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The Roles of Dynamic Capability in Moderating Intellectual Capital Effect on the Performance of Public Companies in Indonesia

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This study aims to examine the roles of Dynamic Capability as a moderating variable in strengthening the influence of intellectual capital on the performance of companieslisted on the Indonesia Stock Exchange in 2011-2013. Purposive sampling method was usedto determine the samples and the data then was analysed by regression analysis tools.
The independent variable in this study is Intellectual Capital,proxied withHuman CapitalEfficiency, Structural Capital Efficiency and Capital Employed Efficiency. Thedependent variable in this study is Corporate Performance, proxied withReturn onAssets, while the moderate variable is Dynamic Capability proxied with atotalcostofresearchanddevelopment.
The results showed that there was a positive effect between Human Capital Efficiency and Capital Employed Efficiency to Company Performance. However, this study failed to prove the positive influence of Structural Capital Efficiency for Corporate Performance. The study also proved the role of Dynamic Capability as a variable to strengthen the influence of Human Capital Efficiency of the CompanyPerformance, but failed to prove that Dynamic Capability has a role in strengthening the influence of Capital Employed Efficiency and Structural Capital Efficiency toward Company Performance.

Keywords: Intellectual capital, Dynamic Capability and performance of the company.

1. INTRODUCTION

The growing global economy has led to a variety of new industries based on knowledge. The change turns the business world from an economy based on production into an economy based on knowledge. This caused the company's performance measurement which is based on conventional factors of production such as machinery or manpower, changed into the use of production factors based on knowledge, innovation, and technology. This showed that the company resources are not only physical assets, but also innovation, information systems, organizational management, and human resources (Solikhah 2010). To improve the performance of the company resources, the company must have company capabilities. The company capability, according to the Resource-based theory, is one of the important internal factors in managing resources owned by the company to achieve its competitive advantage (Fransisca Mulyono, 2013(Mulyono 2013). When the capability of a company is good, the resource management will also be managed well and in the future the company can gain competitive advantages. Dynamic capability represents the company's ability in creating new production processes and new products/services to quickly respond to environmental changes as stated by Helfat et.al 2007 and Teece 1998 as cited in (Tseng & Lee 2014).

Several studies researched about the effect of intellectual capital on the company's performance had been conducted either in Indonesia or in overseas. Some researches on the effect of intellectual capital on the company's performance are among others explored by (Ulum et al. 2008), (Solikhah 2010), (Gruian 2011), (Rousulita 2012), and (Sunarsih & Mendra 2012). They found that the intellectual capital affects the company's financial performance. In addition(Dadashinasab & Sofian 2014) found that the dynamic capability strengthens the influence of intellectual capital on the performance of public companies in Indonesia.

The researcher conducted a study on the roles of Dynamic Capability as a moderating variable in Indonesian public companies by selecting high IC companies listed in Indonesia Stock Exchange from the period 2011 - 2013 as the research objects. Intellectual Capital is measured by using three components, namely: human capital, structural capital, and customer capital (Bontis et al. 2000)

1.1 Research Objectives

1. To determine the effect of customer capital, human capital and structural capital on the company's performance.
2. To determine the role of dynamic capability in increasing the influence of intellectual capital on the company's performance.

2. THEORETICAL REVIEW

2.1 Intellectual Capital

Stewart (1997) as cited in (Sharabati et al. 2010) stated that the Intellectual Capital is intellectual materials which are composed, captured and used by organizations to create prosperity through the creation of high-value assets. Further, (Sharabati et al. 2010) suggested that in order to understand the intellectual capital that exists in an organization, the members of the organization need to assess the core competence that will make the organization able to achieve or have achieved the best status. Intellectual capital of an organization represents the wealth of innovation ideas and abilities to determine the organization in the future.

Physical assets such as fixed assets, financial assets such as cash and investments are very necessary, but these are not sufficient to achieve the organizational goals. Intellectual capital in the forms of technology, relationships, brands and information system which are useful for a decision making is a critical factor in the era of information and services nowadays as mentioned by (Isaac et al. 2010). Intellectual capital represents employees' added values when they use their knowledge and other personal assets to produce goods and services to create organizational wealth.

(Bontis et al. 2000) stated that in general, researchers divided the intellectual capital into three components, namely: human capital, structural capital, and customer capital. Basically human capital is reflected by individual knowledge stock of an organization represented by its employees. The human capital includes competence, commitment and loyalty of employees to the company. Structural capital includes all non-human storehouses of knowledge within an organization, including database, organizational charts, manuals of process, strategies, routines and all the things that make the company's value is greater than its material values. The customer capital is essential knowledge in marketing channels and customer relationships.

2.2 Dynamic Capability

Company capability is the ability of a company to perform coordinated tasks or activities to achieve the company objectives. (Teece et al. 1997) stated that the dynamic capability indicates the ability of the company to achieve its new excellent competitive advantages. 'Dynamic' is defined as the ability to update the competence to be able to adapt to environmental changes, while 'capability' is emphasized on the role of strategic management in adapting, integrating, and reconfiguring internal and external organizational skills, resources and functional competencies to adapt to environmental changes. A dynamic capability is the company's ability to create and utilize existing resources within the company to achieve sustainable competitive advantages (Tseng & Lee 2014)

The dynamic capability according to some researchers is the company ability to use its resources - particularly in the process of integrating, reconfiguring, gaining and releasing resources - which allows the company to respond quickly to new opportunities and even to create changes in the market because of its innovation as a means of adjustment to changes in external environments (Mulyono 2013)

2.3 Financial Performance

Performance is an important element to be achieved by each company. Performance can become a benchmark showing the company's ability to manage and allocate all available resources. While financial performance is certain measurements determining the success of a company in gaining profits. The company achievement can be seen in its financial statements reporting a condition of a company during a certain period - called the company's financial performance.

The company's financial performance is the result of company's performance measured from its financial aspects showing in the financial statements.

2.4 Hypothesis Formulation

Ownership and use of intellectual resources enable the company to achieve its competitive advantages and added values. Investors will provide more rewards to companies which are able to create added values on an ongoing basis, in line with the Resource-Based Theory (Solikhah 2010). The company management shall keep the knowledge in the company by paying more attention to employees or giving allowances or rewards for owning the knowledge. This will at least allow the management to control the human resources, although they do not belong to the company. Salaries and greater benefits to employees are expected to motivate the employees to improve their productivity so that this will result in Human Capital Efficiency. The higher the Human Capital Efficiency, the higher the company's performance will be. This is in line with the results of research conducted by (Solikhah 2010), (Rousulita 2012), (Ulum et al. 2008), and (Gruian 2011). They found that Human Capital Efficiency has a positive effect on the company's performance.

Ha1-: Human Capital Efficiency positively affects Company's Performance.

Structural capital is a corporate support for employees working in a company. It is a company's knowledge database that can be accessed by all employees to create a learning experience. The structural capital should be maintained, used and developed because the failure in its maintainance will cause competitors to take over the company. The structural capital include all knowledge in the company, in addition to the existing knowledge on human capital, consisting of database, organizational charts, manual processes, strategies, routines and those whose value are higher than the material values (Bontis et al. 2000). The efficient use of structural capital is a means of support in improving company's performance (Solikhah 2010), (Rousulita 2012), and (Gruian 2011), (Ulum et al. 2008).

Ha2: Structural Capital Efficiency positively affects Company's Performance.

Capital employed is defined as the total capital utilized in fixed assets of an enterprise, Pulic 2000 as cited in (Dadashinasab & Sofian 2014). Capital Employed Efficiency is obtained if less capital owned by a company can be used to generate an increase in sales, or greater capital employed can be followed by growing sales. Then, the capital increase will raise the company's revenue as well. Therefore, this can improve the return on certain assets owned by the company so that the company's performance will also increase. (Solikhah 2010), Suhendah (2012), (Ulum et al. 2008), and (Gruian 2011) proved that Capital Employed Efficiency positively affect company's performance.

Ha3: Capital Employed Efficiency positively affects Company's Performance.

The role of human capital can be supported by dynamic capabilities demonstrated by the ability to overcome the gap between current resources and new expected resources. Qualified human capital can be improved through dynamic capabilities, among others by conducting training and development programs for employees. Training and development programs for employees will create qualified human resources that are able to create a new innovation for consumers as well as to improve company's performance. (Dadashinasab & Sofian 2014) proved that the Dynamic Capability can increase the influence of Human Capital Efficiency to the company's performance.

Ha4: Dynamic Capability increases the effect of Human Capital Efficiency to Company's Performance.

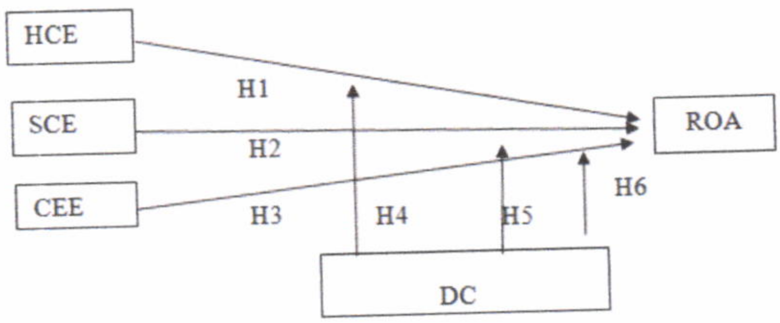
Structural capital is an infrastructure to support employee's performance. The high structural capital value indicates that enterprise systems have been operated optimally. The higher the structural capital is, the longer the company will maintain the business. The role of Structural Capital Efficiency can be supported by the dynamic capability which is related to dynamic changes of company's activities through continuous learning, adaptation, and development. Dadashinasab and Sofian (2014) proved that Dinamic Capability can increase the influence of Human Capital Efficiency on company's performance.

Ha5: Dynamic Capability increases the influence of Structural Capital Efficiency on Company's Performance.

The creation of dynamic capabilities involves human assets, information systems, and sufficient knowledge management systems in business organizations to be able to explore, integrate and produce a variety of new useful knowledge to meet the market dynamics. Capital employed efficiency supported by a variety of new knowledge of dynamic capabilities will be able to improve the performance of the company. (Dadashinasab & Sofian 2014) found that the dynamic capability can improve the influence of capital employed efficiency on the company's performance.

Ha6: Dynamic Capability increases the effect of Capital Employed Efficiency to Company's Performance.

2.5 Research Model



(Figure 1: Research Model)

3. Research Method

The data in this research are secondary data obtained from companies listed in the Indonesia Stock Exchange. Sampling was done by using purposive sampling method with criteria that the companies were listed on the Indonesia Stock Exchange in 2011 - 2013, including the high IC companies and those having complete data corresponding with this research's variables. According to Global Industry Classification Standard (GICS) in (Whiting & Woodcock 2011), the companies will be grouped into two groups: IC high-intensive industries and IC low- intensive industries.

Based on the determined criteria, it was obtained 20 samples for each year so that the total number of samples was 60 companies. The limited number of samples was decided due to constraints on the availability of data research and development cost needed to measure Dynamic Capability.

The data were then analysed by using the regression model as follows:

$$\mathbf{ROA} = \alpha_0 + \alpha_1\mathbf{HCE} + \alpha_2\mathbf{SCE} + \alpha_3\mathbf{CEE} + \alpha_4\mathbf{DC} + \alpha_5\mathbf{HCExDC} + \alpha_6\mathbf{SCExDC} + \alpha_7\mathbf{CEExDC} + \varepsilon_1$$

ROA= Return on Asset, HCE=Human Capital Efficiency, CEE=Capital Employed Efficiency, SCE-Structural Capital Efficiency, DC=Dinamic Capability

3.1 Research Variables

The dependent variable used in this study is company's performance. The measurement of company's performance used return on assets that reflect business profits and company's efficiency in utilizing its total assets, measured by using Net Income / Total Assets formulas.

The independent variable of this research is intellectual capital, measured by Value Added Intellectual Capital (VAIC) developed by Pulic in 1998 as cited in (Dadashinasab & Sofian 2014). Value Added Intellectual Capital consists of Human Capital Efficiency, Structural Capital Efficiency and Capital Employed Efficiency. The researcher used the VAIC because the model covers all intellectual capital elements.

1. Value added (VA)

   Value added is obtained from the difference between output and input. The output (OUT) represents the revenue, while the input (IN) covers all expenses other than labor expenses used to obtain the revenues.
2. Human Capital Efficiency

   Human capital efficiency shows how much value added can be generated by a company with the owned financial resources and human capital. Human capital efficiency is measured with salaries and allowances given to the employees. Human capital efficiency / HCE = VA / HC, Where: HC = salaries and allowances.
3. Structural Capital Efficiency

   Structural capital covers all knowledge in the company in addition to the existing knowledge on human capital, including database, organizational charts, manual processes, strategies, routines and those whose value are higher than the material values ((Bontis et al. 2000)Structural Capital Efficiency / SCE = SC / VA. While, SC = VA – HC
4. Capital Employed Efficiency

   Capital Employed Efficiency / CEE shows the Value Added generated by a company of capital employed. CEE = VA / CE, Where: CE = the book value of net assets (equity)

Moderating variable in this research is Dynamic Capability. Wang and Ahmad defined the dynamic capability as a stable pattern of behavior to renew, integrate, create and reconfigure capabilities and resources of the company (Mulyono 2013) Dynamic capability was measured using the formula:

$$DC = \left(\frac{1}{2}\right)\left[\left(\frac{R\&D_{t-1}-R\&D_{t-2}}{R\&D_{t-2}}\right)\right] + \left(\frac{R\&D_{t-2}-R\&D_{t-3}}{R\&D_{t-3}}\right).$$

Where R&D are costs for Research and Development

4. Analysis and Discussion

The description of this research results are presented in the Table 4.1 below.

Table 4.1: Descriptive Statistics

	N	Min	Max	Mean	Std.Dev
ROA	60	-35	0.27	0.450	0.957
DC	60	0.55	80.45	20.1293	0.463
HCE	60	0.743	1.522	0.386	0.426
SCE	60	-3459	9860	8198	2168
CEE	60	1.453	7.794	1.076	1.524

Before testing the hypothesis, the researcher conducted a normality test, multicollinearity test, and heterocedasticity test. The tests showed good results, where the research data are normal and there is no multicollinearity and heterocedasticity. The results of data analysis for the tests are shown in the Table 2 as follows:

Table 4.2: Coefficient of Determination Testing Results

R	R Square	Adj R Square	Std. Error of Estimate
0.757	0.573	0.483	0.04102

From the table 2 above, it can be seen that the value of Adjusted R Square, or the coefficient of determination of independent variables affects the dependent variable of 0.483 or 48%. Therefore, 48% of the company's performance was affected by intellectual capital consisting of human capital, structural capital, capital employeed, and dynamic capability. Then, the regression test was conducted and the results are presented in the Table 4.3.

Table 4.3: Regression Test Results

Variable	B	Sig
(Constan)	-0,002	0,932
HCE	0,001	0,046
SCE	0,023	0,506
CEE	0,036	0,042
DC	-,038	0,049
HCE*DC	0,032	0,000
SCE*DC	-0,031	0,000
CEE*DC	-0,001	0,010

From the results of the moderating linear regression analysis above, the regression coefficient of Human Capital Efficiency is 0.001 with a significance value of 0.046. At the significance level $\alpha = 5\%$, it can be concluded that the Human Capital Efficiency shows a positive and significant effect on the company's performance so that the first hypothesis of this study can be accepted. It is in line with the Resource-Based Theory (Solikhah 2010) and consistent with several studies such as (Rousulita 2012), (Ulum et al. 2008) and (Gruian 2011).

The regression coefficient of Structural Capital Efficiency is 0.023 with a significance value of 0.506. It can be concluded that Structural Capital Efficiency does not significantly affect the company's performance so that the second hypothesis in this study is rejected. These results are consistent with the research by (Rousulita 2012)) who found that Structural Capital Efficiency does not affect the company's performance. It is possible that the hypothesis is rejected because the sample companies could not meet the structure supporting the employee efforts to produce optimal intellectual performance and overall business performance. The structure are, among others, company's operational system, organizational culture, management philosophy and all intellectual properties owned by the company. These results are supported by the results of the descriptive analysis showing that there are companies that still have a negative value of Structural Capital Efficiency which is equal to -0.3459. (Dadashinasab & Sofian 2014) stated that companies in emerging countries are still largely based on tangible assets, not intangible assets.

The Capital Employed Efficiency regression coefficient is 0.036 with a significance value of 0,042. It can be concluded that Capital Employed Efficiency has a significant positive effect on the company's performance so that the third hypothesis of this study is accepted. These results are consistent with (Solikhah 2010), (Rousulita 2012), (Ulum et al. 2008) and (Gruian 2011). They proved that Structural Capital Efficiency positively affect on the company's performance.

The regression coefficient of interaction between Dynamic Capability and Human Capital Efficiency is 0.032 with a significance value of 0.000. It can be concluded that the Dynamic Capability increases Human Capital Efficiency in raising the company's performance so that the fourth hypothesis of this study is accepted. These results are consistent with (Dadashinasab & Sofian 2014) research that Dinamic Capability can increase the influence between Human Capital Efficiency and Company's Performance.

The value of interaction coefficient of Dynamic Capability and Structural Capital Efficiency is -0.031 with a significance value of 0.002. It can be concluded that the Structural Capital Efficiency has been decreasing the effects of Intellectual capital on the company's performance so that the fifth hypothesis in this study is rejected. These results are in contrast to the studies conducted by (Dadashinasab & Sofian 2014). They found that DC can increase the influence between HCE and company's performance.

The interaction regression coefficient of Dynamic Capability and Capital Employed Efficiency is -0.001 with a significance value of 0.010. It can be concluded that Capital Employed Efficiency has been decreasing the effect of Intellectual Capital on the company's performance so that the sixth hypothesis in this study is rejected. These results are different from the findings of (Dadashinasab & Sofian 2014), that Dynamic Capability can increase the influence of Capital Employed Efficiency and the company's performance. The difference between the results of this study and (Dadashinasab & Sofian 2014) (2014) research might happen due to differences in economic conditions, or the measuring instruments of Dynamic Capability which are less suitable to use in Indonesia.

5. CONCLUSIONS

The results of this research proved that Human Capital Efficiency positively impacts on the company's performance and Capital Employed Efficiency positively affect on the company's performance. However, this research failed to prove that Structural Capital Efficiency affects the company's performance. This research has successfully proved the role of dynamic capability in increasing the influence of Human Capital Efficiency, but failed to prove the role of Dynamic Capability in increasing either the influence of Structural Capital Efficiency or Capital Employed Efficiency on the company's performance.

This study has limitations due to the difficulty of getting the sample data of the dynamic capability variable. Further research can be done by extending the period of study to obtain more samples, and using a moderating variables other than dynamic capability, for example company's competitive advantages.

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