



Intellectual Capital Performance: A Comparative Study between Financial and Non-Financial Industry of Indonesian Biggest Companies

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ABSTRACT

The aim of this study is to analyze the intellectual capital performance (ICP) of financial and non-financial industry of Indonesian biggest companies. ICP was measured with modified value added intellectual coefficient (MVAIC) constructed by Ulum et al. (2014a) which is based on Pulic's model (Pulic, 1998). MVAIC is a comprehensive tool to measure the performance of IC. Data were taken from 50 biggest market capitalizations listed on the Indonesia Stock Exchange for the period of 2007-2014. The result indicates that the ICP of companies in the non-financial industry is higher than the ICP of companies in financial industry. This result disputes that financial industry is one of IC intensive sector as identified by Firer and Williams (2003).

Keywords: Intellectual Capital, Intellectual Capital performance, Modified Value Added Intellectual Coefficient, Financial Industry

JEL Classifications: E44, G23

1. INTRODUCTION

Resource-based theory (RBT) stated that the company has resources which can make the company to have a competitive quality and be able to direct the company to own a good long-term performance. The valuable and scarce resources can be directed to create competitive quality; hence the resources owned are long-last and not easily copied, transferred, or replaced. Barney and Arkan (2001) stated that resources are tangible and intangible, which are used by organizations to develop and implement their strategies.

There are two assumptions embedded in RBT (Nothnagel, 2008). They are resource heterogeneity and resource immobility. Resource heterogeneity (also known as resource diversity) alludes whether a company has the resources or capabilities that are also owned by their competitor companies, so that these resources cannot be considered as a competitive quality. Meanwhile, resource immobility refers to a resource that is difficult to be found by competitors for it is difficult to obtain or if those resources are used, the cost is too expensive.

Barney (1991) revealed that in RBT perspective, firm resources cover all the assets, capability, organizational process, attributes, company, information, knowledge, and others controlled by companies that allow them to understand and implement strategies to improve the efficiency and effectiveness of the company.

One of the important resources for organization as RBT identification is intellectual capital (IC). In the perspective of IC, the company's tangible asset is classified into three main categories. They are human capital, structural capital, and customer capital (Bontis, 1998). According to Pulic and Kolakovic (2003), every companies have unique knowledge, skill, value and solution – intangible resources – which can be transformed into “value” in the market. The management of intangible resource can help the company to achieve competitive quality, increase productivity and market value. The explanation of Pulic and Kolakovic (2003) is in line with the logic of Barney (1991) when explaining the relationship between two resource assumptions in RBT with four attributes or potential resource for competitive quality.

In Indonesia, IC has been discussed in Statement of Financial Accounting Standard (SFAS) 19 (revised 2010) about intangible asset which is the adoption of International Accounting Standard (IAS) 38 (Ikatan Akuntan Indonesia, 2011). In that standard, IC is not mentioned explicitly, however, the components of IC (for example goodwill) is explained its accounting treatment. However, SFAS 19 (revised 2010) does not regulate all components of IC. In fact, according to this standard, goodwill which is generated internally cannot be recognized as goodwill. Related to this, SFAS 22 (revised 2010) about business combination which is the adoption of IFRS 3 express that goodwill appearing from acquisition will no longer be amortized but must be subjected to an impairment test each year by means of the test described in SFAS 48 (revised 2013) about impairment of assets (Ikatan Akuntan Indonesia, 2013).

The limited provisions of accounting standard about IC prompted experts to create a model of IC’s measurement and reporting (Ulum et al., 2014b). One of the most popular models in some countries is Value Added Intellectual Coefficient (VAIC™) which is developed by (Pulic, 2000). VAIC™ does not measure IC, but it measures the impacts from IC management. Ulum et al. (2008). The assumption is that if a company has good IC and manage well, then certainly there will be impacts emerged. That impact then measured by Pulic using VAIC™. Therefore VAIC™ is more accurately described as a measure of IC performance (intellectual capital performance [ICP]) that is called business performance indicator by Mavridis (2004), Kamath (2007), and Ulum (2008).

Shiri et al. (2012) uttered that VAIC cannot measure all components of IC. VAIC only measures two components namely human capital and structural capital. VAIC cannot measure relational capital. This limitation is later enhanced by Ulum et al. (2014a), who developed Modified VAIC (MVAIC). MVAIC adds one new measurement that is called relational capital efficiency (RCE). It is one of the formulas to measure the efficiency of relational capital.

The use of VAIC as a proxy to measure IC performance has been done by researchers in a wide range of industrial contexts and countries (Mavridis, 2004a; Kamath, 2007; Ulum, 2009; Shiri et al., 2012). MVAIC as the measurement of IC performance also has been studied in several countries and industry groups (misalnya: Ulum et al., 2014c; 2014d; Nimtrakoon, 2015; Jannati, 2016; Meles et al., 2016). Most of the studies are done in financial sector companies. This is because Firer and Williams (2003) identified that financial sector is one sector that its IC is intensive.

This research tries to prove two things. First, it tries to identify the IC performance of big companies in Indonesia if it is measured by using MVAIC. Second, to find the truth about IC of financial sector is more intensive than non-financial industry. The comparison is done because according to Firer and Williams (2003), banking industries is the industry that have high intensive of IC. It means that banking companies have bigger intensive of IC than other sectors. Kubo and Saka (2002) also emphasized that employee in banking sectors have higher homogeneity level than other sectors. The homogeneity of employee is important because IC is one of the measurements that measure employee capacity. Financial

industries which over-regulated will tend to be more “submissive” in fulfilling regulator expectation, while non-financial industries are the industry that as not tight as financial industries.

2. METHOD

The population in this research was public companies (registered in Indonesia Stock Exchange [IDX]) include in 50 biggest market capitalization categories during 2007 – 2014. The sample was done by using purposive sampling through criteria. Those criteria are: (1) Public company that include in the top 10 categories of 50 Biggest Market Capitalization during 2007-2014, and (2) public company which publish financial report presented in rupiah during 2007-2014.

The data used was secondary data from financial report of company which is obtained through documentation both through official website or IDX (www.idx.co.id). The analysis was drawn by using descriptive comparative and statistics test using Mann–Whitney test. First, the calculation of IC performance was done by using MVAIC as the stages below:

$$\text{Value added (VA)} = \text{OP} + \text{EC} + \text{D} + \text{A}$$

The next step is calculating the efficiency from three components of IC; HC, SC, and RC (those three measurements were called intellectual capital efficiency) and also the additional component from tangible capital; capital employed as follows:

$$\begin{aligned} \text{HCE} &= \text{VA} / \text{HC} \\ \text{SCE} &= \text{SC} / \text{VA} \\ \text{RCE} &= \text{RC} / \text{VA} \\ \text{CEE} &= \text{VA} / \text{CE} \end{aligned}$$

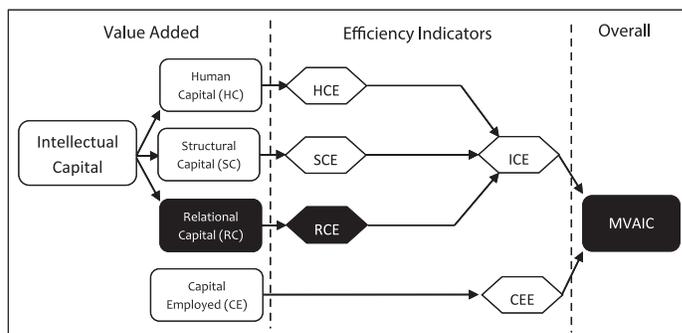
Thus:

$$\text{MVAIC} = \text{ICE} (\text{HCE} + \text{SCE} + \text{RCE}) + \text{CEE}$$

Explanation (Figure 1):

- MVAIC: Modified VAIC
- ICE: Intellectual capital efficiency
- HCE: Human capital efficiency
- SCE: Structural capital efficiency
- RCE: Relational capital efficiency
- CEE: Capital employed efficiency
- VA: Value added

Figure 1: Modified value added intellectual coefficient formula



Source: Ulum (2015)

- HC: Human capital; employee expenses total, include training
- SC: Structural capital; VA-HC
- RC: Relational capital; marketing costs
- CE: Capital employed; book value from total asset
- OP: Operating profit
- EC: Employee costs
- D: Depreciation
- A: Amortisation.

3. RESULT AND DISCUSSION

3.1. The Description of Data

Table 1 shows the total of observation in sample (N). There are 24 companies in financial industry and 24 companies in non-financial industries. The minimum value for financial industries and non-financial industries are 3.50 and 4.11, while their maximum value are 4.92 and 10, 78 with a standard deviation of 0.38 and 2.05.

If referring to the criteria established by Ulum et al. (2014a), then the entire sample in this research include in top performers category for its IC performance, because it has score above 3.5. This case can be understood since all the samples in this research are big companies (top 10 from 50 biggest market capitalizations).

Table 2 presents the average result of human capital efficiency (HCE), structural capital efficiency (SCE), relational capital efficiency (RCE), capital employed efficiency (CEE), and MVAIC in financial industries. During the study period, the efficiency of each component of MVAIC is fluctuating. In 2007 the score of MVAIC is in the lowest position that is 4.03. In 2010 up to 2013, the score of MVAIC is raising from the range of 4.36-4.62.

Table 3 provides the average result of HCE, SCE, RCE, CEE and MVAIC in non-financial industries. In 2007 up to 2008, the score of MVAIC decreases slightly from 7.13 to 7.12. The highest score of MVAIC is in 2010 that is 7.55.

3.2. Mann–Whitney test

Table 4 serves the average test result of ICP between financial industries and non-financial industries during 2007-2014 by using

Table 1: Descriptive statistics

Category	N	Minimum	Maximum	Mean±SD
Financial	24	3,50	4,92	4.3542±0.37936
Non-financial	24	4,11	10,78	7.1888±2.05156
Valid N (listwise)	24			

Table 2: The average result of HCE, SCE, RCE, and CEE of financial industry

Category	2007	2008	2009	2010	2011	2012	2013	2014
HCE	2.85	2.92	2.93	3.19	3.41	3.46	3.51	3.36
SCE	0.64	0.65	0.65	0.68	0.71	0.71	0.71	0.70
RCE	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02
CEE	0.51	0.54	0.50	0.46	0.41	0.38	0.38	0.35
MVAIC	4.03	4.13	4.11	4.36	4.55	4.58	4.62	4.44

HCE: Human capital efficiency, SCE: Structural capital efficiency, RCE: Relational capital efficiency, CEE: Capital employed efficiency, MVAIC: Modified modified value added intellectual coefficient

SPSS analysis technique of nonparametric test of Mann–Whitney test. This test was done by the assumption of ICP group one for financial industries and ICP group zero for non-financial industries.

From the result of Mann–Whitney’s average test on Table 4 with 24 sample of financial and non-financial industries, it is discovered that the mean rank for non-financial industries is 34.88. Meanwhile, the mean rank for financial industries is 14.13. Thus, it means that the ICP of companies in non-financial industries is better than companies in financial industries.

Table 5 presents that Mann–Whitney U value is 39.000, Wilcoxon W value is 339.000, Z-count score is -5.135, and the value of Asymp. Sig. (2-tailed) on this research is 0.000. It can be concluded that there is significant differences of ICP between financial industries and non-financial industries.

The result of this research proves that there are significant differences between IC performance of company in financial sector and non-financial sector. The initial expectation is that the companies in financial sector will have better IC performance than non-financial sector as identified by Firer and Williams (2003) that described financial sector (banking), electrical, information technology, and services sector are four sectors which have high intensive IC.

The most interesting thing is the findings in this research also argue the assumptions developed by Kubo and Saka (2002) about the important of employee homogeneity in an organization. This research verified that companies in non-financial sector exactly have better IC performance than companies in financial sector.

Table 3: The average result of HCE, SCE, RCE and CEE of non-financial industries

Category	2007	2008	2009	2010	2011	2012	2013	2014
HCE	4.79	4.77	5.44	5.59	5.27	5.01	5.01	5.36
SCE	0.79	0.79	0.81	0.81	0.80	0.79	0.78	0.78
RCE	0.26	0.26	0.20	0.27	0.27	0.26	0.26	0.25
CEE	0.95	0.96	0.92	0.88	1.02	1.07	1.06	1.02
MVAIC	6.79	6.78	7.36	7.55	7.35	7.13	7.12	7.42

HCE: Human capital efficiency, SCE: Structural capital efficiency, RCE: Relational capital efficiency, CEE: Capital employed efficiency, MVAIC: Modified modified value added intellectual coefficient

Table 4: The average result of Mann–Whitney

Industry	N	Mean rank	Sum of ranks
ICP			
Non-financial	24	34.88	837.00
Financial	24	14.13	339.00
Total	48		

Table 5: The result of statistics test Mann–Whitney

Test (Type)	ICP
Mann–Whitney U	39.000
Wilcoxon W	339.000
Z	-5.135
Asymp. Sig. (2-tailed)	0.000

ICP: Intellectual capital performance

The companies in financial sector which is basically over regulated are familiar with the various provisions. Therefore, performance patterns which they do will tend to “merely” meet the requirements from the regulators. Companies in non-financial sector precisely have the space to do innovation. The innovation they do relate to the management of human capital as well as customer management (relational capital).

4. LIMITATION AND SUGGESTION

One of fundamental limitations of this paper lies in MVAIC model used. SC, and RC. However MVAIC not fully considered yet as the whole size of intellectual model. It is because SCE component in MVAIC is not just built between VA-HC ratio as the proposition of Pulic (2000)– nor VA/SC. Consequently it becomes irrational because the efficiency from SC will high only if the efficiency of HC is low.

Further research can consider using other models such as Nazari and Herremans (2007)’s extended VAIC or E-VAIC plus (Ulum, 2014). Both models separate the size of SC from HC and VA as Pulic’s model. SC in both models is measured using Innovation Capital and Process Capital.

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