Abstract. The purpose of this study to analyze the influence of Intellectual Capital to Economic Value Added. The samples are 90 manufacture companies as the item of observations that were taken from annual reports listed of Indonesian Stock Exchange in 2011-2015. The model that used to measure intellectual capital was using Modified Value Added Intellectual Coefficient (M-VAIC). M-VAIC component consist of Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE), Capital Employed Efficiency (CEE) and Relational Capital Efficiency (RCE). This research is quantitative research and using panel data regression on balanced data of fixed effect for data analysis. The results showed that Human Capital Efficiency (HCE) and Structural Capital Efficiency (SCE) has no positive impact on Economy Value Added (EVA) but in this research has a positive impact on the Capital Employed Efficiency (CEE) and Relational Capital Efficiency (RCE) to Economic Value Added (EVA).

Keywords: Intellectual Capital; Modified Value Added Intellectual Coefficient; Economy Value Added.

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INTRODUCTION

Economic Value Added (EVA) as one of the company's performance appraisal tools used to assess the ability of management in creating value for corporate investors. Rudianto (2013) stated that Economic Value Added is a management system that measures economic profit in a company, which states that welfare can be realized if the company is able to meet all operating costs and capital costs. The main thing that distinguishes EVA from other financial benchmarks is that EVA is not limited by generally accepted accounting; EVA can support every decision in a company starting from capital investment, employee compensation and business unit performance; and a simple EVA structure makes it usable by engineering, environment, and other parts as a commonly used tool to communicate different aspects of financial performance.

On the other hand, the process of value creation for investors does not only involve management but also non-physical resources that exist within a company or entity. Most of these non-physical resources are very difficult to measure in value such as company employee knowledge and competence, corporate customer loyalty, and application of information technology. These non-physical resources are known as Intellectual Capital (IC) which are included in Intangible Asset category.

Some previous research shows that the level of competition and performance can be influenced by intellectual capital. Intellectual capital does not only consist of non-financial information but also encourages corporate value. There are several intellectual capital elements used, namely human capital, process capital and customer capital. The results of research conducted by Masri (2016) show that out of the three intellectual capital elements used in her research (human capital, process capital and customer capital), process capital can improve the company's financial performance. In addition, in the study Masri (2016) also showed that when moderated with business strategies shows that process capital is more appropriate in the innovation strategy than the cost efficiency strategy, because process capital is inherent in innovation and creativity.

Developing from the intellectual capital element then several studies related to intellectual capital measure based on Value added Intellectual Coefficient (VAIC) developed by Pulic (1998), which consists of Human Capital efficiency (HCE), Structure Capital Efficiency (SCE), and Capital Employed Efficiency (CEE). Differences between VAIC and intellectual capital elements are the components of value added that are measured in each element of intellectual capital. Furthermore Ulum (2014) adds an element of Relational Capital Efficiency (RCE) in measuring intellectual capital. The addition of these elements is known as the Modified-Value Added Intellectual Coefficient (M-VAIC).

This study uses M-VAIC which consists of Human Capital efficiency (HCE), Structure Capital Efficiency (SCE), Capital Employed Efficiency (CEE), and Relational Capital Efficiency (RCE) to measure intellectual capital and examine the impact on Economic Value Added (EVA) in the consumer goods manufacturing sector listed on the Indonesia Stock Exchange during period 2011 to 2015. Companies that can manage intellectual capital properly will be able to increase the company's financial performance and can provide economic added value to the company, including for shareholders (Taheri et al, 2014). In addition, the consumer goods sector always requires innovation and creativity to be able to compete in the market. By using a sample of consumer goods sector manufacturing companies that always implement product innovation, this study tries to emphasize the results of research conducted by Masri (2016) which shows that intellectual capital will be more appropriately applied to strategy innovation, especially for element of process capital. Supporting research before this research has succeeded in proving the existence of a positive influence on Capital
Employed Efficiency and Relational Capital Efficiency toward Economic Value Added.

**LITERATURE REVIEW**

**Resourced-based Theory**

Resource Based Theory pioneered by Penrose (1959) suggests that corporate resources are heterogeneous, not homogeneous, the productive services available come from company resources that give a unique character to each company. Resource-based theory (RBT) is a thought that develops in strategic management theory and competitive advantage of a company that believes that a company will achieve excellence if they have superior resources. What is a superior resource? Superior resources are scarce resources that are difficult for competitors to imitate. Resource-based view (RBV) of the firm is a theory developed to analyze the competitive advantage of a company that emphasizes the superiority of knowledge or an economy that relies on intangible assets (Wijayanti, 2012).

**Stakeholders Theory**

Stakeholder Theory is a theory that states that a company is not an entity that only operates for its own sake, but must provide benefits to all its stakeholders, namely shareholders, creditors, consumers, suppliers, government, society, analysts and other parties. Stakeholder relations with intellectual capital must be viewed from two fields, namely ethics and managerial fields (Budianto, 2014). Stakeholders have the right to be treated fairly by the organization, and managers must manage the organization to the maximum value creation. This theory shows that stakeholder relations include all forms of relationships between companies and all stakeholders. This theory explains the importance of companies to satisfy the wishes of stakeholders.

**Knowledge-based Theory**

Knowledge-based Theory (KBT) is a new extension of a company's resource-based viewpoint or Resource-based Theory (RBT) from a company and provides a strong theoretical support for intellectual capital. RBT explains two views regarding the tools of developing corporate strategy. The first is a market-oriented view and the second is a resource-based view. The development of these two devices generates a new view, namely a knowledge-oriented view. KBT is a human resource-based view but emphasizes the importance of corporate knowledge.

**Economic Value Added (EVA)**

The concept of EVA makes the company focus more attention on efforts to create corporate value and assess the company's financial performance fairly measured by using a weighted measure of the existing initial capital structure (Widayanto, 1994: 188). By calculating EVA, it is expected to obtain calculation results on creating a firm value that is more realistic. Measurement using EVA is reducing operating income after tax with the cost of capital, where the cost of capital reflects the level of risk of the company.

**Intellectual Capital (IC)**

One of the intangible assets that is very important in the era of information and knowledge is intellectual capital that is difficult to research or measure directly. In the study of intellectual capital, many definitions have been proposed by researchers. Intellectual capital refers to the knowledge and abilities possessed by a social collectivity, such as an organization, intellectual community, or professional practice. Intellectual capital represents the resources that value and ability to act based on knowledge. According to Purnomoshidi (2006), intellectual capital is intellectual material that has been formalized, captured, and utilized to produce assets of higher value. Each organization places intellectual capital in the form of assets and resources, perspectives, and explicit and hidden capabilities, data, information knowledge, and maybe policy. According to Stewart (1997) in Ulum (2008) states that: "IC is intellectual material-
knowledge, information, intellectual property, experience that can be used to create wealth”.

**Modified Value Added Intellectual Coefficient (M-VAIC)**

Ulum (2014) developed in the measurement of intellectual capital based on the VAIC model developed by Pulic (1998), namely Modified Value Added Intellectual Coefficient (M-VAIC). Value Added Intellectual Coefficient (VAIC) is different from the Modified Value Added Intellectual Coefficient (M-VAIC) which is the addition of the RCE (Relational Capital Efficiency) component. VAIC, the component consists of HCE, SCE, and CEE, while M-VAIC there is the addition of one component namely RCE.

**Human Capital Efficiency (HCE)**

Human capital is the largest and most important intangible asset in an organization. Human capital can fulfill goods or services needed by customers and can also provide solutions to customer problems (Ghosh and Mondal, 2009). Human capital in it includes a strength of intellectual capital sourced from human resources owned by the company, namely employees who are competent, committed, motivated at work and have loyalty to the company (Bontis, 2000). The results of Mojtahedi and Ashrafpour (2013), Gogajeh, et. al (2015), Taheri, et al (2014), Rezaei (2014) shows that human capital efficiency can improve economic value added. With increasing human capital efficiency, there will be added value resulting from the monetary units invested in employees. So the first hypothesis developed is:

H1: There is a positive and significant influence between Human Capital Efficiency (HCE) on Economic Value Added (EVA).

**Structural Capital Efficiency (SCE)**

In the Ulum (2014) model, Structural Capital (SC) is obtained by means of value added minus human capital. The results of Taheri's research, et al (2014), Rezaei (2014) showed a positive relationship between structural capital efficiency (SCE) and Economic Value Added (EVA). Structural Capital according to Sawarjwono & Kadir (2003) is the ability of an organization or company to fulfill the company's routine process and its structure that supports employees’ efforts to produce optimal intellectual performance and overall business performance, for example: the company's operational system, manufacturing processes, organizational culture, philosophy management and all forms of intellectual property owned by the company. So that the higher the value of structural capital will increase the economic value added. The second hypothesis that can be developed in this study is:

H2: There is a positive and significant influence between Structural Capital Efficiency (SCE) on Economic Value Added (EVA).

**Capital Employed Efficiency (CEE)**

Capital Employed Efficiency (CEE) according to Chen et al (2005) shows the company's ability to manage resources in the form of capital assets. The results of the study by Gogajeh, et. al (2015) and Fika Shelviana (2014) show that Capital Employed Efficiency (CEE) has a positive relationship to EVA. Likewise, the results of research by Ayu Wahdikorin (2010) in her research explained that the use of capital efficiency that is used can improve company performance. If capital assets are managed properly, it will improve the company's financial performance. The third hypothesis developed in this study is:

H3: There is a significant positive influence between Capital Employee Efficiency (CEE) on Economic Value Added (EVA).

**Relational Capital Efficiency (RCE)**

Relational Capital Efficiency (RCE) is the latest component in calculating the company's intellectual capital modified by Ulum (2014). The amount of relational capital needed to produce one monetary unit of added value. Relational Capital (RC) is measured
using the company's marketing costs (Ulum, 2014). The results of Mojtahedi and Ashrahipour (2013) research show that relational capital also has a strong and positive relationship to economic value added. Relational capital is a harmonious relationship owned by the company and its partners, both from reliable and quality suppliers, loyal customers and satisfied with the company's services, and derived from the company's relationship with the government and the surrounding community (Sawarjuwono & Kadir, 2003). So that the higher the relational capital will increase the economic value of the company. Then the fourth hypothesis developed in this study is:

H4 : There is a positive significant influence between Relational Capital Efficiency (RCE) on Economic Value Added (EVA).

RESEARCH METHOD
This study uses a quantitative approach. According to Anshori and Iswati (2009: 13), quantitative research is research that focuses on testing hypotheses, the data used must be measured, and then produce conclusions that can be generalized. The dependent variables used in this study are Economic Value Added (EVA) and capital intellectual (Intellectual Capital) as an independent variable. Calculation of Economic Value Added as follows:

\[
\text{NOPAT} = \text{Net profit after tax + interest expense}
\]
\[
\text{Capital Charge} = \text{WACC} \times \text{Invested Capital}
\]
\[
\text{EVA} = \text{NOPAT} - \text{Capital charge}
\]

Intellectual capital was measured by Modified Value Added Intellectual Coefficient (M-VAIC) which consisted of Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE), Relational Capital Efficiency (RCE) and Capital Employed Efficiency (CEE), with the following formulations:

a) \( \text{Value Added (VA)} \rightarrow \text{VA} = \text{OP} + \text{EC} + \text{D} + \text{A} \)

Where:
- \( \text{OP} \) = Operating profit
- \( \text{EC} \) = Employee costs
- \( \text{D} \) = Depreciation
- \( \text{A} \) = Amortization

b) \( \text{Human Capital Efficiency (HCE)} \rightarrow \text{HCE} = \frac{\text{VA}}{\text{HC}} \)

Where:
- \( \text{HC} \) = Employee expense

c) \( \text{Structural Capital Efficiency (SCE)} \rightarrow \text{SCE} = \frac{\text{SC}}{\text{VA}} \)

Where:
- \( \text{SC} = \text{VA} - \text{HC} \)
d) \( \text{Relational Capital Efficiency (RCE)} \rightarrow \text{RCE} = \frac{\text{RC}}{\text{VA}} \)

Where:
- \( \text{RC} \) = Marketing expense
e) \( \text{Capital Employed Efficiency (CEE)} \rightarrow \text{CEE} = \frac{\text{VA}}{\text{CE}} \)

Where:
- \( \text{CE} = \text{Total net assets} \)

The sample used in this study is a consumer goods manufacturing sector listed on the Indonesia Stock Exchange in the period 2011 to 2015 and consistently publishes audited financial statements for the period 2011 to 2015. The data analysis techniques used in this study are quantitative. In this study using panel data that shows the number of years and companies so that it uses balanced panel data regression with fixed effect model.

Descriptive Statistical Analysis

Table 1
Descriptive Statistic
Source: the results of Eviews 8.0 data processing, 2017

<table>
<thead>
<tr>
<th>Explanation</th>
<th>EVA</th>
<th>HCE</th>
<th>SCE</th>
<th>CEE</th>
<th>CEE</th>
<th>RCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>23.741</td>
<td>4.295</td>
<td>0.664</td>
<td>0.503</td>
<td>0.225</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>23.685</td>
<td>3.180</td>
<td>0.685</td>
<td>0.430</td>
<td>0.210</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>29.100</td>
<td>30.310</td>
<td>0.970</td>
<td>1.710</td>
<td>0.540</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>16.580</td>
<td>1.330</td>
<td>0.250</td>
<td>0.150</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Std. Deviasi</td>
<td>2.079</td>
<td>4.169</td>
<td>0.164</td>
<td>0.312</td>
<td>0.138</td>
<td></td>
</tr>
<tr>
<td>Observation</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td></td>
</tr>
</tbody>
</table>

RESEARCH RESULT
value, median value, minimum value, maximum value and standard deviation. Descriptive statistics of the variables used are presented in table 1. Based on the results of descriptive statistical analysis in table 1 the variable EVA shows the mean value is greater than the median value that is equal to 23.74133 (median is 23.685) which means that the EVA value in the sample is relatively smaller. While the intellectual capital variable which also shows the mean value greater than the median value is HCE, CEE, and RCE which means that in this study sample intellectual capital values for HCE, CEE and RCE were smaller. In contrast to SCE which shows the mean value is smaller than the median value which means that for SCE the value is relatively large.

**Regression Result**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constanta</td>
<td>21.28496</td>
<td>16.71787</td>
<td>0.0000</td>
</tr>
<tr>
<td>HCE</td>
<td>0.084203</td>
<td>1.277486</td>
<td>0.2058</td>
</tr>
<tr>
<td>SCE</td>
<td>-3.396010</td>
<td>-2.014512</td>
<td>0.0479**</td>
</tr>
<tr>
<td>CEE</td>
<td>3.203563</td>
<td>3.335767</td>
<td>0.0014***</td>
</tr>
<tr>
<td>RCE</td>
<td>12.16513</td>
<td>4.114126</td>
<td>0.0001***</td>
</tr>
<tr>
<td>Adj R2</td>
<td>0.812962</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-value (F statistic)</td>
<td>0.0000***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: the results of Eviews 8.0 data processing, 2017. p-value of t-statistics and f-statistics where *** is significant 1%, ** significant 5%, and * significant 10%

The test results with panel data regression analysis are attached in table 2. The first hypothesis states that the Human Capital Efficiency (HCE) has no significant effect on Economic Value Added (EVA). Based on statistical parameters, it shows that t statistic is 1.277486. While the values of t table α = 0.05 and df = (nk), df = (90 - 4) = 86 where the value of t table is 1.9879 is greater than t statistic of 1.277486 at the significance point of 0.05 or 5% then from the probability is equal to 0.2058 greater than 0.05 then Ho is accepted. This means that the HCE has no significant effect on EVA with the conclusion rejecting the hypothesis.

The second hypothesis states that Structural Capital Efficiency (SCE) has a significant negative effect on EVA. Based on the statistical parameters in table 2 shows that t statistic is -2.014512 smaller than t table of 1.9879, with a significance level of 5%, the probability level is equal to 0.0479 below 0.05 which means that SCE has a significant negative effect on EVA. The second hypothesis conclusion is rejected because the SCE variable decreases the value of EVA.

The third hypothesis states that the Capital Employee Efficiency (CEE) has a significant positive effect on EVA. Based on the statistical parameters in table 2 shows that the t statistic is 3.335767 greater than t table at 1.9879, at the 5% significance point, then h0 is rejected. The CEE variable has a probability of 0.0014 whose value is below 0.05, meaning that CEE has a significant positive effect on EVA with the conclusion of accepting the hypothesis.

The fourth hypothesis states that Relational Capital Efficiency (RCE) has a significant positive effect on EVA. Based on statistical parameters, it shows that t statistic is 4.114126 greater than t table of 1.9879, at the significance point of 5%, then h0 is rejected. In the RCE variable has a probability of 0.0001 whose value is less than 0.05 means that RCE has a significant positive effect on EVA with the conclusion that the hypothesis is accepted.

**DISCUSSION**

The Effect of Human Capital Efficiency (HCE) on Economic Value Added (EVA)

The first hypothesis shows that the Human Capital Efficiency (HCE) has no significant positive effect on Economic Value Added (EVA), in accordance with the research conducted by Ekowati et al (2012). The results of this study indicate that the required ability of human capital is not in accordance with what is needed in the company, so Human Capital Efficiency (HCE) does not significantly influence the performance of the company proxied as EVA. Companies must be able to position human
capital appropriately, so for further improvement of human resources can be provided through education in accordance with what is needed about how to be a resource that can position itself well and can increase value added for the company.

The results of the study can be concluded that the companies that are sampled in this study are not yet optimal in utilizing existing human capital and are not efficient enough to position human capital capabilities in accordance with company needs. This indicates that in manufacturing companies in the consumer goods sub-sector, HCE does not have enough influence and contribution in increasing value added.

The Effect of Structural Capital Efficiency (SCE) on Economic Value Added (EVA)

The second hypothesis shows that Structural Capital Efficiency (SCE) has a significant negative effect on Economic Value Added (EVA). The results of this study are in line with the research conducted by Budiarso (2010) which states that even though a company has high intellectual intelligence, while an organization in a company does not have a good system and procedure, intellectual capital cannot achieve optimal performance, and there is no maximum benefit. The negative structural capital value in this study also indicates that the company's operational system, manufacturing process, organizational culture, management philosophy and all forms of intellectual property owned by the company are not very efficient and economical in creating value for the company. The existing structural capital companies are only routines carried out by all individuals in the company, so as not to affect the production process and the creation of innovations for more innovative products that can create good corporate performance (Ekowati et al., 2012).

The Effect of Capital Employee Efficiency (CEE) on Economic Value Added (EVA)

The third hypothesis shows that Capital Employee Efficiency (CEE) has a significant positive effect on Economic Value Added (EVA). The results of this study are in line with Fika Shelviana's research (2014) which states that the CEE component has a positive effect on EVA because the greater the Intellectual Capital allocated by companies can improve Economic Value Added (EVA). Ayu Wahdikorin (2010), in her research explained that the utilization of capital efficiency can improve company performance. In this study CEE shows the company's ability to manage resources in the form of capital assets. If capital assets are managed properly, there will be added value on EVA. The function of CEE is to bridge human capital in order to be able to create positive relationships with certain consumers, markets and institutions.

The Effect of Relational Capital Efficiency (RCE) on Economic Value Added (EVA)

The fourth hypothesis shows that Relational Capital efficiency (RCE) has a positive and significant effect on Economic Value Added (EVA). The results of this study support the research conducted by Mojtahedi and Ashrafipour (2013). Relational Capital Efficiency (RCE) is the latest component in calculating a company's intellectual capital modified by Ulum (2014). Relational capital is a harmonious relationship owned by the company and its partners, both from reliable and quality suppliers, and loyal customers, so that they are satisfied with the company's services and come from corporate relationships with the government and the surrounding community (Sawarjuwono & Kadir, 2003). In this study, RCE has positive results for EVA because there are many factors that support the manufacturing companies such as the existence of marketing strategies, market share, contracts that are profitable and customer loyalty.

CONCLUSION

Based on the results of the analysis and discussion above, the following conclusions can be drawn:
1. Based on the results of the study, it was found that the Human Capital Efficiency (HCE) had no significant effect on
Economic Value Added (EVA) on consumer goods manufacturing sub-sectors in the period 2011-2015. This proves that the management of human resources in manufacturing companies has not sufficiently contributed to being able to influence added value. For further improvement, human resources can be educated according to the needs of how to be a quality resource and increase the value added for the company. In other words, it can be concluded that the companies sampled in this study are not yet optimal in utilizing existing human capital.

2. Based on the results of the study, it was found that Structural Capital Efficiency (SCE) had a significant negative effect on Economic Value Added (EVA) on consumer goods manufacturing sub-sectors in the period 2011-2015. This result show that even though the company has high intellectuality human resources, while the organization in the company does not have a good system and procedures, intellectual capital cannot achieve optimal performance and the existing potential cannot be maximally utilized.

3. Based on the research results obtained that Capital Employee Efficiency (CEE) has a significant positive effect on Economic Value Added (EVA) in manufacturing companies of consumer goods sub-sector in the period 2011-2015. In this study CEE's contribution can increase the company's EVA. CEE shows the company's ability to manage resources in the form of capital assets. If capital assets are managed properly, it will increase EVA.

4. Based on the results of the study, it was found that Relational Capital Efficiency (RCE) has a significant positive effect on Economic Value Added (EVA) on consumer goods manufacturing sub-sectors in the period 2011-2015. This causes that manufacturing companies in Indonesia begin to take advantage of opportunities in every aspect such as customer loyalty, distribution networks, market share, profitable contracts, and marketing strategies.

**Research Limitation**

This research has several limitations that require improvement and development in subsequent studies.

1. In this study using samples in manufacturing companies only in the goods consumer sub-sector for the period 2011-2015. Subsequent research can be done by adding the number of samples by including all sub-sectors of manufacturing companies listed on the Indonesia Stock Exchange so that they can be compared.

2. This research examines the influence of Intellectual Capital on EVA by using secondary data available in the financial statements as the object of research. For the subsequent research can conduct research related to intellectual capital by using content analysis data on intellectual capital disclosure or using company primary data as a source of information, and adding other independent variables related to EVA.

**REFERENCES**


Budiarsro. 2014. “Modal Intelektual dan Kinerja Perusahaan (Studi pada perusahaan yang terdaftar di Bursa Efek Indonesia periode 2009-2012”) Vol.3 No.1


Widayanto, Gatot (1994). Nitami dan Penentuan Bonus Karyawan.Usahawan No. 5 Th. XXIII. Mei