Is Company Intellectual Capital Linked to Corporate Social Responsibility Disclosure? Findings from Indonesia

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Abstract

Many researchers have found relationships between a company’s financial performance and either corporate social responsibility (CSR) or intellectual capital. But this exploratory study investigates whether there is a relationship between intellectual capital and its components and corporate social responsibility disclosure. The method uses hypothesis testing of listed companies on the Indonesian Stock Exchange. The corporate social responsibility disclosure index is based on content analysis of a company’s annual report, whereas the Value Added Intellectual Coefficient (VAIC) for the fiscal year of 2007 is derived from financial information. The result shows that intellectual capital, in its aggregate value of the VAIC, does not have a significant relationship with corporate social responsibility disclosure. However, one of its components, capital employed efficiency, has a significant impact on CSR disclosure, while the other two, human capital efficiency and structural capital efficiency, have no significant impact. The results of the research could also infer that the perception of corporate social responsibility is still at a stage where companies conduct CSR on an ad-hoc basis rather than incorporating it into corporate strategy.

Key words: CSR, Intellectual Capital.

Introduction

One of the fields of academic research that has been conducted on the subject of corporate social responsibility (CSR) is whether or not social responsibility and financial performance are related. To investigate the relationship between these two variables, scholars have compared the financial performance of companies with high reputations for social responsibility to the financial performance of companies with lower reputations. By 2000, as many as 100 studies had been conducted over a period of twenty-five years (Steiner & Steiner, 2000). Research by Balbanis et al. (1998) titled “Corporate social responsibility and economic performance in the top British companies: are they linked?”, conducted a correlative study of profit and responsibility in the context of British companies and concluded that “the results of the empirical research supported only a few of the postulated relationships between CSR disclosure and CSR performance with past, concurrent or subsequent economic performance. However, there was one study which found that in fact there is a positive relationship between CSR and financial performance within US companies, implying that socially responsible corporate performance can result in companies being
better off by gaining bottom line benefits (Tsoutsoura, 2004). However, when most CSR research is mainly related to its correlation or linkage with financial performance and is measured by conventional financial ratios and figures, what is usually left out is the inclusion of intellectual capital as a variable which could be correlated to CSR.

No current research has been undertaken in regard to finding a correlation between intellectual capital and CSR disclosure, despite multiple studies (Pulic, 2002) (Pulic, 2000) (Kujansivu & Lönnqvist, 2005) (Shiu, 2006) (Chen, Cheng, & Hwang, 2005) indicating that intellectual capital does provide company value and better financial performance, even more so in an Indonesian context. The author believes that only by using both financial performance and intellectual capital in an empirical study would a complete and entire assessment in a correlative study of CSR be provided.

This research paper can contribute in many different ways, such as the extensive development of literatures and studies on relationships between corporate social responsibility and intellectual capital in Indonesia, as one of the currently fast growing countries.

The findings can enlighten organizations that intellectual capital can be an important asset which is beneficial in conducting corporate social responsibility. The remainder of this paper is organized as follows: A literature review of the theoretical foundations of intellectual capital is introduced in section two. Section three outlines the research method used in the study. Section four examines and interprets the results of the research. The last section offers final conclusions on the study.

**Literature Review**

Since this paper will discuss corporate social responsibility and intellectual capital, the author deems it necessary to define these terms. CSR can be viewed as a comprehensive set of policies, practices and programs that are integrated within the business operations, supply chain and decision-making processes throughout the company and usually includes issues related to business ethics, community investment, environmental concerns, governance, human rights, the marketplace as well as the workplace (Tsoutsoura, 2004).

However, an early and influential statement of the modern perception of social responsibility was made in 1954 by Howard R. Bowen in his book, *Social Responsibilities of the Businessman* As cited in Steiner & Steiner (2000), Bowen defined social responsibility as "obligations ... to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of objectives and values of our society." Social responsibility has also been viewed as a result or consequence of certain conditions within the company.

Davis (1975) is of the opinion that the existence of social responsibility of companies is due to the increase of a company's social power. When a company is unable to balance this social power in the form of being a large taxpayer, recruiting many people in large numbers, it may ultimately result in a loss of that social power and eventually a decline in the company (Davis, 1975). Tuzzolini & Armandi (1981) have brought a unique perspective to the views of corporate social responsibility and have even provided a motivational theory behind a firm's choice of conducting CSR which they based on Maslow's hierarchy of needs. They argue that the extent to which CSR is conducted by a firm indicates how a company is able to first meet its internal and external "self-actualization" needs, which places CSR at the top of their organizational needs pyramid. Based on this view, in order for companies to conduct CSR, they first need to fulfill three different levels of needs. As for intellectual capital, a possible explanation for its broad definition could be seen by its synonymous use with other words such as
intangible assets, invisible assets, knowledge assets, knowledge capital, information assets, human capital and the hidden value of companies (Bontis, 2001) (Tseng & Goo, 2005). According to Sullivan (2000), intellectual property as intangible assets includes patents, trademarks and copyrights, which can also be included in the traditional financial statement. Intellectual capital can be defined as the knowledge that is transformed into intellectual property or the end result of the process itself. Intellectual capital can be defined as the knowledge that is transformed into intellectual property or the end result of the process itself. Intellectual assets are a part of intellectual capital. They are “the codified knowledge and know-how of the firm’s human capital” Annie Brooking (consultant and author of Intellectual Capital: Core Asset for the Third Millennium Enterprise) describes intellectual capital (IC) as the “combined intangible assets which enable the company to function.” In other words, an enterprise is the sum of its tangible assets and its intellectual capital, as follows: Enterprise = Tangible Assets + Intellectual Capital Andre Pulic (1998, 2000), the founder of the Value Added Intellectual Coefficient - VAIC method has gone into detail in regards to the definition of intellectual capital and the definition of the components that make up Intellectual capital. In “Intellectual Capital – Handbook of IC Management in Companies”, intellectual capital is defined as “intangible assets or intangible business factors of the company, which have a significant impact on its performance and overall business success, although they are not explicitly listed in the balance sheet” (Karmen Jelcic, 2007).

**Hypothesis Development**

Intellectual capital has been playing an ever more increasing role not only in the corporate financial performance of companies, but also in contributing to financial achievements such as market evaluation (Bozbura, 2004) (Brennan, 2001) (Petty & Guthrie, 2000). If this link between intellectual capital and financial performance is true, then from looking at past studies which have shown a positive link between financial performance and CSR, we could infer that intellectual capital would also have a positive relationship on CSR. This relationship is shown and described in the figure below:

![fig1. Relationship between Intellectual Capital, and Corporate Social Responsibility](image)

Therefore, the initial hypothesis being proposed in this paper is that there will be a positive relationship between intellectual capital and the CSR activities of the publicly listed companies in Indonesia. Sumita (2005) argues that intellectual capital and corporate social responsibility are actually the same thing on two different sides of the same coin where both are describing the interface between society and companies. In other words, the multiple aspects of the management and maintenance of intellectual
capital within a firm coincide and are complimentary towards the CSR activities of a company. The following hypothesis statement summarizes the statements above for this study:

**H$_1$:** There is a relationship between intellectual capital (VAIC) and corporate social responsibility (CSR) disclosure.

A second hypothesis aims to prove which element of intellectual capital is contributing the most to CSR activities of a company.

**H$_{2a}$:** There is a relationship between capital employed efficiency (CEE) and corporate social responsibility (CSR) disclosure.

**H$_{2b}$:** There is a relationship between human capital efficiency (HCE) and corporate social responsibility (CSR) disclosure.

**H$_{2c}$:** There is a relationship between structural capital efficiency (SCE) and corporate social responsibility (CSR) disclosure. In order to create a proper assessment of the regression, control variables which may have an effect on corporate social responsibility need to be introduced. The control variables are Firm size (FSIZE), which is calculated as the natural log of market capitalization, Market valuation (MB) as the ratio of market capitalization to book value of common stocks, Asset turnover (ATO), and Return on assets (ROA). The inclusion of financial performance as an affecting variable on CSR is justified because all CSR activities will require the expenditure of limited financial resources. With limited financial resources, companies will be more inclined to reallocate those resources to other parts of the company with a higher priority such as operations, production, marketing etc. which are their primary lines of business. Justification for including firm size as a control variable is based on the argument that as companies grow, there is greater demand placed on these big firms by society (Esrock & Leichty, 1998).

The first regression model used to address the first hypothesis will be the following:

$$CSR = \beta_0 + \beta_1VAIC + \beta_2MB + \beta_3FSIZE + \beta_4ROA + \beta_5ATO + \varepsilon$$

**CSR** = Corporate Social Responsibility score (based on KLD indicator)

**VAIC** = Value added intellectual coefficient

**MB** = Market valuation (Market-to-Book ratio)

**FSIZE** = Firm Size (Natural Log of Market Capitalization)

**ROA** = Return on Assets

**ATO** = Asset Turnover

![Fig 2a Relationship between Intellectual Capital VAIC, Financial Performance and Corporate Social Responsibility Disclosure](image)
The second regression model, which looks into the different components of VAIC, to address the second hypothesis will be as follows:

$$CSR = \beta_0 + \beta_1CEE + \beta_2HCE + \beta_3SCE + \beta_4MB + \beta_5FSIZE + \beta_6ROA + \beta_7ATO + \epsilon$$

CEE = Capital employed efficiency coefficient  
HCE = Human capital efficiency coefficient  
SCE = Structural capital efficiency coefficient  

Fig 2b Relationship between Intellectual Capital Components, Financial Performance and Corporate Social Responsibility Disclosure.

Data and Research Methodology

Measurement of Intellectual Capital

The Value Added Intellectual Coefficient (VAIC) is a financial valuation method of intellectual capital, which measures the efficiency of key resources in companies (Andriessen, 2004). It refers to the "total value creation efficiency due to both intellectual capital (structural and human capital) and the physical capital (capital employed) functioning in concert in business environment" (Pulic, 2004). Corporate intellectual ability which is measured by the VAIC is an indicator of the overall ability of companies to add value to their companies through utilizing physical capital and IC resources. Therefore, a company with a VAIC would mean that they are able to create more value for their company given the same amount of resources.

The computation of the VAIC takes five steps. First, it is necessary to calculate the value added (VA) of the company:

$$VA = OUT - IN$$

Where: VA = value added for a company; OUT = total sales; IN = cost of bought

Following (Pulic, 2002) (Firer & Williams, 2003), the three resources of a firm that contribute to a firm’s value are calculated as the following:

$$HC = EC and SC = VA - HC$$

CE = physical capital + financial assets

$$= Total \text{ assets} + \text{ intangible assets}$$
Where: HC = human capital; SC = structural capital; CE = capital employed. After the three components of firm resources have been calculated, the efficiency of these resources in creating value added is then calculated as the following:

\[
\text{CEE} = \frac{VA}{CE}; \quad \text{HCE} = \frac{VA}{HC}; \quad \text{SCE} = \frac{SC}{VA}
\]

Where: CEE = capital employed efficiency coefficient; HCE = human capital efficiency coefficient; SCE = structural capital efficiency coefficient.

VAIC is defined as:

\[
\text{VAIC} = \text{HCE} + \text{SCE} + \text{CEE}
\]

**Measurement of Corporate Social Responsibility**

The dependent variable of this study is corporate social responsibility (CSR), which is measured based on content analysis of the company’s annual reports and their disclosures of social responsibility activities. To properly assess the indicators that are needed to measure CSR, the indicators that have been defined by the KLD Research – Environmental, Social and Governance Ratings Criteria were used.

**Sampling Design**

The sample for the population is taken in 2007 from the Kompas 100 list. Some companies are excluded from the list for several reasons. First, companies in natural resources are excluded because they have to conduct CSR activities by Indonesian Law. Second, to provide a good comparison between the companies being tested, the study separated financial and non-financial industries. In the end, only non-financial companies were chosen as the part of the study, since they would provide a larger sample size and span different industries to provide a better overall picture of the situation. Third, numerous companies that did not have annual reports available were omitted from the sample. Lastly, one company (New Century Development), which had a high negative value for its VAIC, is omitted because it would distort the data from the overall sample being taken into account.

**Table 1: Description of Excluded Samples**

<table>
<thead>
<tr>
<th>Kompas 100 Index</th>
<th>No. of Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural, Mining and Energy companies</td>
<td>(15)</td>
</tr>
<tr>
<td>Financial companies</td>
<td>(18)</td>
</tr>
<tr>
<td>Missing data</td>
<td>(17)</td>
</tr>
<tr>
<td><strong>Sample size</strong></td>
<td><strong>49</strong></td>
</tr>
</tbody>
</table>

**Findings and Discussion**

**Table 2: Descriptive Statistics Table**

<table>
<thead>
<tr>
<th></th>
<th>VAIC</th>
<th>CEE</th>
<th>HCE</th>
<th>SCE</th>
<th>CSR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>4,81</td>
<td>0,20</td>
<td>3,95</td>
<td>0,67</td>
<td>7,53</td>
</tr>
<tr>
<td><strong>Standard Deviation</strong></td>
<td>2,24</td>
<td>0,14</td>
<td>2,08</td>
<td>0,20</td>
<td>4,24</td>
</tr>
<tr>
<td><strong>Minimum</strong></td>
<td>0,79</td>
<td>0,01</td>
<td>0,90</td>
<td>-0,11</td>
<td>0,00</td>
</tr>
<tr>
<td><strong>Maximum</strong></td>
<td>10,59</td>
<td>0,78</td>
<td>9,53</td>
<td>0,90</td>
<td>15,00</td>
</tr>
</tbody>
</table>
From table 2, it is apparent that large portions of the VAIC are made up of the HCE variable. This shows that most of the created value is a result of how the companies utilize their human capital (Jelcic, 2007). Also, this illustrates that Indonesian companies are more efficient in using human capital as a source to add value to the company than other sources such as capital employed and structural capital (Firer & Williams, 2003). In their study, (Tuzzolini & Armandi, 1981) claim that CSR is at the top of the hierarchy of needs of a company, therefore it needs to fulfill its other needs (financial security, market position, etc.) before it conducts CSR. This could mean that most Indonesian companies see CSR as charitable action (PIRAC, 2002).

Findings and Discussion of Hypothesis 1

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>(constant)</td>
<td>-17.150</td>
<td>7.339</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VAIC</td>
<td>.055</td>
<td>.261</td>
<td>.029</td>
<td>.210</td>
<td>.835</td>
<td>.944</td>
<td>1.185</td>
</tr>
<tr>
<td>MB</td>
<td>.003</td>
<td>.001</td>
<td>.328</td>
<td>2.564</td>
<td>.014</td>
<td>.974</td>
<td>1.027</td>
</tr>
<tr>
<td>ROA</td>
<td>-.087</td>
<td>.109</td>
<td>-.146</td>
<td>-.796</td>
<td>.430</td>
<td>.476</td>
<td>2.102</td>
</tr>
<tr>
<td>ATO</td>
<td>.926</td>
<td>.945</td>
<td>.164</td>
<td>.981</td>
<td>.332</td>
<td>.568</td>
<td>1.760</td>
</tr>
<tr>
<td>FSIZE</td>
<td>1.545</td>
<td>.467</td>
<td>.545</td>
<td>3.308</td>
<td>.002</td>
<td>.587</td>
<td>1.704</td>
</tr>
</tbody>
</table>

a. Dependent Variable CSR  
b. Predictors: (Constant), FSIZE, MB, ATO, VAIC, ROA

From table 3, CSR shows a strong relationship with financial performance, such as FSIZE and MB. However, the VAIC was unable to show that it has a significant impact on CSR. The results did not present any statistical evidence that would support the presence of an association between corporate intellectual ability, measured by the VAIC and CSR. That could be explained by how Indonesian companies perceive IC and CSR in the first place. For example, in order to create better human capital and organizational capability, Indonesian companies may be leaning towards compliance of Indonesian Laws such as labor standards. Compliance to these labor laws is a form of creating better human capital, but does not fit the category of CSR since it is not voluntary in nature. CSR is not perceived as an action that would create long-term benefits in Indonesia, and is not usually linked or planned out as a way to gain value or bring intellectual ability back to a company. Most of the time, CSR activities in Indonesia do not bring the benefits of CSR back to their companies, usually leaving individuals better off but not creating value for the company. This could be why CSR and the link to value creation is not significant in Indonesia.
Findings and Discussion of Hypothesis 2

### Table 4: Coefficients

<table>
<thead>
<tr>
<th>(constant) B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>-19.094</td>
<td>7.283</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.824</td>
<td>7.215</td>
<td>.575</td>
<td>2.332</td>
<td>.025</td>
<td>.240</td>
<td>4.169</td>
</tr>
<tr>
<td>-.289</td>
<td>.430</td>
<td>-.141</td>
<td>-2.332</td>
<td>.024</td>
<td>.229</td>
<td>4.366</td>
</tr>
<tr>
<td>4.527</td>
<td>4.550</td>
<td>.029</td>
<td>.995</td>
<td>.326</td>
<td>.329</td>
<td>3.039</td>
</tr>
<tr>
<td>.003</td>
<td>.001</td>
<td>.330</td>
<td>2.699</td>
<td>.010</td>
<td>.974</td>
<td>1.027</td>
</tr>
<tr>
<td>-.351</td>
<td>.150</td>
<td>-.589</td>
<td>-2.332</td>
<td>.024</td>
<td>.229</td>
<td>4.366</td>
</tr>
<tr>
<td>.017</td>
<td>.984</td>
<td>.003</td>
<td>.017</td>
<td>.986</td>
<td>.179</td>
<td>2.088</td>
</tr>
<tr>
<td>1.512</td>
<td>.448</td>
<td>.533</td>
<td>3.371</td>
<td>.002</td>
<td>.583</td>
<td>1.716</td>
</tr>
</tbody>
</table>

a. Dependent Variable CSR
b. Predictors: (Constant), FSIZE, MB, ATO, ROA, HCE, SCE, CEE

From table 4, we can observe that FSIZE and MB have positive consistent influence on CSR. From the components of intellectual capital, only CEE had a significant positive relationship towards CSR while HCE and SCE were insignificant. Capital employed efficiency describes the amount of value that is added with every dollar that is put into physical and financial assets. With this in mind, the regression results show us that as companies become more capable or more efficient at creating value from their tangible assets, the greater the amount of CSR those companies will conduct. Although other factors, such as the efficiency of creating value from human capital and structural capital are present, they are neither used nor perceived by Indonesian companies as a measurement, nor looked upon when considering corporate social responsibility activities. The reason behind this could be due to the lack of recognition of other intellectual capital components of the VAIC. Another possible explanation for the significance of CEE could be in the nature of CSR within Indonesia. Most CSR activities are usually affiliated with the giving of money, or donation of physical goods.

In regard to the control variables, firm size and market valuation were still significant as it was in the first regression. Profitability had become significant in the first second, in a negative relationship. This result of a negative relationship between profitability and corporate social responsibility could be explained by the neoclassical economic model in which CSR would only incur costs that might have otherwise been avoided or which would have been taken over by others (Waddock & Graves, 1997).

### Conclusion

After conducting the research, several conclusions can be made from the results. First, from the 1st regression model, we can see that intellectual capital, measured by the VAIC in its aggregate form, was not able to show a significant relationship with corporate social responsibility. Second, when the components of the VAIC were separated and put through the regression, it revealed that capital employed efficiency (CEE) had a significant relationship whereas human capital efficiency (HCE) and structural capital efficiency (SCE) had an insignificant relationship with corporate social responsibility. Third, from the results of the control variable, it indicated that market valuation and firm size had a significant relationship with corporate social responsibility within Indonesia. Fourth, the research reveals that there is a lack of CSR rating institutions within Indonesia, indicating a lack of awareness concerning the
measurement of social performance of companies within the country. Fifth, it seems apparent that the level of corporate social responsibility in Indonesia is at the stage where companies still see CSR as a means to manage social relationships but not to incorporate it within corporate strategy. Sixth, the research reveals that the form of CSR most popular within Indonesian firms is community development.

Overall, the results of this study are merely preliminary findings regarding the issue of the relationship between intellectual capital and corporate social responsibility disclosure. Taking into account the lack of financial journals which have carried out the same research, the author believes that further research into this field would be necessary in other countries with better research models and variables being taken into account. Further research could reveal how intellectual capital and corporate social responsibility, two items that are rarely affiliated with one another, could actually be complementing one another as a company tries to seek better social performance and enhance intellectual capital at the same time.

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