

Effects of Human Capital, Information Technology and Financial Investment on the Employees' Performance and Competitiveness of the Banking Industry in Indonesia

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Abstract-This study aims to analyze the effects of human capital, information technology and human resource investment on the employees' performance and competitiveness of the banking industry in Indonesia. This research is an explanatory or confirmation research, aimed to explain the causality relationship between the above variables through hypothesis testing. Sources of data were from questionnaires distributed to 250 respondents in a Government Bank in Indonesia. The analytical method used is Structural Equation Modeling (SEM). The study found that out of ten hypotheses tested, there are only four of hypothesis are accepted. These four hypotheses are as follows. First, human capital has significant effects on employees' performance. Secondly, employees' performance has significant effect on competitiveness. Thirdly, financial investment has significant effect on competitiveness of banking industry through employees' performance. Fourthly, human capital affects significantly competitiveness through employees' performance. However, the information technology was found to be insignificant in affecting the employees' performance. This finding was different in comparison with the previous studies. Also, it was found that financial investment has no significant effect toward employees' performance. However, to make the employees' performance in a better shape, the bank should give serious attention toward employees' welfare in line with the financial improvement. Finally, given the dramatic changing paradigm of public management (NPM), further research focussing on the development of public sector management on one hand, and the practical importance of public sector business progress in the face of future competition on the other hand are a must.

Index terms- state own enterprises, Banking Industry, human capital, information technology, financial investment, employees' performance and public sector competitiveness.

I. INTRODUCTION

Research related to public sector is crucial to be undertaken. The reason is simply because there is a wide research gap in this area, especially concerning the performance of State Own enterprises (BUMN) in Indonesia. The important concern of the research toward State-Owned Enterprises (BUMN) is due to the facts that these SOEs were considered unproductive, inefficient, lack of innovation, corrupt and lack of high quality of employees (Mahmudi, 2015). The above conditions become particularly not so impressive since SOEs from time to time are never gain significant profits. In 2014, for instance, of 119 SOEs, it was recorded that only 20 of SOEs are able to get profit. This situation was never change in the year 2017. Uniquely, the government in 2017 keeps helping the SOEs by giving equity participation at least to six SOEs (Tempo.com, 2017).

The above non promising performance of SOEs suggests that efforts to improve the SOEs in Indonesia are not an easy task. Reality and expectation are not always in the same line, although there have been many government policy reforms to support the SOEs. Of the many reforms toward the SOEs, the government has issued Bureaucratic Reform in 2007. Through this reform, it was expected both corporate governance and management of the SOEs will improve in a better shape (Moeheriono, 2014). However, the results of this reform are still far from the expectation. Why is this so?

From the personnel communication with the elite parties, it was stated that one main reason toward the failure of bureaucratic reforms in many SOEs was because the leaders in the SOEs are worried to be replaced with others (*homo homini lupus*). Whilst this internal worry seems to be natural, this behavior is certainly unfriendly to dynamics of global change. This is simply because economic globalization demands changes in infrastructure and management instruments toward the growing tight competition.

However, of the many SOEs that have aggressively undertake bureaucratic reforms are the banking industry. One of the Government Banks that showed successful performance was Bank of Mandiri. The establishment of this bank has been the result of the merger of four Banks, namely, Bank Bumi Daya (BBD), Bank Dagang Negara (BDN), Bank Exim Indonesia and Bank Pembangunan Indonesia (BPI). The merger of these four banks into Bank of Mandiri was conducted in October 2, 1998 when there was an Asian Crisis.

The successful performance of the above bank has been due to the following 8 programs. The first is by changing technology platform thoroughly. The second is by establishing information technology system based on the processing of data Straight - Through and Interface for its customers uniformly. The third is by transforming four basic values: culture, sales, alliances and control of bad debts. Fourthly, by reconstructing the company's foundation to promote future growth. The fifth is by expanding business to ensure significant growth in various segments and achieve profit levels that exceed the target market average. Sixth, by redefine the value of corporate culture to become the employee's work manual. Seventh, by setting the vision of this Bank as "Becoming Indonesia's Most Admired and Always Progressive Finance Institution". Finally, by developing an Internal Factor Evaluation Matrix (IFEM) system which is a strategy formulation tool that summarizes and evaluates key strengths and weaknesses in the business functional areas and also provides a basis for identifying and evaluating relationships between these areas.

In short, the Bank industry has made many management changes related to human capital, information technology and financial investments to improve employees' performance and competitiveness. However, the study that examines whether the above variables have direct and significant impact on the employees' performance and competitiveness of the banking industry has not been yet available. For this main reason, this study is aimed to analyze the effects of human capital, information technology and financial investment on the employees' performance and competitiveness of the state-owned bank industry. Before the detail of the results are discussed and analyzed, the following section 2 reviews studies related to this subject matter. Section 3 briefly outlined the research methods. Section 4 discussed and analyzed the results of the study. Finally, conclusion and recommendation are drawn in section 5.

II. LITERATURE REVIEW

The term of human capital was first proposed by an economist named Theodore W. Schultz in 1990 in his work titled "investment in human capital". Schultz defines human capital as "the sum of knowledge, skill, experience and other relevant workforce attributes that reside in an organization's workforce and drive productivity, performance and the achievement of strategic goals"

The luxury of a human capital defined by Schulz describes the level of knowledge, skills, experience and hard work that an employee has in a company that will be able to improve performance. In his theory it is asserted that knowledge and skill are the form of capital that can be done in Western countries where national output is the result of investment from human capital. Man is the unrivaled capital from an abstract and mathematical point of view, but it rarely discussed in the formal core of economic studies. This is due to a lack of confidence at the time that investment in humans is considered important.

Due to the above condition, both of human capital and the production of physical capital goods were then synergized, and the results showed that the output is very extraordinary in that the production of goods increases significantly and the workers no longer depend on the mercy of others. Instead, they can increase their own productivity and at the same time increased their earnings. The increasing productivity of workers automatically increase in the ability of the means of production (workers). In other words, human capital is an investment since it has (1) ability, (2) behavior, (3) effort, (4) time.

Parallel to the above finding, there was also new paradigm on new public management (NPM). Christopher Hood (1991) in his work titled: *A Public Management for All Seasons?* observed that the progress of public sector management today has pushed the world's corporations into an increasingly fierce and open competition arena. Due to this, the thinking of public management has changed substantially in the order of competition. This can be seen from the work of Porter (1985) titled : "Competitive Advantage: Creating and Sustaining Superior Performance. Porter (1985) suggests three competitive strategies as core essence that can be used to gain competitive advantage. The first is an innovation strategy that is to develop products or services that differ from those of competitors. The second is the cost reduction strategy that emphasizes the company's efforts to become a producer with low product price offerings. The third is the quality improvement strategy that gives more priority on offering a higher quality product or service, even though the product is the same as a competitor.

Due to the above empirical findings, studies on the important of human capital grew significantly. Ozge Uygur (2015), for instance, through his study conducted at a school in Hong Kong found two main points in human capital. First, Tacit knowledge, is a silent knowledge in the human mind in the form of intuition, judgment, skill, value, and believe that is very difficult to formalize and share with others. Second, Explicit Knowledge, is knowledge that can be or have been codified in document form, so it can be easily transferred and distributed by using various media like, formula, cassette, cd video, audio product specification and others.

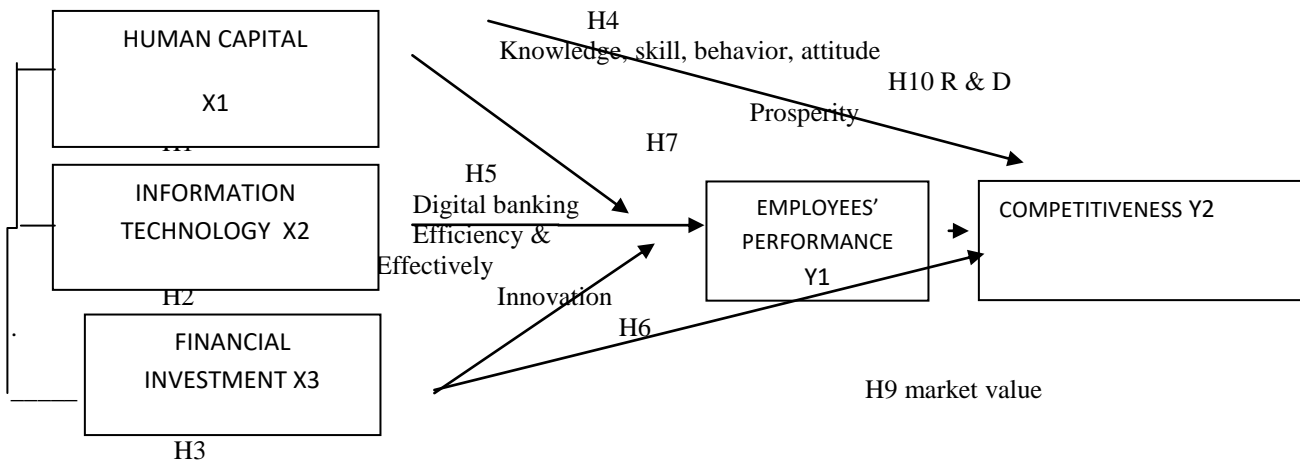
In that context, human capital possessing knowledge and skills is unlikely to work without the support of information technology. Information technology brings together high-speed computing and communications for data, voice and video (Novemy Triyandari Nugroho, 2015). Technology is not just limited to computer technology (hardware and software) used to process data, store information, but it also includes communications to send information.

Furthermore, Purcel and Lee Rainie (2014) found that both large and small companies have used email (61%), internet (54%), Landline phone (35%), Cell or Smartphone (24%), Social networking sites like twitter, face book and linkedin (4%). This shows that digital technology can speed up the work, effectively and efficiently. This means that modern information technology is needed by employees in improving performance. These consequently have increased work performance of the company. These studies suggest that human capital, information technology and financial investment have effects on the employees' performance and competitiveness of the companies under study.

III. RESEARCH METHODS

This research is an explanatory or confirmation research. It aims to examine the effects of human capital, information technology and financial investment on the employees' performance and competitiveness of the banking industry. Sources of data are mainly from questionnaires distributed to 250 respondents in a Government Bank in Indonesia. The analytical method used is Structural Equation Model (SEM) . Note that, before the analysis of SEM was done, tests toward validity, reliability and normality of the research instruments and tests toward the model assumption such as autocorrelation, multicollinearity and heteroscedasticity firstly undertaken. The analytical framework of this study and 10 hypotheses are exhibited at Figure 1.

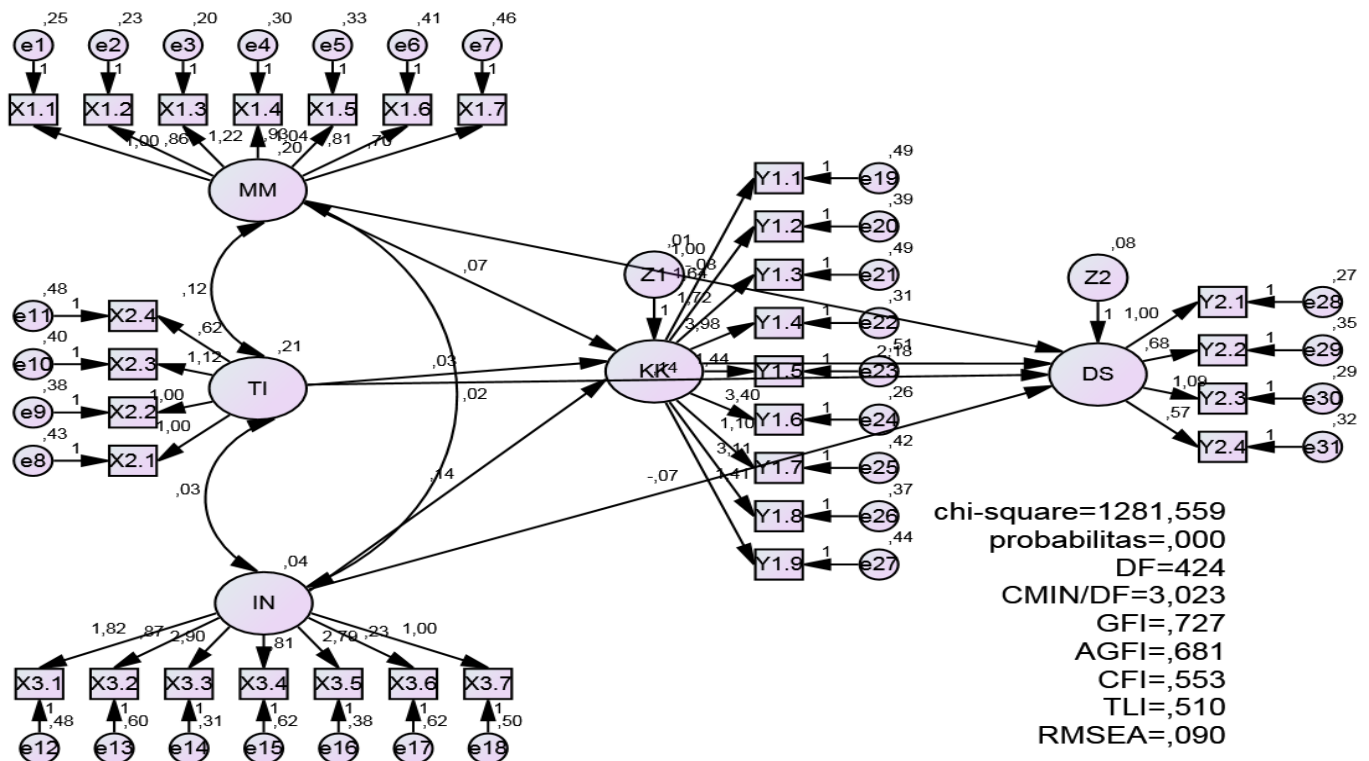
Figure 1. The Analytical Framework of the study and Hypotheses



IV. RESULTS AND DISCUSSION

In estimating the values in the model, the variables estimated are firstly grouped into exogenous variables and endogenous variables. An exogenous variable is a variable where the value is determined outside of the model. While the endogenous variable is a variable where the value is determined through the equation or from the established model. The group of exogenous variables are human capital, technology, and investment, while the endogenous variables are employees' performance and competitiveness. The model is said to be good when the hypothetical model development is theoretically supported by empirical data. The result of complete SEM analysis can be seen in Figure 2 below.

Figure 2. Measurement of early models of variables relationships



The test results shown at Figure 2 above were then evaluated to examine the goodness of fit indices. The evaluation criteria of Goodness fit indices are given at Table 1.

Table 1. Evaluation Criteria of the Goodness of Fit Indices

Goodness of fit Index	Cut-off Value	Model Results*	Description
χ^2 – Chi-square	Expected Small	500,456 < (0,05:424= 1281,559)	Not Good
Probability	≥ 0.05	0.000	Not Good
CMIN/DF	≤ 2.00	3,023	Not Good
RMSEA	≤ 0.08	0.090	Good
GFI	≥ 0.90	0.727	Not Good
AGFI	≥ 0.90	0.681	Not Good
TLI	≥ 0.92	0.510	Not Good
CFI	≤ 0.92	0.553	Not good

Source: Hair (2006), Arbuckle (1997)

From the above evaluation model showed at Table 1, it can be seen that of 8 criteria of goodness of fit indices, it was found that only one model that meet the criteria. However, as the number of samples and indicators in this study are relatively small, it is then important to test the suitability of the model with data through the fulfillment of criteria goodness of fit indices. This can be done by modifying the model. This model modification was done by estimating the correlation between error indicators. Results of analysis after the final model obtained are given at Figure 3.

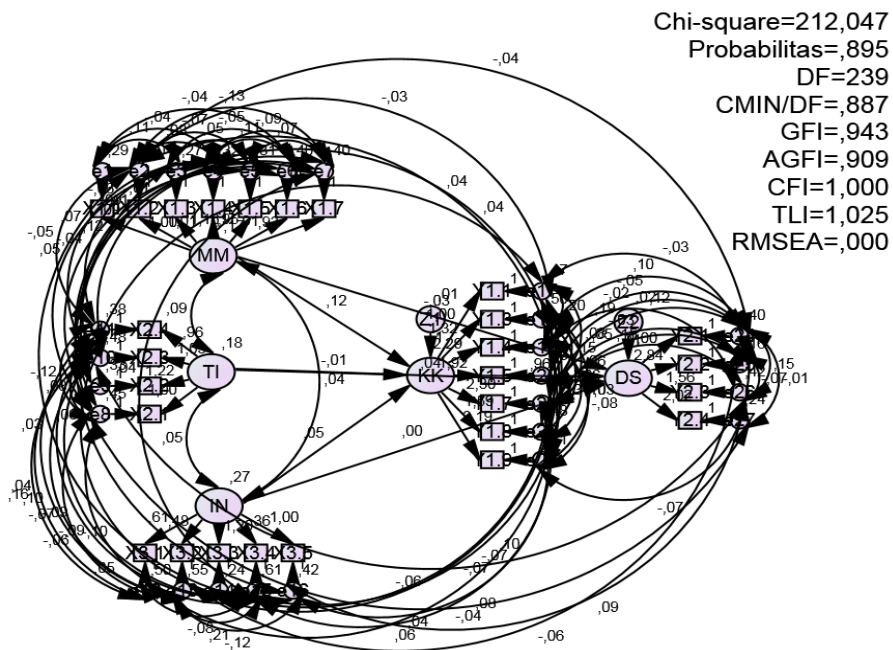


Figure 3. Measurement of final model of variables relationships

The model test results presented in Figure 3 above are then evaluated based on the goodness of fit indices. The results of the estimation are given at Table 2. In Table 2 it can be seen that the eight criteria of goodness of fit indices have all met the criteria. These findings suggest that the model are appropriate to be used for further estimation.

Table 2. Evaluation Criteria of the Goodness of Fit Indices

Goodness of fit Index	Cut-off Value	Model Results*	Description
χ^2 – Chi-square	Expected Small	275,215 > (0,05:239=212,047)	Good
Probability	≥ 0.05	0.895	Good
CMIN/DF	≤ 2.00	0,887	Good
RMSEA	≤ 0.08	0.000	Good
GFI	≥ 0.90	0.943	Good
AGFI	≥ 0.90	0.909	Good
TLI	≥ 0.92	1,025	Good
CFI	≥ 0.92	1,000	Good

Source: Hair (2006), Arbuckle (1997)

Based on the above findings, the hypothesis can then be further tested by testing the path coefficient in the structural equation model. The significant test of the variables is done by examining the value of p value. If the value of p value is less than 0.05 or 5% then the relationship between variables is significant. The results of hypothesis testing are presented at Table 3.

Table 3. The Results of Hypothesis Testing of the Model

Code	Independent variable	Dependent variable	Direct Effect			
			Standardized	CR	p-value	Description
H1	Human Capital	Employee Performance	0,142	2.216	0.034	Accepted
H2	Technology	Employee Performance	-0,027	-0.507	0.612	Rejected
H3	Investment	Employee Performance	0,053	1.338	0.181	Rejected
H4	Technology	Competitiveness	0,048	0.961	0.337	Rejected
H5	Investment	Competitiveness	0,035	0.825	0.409	Rejected
H6	Human Capital	Competitiveness	-0,008	-0.149	0.882	Rejected
H7	Employee	Competitiveness	0,658	1.975	0.048	Accepted

	Performance				
Code	Independent variable	Dependent variable	Indirect Effect		Information
			Intervening variable	Standardized	
H8	Technology	Competitiveness	Employee Performance	-0.042	Rejected
H9	Investment	Competitiveness	Employee Performance	0.100	Accepted
H10	Human Capital	competitiveness	Employee Performane	0.209	Accepted

Source: calculated from the survey data.

As it can be seen at Table 3 that of 10 hypothesis tested, there were 6 hypothesis rejected. The details of the results of hypothesis testing are as follows.

- 1) Hypothesis H1 was Accepted. This was shown from the critical value of 2,216 which is greater than the limit of 1.96 at 5 percent level. The value of p was also less than 5 percent. These mean that human capital will affect the employees’ performance. The coefficient of the human capital was 0.142. This coefficient indicates that with the increase in human capital it will improve employees’ performance by 0.142. Thus there is no doubt to accept the truth that human capital has a positive and significant effect on employees’ performance.
- 2) Hypothesis H2 was Rejected. This is shown from the critical value of -0.507 which is less than the limit of -1.96. Also, it can be seen from the p-value of 0.612 which is greater than 0,05. This suggests that information technology does not affect the employees performance. This finding is surprising since information technology does not have any significant effect to employees’ performance.
- 3) Hypothesis H3 was also rejected as both the critical value and p value were not significant at 5 percent level. The critical values was 1.338 which is greater than the limit of 1.96, while p-value was 0.181 which was greater than 0,050. Like the information technology, financial investment does not have any effect on employees’ performance.
- 4) Hypothesis H4 was rejected. This again suggests that information technology does not have any effect on the competitiveness of the banking industry under surveyed. The critical value was 0.961 which is greater than 1.96 at 5 percent significant level and the p-value value was 0.337 which is greater than 0.050. Thus, information technology has insignificant effect on employees’ performance.
- 5) Hypothesis H5 was rejected since the critical value was 0.825 which is smaller than the limit value of 1.96. Also, the p-value was 0.409 which is greater than 0.050. Thus, there is no significant effect of financial investment on competitiveness.
- 6) Hypothesis H6 was rejected. The critical value was -0.149 which is smaller than the limit value of 1.96. Also, p-value was 0.882 which was greater than 0,050. This suggests that human capital has insignificant effect on competitiveness.
- 7) Hypothesis H7 was accepted since the critical value was 1.975 which was greater than the limit value of 1.96. Also, the p-value value was 0,048 which is less than 0,050. This indicates that the improvement of employees’ performance will increase competitiveness of the bank under surveyed. Thus, employees’ performance has significant effect on the competitiveness of the SOEs.
- 8) Hypothesis H8 was rejected as the value of standardized was -0.042 which means it has weak effect. Therefore, information technology has no effect on competitiveness through employees’ performance.

9) Hypothesis H9 was accepted since the standardized value of 0.100 which means a strong influence. The coefficient also shows a positive positive sign which means that the increased of investment, it will increase competitiveness through employee performance. Thus, investment has an effect on competitiveness through employees' performance.

10) Hypothesis H10 was accepted as shown from the standardized value of 0.209 which means it has a strong influence. The coefficient shows a significant positive sign which means that the increase in human capital. it will increase competitiveness through employees' performance. Thus, human capital affects competitiveness through employees' performance.

V. CONCLUSION AND RECOMMENDATION

This study found that out of ten hypotheses tested, there are only four of hypothesis are accepted. These four hypothesis accepted are as follows. First, human capital has significant effects on employees' performance. Secondly, employees' performance has significant effect on competitiveness. Thirdly, financial investment has significant effect on competitiveness of banking industry through employees' performance. Fourthly, human capital affects significantly competitiveness through employees' performance.

These findings were in line with the previous studies. Ozge Uygur (2005), for example, suggests that human capital has effect on employees' performance. This is because the improvement of human capital will lead to an increase in knowledge, skill, ability and competence. This further will have a direct influence on employees' performance.

The information technology was found to be insignificant in affecting the employees' performance. This finding was different in comparison with the previous studies. However, this study's finding was not so surprising since the Bank industry under studied has limited ability to apply modern technology due to budgets constraint. As a consequence, knowledge and skills of employees were worn out and these makes low employees' performance and weakens its competitiveness. Thus, further concern toward the application of information technology is a must.

A similar concern needs also to be given toward financial investment. While this variable has no significant effect toward employees' performance, financial investment is very much important since it improves the capital structure and the company's financial cashflow. As Aulia Pohan (2012) found that the capital structure is necessary for banks to be more liquid and able to mitigate the possibility of risk of monetary crisis. In short, if the company's financial performance increases, it will encourage increased competitiveness. However, to make the employees' performance in a better shape, the bank should give serious attention toward employees' welfare in line with the financial improvement.

Finally, given the dramatic changing paradigm of public management (NPM), further research focussing on the development of public sector management on one hand, and the practical importance of public sector business progress in the face of future competition on the other hand are a must.

REFERENCES

- [1] Arbuckle & James. L. (1997) Using Amos 7.0 User's, Chicago, iL :SPSS, Inc.
- [2] Anonimous, (2015) Investasi: Reach New Heights, 70 Tahun Indonesia Merdeka, Edisi Kemerdekaan, Penerbit BKPM.
- [3] Augusty, (2005) Metode Penelitian Manajemen: Pedoman Penelitian untuk skripsi, tesis dan disertasi ilmu manajemen, Badan Penerbit Universitas Diponegoro, Semarang.
- [4] Charles W. Mulford & Eugene E. Comiskey, (2002) dalam Aurolla Saporini Harapah & Yudith Dwi Anggraeni, (2010), Penerbit PPM, Jakarta.
- [5] Fonseka M.M, et al, Does Accessibility to Different Sources of Financial Capital Effect Competitive Advantage and Sustained Competitive Advantage? Evidence From A Highly Regulated Chinese Market, August, 2003.
- [6] Gujarati, (1997) Statistik Ekonometri, Penerbit Bumi Aksara, Jakarta.
- [7] Hall. H. Bronwyn (1998) Effect of Technology and Innovation on Firm Performance, Employment and Wages, Journal Econ,Innov, New Techno, Vol.5,pp 99-107.
- [8] Hood Christopher, (1991) A Public Management for All Seasons? Oxford University Press.
- [9] Hair (2006) , Multi Variate Data analysis With Reading, Mac Milln Pub, Company, New York.
- [10] Hughes O.E, (1998), Public Management and Administration: A Introduction, Second Edition, Macmillan Press.
- [11] Hasta Lukita, Harry Justron, (2011) Ilmu Pengetahuan dan Teknologi Dalam Pembangunan Sosial Ekonomi Bangsa, Penerbit Suara Bebas, Jakarta.

- [12] Kementerian BUMN, (2016) 20 BUMN Pencetak Profit.
- [13] Mahmudi, (2015) Manajemen Kinerja Sektor Publik, Edisi Ketiga, UPP STIM YKPN.
- [14] Porter E. Michael (1985) Competitive Advantage: Creating and Sustaining Superior Performance, New York Published.
- [15] Porter E. Michael (1985) Competitive Advantage: Creating and Sustaining Superior Performance, New York Published.
- [16] Pohan Alia, (2008) Kerangka Kebijakan Moneter dan Implementasinya di Indonesia, Penerbit PT Raja Grafindo Persada, Jakarta.
- [17] Purcel Kristen and Lee Rainie, (2014) Technology's Impact On Workers, Pew Research Center: Internet, Science and Tech.
- [18] Ozge Uygur, (2005) The Impact of Human Capital on Employee Compensation and Pay Performance Sensitivity, Journal : Academy of Business Research, Vol.I, 2013, P 105-122.
- [19] Schultz W. Theodore, (1990) Human Capital: A Theoretical and Empirical Analysis With Special Reference to Education, The American Review, Vol.51, No.1.
- [20] Schultz W. Theodore, (1998) The Economic Value Of Education, University of Chicago Press.
- [21] Sima Ajam and Raziyah Chadegani, (2014) The Effect of Applying Information Technology on Job Empowerment Dimensions: economic and business, J. Educ Health Promote, August, 28.
- [22] Sabah Agha, et al, (2012) Effect of Core Competence on Competitive Advantage and Organizational Performance, January.
- [23] Sene Sefer, Ercan Saridogan, (2005) The Effect of Science – Technology Innovation on Competitiveness and Economics Growth, Third Edition, A joint Publication of OECD and Eurostat.
- [24] Sugiyono, (2009), Metode Penelitian Kuantitatif/Kualitatif dan R&D , Penerbit Alfabeta, Bandung.
- [25] Sujarweni V. Wiratma & Poly Endrayanto, (2012) Statistik Untuk Penelitian, Edisi I, Graha Ilmu, Yogyakarta.
- [26] The Research Paper Factory, (2014) Effect of Technology Change on Employee Performance in Organizations: A case Study of MOI University.
- [27] Wiyono, (2011) Pendidikan Inklusif (Bunga Pemikiran Education for All) Jurnal, Malang: Universitas Negeri Malang.
- [28] <http://Bank.Mandiri>, 2016.