Determinant Intellectual Capital Disclosure Factors in Integrated Reporting

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This research aims to determine the relationship between firm performance, firm industry, size, and intangible asset to intellectual capital disclosure. Sources of research data consist of integrated reports from publicly listed company from several countries for 2012–16. The analytical technique used is multiple linear regression analysis using SPSS program version 18 by first doing the classical assumption test. This study shows that performance and size have a significant positive effect on intellectual capital disclosure, otherwise industry has a negative effect on intellectual capital disclosure. The intangible has no significant effect on intellectual capital disclosure. Considering that there is still a small amount of research related to integrated reporting, this research contributes to add study material on issues in integrated reporting, especially factors related to intellectual capital disclosure.

Keywords: Intellectual capital disclosure, Performance, Industry, Size, Intangible asset, Integrated report.

Introduction

As technology, information and business developments are so dynamic, there is a demand to present the company’s condition on the part of the stakeholders completely and comprehensively, both financially and non-financially, to produce an evolution from the company’s reporting process to the current method of reporting as a whole, commonly referred to as integrated reporting (IR). IR is a new approach in Indonesia, where the majority of companies, both open and closed status, still present separate annual reports and ongoing reports where only annual reports more concentrated on financial statements prepared in accordance with the International Financial Reporting Standards (IFRS) are required because they are aimed at capital owners, while ongoing reports aimed at all company stakeholders in accordance with the Global Reporting Initiative (GRI) are only voluntary. In addition to disclosing required financial statements, companies also need to make voluntary disclosures
Because of this, several sources have objected to separate reports because the information in the various reports is not linked (Berndt et al., 2014). This can make it difficult for stakeholders to analyse the reports for decision making purposes.

One important element in IR is intellectual capital disclosure, which is very important for investors because it is able to help reduce uncertainty regarding future prospects and facilitate an accurate assessment of the company (Berndt et al., 2014). According to Zurnali (2008), the term ‘intellectual capital’ is used for all the assets and non-tangible or non-physic intellectual capital assets of a company, including the process, capacity of innovation, patterns, and knowledge that are not visible to its members and corporate networks. IR is a new phenomenon, especially for companies in Indonesia, where the disclosure of the nature of intellectual capital is still voluntary and there is no standard for its preparation. There are still companies that disclose in depth and comprehensively as well as companies that only disclose the minimum information required.

Research related to intellectual capital has been previously discussed in several studies (Abhayawansa & Guthrie, 2010; Alwert, Bornemann & Will, 2009; An, Davey & Eggleton, 2011; Ashton 2005; Basuki & Kusumawardhani, 2019; Beattie, 2007; Madyan & Dwi, 2019; Naimah & Mukti, 2019; Sadalia et al., 2019). Utama and Mirhard (2016) discuss intellectual capital in terms of sustainability report disclosure. Intellectual capital is known to have a negative relationship with firm performance but is not related to firm value (Madyan & Fikir, 2018).

Furthermore, IR rarely occurs in Indonesia and other countries because the majority of company reports are still in the form of financial reports; consequently, similar research is still not widely done in Indonesia. This also applies to intellectual capital disclosure, which is also still done voluntarily by the company. This study examines the analysis of factors related to intellectual capital disclosure, including firm performance, firm industry, size and intangible assets.

This research was conducted using a sample of registered companies that released financial statements in the integrated reporting format for five consecutive years (2012–16). Based on sample selection using the purposive sampling method, the research sample comprised 30 companies from eight stock exchanges in eight countries (Indonesia, South Korea, Japan, the Philippines, Singapore, Hong Kong, Sri Lanka, Malaysia) who had applied integrated reports as financial reporting formats during the period 2012–16. The analysis was performed with a linear regression analysis test using SPSS 18 software.
The results of this study indicate that firm performance and firm size are positively related to intellectual capital disclosure. Conversely, firm industry has a negative relationship with intellectual capital disclosure. However, intangible assets are found to have no relationship with intellectual capital disclosure. The results of this study provide additional evidence, especially for investors to use as a reference in conducting investment activities. The company management can also consider any factors related to corporate financial reporting, especially intellectual capital disclosure, in order to determine the best strategy for the company.

The next section of the article presents a literature review and hypotheses development. This is followed by an examination of the sample description and research variable. The results are then presented and discussed, and the final part presents the conclusions, limitations of and suggestions for progressing this research.

**Literature Review**

**Integrated Reporting**

Integrated reporting is the evolution of corporate reporting, with a focus on firmness, strategic constancy and future orientation (IIRC, 2013). The purpose of this reporting is to better combine the various measures that support the long-term value of the company and the role played by the company in society. The integrated report emphasizes the importance of transparency, which according to Eccles et al. (2011) can increase public confidence. A performance report prepared by the company can enhance how the company sees itself and its role in society. It also communicates the company’s performance, both good and bad. Reporting can thus demonstrate the company’s commitment to improving performance and establishing accountability in achieving goals. Applying a legitimate integrated report in a company is far more important than just the technical factors or showing off company development for a better image because the real purpose of the integrated report is to link the two fundamental reporting practices.

The preparation of the integrated report framework is based on the concept of capital management. The global institution for IR, the International Integrated Reporting Council (IIRC), classifies company capital into six categories (IIRC, 2011):

1. Natural capital, as a basis for economic and social systems related to resources. This capital includes water sources, non-renewable resources such as fossil fuels, renewable resources such as agriculture and solar energy, and carbon sinks, such as sea, forest and air, to overcome the side effects generated by company activities.
2. **Social capital and relationships**, which define each connection to stakeholders, namely consumers and supply chains, relations with government and society, operating licences, dependence on the public sector and other parties.

3. **Intellectual capital**, which involves intangible assets owned by companies such as patents, brands and reputations, copyrights, intellectual property and company systems, procedures and protocols. This capital can increase a significant competitive advantage unless the company has a negative reputation.

4. **Human capital**, which can also be described as a company capability. This type of capital doesn’t just include skills and abilities, but also the involvement and motivation of companies and their ability to manage their human resource potential. Humans as resources are positioned as subjects and objects at the same time (Nirvana, 2018).

5. **Financial capital**, a conventional measurement tool to determine the amount of capital owned by a company. This is a collection of corporate funds available to finance their business processes, both from equity and debt. This capital is related to other forms of capital, so companies must disclose how other capital can generate financial capital within a certain period.

6. **Working capital**, which generally consists of physical infrastructure, such as buildings, machinery and equipment. General or other infrastructure that is owned by a third party can also be classified as part of this kind of capital, provided it contributes to production activities.

**Theoretical Framework**

Stakeholders include any group or individual that can influence, or be influenced to achieve, the company’s goals (Freeman, 1984). Stakeholders include shareholders, employees, customers, suppliers, lenders, the government and the community; and groups representing environmental activists, the media and consumer advocates (Clarkson, 1995). Stakeholder theory states that corporate disclosure is a mechanism for negotiating relationships between the company and its stakeholders (Gray et al., 1995) and as a ‘strategy for managing, or manipulating, the demands of certain groups’ (Deegan & Blomquist, 2006). Companies have a strong incentive to convince stakeholders that their activities are in line with stakeholder expectations (Branco & Rodrigues, 2008). Disclosure of information about intellectual capital to stakeholders thus helps to avoid information asymmetry and litigation risk. Likewise, Guthrie et al. (2004) argue that legitimacy theory is closely related to reporting from intellectual capital and that companies are more likely to report information about intangibles if they cannot legitimize their status through tangible assets that are traditionally symbolized by company success.
The resource-based view (RBV) approach that has been used as a research topic focuses on the increasingly heterogeneous nature of resources that bring competitive advantage, or internal resource quality factors that cannot be replicated, cannot be replaced, and are rarely found among competitors. From the knowledge management perspective, internal resources are referred to as repositories of knowledge resource and capabilities, which consist of individual expertise and experience, processes or ways of serving consumers, all of which should be created uniquely in superior service by the company. A study from Fujimoto (1994) also found that the resilience of Japanese automotive companies originated from concrete and extensive best practices, including Just In Time (JIT), Jidoka (automatic detection activities about possible effects on products), Total Quality Management (TQM), continuous improvement (or kaizen), the reduction of ‘young’ (activities that do not add value), and the transfer of components between machines. This is all an indication of a superior company.

Development of Hypotheses

**Firm Performance and Intellectual Capital Disclosure**

Along with the development of the importance of knowledge for organizations to bring out competitive advantage compared with other resources, an intellectual capital perspective finally emerged (Nahapiet & Ghoshalal, 1998; Stewart & Ruckdeschelel, 1998, Chu, Lin, Hsiung & Liu, 2006). Like other concepts that are also based on knowledge, intellectual capital is not only difficult in theory but also in practice. Various definitions of intellectual capital have been discussed in many previous studies, including the number of hidden assets that are not fully covered by the balance sheet (Roos, Roos, Dragonetti & Edvinsson, 1997), knowledge that can change raw materials and make them more valuable (Stewart & Ruckdeschelel, 1998) and the total amount of knowledge that an organization can utilize in its business implementation process to gain competitive advantage (Youndt, Subramaniam & Snell, 2004). Apart from the differences between these definitions, researchers generally agree that, as an intangible and specialized resource, intellectual capital intricately facilitates the creation and extraction of values for an organization through the utilization of knowledge embedded in organizational staff, infrastructure and relationships (Claycomb, Droge & Germainin, 1999; Serenko & Bontisis, 2004; Thrylo & Kornukh, 2011; Youndt et al., 2004; Zharinova, 2011). Improved company performance will be realized if the satisfaction of external stakeholders is achieved (Amar & Hamid, 2016).

According to Zurnali (2008), intellectual capital is also defined as a combination of intangible resources and activities that allow companies to transform a collection of material, financial and human resources in a system to create stakeholder value. Zurnali (2008) provides a different view of the general classification of intellectual capital, arguing that intellectual
capital was formed from a system of interrelational blocks, namely human capital, structural capital and customer capital. The term ‘intellectual capital’ has various definitions in different economic theories. The only neutral definition is a debate about ‘intangible assets’ in the economy and capital assumptions that create intellectual property. This type of capital rarely or never appears in accounting practices.

There are several factors that influence the disclosure of intellectual capital. One of them is the performance of intellectual capital (Melloni, 2015). Schleicher and Walker (2010) state that the amount of costs associated with the disclosure of intellectual capital is influenced by the performance of intellectual capital. Companies that have good intellectual capital performance tend to more effectively disclose intellectual capital owned by the company because the profits generated by the company can be allocated investments in intellectual capital. In other words, the better the performance of the company’s intellectual capital, the higher the level of disclosure. This is because the disclosure of information about intellectual capital can increase stakeholders’ trust and the reputation of the company in the eyes of the public while in companies with poor intellectual capital performance, disclosure of minimal intellectual capital information can reduce stakeholders’ trust and the company’s reputation for trustworthiness (Melloni, 2015). Based on the explanation above, the following hypotheses is proposed:

**H1:** Performance is positively related to intellectual capital disclosure in the integrated report.

**Firm Industry and Intellectual Capital Disclosure**

Companies will tend to report intellectual capital if they have a specific need to do so – for example, if they cannot legitimize their status through physical assets and need to highlight the extent of their ownership of intangible objects (Guthrie et al., 2004). However, accounting treatment for intangible assets is still inadequate, especially for high-tech industries that have large investments in intellectual capital (Collins et al., 1997; Francis & Schipper, 1999; Lev, 2001; Lev & Zarowin, 1999). In such an industry, companies will overcome this lack of information and the potential for misrepresentation by providing further voluntary disclosure (Tasker, 1998).

Industry is another important characteristic that might encourage companies to conduct intellectual capital disclosure. Industry utilizes skills and work diligence, and the use of tools, in the field of processing of agricultural products and their distribution. So Industry is generally known as the next chain of businesses to meet the needs (economy) associated with the earth – namely agriculture, plantations and mining. Industry’s position is further from the land, which is the economic, cultural and political basis. This can be part of the company’s
strategy. Previous studies have shown that environmentally sensitive industries (e.g. oil and gas) can only be entered by strong companies, both financially and politically (Cho et al., 2010). Indeed, much research has documented that companies whose processes put greater emphasis on the natural environment also systematically provide wider disclosure (Melloni, 2015). Based on the explanation above, the following hypothesis is proposed:

**H2:** Industry is negatively related to intellectual capital disclosure in the integrated report.

**Firm Size and Intellectual Capital Disclosure**

Most accounting disclosure studies have found a positive relationship between firm size and the extent of discretionary disclosure (Botosan, 1997; Depoers, 2000). The larger the size of the company, the more information will be conveyed in the disclosure because it is more visible and more vulnerable to oversight from stakeholder groups (Branco & Rodrigues, 2008b), as well as a tendency to support voluntary disclosure.

Based on previous research, Istanti (2009) states that the results of data analysis indicate a positive and significant effect between size on voluntary disclosure of intellectual capital, which means that the larger the size, the more extensive the disclosure of intellectual capital by companies. In general, the larger the size, the higher the level of intellectual capital disclosure by the company (Cho et al., 2010). Based on agency theory, large companies with many shareholders have higher agency costs because large companies must submit complete financial reporting to shareholders as a form of management accountability. The practice of intellectual capital disclosure in terms of management accountability is an effort to reduce the amount of agency cost. White et al. (2007) suggest that size is the main trigger for intellectual capital. Based on intellectual capital research in the research of Bukh et al. (2005), García-Meca et al. (2005) and Oliveira et al. (2006), the authors hypothesize that firm size is positively related to intellectual capital:

**H3:** Size is positively related to intellectual capital disclosure in the integrated report.

**Intangible Asset and Intellectual Capital Disclosure**

Research conducted by Gerpott et al. (2008) and Guthrie et al. (2008) compared the disclosure of intellectual capital between different communication media. Each research focuses on one industry, the telecommunications industry and the food and beverage industry. The results of his research concluded that the disclosure of intangible assets in annual reports tends to be better than on the website. According to Gerpott et al. (2008), telecommunications
network operators use annual reports and websites in complementary events to reveal intangible information.

Intellectual capital is knowledge based on intangible assets (An et al., 2011). This ratio measures the evaluation of financial markets for management and corporate organizations as going concern. Higher levels of intangible assets are associated with increased intellectual capital disclosure. Companies with high levels of intangible assets cannot legitimize their status on the basis of ‘fixed assets’, which are traditionally recognized as symbols of company success (Guthrie et al., 2006). Company intangible assets are measured by reference to the market to book ratio (MBV). The book value of shares reflects the historical value of the company’s assets. A company that is well managed and operates efficiently can have a higher market value than the book value of its assets. The following hypothesis is therefore proposed:

**H4:** Intangible assets are positively related to intellectual capital disclosure in the integrated report.

### Research Design

#### Sample and Source of Data

The population used in this study is publicly traded companies that make financial statements with integrated reporting format for five consecutive years in 2012–16. Based on sample selection using purposive sampling method, as many as 30 companies from eight stock exchanges in eight countries (Indonesia, South Korea, Japan, the Philippines, Singapore, Hong Kong, Sri Lanka, Malaysia) have implemented the application as a format of financial statements; they form the research sample for the 2012–16 period.

#### Operational Definition and Variable Measurement

The dependent variable in this study is disclosure of intellectual capital. In this study, disclosure of intellectual capital requests information from the components of intellectual capital issued by the company in the annual report. This study invites 61 items of intellectual capital disclosure, consisting of human capital, structural capital and relational capital. The assessment of intellectual capital disclosure uses the index number of intellectual capital disclosure (Intellectual Capital Disclosure Index) obtained from the total score on intellectual capital obtained by the company by giving a value of 1 for each component that produces all entities and 0 for each component that is not necessary.
The independent variables in this study are firm performance, industry type, firm size capital and intangible assets. Company performance can be measured through company performance reports using ROA profitability ratios (Alghifari, Triharjono & Juhaeni, 2013; Irawati et al., 2018; Kangarloe et al., 2012 Lins, Servae & Tamayo, 2017). Industry type determines a treatment of intellectual capital disclosure. There are two types of industries: sensitive industries that have the risk of contact with natural, political and cultural factors; and non-sensitive industries that do not have a direct risk of coming into contact with these factors. Size is the big picture of an entity. It is calculated by the natural logarithm value of the total assets at the end of the year in each company that is used as a research sample (Harymawan, Nasih, Madyan & Sucany, 2019). The calculation of intangible assets can be determined through the market to book value formula, which is the ratio of an entity’s market value at the time of closing to the value of the company’s equity (Bai et al., 2004; Chen, Cheng & Hwang, 2005). This study has used a quantitative analysis, expressed by calculations using a statistical method assisted by the SPSS18 program. A descriptive statistical data analysis (minimum, maximum, average and standard deviation) has been used, testing classic assumptions and hypothesis testing.

Results and Discussion

Descriptive Statistics

Table 1 shows descriptive statistics in this study. Based on the table above, there is an average ROA of 2.99%, size of 22.471447 and market to book value of 1.5069609. Intellectual capital disclosure has a mean of 0.3120219, which means manufacturing industry companies reveal an average of 19 items from 61 items of intellectual capital disclosure.

Table 1: Descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>-0.12348</td>
<td>0.33635</td>
<td>0.0299099</td>
<td>0.04336055</td>
</tr>
<tr>
<td>SIZE</td>
<td>17.45613</td>
<td>26.60229</td>
<td>22.471447</td>
<td>1.99752358</td>
</tr>
<tr>
<td>MBV</td>
<td>0.04992</td>
<td>5.23908</td>
<td>1.5069609</td>
<td>1.04254400</td>
</tr>
<tr>
<td>ICD</td>
<td>0.21311</td>
<td>0.45902</td>
<td>0.3120219</td>
<td>0.06058170</td>
</tr>
</tbody>
</table>

Based on Table 2, it can be seen that as many as 115 of the data sampled in this study are non-sensitive industry sectors with a percentage of 76.7%. The remaining 35 observational data are sensitive industry type sectors (mining, manufacturing, construction) with a percentage of 23.3%.
Table 2: Frequency distribution of industry

<table>
<thead>
<tr>
<th>Notes</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-sensitive industry</td>
<td>115</td>
<td>76.7</td>
</tr>
<tr>
<td>Sensitive industry</td>
<td>35</td>
<td>23.3</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Firm Performance and Intellectual Capital Disclosure**

The coefficient values shown in Table 3 show a positive relationship between firm performance and intellectual capital disclosure. That is, performance is significantly positively related to intellectual capital disclosure. An increase in performance will cause an increase in intellectual capital disclosure. Conversely, a decrease in performance causes a decrease in intellectual capital disclosure.

Table 3: Regression test results

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>0.088</td>
<td>0.062</td>
<td>1.425</td>
</tr>
<tr>
<td></td>
<td>ROA</td>
<td>0.338</td>
<td>0.113</td>
<td>0.242</td>
</tr>
<tr>
<td></td>
<td>INDUSTRI</td>
<td>-0.022</td>
<td>0.011</td>
<td>-0.156</td>
</tr>
<tr>
<td></td>
<td>SIZE</td>
<td>0.010</td>
<td>0.003</td>
<td>0.316</td>
</tr>
<tr>
<td></td>
<td>MBV</td>
<td>0.003</td>
<td>0.005</td>
<td>0.047</td>
</tr>
</tbody>
</table>

Performance disclosure has a positive relationship with intellectual capital disclosure; the implication for company management is that increasing company performance can increase intellectual capital disclosure. This can occur because, with high performance, the extent of intellectual capital disclosure disclosed by the company in its annual report can provide investors with confidence that the company has an advantage over other companies. In addition, the estimated risk that must be borne by investors is reduced due to increased information disclosed. The results of this study are in accordance with the hypotheses set at the beginning and are in line with research conducted by Suhardjanto and Wardhani (2010), Utomo and Chariri (2015), Windri and Januarti (2010) and Melloni (2015) that performance has a significant positive effect on intellectual capital disclosure.

**Industry Type and Intellectual Capital Disclosure**

The value of the regression coefficient on the industry shows as negative, while the results of the hypothesis test indicate that industry type is associated with intellectual capital disclosure.
That is, industry type is significantly negatively related to intellectual capital disclosure. An increase in industry type that is at risk causes a significant decrease in intellectual capital disclosure. Conversely, a decrease in industry type that is at risk causes an increase in intellectual capital disclosure.

The results of this study indicate that the industry type at risk indicates the increasing opportunities for the company’s negative effects on the environment to be one focus in the intellectual capital disclosure factor because the risk assessment and the company’s negative impact on the environment will be judged by investors to increase the risk in return on investment. This is in accordance with the hypothesis determined at the outset, and is in line with research findings by Suhardjanto and Wardhani (2010), Utomo and Chariri (2015), Windri and Januarti (2010) and Melloni (2015).

**Size and Intellectual Capital Disclosure**

The value of the regression coefficient on the equation shows positive, while the results of the hypothesis test indicate that size is significant. That is, size is positively related significantly to intellectual capital disclosure. The increase in size projected through total assets will cause a significant increase in intellectual capital disclosure. Conversely, a decrease in size causes a significant decrease in intellectual capital disclosure.

The results of this study indicate that the size measured by total assets is considered to be significantly related to intellectual capital disclosure because it is important for investors as consideration in assessing risk and return in investing. The size of the assets of an entity is a consideration for investors, so investors look at how the company’s management is able to manage the optimization of existing assets. These results are in accordance with the results of research conducted by Suhardjanto and Wardhani (2010), Utomo and Chariri (2015), Windri and Januarti (2010) and Melloni (2015).

**Intangible Assets and Intellectual Capital Disclosure**

The value of the regression coefficient on Intangible Asset shows positive, while the results of hypothesis testing indicate that intangible assets are not significantly related to intellectual capital disclosure. An increase in intangible assets will cause an insignificant increase in intellectual capital disclosure. Conversely, a decrease in intangible assets will cause a decrease in intellectual capital disclosure, although not significantly.

The results of this study indicate that investors are not particularly focused on intangible assets as a material consideration in assessing risk and return in investing. This can be caused by inconsistent stock market activity, which causes the company’s growth in the future to be
unable to be assessed only through fundamentals or book value. This means investors do not make intangible assets an indicator in their analysis, which results in insignificant intangible assets factors in intellectual capital disclosure. The results of this study are not in accordance with the hypothesis determined at the outset but are in line with research conducted by Suhardjanto and Wardhani (2010), Utomo and Chariri (2015), Windri and Januarti (2010) and Melloni (2015).

Conclusion

An analysis has been undertaken of the relationship between firm performance, industry type, firm size and intangible assets with intellectual capital disclosure. The analysis shows that firm performance and firm size are positively related to intellectual capital disclosure. Conversely, industry type was found to be negatively related to intellectual capital disclosure. However, a relationship between intangible assets and intellectual capital disclosure was not found in this study.

This research is inseparable from the obstacles in the implementation process. First, the study only uses four independent variables: performance measures, industry type, size and intangible assets. This is due to limited access to financial statements. This study only uses 30 companies that publish integrated reports and are recorded in the IIRC database. In addition, the research period used is still very limited. Therefore, we suggest future research to add other variables that can affect intellectual capital disclosure. Future researchers should conduct studies on broader aspects of integrated reporting, such as evaluating the level of integration and value creation in integrated corporate reporting, and analysing differences in applications and the effects of integrated reporting between mandatory implementation, and voluntary implementation and expanding the country of origin of the reporting company to broaden variations in reporting types and corporate culture, such as companies from the United States, South Africa and Brazil.

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