

How Intellectual Capital Effects Firm's Financial Performance

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Abstract. This study examined the effect of intellectual capital on the financial performance of the company. Independent variables consisted of structural capital efficiency (SCE), human capital efficiency (HCE), capital employed efficiency (CEE) control variables used in this research are the size and leverage. The population of this study are non-financial companies listed on the Indonesian Stock Exchange. Samples were selected using purposive sampling method and obtained 232 companies. Results showed that HCE has negative effect on the financial performance, SCE has significant positive effect on financial performance, and CEE has significant positive effect on financial performance. The limitation in the study is sample that are used only limited to the non-financial sector companies listed on the Indonesia Stock Exchange. Future studies are expected to use other measurements to measure intellectual capital and value of the company, and further research is also expected to increase the research data and select other industrial sectors.

Keywords: structural capital efficiency, human capital efficiency, capital employed efficiency, performance

Introduction

In the modern era of business competition, it takes the right skills by company stakeholders to attempt to repair and improve its performance in order to survive and continue its business. Increased competition among companies as well as the strategies that made parties to make the company must begin to make changes to the strategic direction of the business by starting to reorganize the management of knowledge so that companies can survive and dominate the market. Suwarjono (2013) stated that the prosperity of the company will depend on a transformation of creation and capitalization of knowledge itself, along with the increasing competition between businesses that need their awareness of the importance of knowledge resources as a source of corporate wealth.

According Haradian (2011), progress in the era of competition, as now require businesses to develop a knowledge-based economy gained from innovation to deliver added value characterized by increased investment company. Companies should be able to

make knowledge as a major capital companies to be able to survive with the current competitive situation. Choo (2009) stated that the company's ability to compete begins with managing the resources and the knowledge-based organizations that form the basis of competence for the organization can continue to thrive, namely the concept of intellectual capital.

Santos et al. (2011) found some companies that exist today have not been able to find more value to the companies they lead, so it requires companies to be able to manage resources in order to stay ahead among its competitors, the company is able to develop and renew intangible assets will have the ability to create more value in order to increase the wealth of the company. According to Sullivan (2000), as has been known to the company must define intellectual capital as a form of technology is an important source for the company. According to Michael (2001) intellectual capital is an asset in a knowledge-based company that can affect the development and excellence of the company. According to Nahapiet (1998), intellectual capital refers to the knowledge and skills possessed by

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a social collectivity, as an organization, intellectual community, or professional practice. Farrier (2000) argument that intellectual capital can also be defined as the sum of what is produced by the three main elements of the organization with regard to knowledge and technology that can provide more value for the company in the form of competitive advantage of the organization.

Pulic (2008) stated that value added intellectual capital (VAIC) is used to measure the value of a company and the intellectual as a value-added enterprise. Value added intellectual capital has three categories of what we often call value added capital employed (VACA), value added human capital (VAHU), and structural capital value added (STVA).

The study determine whether the intellectual capital affect the value of a company located in Indonesia. This study refers to an earlier study conducted by Fatimah (2015) examined the intellectual capital with a sample of Islamic banking in Malaysia in 2008-2010. The variables used to measure performance are ROA and ROE and the results show that the efficiency of intellectual capital in Islamic banks has the potential to increase the profitability of banks in order to improve the efficiency of intellectual capital that can be profitable and still has an advantage in competing.

Research conducted by Ahangar (2011), which examines the relationship between intellectual capital and financial performance in one of the business enterprise in Iran for 30 years 1980-2009. The analytical method used is multiple linear regression and the results showed that human capital has a strong relationship with the company's financial performance.

Zulyati (2012) which examines the intellectual capital that affect the performance of the company by using ROE, and ROI on the manufacturing sector in Indonesia. The results show that human capital more efficiency has a significant correlation with financial performance in manufacturing companies, but the other two components of human capital, structural capital also has a significant relationship with financial performance.

The difference of this study with previous research that the researcher Fatima (2015) only focus on researching in the Islamic banking sector in 2009-2010 and the variables used to measure performance is return on assets (ROA) and return on equity (ROE). While the current study used a sample of non-financial companies listed on the Indonesia Stock Exchange in 2013-2014.

Literature Review

Stakeholder Theory

A theory maintaining corporate relationships of all stakeholders are considered important and this relationship is strengthened by Freeman (1984) which states that stakeholder is any group or individual who can affect or be affected by the achievement of the goals of an organization. Assumptions stakeholder theory is built on the basis of a statement that the company developed into a very large and are highly correlated and watch company, so the company needs to demonstrate accountability and responsibility more broadly and is not limited only to the shareholders. This means, companies and stakeholders to form relationships of mutual influence, this theory maintain stakeholder relationship that includes all forms of relationship between the company and all its stakeholders, as well as to minimize possible losses for stakeholders (Randa and Solon, 2012).

Resource based Theory

Resource usage-based theory (RBT) in intellectual capital because want to see relevant existing resources within the company one of them if there are significant intellectual capital to financial performance or there is a contribution to the company's financial performance. Nothnagel (2008) alludes whether a company has the resources or capability that is also owned by other companies who are competitors, the resource heterogeneity and resource immobility. Resource heterogeneity (also called resource diversity) alludes whether a company has the resources or capability that is also owned by other companies who are competitors Barney (1991) states that the resource-based theory covers all assets, capabilities, organizational processes, information, knowledge, and others are controlled by companies that allow companies to understand and implement strategies to improve the efficiency and effectiveness of the company to have a good long-term performance, so that the resources owned durable and not easily imitated, and replaceable.

Value Added Intellectual Coefficient

Performance of intellectual capital is the process of value creation generated by human capital by using existing physical resources. Human capital cannot do anything without their physical capital. So that human

capital, structural capital and capital employed together-were needed in the value creation process. Intellectual performance in this study was measured by value added intellectual coefficient. Value added intellectual coefficient is a method developed by Pulic (2008) to provide information about the value creation efficiency of tangible assets and intangible assets owned by the company.

Intellectual Capital

There are a few existing literature is very diverse. According Nahapiet et al. (1998), one asset intangible that is very important in the era of information and knowledge is intellectual capital, which refers to the knowledge and capabilities of an organization, or a professional practice, intellectual capital represent valuable resources and ability to acts that are based on knowledge. Anatan (2004) stated that the model of intellectual capital originally started in the 1980s with the advent of the shift from production-based to service-based economy and to knowledge. Sawarjuono and Kadir (2003) defines intellectual capital as the sum of which is generated by three main elements contained in intellectual capital which are human capital, structural capital, capital employed and costumer capital if these elements can be put to good use the knowledge that is able to contribute or contribute can add value and different usage for the company.

Return on Assets and Return on Equity

ROA and ROE are ratios that used to measure a company's profitability. Profitability reflected on how efficiently the company's net income from its assets. ROE is obtained by dividing net income by total equity of the company. The higher the ROA, it means that the company can generate greater revenue, but with a smaller investment Chen et al. (2005). ROA is obtained by dividing net income by total assets of the company. The higher the ROA, it means that the company can generate greater revenue, but with a smaller investment Chen et al. (2005).

Firm Size

The size of the company explains on a scale where the size of the company can be classified in various ways, namely total assets, log size, and the stock market value (Suhermin, 2014). The greater the total assets, sales and market capitalization are, the greater

the size of the company. The size of the company is also a number of different capacities or capabilities of the company, a variety of services that can be provided to customers. Company size is a major factor in determining profitability, company size using the concept of economies of scale. The profitability of the company determines the success of the company in performance of operation.

Leverage

Leverage is the amount of the company's assets that financed by debt. The level of leverage ratio can be determined by comparing the total debt to total assets (Suhermin, 2014). Leverage refers to the debt of the company, the source of funds the company can be divided into two funding sources of internal and external funding sources. The leverage ratio consists of two kinds of debt to equity ratio which is calculated on the total debt divided by shareholders' equity and the ratio of debt to total assets is calculated on the total debt divided by total assets.

Previous empirical research provides empirical evidence of the intellectual capital on the financial performance of companies found mixed results in each study. Fatimah (2015) examined the intellectual capital with a sample of Islamic banking in the country of Malaysia in 2008-2010, variables used to measure performance are ROA and ROE and the results show that the efficiency of intellectual capital in Islamic banks has the potential to increase the profitability of banks in order to improve the efficiency of intellectual capital that can be profitable and still has an advantage in competing.

Arya (2011) indicates that there is positive effect from intellectual capital on the financial performance of the company. The empirical evidence of this study states that human capital, structural capital and ROA is an indicator of significant intellectual capital and financial performance.

Research conducted by Ahangar (2011), which examines the relationship between intellectual capital and financial performance in one of the business enterprise in Iran for 30 years 1980-2009. The analytical method used is multiple linear regression and the results showed that human capital has a strong relationship with the company's financial performance as measured by ROA.

Rehman et al. (2011), which examines the performance of intellectual capital and the impact on company performance ROE, and ROA manufacturing sector in Pakistan. The results show that human capital

more efficiency has a significant correlation with financial performance in manufacturing companies, but the other two components of structural capital efficiency, human capital efficiency, capital employed efficiency also has a significant relationship with financial performance.

Chen et al. (2005) conducted a study of intellectual capital by using a sample of listed companies in Taiwan, the results of this study indicate that the 28 structural capital efficiency, human capital efficiency, capital employed efficiency are positively related to financial performance. It was further added by Mariya et al. (2012) which provides empirical evidence that is based on specific industry shows that the efficiency of structural capital, human capital efficiency, and capital employed efficiency significantly influence the ROA and ROE.

Research Framework

Based on the review of the literature that has been described can be seen that almost all previous studies stating that intellectual capital has a significant influence on the company. Strengthened by the study of stakeholder theory that stated the stakeholder is any group or individual who can affect or be affected by the achievement of the goals of an organization. Assumptions stakeholder theory is reinforced also by the resource-based theory by Barney (1991) which states that all assets, capabilities, organizational processes, information, knowledge, and others that are controlled by the company to understand and implement strategies to improve the efficiency and effectiveness of the company's which have a good long-term performance, so that the resources owned durable and not easily imitated, and replaceable, built on the basis of a statement that the company developed into a very large and are highly correlated and watched the company.

The theory that has been described above is instrumental in intellectual capital because in order to implement the strategy in a competitive business today companies should be able to utilize and streamline all elements within the company, so bring added value to prospective stakeholders, so that the company and prospective stakeholders to form relationships interplay.

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states that all assets, capabilities, organizational processes, information, knowledge, and others that are controlled by the company to understand and implement strategies to improve the efficiency and effectiveness of the company have a good long-term performance, so that the resources owned durable and not easily imitated, and replaceable, built on the basis of a statement that the company developed into a very large and are highly correlated and watched the company.

Human Capital Efficiency Effects on Financial Performance

Human capital reflects the company's collective ability to produce the best solution based on the knowledge of people who are in the company (Sawarjuwono and Kadir, 2003). How companies manage human capital that provides training programs, salaries, and benefits on the other side of creativity and experience have had able to create a competitive advantage. The better a company manages its resources better the productivity of assets in generating net income. Ahangar study (2011) showed that human capital efficiency positive effect on company performance.

H1: Human capital efficiency (HCE) effects on financial performance

Structural Capital Efficiency Effects on Financial Performance

Companies that are able to manage organizational resources properly will create competitive advantage by stressing the ability of the company and the structure that supports employee efforts to generate intellectual capital that is optimal, suggesting that the improvements in the company in utilizing intellectual capital owned by the company can increase the level of profitability companies and investor confidence. Fajarini and Firmansyah (2012) the management of structural capital efficiency that would increase income from assets that are measured by the company's financial performance. Research conducted shows that structural capital efficiency positive effect on financial performance.

H2: Structural capital efficiency (SCE) effects on financial performance

Capital Employed Efficiency Effects on Financial Performance

Capital employed efficiency illustrates the company's ability to manage resources in the form of capital assets which, if managed properly will improve the company's financial performance. Research Rehman et al. (2011), which examines the performance of intellectual capital and the impact on company performance ROE, and ROA manufacturing sector in Pakistan. The results show that human capital more efficiency has a significant correlation with financial performance in manufacturing companies, but the other two components of structural capital efficiency, human capital efficiency, capital employed efficiency also has a significant relationship with financial performance.

H3: Capital employed efficiency (CEE) effects on financial performance

Chen et al. (2005) stated return on assets is a ratio used to measure a company's profitability. Profitability reflected on how efficiently the company's net income from its assets, reflecting the business benefits and efficiency in the utilization of total assets. Return on equity is a profitability ratio that relates to investment gains, ROE measures how much profit is generated by a company of shareholders Vanhome (1989).

The independent variables to be taken in this study is a model Pulic (2008), i.e. value added intellectual capital (VAIC) has three components, structural capital efficiency (SCE), human capital efficiency (HCE), capital employed efficiency (CEE).

$$VAIC = CEE + HCE + SCE$$

$$CEE = \frac{VALUE\ ADDED}{CAPITAL\ EMPLOYED}$$

$$HCE = \frac{VALUE\ ADDED}{HUMAN\ CAPITAL}$$

$$SCE = \frac{STRUCTURAL\ CAPITAL}{VALUE\ ADDED}$$

Control variables are variables that are controlled or are made so that the effect on the dependent variable, cannot be influenced by external factors not examined. The control variables in this study, there are two that leverage and size (Weston & Brigham, 2000).

$$Size = \text{Natural Logarithm of Total Asset}$$

Leverage is the amount of the company's assets which are financed by debt. The level of leverage ratio can be determined by comparing the total debt to total assets (Suhermin, 2014). Leverage refers to the debt of the company. Researchers made the leverage as control variables based on research done by Iranmahd, et al. (2014).

Research Design

The data used are secondary data from the financial statements of the company and the type of data in the form of a ratio. The research data was taken at the Indonesia Stock Exchange (IDX). The objects of this research are non-financial companies listed on the IDX which have the annual report and annual financial statements from 2013 to 2014 period. Companies in the financial sector, comprising banking, insurance, leasing and investment or financial services, is not used in this study, because the company is highly regulated.

Sampling method in this research is purposive sampling method in which the sampled companies meet the necessary criteria, non-financial companies listed on the IDX 2013-2014 study period of one year, the fiscal year end of the annual financial statements December 31, it is to maintain the uniformity of the samples and analysis company that uses rupiah in the financial statements do not experience negative ETR during the study period from 2013 to 2014 the company has a complete data needed by researchers.

Data collection techniques used in this study is the archive data collection techniques by using the technique of collecting data in the database to obtain secondary data such as financial statements of non-financial companies listed on the Stock Exchange in 2013-2014. Other necessary supporting data in the study was obtained from books, articles, internet, and other resources to complete the research data.

Results and Discussion

Companies that the population in this study includes the company's non-financial sector, with the total of all companies listed on IDX Fact Book 2014 as many as 515 companies. The entire populations of non-financial sector in the period of 2014 are 428 companies. The amount obtained after eliminating companies that were in the financial sector, including the banks sector with a number of 41 companies,

financial institution sector of 15 companies, securities companies sector of 10 companies, insurance sector of 11 companies, and investment fund of 10 companies.

Sample were selected by purposive sampling method, with the criteria that must be met in this research, the company published complete annual report per December 31, 2014, and the company presents financial statements using the currency of rupiah. The results of companies that do not publish annual reports until December 31, 2014 as many as 25 companies, companies that do not present a financial report with the currency of rupiah as many are 85 companies, and companies that suffered losses as many as 86 companies. The final result of the sample selection this study found 232 companies that had complete data for one year.

HCE has an average of 2.85 which indicates that non-financial companies in Indonesia use the value obtained as the capital structure of the company amounted to 2.85. HCE variable standard deviation of 1.76, for a minimum value of the variable HCE was 0.12 which showed the lowest value for HCE, while the maximum value of the company is 7.64 which indicates the use of the highest value obtained by the company.

The independent variable SCE has an average of 0.52, which means the average non-financial companies issued the wages of employees amounted to 0.52 for each additional value given by the product. The standard deviation for this variable by 0.27, for the minimum value of the variable SCE was 0.00 which showed the lowest value of the efficiency of structural capital, while the maximum value of 0.89 which showed the highest efficiency value for structural capital.

ROA has an average of 0.06 which indicates that any net income derived from the company's assets amounted to 0.06. Standard deviation of ROA is 0.04, for a minimum value of ROA is 0.00 while the maximum value of ROA is 0.19. ROE has an average of 0.12 which shows the average non-financial companies in Indonesia using the capital of 0.12 for any profits earned. ROE has standard deviation of 0.08. The minimum value of ROE is 0.00 while the maximum value of the company is 0.33.

Control variables in this study are size has an average of 28.38 which indicates the average non-financial corporations in Indonesia has total assets of 28.38. Size variable has standard deviation of 1.58. The minimum value of the size is 23, while the maximum value of the size is 32.36. Leverage has an average of 0.44 which indicates that any debt of the company guaranteed by the company's assets

amounted to 0.44. The value of the variable leverage has standard deviation of 0.21. The minimum value of the variable leverage is 0.00, while the maximum value of the variable leverage is 0.95.

Table 1 Hypotheses Test

Variable	HCE	SCE	CEE	
ROA	Coeff.	0.003	0.019	-0.022
	t-stat.	1.908	1.810	-3.292
	Prob.	0.058	0.72	0.001***
ROE	Coeff.	0.006	0.037	-0.042
	t-stat.	2.246	1.989	-3.362
	Prob.	0.026***	0.048***	0.001***
Significant	*p < 0.1, **p < 0.05, ***p < 0.01			
Samples	216			

The HCE does not affect the ROA with a probability value of 0.058 (sig > 0.05). This means that for any company to lower or raise the cost of human capital with the aim to add value to the company's products will not affect the company's financial performance as measured by ROA. The HCE has positive effect on ROE with a probability value of 0.026 (sig < 0.05). This means that the larger the company uses a cost to human capital with the aim to add value to the company's products will improve the company's financial performance as measured by ROE.

The SCE does not affect the ROA with a probability value of 0.72 (sig > 0.05). This means that for any company using the value obtained by the company to improve the structural capital will not affect the financial performance as measured by ROA. The SCE has positive effect on ROE with a probability value of 0.048 (sig < 0.05). This means that the companies use the value obtained by the company to improve the structural capital will increase the company's financial performance as measured by ROE.

The CEE has negative effect on ROA with a probability value of 0.001 (sig > 0.05). This means that the larger the company uses capital employed to value the company's products will reduce the company's financial performance as measured by ROA. The CEE has negative effect on ROE with a probability value of 0.001 (sig > 0.05). This means that for any company uses capital employed to value the company's products will lower financial performance as measured by ROE.

Conclusion

The study investigate the effect of intellectual capital on the financial performance of the company. This study uses the independent variable efficiency of

human capital, structural capital efficiency and capital employed as the measurement for the efficiency of intellectual capital, while the dependent variable using ROA and ROE as a measure of financial performance. This study includes the control variables are firm size and leverage. The observation period of this study is 2014. The samples of companies in this study are 232 non-financial sector companies are eligible to be sampled.

Human capital efficiency has no effect on ROA, however HCE positive effect on ROE. This means, the use of human capital to add value to the product generated more influencing the use of equity than the use of assets to earn profits for the company. More companies use the equity for human capital is one component of capital for the company in the form of intellectual capital.

Structural capital efficiency has no effect on ROA, but positive effect on ROE. This means, the use of the results of value-added products to enhance the structural capital has more influence on the increase in corporate profits from equities compared to that obtained from the asset. This increase in equity can occur because of structural capital is also one component of capital for companies such as human capital in the form of intellectual capital.

Capital employed efficiency affect the company's ROA and ROE. These results indicate that the use of capital employed for adding value to products made only affect the profit decline resulting from the company's equity and assets. This can happen due to capital employed is the entire capital, including capital assets and equity, which is used by companies to make a profit in its operations so that the increase in capital employed in the enterprise can be a bad influence in gaining profit.

This study has some limitations that are expected to be improved in future studies. The limitations in this study is the sample used is only limited to the non-financial sector companies listed on the Indonesia Stock Exchange in 2014 which had a number of relatively limited sample is 232 companies, so the results cannot be generalized to companies engaged in the financial sector.

According to the research conducted by the researchers, the advice that can be given is as follows: Firstly, suggested the need for other measurements to measure intellectual capital and corporate value in companies. Second, further research is expected to increase the sample used and also the study period is longer. Based on the results obtained, the implications of this research are companies expected to better manage intellectual capital. Good management of

intellectual capital which may affect the financial performance and how companies can make a profit.

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