEAD COST)		146.83		146.83
		TOTAL COST PER METER		1,934.27		2,232.03
ESTIMATION 60-70 % PRODUCT COSTS						
2	FEEDBACK FROM DISTRIBUTORS & CONSUMERS	Based on the feedback from distributors, the consumers prefer the price on the market between:	Rp 2,500.00-Rp 2,700.00		Rp 3,500.00-Rp 3,700.00	
3	COMPETITIORS	"Dolphin" brand usually sets higher price of "Djangkar" price, different Rp 100.00/ meter "Arwana" and "Merlin" brand is usually set below "Djangkar" price, different from Rp 100,00 to Rp 200,00				
4	REGULATION	No regulation from government about pricing decision of fishing net in the market				

Based on the table above explains that there are some considerations to set the price higher than normal product. Firstly, “Djangkar” and “Djangkar Super” have different on weights that show “Djangkar” has 8 kg and “Djangkar Super” has 9 kg. The heavier weight of fishing net is better because it shows the material stronger, more solid, thicker, tight, and can survive longer period in the field. To calculate the product cost estimation, we consider about the direct material of HDPE use, direct labor, and indirect cost of manufacture overhead. Usually to produce 1 roll of fishing net, they give more raw materials ingredients for the waste of production around 3 %. It means in the real application of production process, “Djangkar’s” weight is 8.24 kg and “Djangkar Super’s” weight will be around 9.27 kg. 1 Roll of fishing net is 100 meters, so we can calculate the direct material cost approximately Rp 21,000.00 per kg times the weight of fishing net, then divided to 100 meters to get the cost per meter. After that for direct labor we get that result from consideration the labor wages of year divided to the total of employees, total machines, working hours per year, wages per hour until we get the result for “Djangkar” and “Djangkar Super”. “Djangkar Super” shows higher direct labor than “Djangkar” because “Djnagkar Super” uses Raschel Machine when more supervision of the production which is 1 operator machine need operate 2 machines at once. While “Djangkar” is using Ravier Machine that 1 operator machine can operate 5 machines at once. The other consideration also is indirect cost which is manufacture overhead of production such as electric and water bills, rent the plant, factory equipment and building, factory supplies, and others. The indirect cost we get the estimation result from total overhead cost per year divided with unit production of fishing net per year. The total of product costs, we assume about 60-70% product costs and target can gain 20-30% maximum profit on return.

Second analysis from business solution is feedback from distributors and consumer experience. The feedback is not written in the chapter 2, but CV Kurnia Agung Sejati get the information from direct talk and some visiting gathering with the distributors. The distributors told the company that the consumers in the market prefer the price of fishing net around Rp 2,500.00 – Rp 2,700.00 per meter. That price is almost

similar for all competitors in the market. For higher quality such “Djangkar Super” the consumers attract the price between Rp 3,500.00 to Rp 3,700.00 per meter.

Thirdly, based on the competitors consideration “Dolphin” brand is usually set higher price than “Djangkar” which is different Rp 100,00 . “Arwana” and “Merlin” brand are also following the “Djangkar” price that set below “Djangkar” price between Rp 100.00 to Rp 200.00 lower. It means “Djangkar” become a leader of net product when has a power for setting the price while the others competitors follow “Djangkar” price standard.

The last consideration is about regulation of net product from government. After some research, there is no related regulation of government to set the price of fishing net. The company is not violating any rules from regulation of government to set the price of fishing net.

So, after all explanation above about some considerations analysis to choose business solution for CV Kurnia Agung Sejati, we know the best business solution for doing implementation plan is using product line pricing for “Djangkar” and “Djangkar Super”. The other characteristics of both product and other requirements will be explained in chapter 4 of implementation plan.

6. IMPLEMENTATION PLAN

After some consideration whether initiate either a price cut or a price increase, the best solution is increasing the price to increase return on profit for the company with using product line pricing. A successful price increase can greatly increase profits. To do implementation plan, we need to do preparation for doing implementation plan, include the specification of the product, the costs, and how to do the implementation plan

6.1 Product Specification

Firstly, to make product line pricing of fishing net we need to set 2 criteria of fishing net which are “Djangkar” and “Djangkar Super” of fishing net. There are below the explanation of 2 characteristics of fishing net.

Table 6 The Spesification of “Djangkar” and Djangkar Super” of Fishing Net

NO	TYPE	USEFULNESS	THE CONSUMER	SPECIFICATION				THE VALUE OF PRODUCT
				HOLE DISTANCE	LENGTH X WIDTH	SIZE OF YARN	WEIGHT	
1	“Djangkar”	For fishpond, aquaculture, cultivation, breed the fish, also can use for plantation and hedgerows (for small fish)	Fisherman, aquaculture, and plantation industry	1 Inch = 8 holes	100 m x 1.2 m	700 Denier (D)	1 Roll= 8 Kg	Basic usefulness of fishing net that more application in the fishponds, aquaculture, and cultivation. Also can use for hedgerows of the plant.
2	“Djangkar Super”	For fishery in the sea, fishpond, aquaculture, cultivation, breed the fish (for big fish)	Fisherman, fishery, and aquaculture industry	1 Inch = 8 holes	100 m x 1.2 m	700 Denier (D)	1 Roll= 9 Kg	Heavier on weight than “Djangkar” shows stronger, tighter, more solid, tight the net each other, not easy to damage, and can survive for longer period, can use in the fishponds and the sea

From the table above, we know the different characteristics and specification between “Djangkar” and “Djangkar Super” of fishing net. According to the usefulness, “Djangkar” fishing net is focus on the fishpond and aquaculture for small fish, also can use for hedgerows of plant in the plantation area. Different from “Djangkar Super” fishing net is focus on the sea area for big fish. The specification for making a “Djangkar” product and “Djangkar Super” product are the same, only different from quantity ingredients of raw material, the weight of net, and the pattern design of fishing net. “Djangkar Super” needs more ingredients of raw material (HDPE), so the finishing net becomes heavier rather than normal product of “Djangkar” which is different 1 kg becomes 9 kg. The pattern and design of “Djangkar Super” of fishing net also different, with square design each hole are using more yarns, the net stronger than normal product,

more solid, ticker and more tight, and the net is tied strongly so that the net cannot move between holes.

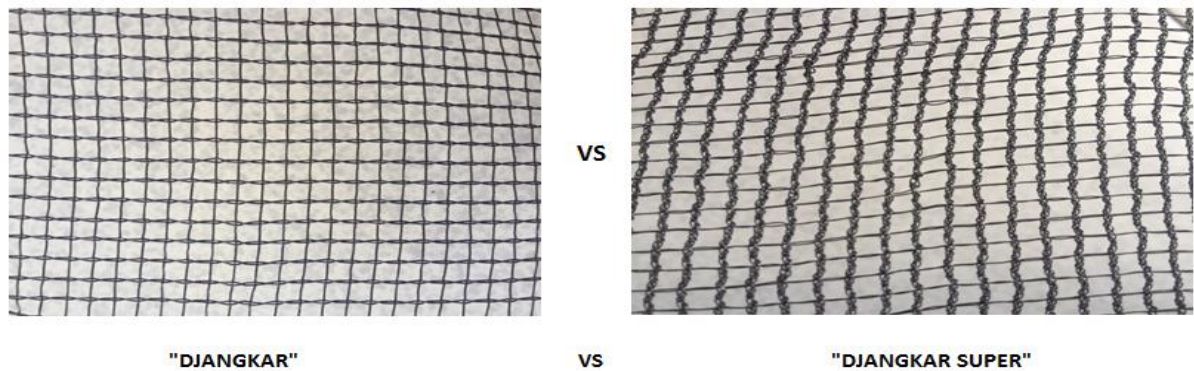


Figure 6 The Different of “Djangkar” VS “Djangkar Super”

So, from the different characteristics and higher production costs cause also the higher price of “Djangkar Super”. More value-added of fishing net is used to attract more consumers and catch larger market around Indonesia in order to increase the profit margin and maximize the profit of the company. Therefore from all considerations, the consumers can choose the fishing net based on their preferences of their needs.

6.2 Timeline Activities

To making the resegmentation product for “Djangkar Super” of fishing net, the timeline activities are scheduling will be held between 1 to 6 months. The timeline activities will be started from July 2016 to December 2016. The time frame explanation will be described table below.

Table 7 Timeline Activities

NO	TIMELINE ACTIVITIES	MONTH OF 2016					
		JULY	AGT	SEPT	OCT	NOV	DEC
1	Doing market research and design the characteristics of "Djangkar Super"						
2	Searching some technology, skills, doing training to the employees to produce "Djangkar Super"						
3	Do some experiments to produce "Djangkar Super" with some trial and error						
4	Produce the "Djangkar Super" with smoothly and efficiently						
5	Ready to package and sell to distributon channels of CV Kurnia Agung Sejati						
6	Launching "Djangkar Super" to the market with some promotion and sample						

From the table above shows, before we do the production of “Djangkar Super”, we need to do some market research to the market to create the suitable characteristics of “Djangkar Super” that the consumers are willing to buy the product. We do this preparation in the first month of July 2016. Then, while doing the market research, the company also needs to search some technology, skills, and doing some training to the employees in order to teach how to produce “Djangkar Super” correctly. The schedule will be held from July to Agustus 2016. There should still have some trial and error experiments, also some failed product that the company should try continuously until get the product correctly. This process will be run along September 2016. Then, we predict the product will be produced smoothly and efficiently around October 2016. After produce the product correctly with all specification we want, the product of “Djangkar Super” is ready to package into the packaging and ready to distribute to all distribution channel of CV Kurnia

Agung Sejati around November 2016. Finally, after all preparation until finished the product, “Djangkar Super” is readying to launch to the market on December 2016. The company also can give some sample and promotions in order to the consumers want to buy the new resegmentation product.

6.3 Resources Requirement

The implementation plan for the proposed strategy requires the right allocation of some resources. Below, there are some resources of CV Kurnia Agung Sejati to support the implementation plan.

6.3.1 Human Resources

The important resource to do implementation plan is having good people of human capital management to do the implementation plan. To create a new product, there are some factors related to the human capital, which are we need the experts skills and knowledge, a leader to monitoring the production process, also cooperation between a team and fellow workers. With a good supervision, management, and cooperation will help the operation and production process more efficient and maximize. Besides the team and experts skills, any other activities for the action plan do not require special assigned individual or team. In fact, most of the activities also need the involvement of top executives directly such as Operation Manager and Supervisor, Planning and Marketing Manager, Finance and Accounting Manger, and also Human Resources Manager. So, from the subordinates to the bottom, all of employees need cooperation each others to reach goals of the company..

6.3.2 Financial Resources

Financial resources are related to the budget costs and other financial activities to support doing the implementation plan. The budget cost is all costs of business process from produce a net from raw material until market the product into the market in order to the consumers buy it. Financial resource is required for doing the implementation plan can be seen in the table 4.3.

Table 8 Financial Resources Plan

Activities		Budget
Strategic Plan	Action Plan	
Doing some experiments to produce new product	Searching some new technology, knowledge, do training about new technology, and do some experiment trial and error to produce premium product of fishing net	Rp 100,000,000.00
Direct visiting to the distributors and doing observations directly to the consumers in the market	Doing survey and interview to the customers what the criteria the market wants from the fishing net	Rp 50,000,000.00
Doing product line pricing with creating 2 product of “Djangkar” and “Djangkar Super” of fishing net to capture larger market around Indonesia.	Produce “Djangkar” product of fishing net with Rapiet Machine (150 Roll per day x 100 meters x 24 Day per month x Rp 1,900.00).	Rp 684,000,000.00 per month
	Produce “Djangkar Super” product of fishing net with Rapiet Machine (30 Roll per day x 100 meters x 24 Day per month x Rp 2,200.00).	Rp 158,400,000.00 per month
Total Budget		Rp 992,400,000.00

The total capital required to implement the proposed strategy for the first month around Rp 992,400,000.00. Then for the following month, we can minus the experiment cost and the visiting cost to the market. So, the budget cost overall around Rp 842,400,000.00 to create 2 product line pricing of fishing net. The budget costs for fishing net, we assume about 60% - 70% of budget cost and predict for 20% -30% for profit margin. The budget costs already include the production cost which is including direct material, direct labor cost, and manufacture overhead.

The table above shows the speculation and estimation about doing the implementation plan. There could other probability increasing the budget costs and other miscellaneous unpredictable costs. This financial resource has purpose to have more understanding and prediction about any possibility costs to create a new product.

6.3.3 Marketing Resources

Marketing resources has a purpose to market product line pricing of fishing net to the market. There are 2 different characteristics of fishing net offer to the market based on the value-added and the usefulness. This strategy aims to expand the market size of fishing net product in order to increase the sales and profit margin of the company. So, the marketing resources are important to advertise to the market, give the right information the consumers about the strengths and the advantages for each product of fishing net. Giving the right information of marketing resources to the customers is important to build customers relationships and loyalty through some ways, such as doing a customer's gathering, visiting directly to the customers, doing seminar, and ask for feedback from distributors and consumers.

6.4 Further Research

There are several weaknesses from the data analysis on this research, which related to the limitations and research scope. The writer does the best for giving the best solution and recommendation to do implementation plan that could be useful for CV Kurnia Agung Sejati in the future. There are also other alternatives ways solution such as manage the efficiency of the production activity that could be applied in the further research. The writer wishes this research can be useful for the company and the reader who reads for the educational purpose.

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The Impact of Earning Asset Qualities and Bank-Specific Variables to Market Discipline in Indonesian Banking

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Abstract

Bank has an obligation to disclose its financial information to the public as regulated in Basel III. The financial information published mainly refers to the profitability level of a bank reflected in detailed information regarding bank's assets, liabilities, and other general financial information. Market discipline occurs as the market get to fully understand the bank's profitability and risk exposures. The central issue surrounding the market discipline is the behavior of the market that can expose the bank to the risk of bank run. In a large scale, bank run can cause economic recession in a country. This research aims to investigate the impact of earning asset qualities and other bank-specific variables on market discipline in Indonesia within the period of 2010 – 2015. The market discipline studied is from the perspective of depositors and investors. The sample is the 15 listed commercial banks in Indonesia with minimum core capital of 5 trillion rupiah to best represent the condition of market discipline in Indonesia. The earning asset qualities consist of Current, Special Mention, Substandard, Doubtful, and Loss while the bank-specific variables are Bank Size and Non-Interest Expense to Total Asset ratio. The method used is Ordinary Least Squares (OLS) through EViews Software to examine the effect of those variables to market discipline. The depositor perspective of market discipline is represented by the variable of first difference of the log of total deposits held by bank i at time t , while the investor perspective is represented by the stock price return. The expected result is the explanation of which variables has significant effect to market discipline to help the banking industry to prevent the risk of bank run in the future.

Keywords: Market Discipline, Banking, Banking-Specific Variables

1. Introduction

In Indonesia, as regulated in Undang-Undang RI Nomor 7 Tahun 1992, bank is an important financial institution as it is established to support economic growth and stability in order to improve the people's welfare. *Dana Pihak Ketiga* (DPK) refers to the fund obtained from bank depositors (*nasabah*) which can be individuals or organization and it is accounted as the bank's liability. This fund is liquid and the depositors can withdraw it easily. While managing this fund, bank has an obligation to pay the cost of fund, in the form of interest expense that the depositors will get. At the same time, bank also has an obligation to disclose its financial information to the public regulated in PBI Nomor 14/14/PBI/2012 to allow the market-discipline to operate in the banking industry.

Market discipline of banks can be measured through two points of views, depositors' and investors'. For depositors, it may be reflected in their decision to place their fund in a bank.

Meanwhile, for investors, the market discipline may be reflected in a bank's stock price in capital market.

Accordingly, the subject of the market discipline has been an interesting topic in the banking industry

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because of the potential of risk related to it. One central issue surrounding the importance of such research is because the behavior of the market exposes the bank to the risk of bank run. Bank run is a situation when a crowd of depositors withdraw their funds from a bank because of certain beliefs or conditions. In a large scale, if bank run happens to several banks, it can cause economic recession in a country, which is dangerous and must be prevented at all cost. Realizing the importance of understanding more about market discipline, this research is conducted to analyze the impact of five categories of earning asset quality and other bank-specific variables to the market discipline. The sample used consists of 15 listed banks with minimal total assets of IDR 5 trillion classified as Bank Buku 3 and Bank Buku 4 and the observation period is five years, starting from 2010 to 2014. The methodology used will measure the market discipline through deposit growth and stock price. The data used is taken from the monthly financial report of the banks, which are published in the website of OJK (*Otoritas Jasa Keuangan*) and the data for stock price is taken from BEI (*Bursa Efek Indonesia*).

2. Literature Review

2.1 Bank Definition

According to Undang-Undang RI Nomor 10 Tahun 1998, bank is a business entity that collects funds from the society in the form of deposit and distributes it back to the society in the form of credit and/or other forms as the means of improving the society's welfare. Specifically, as explained in Undang-Undang RI Nomor 7 Tahun 1992, the deposits collected by commercial banks can be in the form of checking account (*giro*), time deposit, certificate of deposits, saving account, or other comparable form of deposits. Meanwhile, the credit given must be based on the deal made between the bank and the other party in which the other party is obliged to pay off his/her debt after a certain time period along with the required interest.

2.2 Market Discipline Definition

The definition of market discipline in a bank is a scheme in which depositors and investors implicitly discipline the banks by changing their investment decision in response to the changes in financial stability and risk level of the bank (Semenova, 2012). Market discipline in banking is first regulated in the Third Pillar of Basel II. The purpose of this regulation is to increase market awareness about the bank's risk to encourage more effective banking environment. The regulation required banks to disclose important information regarding scope of application, capital, risk assessment process and the capital adequacy of the bank that has been previously regulated in the First Pillar.

2.3 Mechanisms of Market Discipline

There are several mechanisms in which the market disciplines the banks, first, the price approach is as a bank becomes more risky, the depositors will demand higher deposit interest rate to cover the risks they undertake by placing their fund in that bank. Second, the quantity approach is if the depositors no longer feel safe placing their fund in a risky bank, they may choose to withdraw their deposits and manage it by themselves or move it to other financial institutions. Third, the market value approach is as a bank gets riskier, they may experience a decrease in their stock price because there is lower demand for their stock among investors. Fourth, the maturity shift approach is in riskier banks, depositors may move their investment from risky long-term deposits to less risky short-term deposits.

2.4 Earning Asset Quality in Market Discipline

Earning asset quality can be an indicator of bank risk. Risky earning asset can cause depositors to withdraw their fund or demand higher deposit interest rate from the bank (Hamada, 2011). As in terms of stock price, asset quality specific to commercial banks is a systemic factor which is an important asset pricing factor for bank stocks. In accordance to that, it is expected that earning assets other than the non-performing one, such as Current and Special Mention categories will have opposite effect to the market discipline behavior. In this research, the author uses the variable of earning asset quality with the formula below:

Current earning asset

$$CRTEA = \frac{\text{Current earning asset}}{\text{Total Earning Asset}}$$

- Special mention asset
 $SMTEA = \frac{\quad}{\quad}$
- Substandard earning asset
 $SSTE A = \frac{\quad}{\quad}$
- Doubtful earning asset
 $DTEA = \frac{\quad}{\quad}$
- Loss earning asset
 $LTEA = \frac{\quad}{\quad}$

2.5 Bank Size

Bank size is measured by the total asset of a bank. In the case of market discipline, larger banks are perceived to be safer and more stable by the market. In this research, the author uses the variable of bank size with the formula below:

$$SIZE = \ln (Total Asset)$$

2.6 Non-Interest Expense to Total Asset Ratio

According to Demirgüç-Kunt and Huizinga (2004), the ratio of non-interest expense to total asset is defined as overhead ratio, in which it can represent a bank’s cost management that lead to quality of service. Based on traditional efficient-structure hypothesis (Berger & Hannan, 1989), higher non-interest expense is associated with lower interest rate paid on deposits, implying that it leads to positive deposit growth. However, higher cost expenditures can also mean that the bank is inefficient; therefore, it may impact negatively to the stock price. In this research, the author uses the variable of non-interest expense to total asset ratio with the formula below:

$$NIETA = \frac{\quad}{\quad}$$

3. Methodology

3.1 Research Methodology

There are five steps in conducting this research:

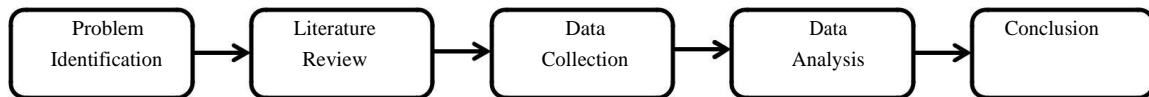


Figure 3.1 Research Methodology

3.2 Regression Model

In this research, there are two perspectives of market discipline investigated, depositors’ and investors’. Therefore, there are two regression models that will be tested separately, first is using deposit growth as dependent variable, while the second will use stock price return as independent variable. Both regression models will use five earning asset qualities, bank size, and non-interest expense to total asset ratio as independent variables. Below are the two research questions:

$$DEPOSIT_t = \alpha_0 + \alpha_1 CRTEA_{t-1} + \alpha_2 SMTEA_{t-1} + \alpha_3 SSTE A_{t-1} + \alpha_4 DTEA_{t-1} + \alpha_5 LTEA_{t-1} + \alpha_6 SIZE_{t-1} + \alpha_7 NIETA_{t-1} + \epsilon \tag{1}$$

$$PRICE_t = \beta_0 + \beta_1 CRTEA_{t-1} + \beta_2 SMTEA_{t-1} + \beta_3 SSTE A_{t-1} + \beta_4 DTEA_{t-1} + \beta_5 LTEA_{t-1} + \beta_6 SIZE_{t-1} + \beta_7 NIETA_{t-1} + \epsilon \tag{2}$$

The research model above will be addressed as the first and second model, respectively, throughout this paper.

3.3 Research Hypothesis

Based on the findings on previous research and the supporting theories, the hypothesis is generated as below:

- Hypothesis 1 – Earning asset quality, bank size, and non-interest expense to total asset ratio has significant effect to deposit growth with detail hypothesis described below:
 - H-1.1. Current earning asset has significant positive effect to deposit growth in the presence of market discipline.
 - H-1.2. Special mention earning asset has significant positive effect to deposit growth in the presence of market discipline.
 - H-1.3. Substandard earning asset has significant negative effect to deposit growth in the presence of market discipline.
 - H-1.4. Doubtful earning asset has significant negative effect to deposit growth in the presence of market discipline.
 - H-1.5. Loss earning asset has significant negative effect to deposit growth in the presence of market discipline.
 - H-1.6. Bank size has significant positive effect to deposit growth in the presence of market discipline.
 - H-1.7. Non-interest expense to total asset ratio has significant positive effect to deposit growth in the presence of market discipline.
- Hypothesis 2 - Earning asset quality, bank size, and non-interest expense to total asset ratio has significant effect to stock price with detail hypothesis described below:
 - H-2.1. Current earning asset has significant positive effect to stock price in the presence of market discipline.
 - H-2.2. Special mention earning asset has significant positive effect to stock price in the presence of market discipline.
 - H-2.3. Substandard earning asset has significant negative effect to stock price in the presence of market discipline.
 - H-2.4. Doubtful earning asset has significant negative effect to stock price in the presence of market discipline.
 - H-2.5. Loss earning asset has significant negative effect to stock price in the presence of market discipline.
 - H-2.6. Bank size has significant positive effect to stock price in the presence of market discipline.
 - H-2.7. Non-interest expense to total asset ratio has significant negative effect to stock price in the presence of market discipline.

3.3 Determination of Regression Approach

3.3.1 F test

The first step of determining the approach is to test the most appropriate between Pooled Least Square and Fixed Effect Regression. The test conducted is the F test, in which, the null hypothesis is using the Pooled Least Square and the alternative hypothesis is using the Fixed Effect Regression.

3.3.2 Hausman test

Hausman test is conducted if in the previous test, the null hypothesis is rejected. This test is conducted to see the most appropriate approach between the Fixed Effect and Random Effect Regression. This test uses null hypothesis of using the Random Effect and the alternative hypothesis is using the Fixed Effect. If the p-value is less than significance level of 0.05, than the Fixed Effect approach will be used, and vice

versa.

3.4 Classical Assumption Test

Before conducting regression techniques, there are several requirements that have to be satisfied to make a good regression model. Those requirements or assumptions are called BLUE (Best Linear Unbiased Estimator) which involves some tests to be conducted, such as multicollinearity test, heteroscedasticity test, autocorrelation test, normality test, and linearity test.

3.4.1. Multicollinearity Test

Multicollinearity means that there is some linear relationship among the independent variables. It means that one variable can be predicted linearly from the other variable accurately. This can cause unreliable change in the coefficient estimates of the regression with just a small change in the data. As the consequence, it may not give accurate result regarding the relationship of the individual variables with the dependent variables. Therefore, for a good regression model, there must not be multicollinearity. One of the indicators of multicollinearity is the value of pair-wise or zero-order correlations. If it is more than 0.8, then the multicollinearity is high (Gujarati, 2003).

3.4.2 Heteroscedasticity Test

Heteroscedasticity is a condition in which the variance of the error term is not equal. For example, the variance of dependent variable increases as the value of independent variable increases. If heteroscedasticity exists, it can make a really false conclusion about the result of the regression model. Instead, the model must be homoscedastic, meaning that the variance is always equal. For example, the variance of dependent variable will always be the same, regardless of the value of the independent variable. To test for heteroscedasticity for panel data, General Least Square (Cross Section Weights) method can be used. In this test, the sum square Resid on Weighted Statistics is compared with the sum square Resid on Unweighted Statistics.

3.4.3 Autocorrelation Test

Autocorrelation is a condition in which there is a correlation between the members of series of observations. For example, an error that happens to a data can affect the other data as well. The most common test used to test autocorrelation is the Durbin-Watson d test. The value of d is the ratio of the sum of squared differences in successive residuals to the RSS. If the computed d value is outside the range of d_L and d_U , then there is an evidence of autocorrelation. The value of d_L is lower bound value and d_U is upper bound value, derived from the Durbin-Watson table which depends on the number of observations n and the number of explanatory variables (Gujarati, 2003).

3.4.4. Normality Test

In a regression model, the variables must be normally distributed. It means that, if two variables are normally distributed, there will be zero correlation between the variables or both variables are independent. One of the tests used is Jarque-Bera (JB) test of normality. This test is a large-sample and in the first step, the JB statistic value is calculated. Then, using a null hypothesis that the data is normally distributed, the JB statistic value will follow the chi-square distribution with $2f$. Therefore, if the JB statistic value is significantly low, the data will not be normally distributed (Gujarati, 2003). However, if the data is not normally distributed in a certain model, regression can still be performed on that model, referring to central limit theorem. This theory states that the distribution of the sum (or average) of a large number of independent, identically distributed variables will be approximately normal, regardless of the underlying distribution (Rice, 1995).

3.5 Regression Analysis

Regression analysis is the study of the dependence of the dependent variable on one or more explanatory variables. If the explanatory variables are more than one, it is called multi regression analysis. In the regression equation, the goodness of fit is tested, to know the proportion of the variation in the dependent variable explained by the independent variable. Then, to test the hypothesis, t-test can be used. This is to test a hypothesis about any individual partial regression coefficient. If the computed t value is more than the critical t value, then the null hypothesis can be rejected. Another method that can be used is the F -test. This test uses variance method to test the overall significance of the multiple regressions. If the

computed F value exceeds the critical

F value or it is significantly low, then the null hypothesis can be rejected (Gujarati, 2003). The data used in this research is panel data, the combination of cross-section and time-series data. There are three methods in doing regression with panel data and this research uses Fixed Effect Regression.

3.5.1 Coefficient of Determination

In multiple regressions, the coefficient of determination (R^2) is used to determine how well the sample regression line fits the data. It means that R^2 measures the percentage of the variation of the dependent variable explained by the regression model (Gujarati, 2003). The value of R^2 ranges from 0 to 1 in which if the value is 1, it means that there is a perfect fit, whereas the value of 0 means there is no correlation at all.

4. The Findings

4.1 Regression Approach

4.1.1 F test

After conducting the F test for the first model, the result is that the F -value (35.412941) is greater than F -table (1.949). For the second model, the result shows F -value (61.897408), which is also greater than the F -table (1.949). Therefore, both models reject the null hypothesis of using Pooled Least Square.

4.1.2 Hausman test

After the previous test, the Hausman test is conducted to determine between Fixed and Random Effect. For the first model, the p -value is 0.0264, which is less than the significance level of 0.05. For the second model, the p -value is 0.0293, which is also less than 0.05. Therefore, both models should use Fixed Effect Regression approach.

4.2 Classical Linear Assumption Test

4.2.1 Multicollinearity Test

Based on the value of the pair-wise test on the correlation matrix, there is no correlation between the variables for both models. This is indicated by the value of the correlation that does not exceed 0.8 for every variable.

4.2.2 Heteroscedasticity Test

After conducting this test using General Least Square, for the first model, it is observed that the sum squared Resid has smaller value on the Weighted Statistics than on the Unweighted Statistics ($0.001523 < 0.001558$). For the second model, the same thing happens ($0.063758 < 0.067012$). The results indicate the presence of heteroscedasticity for both models. Therefore, for the regression, white cross section must be used as the coef-covariance method to manage this issue.

4.2.3 Autocorrelation Test

For this test, the Durbin-Watson (DW) value is observed and compared to the lower bound value (d_L) and upper bound value (d_U). For the first model, the DW value is 0.460915 and for the second model, the DW value is 0.412438. For both models, the d_L value is 1.87480 and the d_U value is 1.90614. For the both models, it can be seen that both DW value is lower than d_L value. Therefore, there are autocorrelation in both models. However, as the approach used is Fixed Effect Regression, autocorrelation in both models can be ignored.

4.2.4 Normality Test

For this test, Jarque-Bera (JB) test is used and if the p -value is greater than the significance value of 0.05, then the data is normally distributed. For the first model, the JB value is 0.024799 and for the second model, the JB value is 0.132710. This indicates that for the first model, the data is not normally distributed but for the second model, the data is normally distributed. However, the regression can still be conducted on the first model, as explained in the central limit theorem.

4.3 Regression Analysis

After the classical assumption test, the regression is performed on both models. Through this test, the value of R -square, p -value from the T -test, and the F -statistic from the F -test will be examined to determine

the relationship between the independent and dependent variable.

$$PRICE_t = \beta_0 + \beta_1 CRTEA_{t-1} + \beta_2 SMTEA_{t-1} - \beta_3 SSTEAt-1 - \beta_4 DTEAt-1 - \beta_5 LTEAt-1 + \beta_6 SIZE_{t-1} - \beta_7 NIETA_{t-1} + \varepsilon$$

Table 1. Regression Analysis of Model 1

Dependent Variable:

DEPOSIT

Method: Panel EGLS (Cross-section weights)

Periods included: 60

Cross-sections included: 15

Total panel (unbalanced) observations: 896

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.000261	0.006595	-0.039518	0.9685
CRTEA	0.028140	0.006225	4.520620	0.0000
DTEA	-0.646924	0.103543	-6.247907	0.0000
LTEA	-0.074405	0.019745	3.768372	0.0002
NIETA	0.000697	0.013651	0.051092	0.9593
SIZE	0.001133	0.000235	-4.831358	0.0000
SMTEA	0.002417	0.008059	0.299895	0.7643
SSTEAt-1	0.188022	0.108040	1.740292	0.0822

Cross-section fixed (dummy variables)

	Weighted Statistics		
R-squared	0.521174	Mean dependent var	0.005321
Adjusted R-squared	0.509669	S.D. dependent var	0.002103
S.E. of regression	0.001320	Sum squared resid	0.001523
F-statistic	45.29989	Durbin-Watson stat	0.460915
Prob(F-statistic)	0.000000		

Table 2. Regression Analysis of Model 2

Dependent Variable: PRICE

Method: Panel EGLS (Cross-section weights)

Periods included: 60

Cross-sections included: 15

Total panel (unbalanced) observations: 896

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.074862	0.039256	1.907013	0.0568
CRTEA	0.128127	0.037502	-3.416554	0.0007

DTEA	-2.165452	0.704099	-3.075494	0.0022
LTEA	-0.398028	0.111225	-3.578592	0.0004
NIETA	-0.241250	0.122414	-1.970777	0.0491
SIZE	0.003038	0.001046	2.903163	0.0038
SMTEA	0.132834	0.048725	2.726201	0.0065
SSTEA	-4.494175	0.591575	7.596970	0.0000

Cross-section fixed (dummy variables)

Weighted Statistics			
		Mean dependent	
R-squared	0.644297	var	0.014041
		S.D. dependent	
Adjusted R-squared	0.635750	var	0.014860
		Sum squared	
S.E. of regression	0.008541	resid	0.063758
		Durbin-Watson	
F-statistic	75.38596	stat	0.412438
Prob(F-statistic)	0.000000		

Based on the regression result which is performed with E-Views software, for the first model, the coefficient of determination (R^2) is 0.521174. This means that the independent variables that consist of five qualities of earning asset, bank size, and non-interest expense to total asset ratio can explain 52.12% of the deposit growth as the dependent variable, while the other 47.88% is explained by other variables. Meanwhile, for the second model, the value of R^2 is 0.644297, indicating that the independent variables can explain 64.43% of the stock price return as the dependent variable, while the other 35.57% is explained by other variables.

Another value that should be observed is the p-value of each of the variables. In the first model, by comparing it to the significance level of 0.05, it can be seen that CRTEA (Current Earning Asset), and SIZE (Bank Size), have positive significant relationship to DEPOSIT (Deposit Growth), while DTEA (Doubtful Earning Asset) and LTEA (Loss Earning Asset) has negative significant relationship to DEPOSIT. Meanwhile, for the second model, it is observed that CRTEA (Current Earning Asset), SMTEA (Special Mention Earning Asset), and SIZE (Bank Size) have positive significant relationship to PRICE (Stock Price Return), while DTEA (Doubtful Earning Asset), LTEA (Loss Earning Asset), NIETA (Non-Interest Expense to Total Asset ratio), and SSTEA (Substandard Earning Asset) has negative significant relationship to PRICE.

In addition to that, in the first model, the F-statistic value (45.29989) is greater than the F-table value (1.949), and in the second model, the F-statistic value (75.38596) is also greater than the F-table value (1.949). Therefore, for both models, the null hypothesis which states that none of the independent variables have a significant relationship to the dependent variable can be rejected. This means that at least one of the independent variables have significant relationship to the dependent variable.

Thus, after the regression has been performed, the research question is changed according to the regression result.

$$DEPOSIT_t = -0.000261 + 0.028140CRTEA_{t-1} - 0.646924DTEA_{t-1} - 0.074405LTEA_{t-1} + 0.001133SIZE_{t-1} \quad (3)$$

$$PRICE_t = 0.074862 + 0.128127CRTEA_{t-1} + 0.132834SMTEA_{t-1} - 4.494175SSTEA_{t-1} - 2.165452DTEA_{t-1} - 0.398028LTEA_{t-1} + 0.003038SIZE_{t-1} - 0.241250NIETA_{t-1} + \varepsilon \quad (4)$$

4.4 Regression Result of First Model

After the regression has been performed, it is found that there are four independent variables that have significant relationship with the dependent variable. Those independent variables are Current Earning Asset, Doubtful Earning Asset, Loss Earning Asset, and Bank Size.

4.4.1 *Current, Doubtful, and Loss Earning Asset*

According to the result, Current Earning Asset has significant positive relationship to Deposit Growth, while Doubtful and Loss Earning Asset has significant negative relationship.

For Current Earning Asset, the result of positive relationship to the deposit growth may be explained by the behavior of depositors. When the value of current earning asset of a certain bank increases, depositor may be more attracted to that bank because they feel that the bank is more profitable, as seen from the good management of the loan. This results in positive deposit growth as more depositors will place their fund in that bank. In the contrary, for Doubtful and Loss Earning Asset, as the value of them increase, depositors may feel that the bank is less profitable and therefore they may withdraw their fund from that bank and place it in another bank, resulting in negative deposit growth.

4.4.2 *Bank Size*

In the regression result, bank size has significant positive relationship to the deposit growth. This may be explained in the depositor behaviors that perceive larger banks as safer and more stable banks. Therefore, as the size of the banks increase, the depositors become more interested in placing their fund in that bank. In accordance to that, the smaller the bank, the depositors may hesitate to place their fund in that bank as the bank will be perceived as unstable and less safe.

4.5 Regression Result of Second Model

For the second model, the regression result shows that all seven independent variables have significant relationship to stock price return as the dependent variables. Those independent variables are the five earning asset qualities, bank size, and non-interest expense to total asset ratio.

4.5.1 *Current, Special Mention, Substandard, Doubtful, and Loss Earning Asset*

As observed from the result, Current and Special Mention Earning Asset have significant positive relationship to the stock price return, while Substandard, Doubtful and Loss Earning Asset has negative significant relationship to the stock price return. This may be explained by the investor behavior in interpreting the five qualities of earning asset. Among those five, Current and Special Mention are considered as “good” categories of an earning asset, while Substandard, Doubtful and Loss are considered as “bad” categories and they are also categorized as non-performing earning asset. As the amount of “good” earning asset of a certain bank increases, investors may have more incentives to invest in that bank, predicting that the performance of the bank will be better in the future. This results in the increase of the stock price of the bank. In the contrary, as the amount of “bad” earning asset of a certain bank increases, investors may avoid to invest in that banks as it can indicate poor performance in the future, resulting in decrease in the stock price.

4.5.1 *Bank Size*

The regression result shows that bank size has significant positive relationship to stock price return. This may be because the investors perception resembles the depositors', in which they feel that the larger the size of the bank, the safer and the more stable the bank will be. In the case of investors, they may predict that there will not be drastic fluctuation of the bank performance; therefore they may feel more interested to invest in that bank.

4.5.2 *Non-interest Expense to Total Asset Ratio*

After the regression has been performed, it shows that non-interest expense to total asset ratio has negative significant relationship to stock price return. This ratio represents the efficiency of a bank in generating its income. When the value of this ratio increases, it indicates that the bank is more inefficient in generating income. This may cause the bank to appear less profitable for the investors. On the other hand, if this value of this ratio decreases, the bank is more efficient in generating income and the investors may feel more attracted to invest in that bank.

5. Summary and Conclusion

For market discipline through depositors' perspective, Current Earning Asset, Doubtful Earning Asset, Loss Earning Asset, and Bank Size have significant relationship to the deposit growth. Current Earning Asset and Bank Size have positive relationship, while Doubtful and Loss Earning Asset has negative relationship. Meanwhile, for market discipline through investors' perspective, all five qualities of earning assets, bank size, and non-interest expense to total asset ratio have significant relationship to stock price return. Current, Special Mention, and Bank Size have positive relationship while Non-Interest Expense to Total Asset Ratio, Substandard, Doubtful, and Loss Earning Asset has negative relationship.

Therefore, the recommendation for banks in general is to pay close attention to the management of earning asset, as it has significant impact to the market discipline behavior. In addition to that, particularly in investors' perspective, it is important for banks to be more efficient in generating its income.

Those are recommendations for banking industry and it is important to prevent the decrease of market's favor towards the bank, and in particular, to prevent the risk of bank run.

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Recommendation of Basic Salary at Siete Café Bandung

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Abstract

Restaurant industry which is accounted as the third biggest contributor for Indonesia's GDP shows its potential by showing higher growth in 2013 and 2014 compared to Indonesia's GDP consecutively. Siete Cafe, a restaurant located in Dago, area with high competitiveness is currently declining in revenue. Siete Cafe with its plan to improve their business initiate improvement human resource management as their first plan. With current human resource management, employee at Siete Cafe are not satisfied with their compensation. This research aims to improve their compensation system through job analysis, job valuation, and salary benchmark in restaurant at Bandung. The end results of this research is recommendation alternatives of basic salary to Siete Cafe.

Keywords: Compensation; Human Resource Management; Basic Salary

1. Introduction

Restaurant is a business which prepare and serves food and beverages. As a part of Trade, Hotel, and Restaurant Sectors, in 2013 and 2014 become the third largest contributor for Indonesia's GDP. Restaurant Industry growth itself shown in 2013 as Indonesia's GDP growth was declining from 6 percent to 5.6 percent (Bank Indonesia, 2014) and Restaurant Industry revenue reach 13.6 percent. (Badan Pusat Statistik, 2014). Restaurant growth could be accredited to the facts that people are coming to restaurant with the foremost reason is for social factors and time availability (Epter, 2009).

1.1. Siete Café

Siete Café is one of the café located in Jalan Sumur Bandung, Bandung. It mainly serves Western and Indonesia food and beverages. Its location in Dago area led to high competition with many similar restaurant such as Verde, Beehive, Caffè Bene, Noah's Barn, Café Halaman, and Golden Monkey. Siete which was established in 2012, over the years start to drop in their revenue. According to the manager of Siete Café, it has been four years since Siete Café establishment and Siete Café has yet to do significant improvement towards their management and business process. In 2016, Siete Café has a goal to improve their restaurant through marketing campaign and renewal in several business process like offered menu and restaurant layout. This renewal as mentioned by the manager, needs contribution from the employee which is highly motivated and capable.

Knowing the plan of Siete Café, a preliminary questionnaire was distributed to all employee of Siete Café to know whether or not the current human resource management (HRM) system could accommodate their plan as a part of competitive advantage (Porter & Millar, 1985). Preliminary questionnaire was designed according to Dessler (2015) that in a good HRM there should be good compensation, performance

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appraisal, and employee training. The result of this preliminary questionnaire is most employee are satisfied with their performance appraisal and employee training. However, most of the employee (53%) are feeling not satisfied with their salary.

Currently, Siete Café is using position based compensation that provide similar payment toward similar position. In addition to basic salary, Siete Café also provide salary increments towards inflation, service fee distribution, and employee of the month rewards. Even so, Siete Café only calculate their basic salary through knowing the average salary of all similar café and restaurant in Bandung and directly use it as their salary. It means internal alignment has yet to be included in determining salary, thus, employee are still not satisfied with their salary.

1.2. Human Resource Management

HRM which has been admitted to be an additional form of competitive advantage by driving the business forward with their human resources (Hall, 2008) is mentioned as well by Porter & Millar (1985). HRM with its set of activity with the objective of improving the company as whole (Hall, 2008) support the plan of Siete Café to improve their human resource as their first steps. HRM could help business to avoid mistakes in human aspects especially on hiring or placing wrong person for a job and experiencing low employee loyalty (Dessler, 2015).

1.3. Basic Salary

Cash compensation in Siete Café is accounted in basic salary. It will be paid regardless the performance of the employee as long as employee responsibilities and tasks are fulfilled. In designing basic salary to be part of compensation, there are several consideration that needed to be accounted. The first one is equity theory of motivation, which stated that individuals are propelled to keep balance and equality between what they perceive as their contribution and the reward that they receive from that contribution (Dessler, 2015). The equity included are:

- External equity which is pointing out about job pay rate's compared to other companies
- Internal equity which is alluding how fair job pay rate's compared to other within companies
- Individual equity which is referring to pay rate fairness compared between people with same job
- Procedural equity which is mentioning how the system and procedures for payment of salary are perceived as fair by individuals.

On top of it, there are others factors which need to be accounted for designing basic salary, those are legal consideration and geographic consideration (Dessler, 2015). Geographic aspects, it could help give consideration by taking into account the living cost at certain area or region, which could differ from each other (Dessler, 2015).

1.4. Purpose of Study

This research aim to review compensation system in Siete Café and make improvement for their compensation system. Based on the identified problem, this research is conducted to mainly evaluate their current basic salary calculation and giving recommendation on basic salary calculation at Siete Café.

2. Research Method

2.1. Problem and Objective Identification

2.1.1. Preliminary Research

Initially, researcher identified the problem that is faced by Siete Café. The problem are identified through preliminary questionnaires on Human Resource Management at Siete Café. After finding the result of preliminary questionnaires, validation on the result and further probing were done through interview with operational supervisor at Siete Café who could clearly describe the issues at Siete Café.

2.1.2. Problem and Objective Identification

Based on the interview Siete Café only use external competitiveness as the sole factor on determining payment. Based on the problem identified, researcher narrowed the objective of this study on reviewing and making improvement of Siete Café current compensation system.

2.2. Literature Review

Literature review provide theories that are related with human resource, compensation, and restaurant in order to achieve research objective. Literature review was done by reviewing text book, journal, publication, and information from web sites.

2.3. Data collection

Data collection specify about the data that has been collected in order to conduct this research. There are two types of data used in this research, that is primary data and secondary data.

2.3.1. Primary Data

Primary data is a data that is collected through direct interaction from the one collecting the data and the data source (Wibisono, 2003). Primary data itself could be collected through survey, observation, and experiment (Wibisono, 2003). In terms of this research, primary data was gathered through interview with the Operation Supervisor which oversees the HRM in restaurant. Interview could give deep information and allow the researcher to clarify any information that is still unclear (Wibisono, 2003). The Operation Supervisor is considered as the suitable interviewee as he is the one that manage, understand, and improve the compensation system over time. For collecting the data, firstly, the restaurant compensation system is described by the Supervisor.

2.3.2. Secondary Data

Secondary data is a data that has been acquired from another sources and available to be acquired for another purpose, also, secondary data usually is a historical data (Wibisono, 2003).

2.3.2.1. Job Analysis

In order to determine the job salary, job analysis was needed. Job analysis was collected from the restaurant job analysis. Since the restaurant does not have job analysis, the data collected was job description instead. Job description which describe specific responsibilities for each position in the restaurant will further be used in determining compensable factors.

2.3.2.2. Salary Benchmark

In terms of this research, additional secondary data was needed consisting of restaurant employees' salary and salary from similar restaurant in Bandung. Current salary budget is needed to know restaurant capability in paying salary and salary from similar restaurant in Bandung will be used for benchmarking purpose.

2.4. Data Processing and Analysis

Data processing is comprised of restaurant's job analysis review, defining competencies, and job value calculation with point method, and job salary calculation as aligned with similar restaurant benchmark and restaurant budget capability. After the data is processed, analysis will be done with related theory of compensation system to be given as a recommendation for Siete Café compensation system improvement.

2.4.1. Job Analysis

Through the restaurant's job description obtained as a secondary data, current job descriptions were analyzed in accordance to job analysis explained by Dessler (2015). In the event job descriptions are already fitting with Dessler (2015) description of job analysis, job analysis will directly be used for determining job salary. For fear that job description yet made fitting with Dessler (2015), job analysis will first be improved. Job analysis is consisted of two elements, the first element is job description that enclose task, authorities, performance indicator, and work relationship. Second element of job analysis is job specification, which specify competency, qualification and experience needed for people to fill a position. By means of improving current job description, the result of improvement could be seen in.

2.4.2. Defining Competencies

Competencies are divided into core competencies as derived from company value, leadership competencies needed to fill managerial position, and functional competencies that differs from one division to another. Competencies are determined by the restaurant manager as interviewed by researcher. The competencies referred to Spencer and Spencer competency dictionary that has scored, scaled, and

described competency. Competency will be used as a compensable factors on determining new job salary.

2.4.3. Job Valuation

Competency which are covered on the job analysis will be processed and assessed based on manager judgement. Competency used in the restaurant because job rotation between similar job are often done like between barista and waiter. Consequently, by using competency, job rotation still could be done flexibly as long as the job require comparable competency.

Job valuation as stated previously in literature review were done through point method. There are some steps researcher done to process the data. First, researcher divided the compensable factor into core competencies, managerial competencies, functional competencies, and working environment. The competencies determined as a sub factors according to the compensable factors, with core competencies are applied to all position like flexibility, managerial competencies for leadership position like achievement oriented, functional competencies for each division like attention to detail. Each sub factors will adapt its description and level accordingly from Spencer & Spencer competency dictionary for its comprehensiveness and suitability with context.

Through the help of restaurant manager, importance between each compensable factors and sub-factors are compared and will be represented by its weight in percentage and it will be determined with the help of Expert Choice software. Furthermore, in order to know the importance of each sub-factors as a whole represented with Total Weight, the weight from each factors is timed with the weight of each sub-factors to know. Maximum value for salary calculation is the result from multiplying total weight with 100.000. Lowest level for each sub factors is obtained by dividing the maximum value with 10. After determining the highest and lowest level of each sub-factors, scale is to be made to determine the level of certain competency using interpolation.

2.4.4. Calculate Job Value for each Position

As job analysis and competency needed for each has been made, job value could be calculated by totaling all of the competency value of the job.

2.4.5. Define Job Salary

Benchmark salary will be divided by job value. The result of this calculation, termed "Job salary per job value" will be used as the reference point to calculate job salary of each position by multiplying it with every position job value. Based on the restaurant budget, average Job salary per job value are used to calculate job salary.

2.4.6. Result Validation

After knowing the result of each position salary, another interview was done to explain the research result and ask consonance from the owner regarding the recommendation proposed. Result validation aims to know whether the research result suitable, applicable, and agreeable by the restaurant.

2.5. Conclusion and Recommendation

Conclusion and Recommendation explains about the conclusion and recommendation suitable with the restaurant based on the data and analysis. This research recommend basic salary based on competency in order to improve the internal alignment of Siete Café.

3. Result and Discussion

This section disclose data collection, data analysis, and the result of this research.

3.1. Core Competencies

Siete Café's core corporate value are customer focus, innovation, excellence in food and hospitality. Core competency is an underlying skill and attitude that each employee in the company should have. Core competencies are represented in corporate value. Customer service orientation represents customer focus which means that everyone in the company should think for and act for the sake of customer. Excellence in food and hospitality means the company should have concern for the order and quality of their working to show restaurant's excellence in both food and service. Innovation needs the flexibility to have a new point of view in tackling issue and thinking outside of the set rule to innovate and improve their business.

Table 3.1 Core Competencies

Corporate Value	Core Competency
Customer Focus	Customer Service Orientation (CSO)
Excellence in Food and Service	Concern for Order and Quality (CO)
Innovation	Flexibility (FLX)

3.2. Managerial Competencies

Managerial competency is necessary for jobs that require leading subordinate responsibilities. Managerial competencies consist of team leadership (TL), developing others (DEV), directiveness (DIR), impact and influence (IMP), and Analytical Thinking (AT). Team leadership means the leader has motivation and able to lead their subordinate. For instance, head chef should lead the chef di partie and cook in preparing food and doing kitchen activity. Developing others is needed for the restaurant to develop as a whole and for subordinate to learn to do their work. For example, supervisor to do training and give pointers for new employee in doing their job. Directiveness means for them to direct people as within their authority. For example, restaurant manager to be able direct the supervisor and waitress for any change that is going to be implemented in SOP. Impact and influence means that manager to influence and convince other, especially subordinate to support common objectives. For example with new goal at certain month, manager able to communicate the plan and encourage everyone to achieve the goal.

3.3. Functional Competencies

Functional competency differed between job families. There are some competencies that represent the functional competencies, which are interpersonal understanding (IU), self-confidence (SCF), self-control (SCT), information seeking (INF), initiative (INT), and expertise (EXP). Interpersonal understanding is possessed by position that need to understand another people subtle or hidden message. Information seeking is needed to see any emerging opportunity or information crucial for business. Both are important and represent functional competency owned by marketing division in which marketing division repeatedly to know what is the current trends or desire from customer in order to determine marketing strategy.

Self-control means the ability for someone to control their own self against pressure. Along with expertise that means employee has mastery towards knowledge or ability regarding their works. These two competencies are needed by finance and accounting division for they need to have understanding in math, accounting, and finance, yet also control themselves from doing negative action while performing job. Self-confidence means the belief of one to finish her/his job and task. Initiative means the drive for one to do action more than what is being asked or formally commanded to do any action in order to increase work result. Both of these competencies are needed by purchasing division in which they need to work fast when supply is running low and with their frequent meeting with supplier they need to have self-confidence, with that purchasing would also always trying to find lower cost supplier or maintain good connection with supplier.

Restaurant service would require the employee to have interpersonal understanding for visiting customer, initiative to help the customer and self-control to work under pressure, especially in peak hour where the order would be a lot and pressure is built-up. Food and beverage division require the people to have self-control in facing pressure in peak-hour and expertise in technical knowledge for preparing food and beverage.

3.4. Working Condition

Working condition in Siete Café is divided into 3 levels based on its comfortability. Work in indoor facilities, work sometimes indoor and outdoor, and work outdoor or in the kitchen. Risk accident is divided accordingly with the comfort level; low, moderately high, very high.

Table 3.2 Working Condition

Level	Comfort Level	Risk Accident
1	Work in indoor facilities	Probability of accident is low
2	Work both in indoor and outdoor	Probability of accident is moderately high
3	Work outdoor or in kitchen	Probability of accident is very high

3.5. Weight Factor and Sub-Factor

There are 4 factors that affect the job evaluation: core competency, managerial competency, functional competency, and working environment. Through discussion with the restaurant manager of Siete Café, functional competency (50%) as the importance in each position. Following that are core competency (30%), managerial competency (20%) and working environment (10%).

Table 3.3 Weight Factor

Factor	Weight
Core Competency	25%
Managerial Competency	15%
Functional Competency	50%
Work Environment	10%

Functional competency become the priority for the facts that each position has their own unique role in restaurant and are completing each other for fulfilling the business process. Core competency is considered more important than managerial competency. Restaurant manager stated that to have employee in the company that understand the value of the company would be more important than leading subordinate. Work environment is considered least important since the accident risk in restaurant is considerably low and overall the comfort level in restaurant is generally comfortable.

Table 3.4 Weight of Core Competency

Factor Weight	Sub Factor	Weight	Total Weight
Core Competency 25%	CSO	50%	12.5%
	CO	30%	7.5%
	FLX	20%	5%

Core competency that includes customer service orientation, concern for quality and order, and flexibility are derived from company values. Customer service orientation is the competency that has the highest importance as a core competency. It has been the vision of Siete Café founder to always include and consider how every decision would make the customer satisfied because they believe customer is the reason why they establish Siete Café in the first place. In accordance with their focus on customer, Siete Café put high concern in quality of their work, because every work of employee directly or indirectly will be shown and assessed by the customer like service done by waiter/tress and food by cook. Siete Café also urge the employee to be able to flexible in their approach towards problem and bring innovation and creative solution to help Siete Café grow.

Table 3.5 Weight of Managerial Competency

Factor Weight	Sub Factor	Weight	Total Weight
Managerial Competency 15%	TL	30%	4.5%
	DIR	10%	1.5%
	DEV	20%	3%
	IMP	25%	3.75%
	AT	15%	2.25%

Managerial competency is competency owned by employee who led another people. There are five competency included in managerial competency at Siete Café, those are: team leadership, directiveness, developing others, impact and influence, and analytical thinking. Team leadership is considered as the most important competency since a good team leader should be able to gain recognition from the team members and able to lead the team towards team vision. After that, they make people recognize them as a team leader, they must have influence and impact. However, if their team member is not capable, they must be able to develop and encourage them to learn. Subsequently, the leader should base their thinking on logic and able to give direction in doing the right thing.

Table 3.6 Weight of Functional Competency

Factor Weight	Sub Factor	Weight	Total Weight
Functional 50%	IU	15%	7.5%
	SCF	15%	7.5%
	SCT	20%	10%
	INF	15%	7.5%
	INT	15%	7.5%
	EXP	20%	10%

There are six competencies being recognized as functional competencies. The importance of every sub factor is similar to each other according to restaurant manager. With self-control and expertise have the highest weight compared to others since self-control is essential to maintain work quality regardless of the work pressure and to prevent and misconduct, while expertise is needed to ensure the work result is based on known technical knowledge and standards.

Table 3.7 Weight of Work Environment

Factor Weight	Sub Factor	Weight	Total Weight
Work Environment 10%	CL	70%	7%
	RA	30%	3%

Working environment includes comfort level and risk of accident. Comfort level is weighted more than risk of accident since restaurant has small risk of having accident and comfort level is more comparable than risk of accident when employees are working.

As illustrated by following example for calculation of CO score scales, total weight is obtained by multiplying factor weight (25%) and sub-factor weight (50%) equal to 12.5%. In order to determine the maximum value could be obtained from the competency, researcher multiply each total weight with 100.000, so the maximum value could be obtained from CSO is 12.500. With the minimum value being maximum value divided by 10, equal to 1250 and rest of the scale is calculated through interpolation by subtracting 12500 with 1250 and divide it with n-1 or 6 to find the interval. This calculation is similarly used in calculating all competencies value.

Table 3.8 Value of Core competencies

		Scale								
Sub Factor	0	1	2	3	4	5	6	7	8	9
CSO	0	1500	2875	4250	5625	7000	8375	9750	11125	12500
CO	0	900	2000	3100	4200	5300	6400	7500	-	-
FLX	0	600	1480	2360	3240	4120	5000	-	-	-

The score above shows score for each core competencies varies within the scale. The scale from 0 to 9 indicate the level of core competency needed on certain position. This score will be used to calculate job value. For example with customer service orientation, when a position needs CSO with scale 1, 1500 will be added to its job value, while if the position need CSO in scale of 9, the position will get 12500 job value. This also applies to the other competencies, with a slight different if the competencies is not applicable or not needed from certain position, then 0 scale will be used and 0 score will be added to its job value.

Table 3.9 Value of Managerial competencies

		Scale								
Sub Factor	0	1	2	3	4	5	6	7	8	9
TL	0	600	1250	1900	2550	3200	3850	4500	-	-
DIR	0	200	362.5	525	687.5	850	1012.5	1175	1337.5	1500
DEV	0	400	725	1050	1375	1700	2025	2350	2675	3000
IMP	0	500	964.286	1428.571	1892.8571	2357.143	2821.429	3285.714	3750	-
AT	0	300	690	1080	1470	1860	2250	-	-	-

Managerial competencies will only be applied and added to position with managerial and leading responsibilities, thus position that require no leadership responsibilities will directly be assigned with 0 score for their managerial competencies.

Table 3.10 Value of Functional Competencies

		Scale								
Sub Factor	0	1	2	3	4	5	6	7	8	9
IU	0	750	2437.5	4125	5812.5	7500	-	-	-	-
SCF	0	750	2100	3450	4800	6150	7500	-	-	-
SCT	0	1000	2800	4600	6400	8200	10000	-	-	-
INF	0	750	1875	3000	4125	5250	6375	7500	-	-
INT	0	750	1593.75	2437.5	3281.25	4125	4968.75	5812.5	6656.25	7500
EXP	0	1000	2285.7143	3571.4286	4857.142857	6142.8571	7428.5714	8714.2857	10000	-

The value above show value for each functional competency. Functional competency will only be added to position that require that competency, for example, in finance they need SCT and EXP, so the other competency will directly be scored as 0 and does not being calculated.

Table 3.11 Value of Working Condition

		Scale				
Sub Factor		1	2	3	4	5
CL		0	700	2800	4900	7000
RA		0	300	1200	2100	3000

The score above are describing value of working condition in Siete Café. Both comfort level and risk of accident are scaled from 1 to 5. Position that get valued with CL and RA of 0 will get no job value from it since they will be working in comfortable working area and no risk of accident in working.

3.6. Job Value and Job Salary

After totaling job value from each position in Siete Café, researcher calculate job salary based on

average salary of restaurant in Bandung as the salary benchmark that is obtained through the manager. Job value is obtained by totaling competency value from each job position.

Table 3.12 Job Salary Calculation

Positions	Salary Benchmark	Job Value	Benchmark/Job Value	Job Salary
Waiter	Rp 1,200,000.00	6930.00	173.16	Rp 1,224,391.88
Cashier	Rp 1,500,000.00	7122.86	210.59	Rp 1,258,465.86
Bartender	Rp 1,500,000.00	10638.57	141.00	Rp 1,879,622.00
Captain	Rp 1,800,000.00	14433.04	124.71	Rp 2,550,027.66
Operation	Rp 4,000,000.00	21629.64	184.93	Rp 3,821,523.67
Supervisor	Rp 2,700,000.00	19078.93	141.52	Rp 3,370,863.67
Finance	Rp 1,800,000.00	12266.79	146.74	Rp 2,167,294.78
Purchasing	Rp 9,500,000.00	36312.14	261.62	Rp 6,415,626.67
Executive Chef	Rp 2,000,000.00	14977.86	133.53	Rp 2,646,286.67
Cook	Rp 2,500,000.00	12655.36	197.54	Rp 2,235,947.55
Marketing Manager	Rp 1,500,000.00	6575.00	228.14	Rp 1,161,670.51
Cleaning Service				
Average		176.68		

Job salary is calculated using the average pay per job value (176.68). Average value is taken after discussion with the restaurant manager since the company does not have budget capability for using the highest value and still want to make their restaurant is competitive enough, but not taxing company finance. This job salary calculation could be of an improvement for Siete Café's current basic salary especially after considering internal fairness in its calculation.

4. Conclusions

Human resource management which has been admitted into a competitive advantage contribute into a growth and development of company. Compensation along with performance management and training are the aspects that allows human resource to contribute in such manners. With unsatisfied employee of Siete Café regarding their salary, this research aimed to improve it in means by systematically incorporate internal fairness in their compensation, specifically basic salary. Internal fairness is ensured by reviewing Siete Café job description and made job analysis based on it for the company. In addition to that, the competency listed in job analysis was used as the compensable factors.

After comparing the importance between each factor and sub-factor with the restaurant manager and assigning weight to each of them, researcher made scale for assigning competency value. The job value of each position is then calculated based on competency on the job analysis. To conclude the research, by dividing benchmark salary with job value and selecting the average value, job salary is concluded.

This research suggest Siete Café to incorporate systematical method and internal fairness in determining basic salary for their employees. Systematical method will reduce the probability of bias is occurring and internal fairness to increase the satisfaction of employees. In addition to that, method used in this research could also be applied to find suitable salary in similar business.

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Integrating Knowledge Management in Project Management to Improve Project Quality: The Case of GSR Project at PT. MSM

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Abstract

Due to decreasing of property sales in Indonesia in 2015 the competition in the real estate business becomes more intense, so it requires competitive advantage to survive. PT MSM is a property developer in Bandung that has been established since 2008. One of their projects is GSR, the middle-up class real estate in East Bandung. According to the company's vision that quality assurance is the main objective of project result, but in fact it was found that an increasing number of houses repaired in 2015 until early 2016. Construction is complex industry, which is an information-intensive industry that involves many parties in all stages of the project life cycle. Integration with knowledge management was considered to be the most appropriate solution to capture project based knowledge. Knowledge sharing culture and ICT offer a number of solutions to implement collaborative knowledge management for PT MSM.

Keywords: Knowledge Management, Construction Project, KM Implementation

1. Introduction

The economic slowdown in Indonesia that occurred during the past year, which is characterized by the low economic growth and the weakening of the Rupiah against the US dollar, indirectly have an impact on the performance of the property sector in 2015. This can be seen with the declining demand for residential. Real Estate Indonesia (REI) estimated property sales during 2015 fell by 40%. This is certainly a trigger for the developers to have competitive advantages in order to compete with their competitors to provide good quality residential. The success of the project management is determined by the effective use of resources, completing projects on time and also meet the customer's satisfaction. The deviations of project that often occurs is how good the planning that has been done, there are always changes in its implementation that causes delays in the completion process. Any errors that occur in construction process will inevitably affect the building quality.

Lack of understanding of knowledge management in the project lifecycle process often leads to the failure of a project. The integration of project management is required to ensure that the various project elements are effectively coordinated during the life cycle process. The main problem that occurs in KM usually happens because companies refuse cultural issues. The development of a culture where sharing knowledge and encourage employees to share their experiences each other are critical and difficult things to do

The main problems that are often faced by PT MSM is the building quality which dominant influenced by the human resources. This study will assess the performance of the project and give recommendations to improve project performance at GSR. The method used in this study is to compare the result of interview and questionnaire to analyze knowledge gap and identify the level of knowledge management maturity at PT MSM then purpose knowledge management strategy which will give the solutions to implement new knowledge management system in the company. The results of this study are expected to reduce the risk of failure in construction projects and increase the chances of project success.

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2. Literature review

The value of knowledge management practice comes from intersection between three component of people, process, and technology as seen in Figure 1 (Barnes,2011).ⁱ

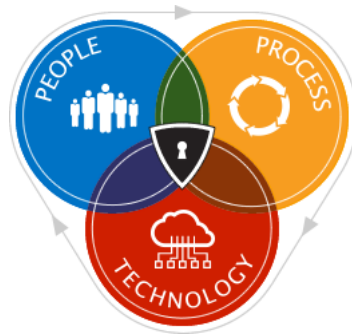


Figure 1 Alignment of people, process, and technology (Barnes,2011)

Learning People : Creating an organization learning culture in the company requires serious hard work which is started from the employees to the teams involved. It takes the ability to motivate the employees to do their best and find the right way to enable company's learning growth.

According to (Senge, 1990)ⁱⁱ, the learning organization are defined in the five disciplines principles as follow:

- **System thinking** : a conceptual framework, a body of knowledge and tools that have been developed to make full pattern becomes clearer, and to help us see how to change it effectively.
- **Personal mastery** : discipline that continues to clarify and deepening our personal vision, focus our energies, developing patience and seeing reality objectively.
- **Awareness of mental model** : embedded assumptions, generalizations, or even pictures or images that influence how we understand the world and how we should take into action.
- **Building a shared vision** : leader has a personal vision that has been translated into a shared vision that reinforce organizations
- **Team learning** : Discipline dialog also includes how to learn to recognize patterns of interaction in teams that undermine learning.

Knowledge Transfer Process : culture that needs to be nurtured and stimulated in a company that wants to implement KM effectively. Because sharing is the foundation for the process of learning, and through sharing created wider opportunities for learning which can foster innovation, then innovation can create a sustainability competitive advantage.

According to Nonaka and Takeuchi (1995)ⁱⁱⁱ, knowledge can be converted through four types of the conversion process as follows:

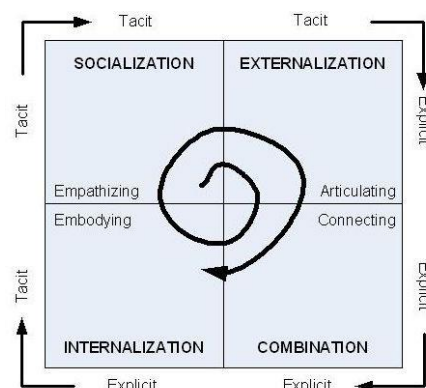


Figure 2 SECI Model (Nonaka and Takeuchi,1995)

1) **Socialization** is the process of spreading tacit knowledge owned by an individual to be understood by other individuals (tacit to tacit); 2). **Externalization** is the process of making tacit knowledge that is already understood together into explicit knowledge owned group (tacit to explicit); 3) **Combination** which is merging or synthesis of a variety of explicit knowledge generated by different groups into new explicit knowledge of the organization (explicit to explicit); 4). **Internalization** is the process of making explicit knowledge organization understood and practiced by every individual in the organization (explicit to tacit). And so on, so that the knowledge stock of the organization continue to grow as the spiral direction heading out.

Fit For Purpose Technology : Information technology is a constituent of KM because infrastructure plays an important role in creating KM in the organization. The role of information technology infrastructure has a positive and significant relationship with knowledge management component (creation knowledge, sharing, and application)

The Benefits of KM for Construction Industry:

Construction project requires an understanding of each series of project life cycle.

- ✓ knowledge management can facilitate the effective transfer of knowledge in a various stages of construction projects to smooth the flow activities between processes.
- Most of the construction industry failed to maintain project knowledge in order to reuse it in the future
- ✓ the role of knowledge management to facilitate the storage of knowledge so that it can be reused easily and effectively through the database of best practice.
- The construction industry has a complex organizational system so that it tends to be a lack of communication between top management and their subordinates
- ✓ with the effective knowledge management system, it will help better flow of communication and knowledge preservation in various stages of construction projects.

KMS Maturity

In the case of knowledge management, maturity is used to assess how effectively the organization to manage, utilize and develop existing knowledge assets.

The purpose of the knowledge management maturity are:

- Assisting the organization to clearly identify what knowledge needed to support the overall objectives of the organization and individual or team activities.
- Provide clear evidence which level of knowledge in the organization has been managed effectively and where should be increased
- Provide the report of knowledge based on the evidence in the organization, and how knowledge flow inside and used by the organization
- Provide a maturity level of knowledge in the organization and where it should belongs, and also shows the gaps occurred.

This study adopt G-KMMM (General Knowledge Management Maturity) model by L. G. Pee and A. Kankanhalli (2009)^{iv} to measure the level of KM maturity in PT MSM with using the dimensions of KM framework by Tjakraatmadja (2011):

1. Initial	Little or no intention to formally manage organizational knowledge
2. Aware	Organization is aware of and has the intention to manage its organizational knowledge, but it might not know how to do so
3. Defined	Organization has put in place a basic infrastructure to support KM
4. Managed	KM initiatives are well established in the organization
5. Optimizing	KM is deeply integrated into the organization and is continually improved upon. It is an automatic component in any organizational processes.

Knowledge Management Dimensions of People, Process, and Technology (Source : Tjakraatmadja, 2011:2)

Statement	Dimensions
PEOPLE	
1 The leaders showed a good example and able to receive suggestions for improve the company	Leadership
2 The leader has the ability to give encouragement so that capable employees can perform well	Leadership
3 The leader is able to create a condusive working environment to support the process of sharing knowledge and experience	Leadership
4 Every employees understands KPI clearly as an indicator of performance success	Reward system
5 The employees have a good understanding of the importance of Knowledge Management for employees and companies	Organization
6 Employees have the habit to sharing knowledge and experience with coworkers	Culture
7 Employees have an open attitude to accept criticism or ideas	Culture
8 The Company has a system to provide awards for employees who want to share knowledge with colleagues	Reward system
9 The Company has a system to provide awards to employees who have initiative and quick response in taking action	Reward system
10 The Company has a dedicated staff to maintain a database of corporate knowledge	Organization
11 The Company provides good facilities for effective communication among employees	Organization
12 The company provides training for every employees regularly	Training
13 Training of employees have gained the knowledge of employees effectively to improve job competence	Training
14 The Company provides an opportunity for employee to attend company's training	Training

PROCESS		
1	Employees have to understand the work plan and requirements (RKS) to prevent an error occurred	Rules system
2	Employees evaluate the project regularly and the results are stored by the company	Monitoring
3	The existing knowledges in the company are easily stored and searched by anyone	Capture & Documentation
4	After training / workshop, employees have to report the results and are stored by the company	Monitoring
5	The Company has a system to make the process of sharing experience among the employees	Rules system
6	The Company has a system to encourage the process of cooperation among employees	Rules system
7	Suggestions and recommendations from employees are used by the company for continuous improvement	Application
8	Voice of the customer as a reference for company improvement	Capture & Documentation
9	Companies undertake exit interviews to each employees who would resign in order to keep knowledge remains in the firm	Capture & Documentation
10	The company develop the application for enhance the knowledge	Application

TECHNOLOGY		
1	The Company has a virtual forum to cooperate among employees without having to meet directly each other	Infrastructure
2	The company information systems have an adequate speed capacity to download documents	Technology capacity
3	The company information system has effective search engine to capture knowledge via public folders	Reliability
4	The features of existing information technology are easy to used by employees	Features
5	The internet access in the company has been supporting the process of sharing knowledge	Technology capacity
6	The company's physical environment is designed to facilitate the process of knowledge sharing	Infrastructure
7	The company information system can be used to disseminate the results of a survey that are conducted by the company	Reliability
8	The features of technology in the company are often used by employees actively	Features

3. Research and methodology

This research use the questionnaire to find out how implementation of knowledge management is felt, what strategies have been implemented, and the obstacles occured in the implementation process. Before that, the interview was done with project manager and internal audit. In addition, the number of complains from customer or renovation record data as a reference of customer satisfaction. At the end, both of data collections from interview either questionnaire are analyzed then compared each others in order to find the solutions for the purpose KM implementation strategy for PT MSM.

Interviews

From the interviews that have been done, the author made a fish bone diagram analysis to find the root cause of the problems as presented below :

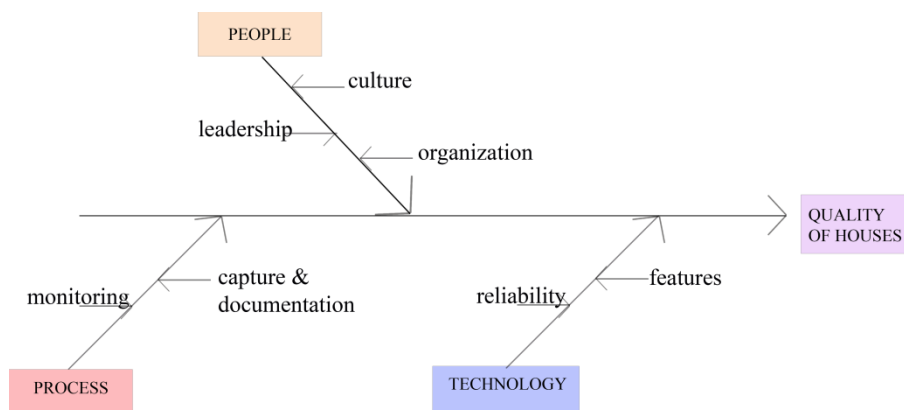


Figure 3 Fishbone diagram, 2016

Table 4 Root Cause Analysis,2016

Possible rootcause	Discussion	Root Cause ?
PEOPLE		
Lack of leadership style	1 Inconsistent policies from the supervisor to the builder 2 Uncondusive working environment such as noisy and strict monitoring	N
Company culture	3 Lack of sharing knowledge from the employee experience so there are time forecasting of material problems	N
Organization problem	4 Lack of sharing information so there are procurement problems with the suppliers	Y
	5 Lack of communication between the company department (marketing and project department)	
PROCESS		
Monitoring problem	1 Lack of monitoring in project control in term of monthly evaluation 2 Problem in evaluating the appropriate subcontractors	Y
Capture and documentation problem	3 The raw datas can not process properly because of missing information	N
	4 The result of testing commisioning from building material are not stored properly	
TECHNOLOGY		

Unfavourable features	1	Some employees are unable to use the new software for construction management (MAKSI Pro)because they do not accustomed to use it	N
Lack of reliability	2 3	No LAN system for effective internal data sharing The Board of Director has not concerned about the important of technology yet	N

According to the fishbone diagram analysis above, we can conclude that the root cause is **lack of process monitoring (QC)**. Meanwhile QC influenced by the assets of organizational process which consist of a quality policies, standard manual work, and communication policies. But in fact, there was a problem in the organization which was caused by **lack of sharing information and knowledge** which are required in quality control (QC).

Questionnaires are distributed to all project department staff population of 27 people and all human resource department staff population of 6 people. So the questionnaires that appropriate for analysis were 33 questionnaires.

Table 5 Results of calculation of dimension from People,Process,and Technology (source: Tjakraatmadja J.H, 2011)

VAR	DIMENSION	Current Conditions	Conditions Expected	GAP (Δ)
PEOPLE	Leadership	3,68	4,70	(1,02)
	Culture	2,53	4,56	(2,03)
	Reward system	3,02	4,59	(1,57)
	Organization	2,19	4,52	(2,33)
	Training	3,20	4,78	(1,58)
PROCESS	Rules system	2,87	4,66	(1,79)
	Capture & Documentation	3,33	4,67	(1,34)
	Application	2,02	4,52	(2,50)
	Monitoring	2,49	4,49	(2,00)
TECHNOLOGY	Infrastructure	1,80	4,23	(2,43)
	Features	2,14	4,21	(2,07)
	Reliability	1,57	4,26	(2,69)
	Technology capacity	3,41	4,69	(1,28)



Table 6 Details of People dimension

NO	DIMENSION	ITEM QUESTIONS	Current	Hope	GAP (Δ)
1	Leadership	1 Good example to receive advice	4,12	4,70	(0,58)
		2 Have ability to encourage the employees to perform well	4,27	4,79	(0,52)
		3 Have ability to create a condusive working environment	2,64	4,61	(1,97)
2	Culture	6 Have the habit to sharing knowledge and experience with coworkers	2,18	4,82	(2,64)
		7 Employees have open criticism or ideas	2,88	4,30	(1,42)
3	Reward System	4 Understanding of KPI	2,94	4,58	(1,64)
		8 System to provide award for employees who want to share	2,30	4,39	(2,09)
4	Organization	9 System to provide award for employees who have initiative / quick respond	3,82	4,79	(0,97)
		5 Good understanding of the importance of Knowledge Management	2,67	4,36	(1,69)
		10 Maintain a database of corporate knowledge	2,06	4,58	(2,52)
5	Training	11 Provides good facilities for effective communication among employees	1,85	4,61	(2,76)
		12 Provides training for every employees regularly	3,73	4,73	(1,00)
		13 Training of employees improve job competences	3,24	4,82	(1,58)
		14 Provides an opportunity for employees to attend company's training	2,64	4,79	(2,15)

According to the chart of measurement from people dimension, we can conclude that the current condition at PT MSM in the rating of defined. The weakest value from the current condition is on the side of organization (2.19) which is consist of knowledge sharing (knowledge stock and flow in the organization). This implies that the employees do not understand or are not yet aware of the importance of

knowledge management to be developed within the company. So the knowledge of informations are only perceived on some level in the organization. On the other hands, the assessment on the leadership (3.68) has the greatest value.

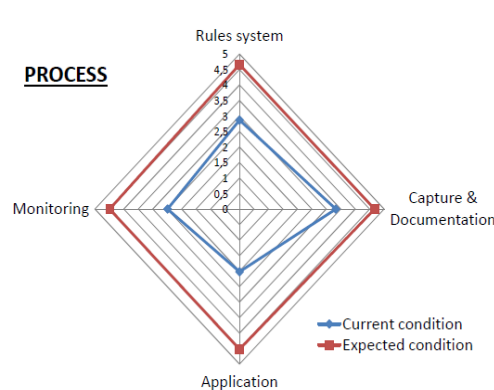


Table 7 Details of Process dimension

NO	DIMENSION	ITEM QUESTIONS	Current	Hope	GAP (Δ)
1	Rules System	1 Understanding the work plan and condition (RKS)	2,45	4,73	(2,28)
		5 System sharing the work experiences	1,94	4,58	(2,64)
		6 System to encourage the process of cooperation between employees	4,21	4,68	(0,47)
2	Capture & Documentation	3 Existing knowledge easily stored and searchable by users	1,88	4,58	(2,70)
		8 Voice of the customer for repair	3,55	4,76	(1,21)
		9 Exit interviews to keep knowledge remains in the organization	4,55	4,67	(0,12)
3	Application	7 Suggestions and proposals of employees for continuous improvement	2,45	4,88	(2,43)
		10 Knowledge application development	1,58	4,15	(2,57)
4	Monitoring	2 Evaluation on a regular basis and the result stored in the company	2,15	4,36	(2,21)
		4 Report the impact of training	2,82	4,61	(1,79)

According to the chart of measurement from process dimension, we can conclude that the current condition at PT MSM in the rating of defined. The weakest value from the current condition is on the aspect of application (2.02) which are consist of suggestion and proposal of employees for continuous improvement and knowledge application development. This implies that the process of knowledge sharing is low because there are no clear application in the company to manage or control the employees sharing activities. On the other hand, the greatest value from process dimension is the aspect of capture and documentation (3.33) which are consist of the process to keep the knowledge stored for continuous improvement in the future, such as voice of customers and exit interviews. This implies that the employees have a strong desire to use existing knowledge easily if it is stored properly.

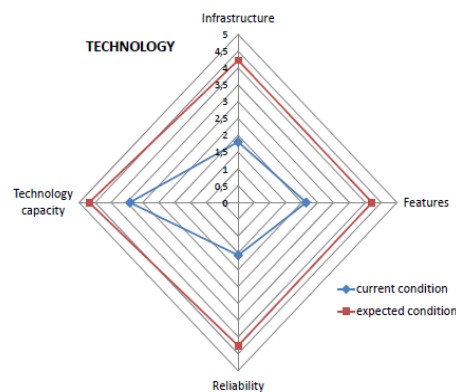


Table 8 Details of Technology dimension

NO	DIMENSION	ITEM QUESTIONS	Current	Hope	GAP (Δ)
1	Infrastructure	1 The existence of a virtual forum	1,45	4,39	(2,94)
		6 Physical environment for knowledge sharing	2,15	4,06	(1,91)
2	Features	4 User friendly	1,73	4,15	(2,42)
		8 Frequently used by employees	2,55	4,27	(1,72)
3	Reliability	3 Effective search engine	1,52	4,18	(2,66)
		7 Can be used for dissemination of the survey	1,61	4,33	(2,72)
4	Technology capacity	2 Download capacity	3,67	4,82	(1,15)
		5 Internet access speed	3,15	4,55	(1,40)

According to the chart of measurement from technology dimension, we can conclude that the current condition at PT MSM in the rating of aware. The weakest value from the current condition is on the side of reliability (1.57) which is consist of the usage of search engine which facilitates the data searching easily. This implies that the company has not already had the system of search engine for effective knowledge sharing. In the future, the company should concern about the importance of search engine to optimize the implementation of KM. On the other hands, the highest value from technology dimension is the side on technology capacity (3.41), such as high speed internet connection and high download capacity. This implies that the company has provided the facilities that support collecting data from the internet. But this excess will not be optimized if it does not support by a adequate infrastructure.

Summarizing the Knowledge Management System in current condition at PT MSM, it could be seen that all respondents who participated in the research showed the similar tendency toward the maturity of KM implementation. The following is the comparison among people, process, and technology dimension at PT MSM :

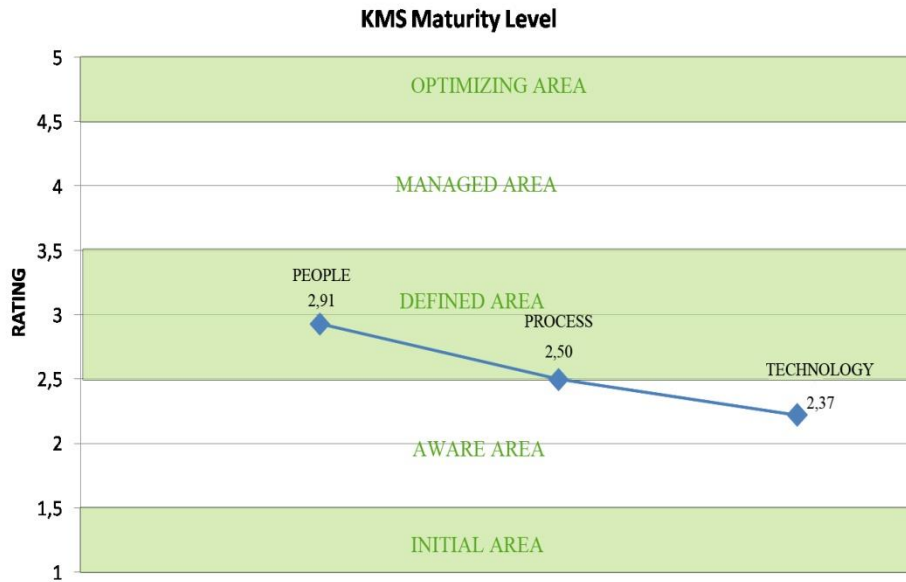


Figure 9 KMS Maturity Level at PT MSM , 2016

According to a maturity model approach KMS model, then in general indicate that the level of KM implementation at PT MSM is at level 3, which is defined. The level characterized that the awareness of knowledge management at management level and defined development of proper organizational context. Seeking goals at this level is important to define the knowledge management practices and to create the adequate organizational environment.

The lowest of average value from these three aspects is Technology which it has proven that PT MSM has not considered the importance of the technology development to enhance the knowledge management in the company. So in the future, company should concern to develop technology that become an important aspect not only people and process. It will need collaboration among people, process, and technology to increase the KM maturity in this company.

Project Integration Knowledge Management

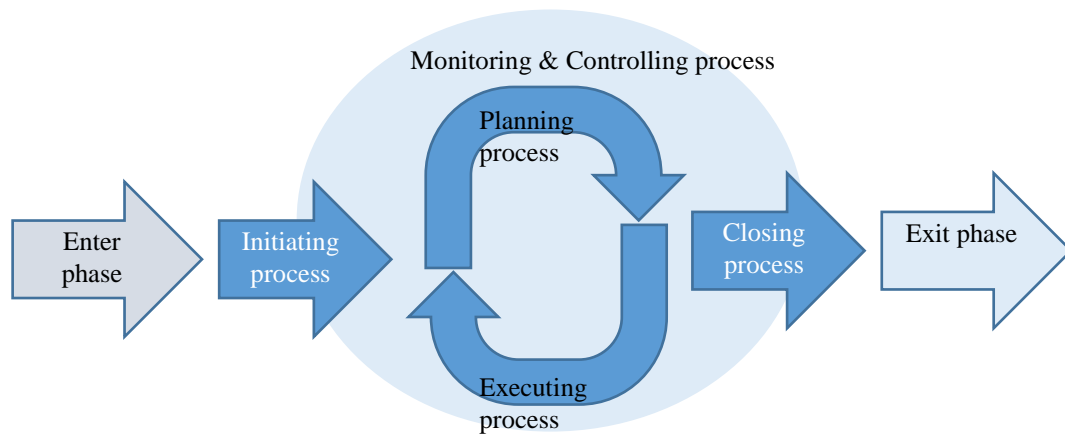


Figure 10 Project Management Methodology (PMI, 2008)

Project Integration Management Knowledge Area (PMI,2008)^v modified with KM Framework (Tjakraatmadja J.H, 2011)

Project Management Process	Knowledge Management Dimension
1. Initiation (develop project charter)	
Project Communication Management: identify stakeholders	Capture and documentation
2. Planning (develop project management plan)	
Project Scope Management : collect requirements, define scope, create WBS	Leadership, rules system
Project Time Management : define activities, sequence activities, estimate activity resource, estimate activity duration, develop schedule	Capture and documentation
Project Management Process	Knowledge Management Dimension
Project Cost Management : estimate cost, determine budget	Reward system, capture and documentation
Project Quality Management : plan quality	Rules system, capture and documentation
Project Human Resource Management : develop human resource plan	Culture, training, organization, leadership, reward system
Project Communication Management : plan communication	Culture, organization, application, technology reliability
Project Risk Management : plan Risk Management, identify risk, perform qualitative and quantitative risk analysis, plan risk response	Capture and documentation
Project Procurement Management : plan procurement	Capture and documentation, monitoring
3. Executing (direct and manage project execution)	
Project Quality Management : perform quality assurance	Rules system, monitoring, capture and documentation, training, leadership
Project Human Resource Management : acquire project team, develop project team, manage project team	Culture, training, organization, leadership, reward system
Project Communication Management : distribute information, manage stakeholder expectation	Organization, culture, application
Project Procurement Management : conduct procurement	Monitoring, capture and documentation
4. Monitoring and Controlling project work	
Project Scope Management : verify scope, control scope	Monitoring, capture and documentation
Project Time Management : control schedule	Monitoring
Project Cost Management : control costs	Monitoring
Project Quality Management : perform quality control	Rules system, monitoring, capture and documentation, training, leadership
Project Management Process	Knowledge Management Dimension
Project Communication Management : report performance	Capture and documentation, technology reliability, application
Project Risk Management : monitor dan control risk	Monitoring, capture and documentation
Project Procurement Management : administer procurement	Monitoring, capture and documentation
5. Closing	
Project Procurement Management (close procurements)	Capture and documentation

Current KM condition in PT MSM based on the comparison between the results of interviews and questionnaires as follows:

Table 11 People Dimension Comparison, 2016

Results from the interview	Results from questionnaire	Compatibility
Lack of leadership	Good leadership	
Inconsistent policies from the supervisor to the builder (less assertive)	Have ability to encourage the employees to perform well	X
Unconducive working environment such as noisy and strict monitoring	unsucceeded yet in creating a conducive working environment	√
Lack of culture of sharing	Lack of culture of sharing	
Lack of sharing knowledge from the employee's experience	Lack of sharing knowledge and experience with coworkers	√
Organization problem	Organization problem	
Lack of communication between one company department to others	Lack of facilities for effective communication among employees	√

The proposed solutions to overcome the problems of people dimension :

- **Leadership.** There is a difference between the results of interview and questionnaire. From the interviews, there are lack of leadership by the supervisor to the builder but from the questionnaire, it identified a good leadership style. This implies that good leadership has already done at the level of top management only and not until the bottom level. Therefore, leaders are not only leading and coaching their employees but also should give encouragement from the bottom level organization as known as Tut Wuri Handayani (The philosophy of Ki Hajar Dewantara). So that the effects can be felt by all levels of employees.
- **Culture.** Most employees in the company are difficult to share their knowledge with their colleagues because they fear of organization competition and will not get anything. Therefore it is necessary to change the existing culture into a culture that is willing to share. A culture that is greatly contributed to motivate individuals to share knowledge, absorb the knowledge and to facilitate the flow of knowledge between source and receiver.
- **Organization.** Lack of communication among employees which one of them caused by lack of support in sharing facilities in the company. The existing office interior is bounded by walls thus it was difficult for the employees to communicate one another. So it should begin with creating open floor plan with no office doors and great deal of meeting space. With the support of conducive working environment, it is expected to create people who are knowledge people sharing knowledge at all level organizations.

Table 12 Process Dimension Comparison, 2016

Results from the interview	Results from questionnaire	Compatibility
Monitoring problem		
Lack of monitoring in project control in term of monthly evaluation	Lack of evaluation on regular basis and the result has not stored properly	√
Capture and documentation problem		
The result of testing commissioning of building material are not stored properly	Existing knowledge is hard to be searched and stored by users	√

The proposed solutions to overcome the problems of process dimension :

- **Monitoring.** 1)Beside asking the supervisor to control the builder in every house projects, the project manager is also involved to check the ongoing project, so that in case of errors can be resolved soon. 2)Make the schedule of job evaluation, so that ongoing projects can be monitored (what percentage has been completed) and also in order to overcome the problems in the workplace. 3)Make a report for evaluation process on regular basis and stored inside the database easily (information sharing). 4)Give reward to the employees to encourage effective monitoring and report.

- **Capture and documentation.** In this case, exit interview has already done by the company. So the problems is lack of facilities to support the knowledge capture and documentation. **1)**Create a facilities to capture the knowledge such as video conference, intranet network, databases that allows a wide range of employees to access the knowledge. When it is stored in this way it can be also used long into the future to assist intakes of new employees. **2)**Provide an information technology such as electronic document (E-library) that is easily to search and stored. **3)**Regular facilitation of internal discussion forum and moderators provided. **4)**Building alumni network which facilitates post retirement knowledge transfer and keep the knowledge stock and flow inside the organization.

Table 13 Technology Dimension Comparison, 2016

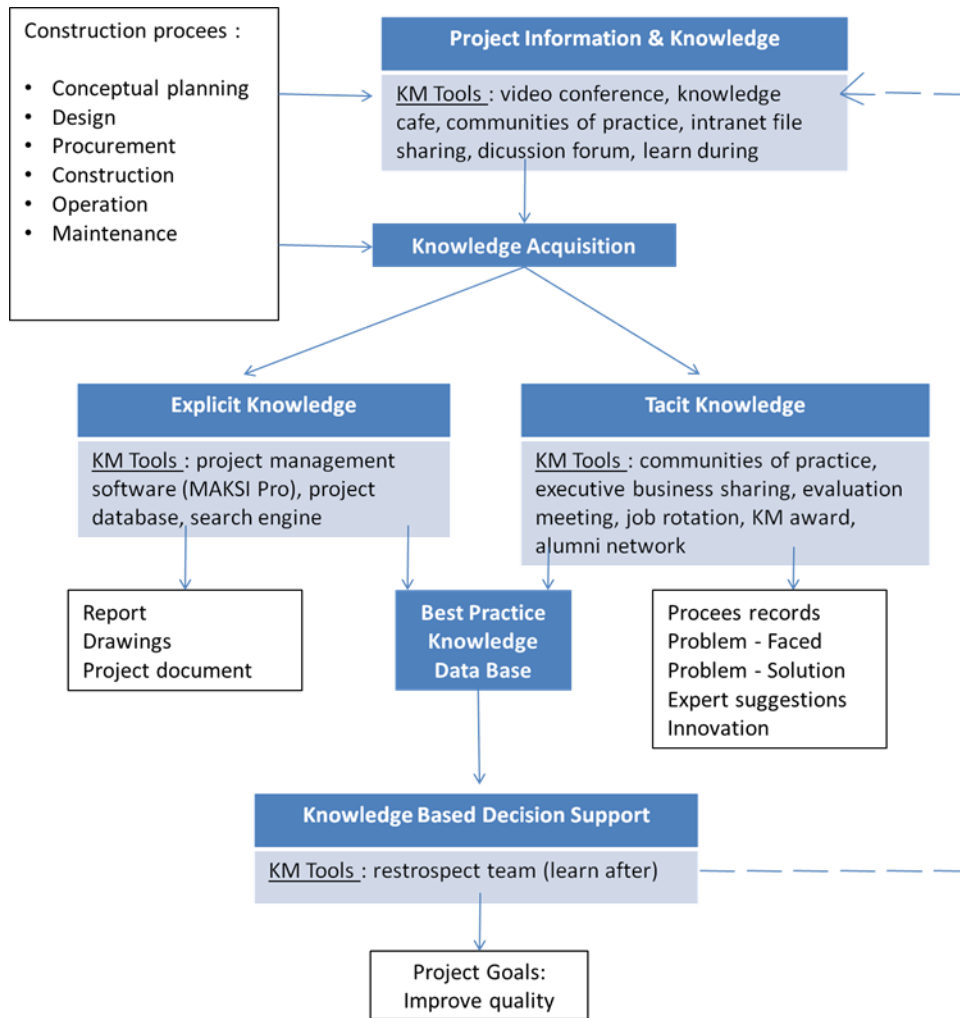
Results from the interview	Results from questionnaire	Compatibility
Unfavourable features		
Some employees are unable to use the new software because they do not accustomed to use it	The feature of new technology is not user friendly and no longer used by employees	√
Lack of reliability		
No LAN system for effective internal data sharing	Ineffective data sharing (search engine)	√
The BOD has not concerned about the important of technology yet	Technology has the lowest point in comparison with people and process	√

The proposed solutions to overcome the problems of technology dimension :

- **Features.** The employees tend to use in conventional ways and do not want to try new technology even it could finish the job more effectively. This may be due a misunderstanding or lack of knowledge about the technology. They need to be training and rewards given to the employees who are using this new software.
- **Reliability.** The internet facility has already available in the workplace but it is still lack of software technology which can improve performance and provide added value or competitive advantage. Then, the company should build intranet (LAN system) and database so that the knowledge can be easily access by all users. In addition, developing virtual teamwork software will also encourage social interaction in the organization without having face to face meeting.

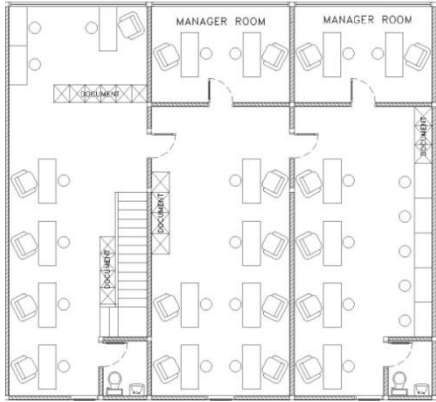
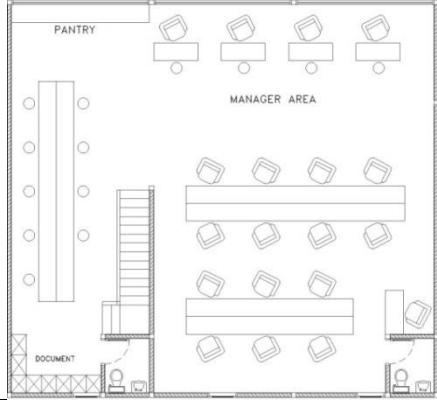
KM Tools for Project Management Process for PT MSM

(Modified from KM Framework Tserng and Li,2004)^{vi}



4. KM implementation proposal

Existing Condition	New KM Proposal
KM Leadership is only on top management	KM leadership at all level in organization (from top to bottom level)
Lack of habit to sharing knowledge Lack of trust between employees	Sharing knowledge as a part of company culture
No reward system for the employees who want to share knowledge	Incentive and reward for employees who want to share knowledge
Inadequate facilities for sharing knowledge	Communities of Practice Knowledge cafe Video conference / Virtual teamwork
Lack of communication across other departments	Job rotation

<p>Interior design of work place that which is bounded by wall</p> 	<p>Open floor plan interior design</p> 
<p>Lack of technology infrastructure Personal folder</p>	<p>Intranet (LAN system) Public folder (effective sharing)</p>
<p>Papersheet document repository</p>	<p>Document Management System Database E-library</p>
<p>Exit interview for the employees who resign from the company</p>	<p>Build alumni network so that we can still keep in touch with the expert alumni</p>

5. KM roadmap

Project	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Technology Enablement																												
Organizational Culture																												
Leadership																												
Technology Development																												
Lesson learned																												
Restrospect																												
Knowledge sharing and collaboration																												
Organizational learning																												
Intellectual Capital Management																												

6. Recommendation and suggestion

According to the analysis above, there are many similarities results of interviews and questionnaires which are interconnected. It can be concluded that knowledge management in the company has not fully implemented properly, especially in terms of culture sharing and technology support. This paper recommends the implementation of KM begins with accustomed to sharing culture. Redesign interior design into open floor plan is an effective ways to knowledge sharing. Company should create new KPI included reward system for knowledge sharing. The second step is the improvement of IT infrastructure that has not been a concern for PT MSM yet. The existing technology applied by PT MSM is only internet speed access. Therefore the next step is setting intranet (LAN system) that can be access easily by all users. This intranet system combines the personal folder with public folder so that it should help user to search and store information data (knowledge). With the proposal of KM implementation above, PT MSM should provide a big investment in knowledge management system, but the result can be perceived in the long term and it gains competitive advantage for the company and sustainable organization.

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