The Mediating Effect of Intellectual Capital Disclosure Between Firm Characteristics and Firm Value: Empirical Evidence From Indonesian Company With Non-recursive Model Analysis

Toni Heryana[1,2], Sugeng Wahyudi[1] & Wisnu Mawardi[1]

[1] Ph.D Program, Faculty of Economics and Business Diponegoro University, Semarang, Indonesia

[2] Accounting Study Program, Faculty of Economics and Business Education Indonesia University of Education, Bandung, Indonesia

Correspondence: Toni Heryana, Ph. D. Program on Faculty of Economic and Business, Diponegoro University, Semarang, Indonesia. Tel: 62-815-615-2141.

Received: November 30, 2019 Accepted: January 8, 2020 Online Published: March 16, 2020

doi:10.5430/ijfr.v11n2p14 URL: https://doi.org/10.5430/ijfr.v11n2p14

Abstract

Based on the signaling theory, this study seeks to explain the interaction of corporate value and the disclosure of intellectual capital in a framework of analysis of recursive models. Testing the recursive model also involves firm size and company growth as a characteristic of the company to clarify the mediating role of intellectual capital in mediating both of the firm's values. We find a positive relationship between firm size and growth on intellectual capital disclosure. The greater the size and growth of the company, the more it encourages companies to disclose intellectual capital in the company's annual report. Also, we find a non-recursive model between intellectual capital disclosure and firm value. This shows that the broader the disclosure of IC information by the company, the better the investor's perception of the company is reflected in the value of the company. Meanwhile, at different times the current condition of the company's value will encourage companies to disclose more complete IC information.

Keywords: intellectual capital disclosure, firm characteristic, firm value, non-recursive model

1. Introduction

Stakeholder theory requires companies to carry out various strategies to maintain good relations with stakeholders. Freeman & Phillips (2002) explains that maintained good relations will bring success to the company. The manager's job is to maintain the company's good relationship with them because of the relationship, in the long run, has implications for the company's value. Strategies to maintain good relations between the company and its stakeholders, among others, can be done through reporting various activities carried out by the company in one year, including disclosing the governance of intellectual capital owned by the company. This disclosure in other parts is a means for companies to give signals to stakeholders as a means of decision making. Signals given by companies in other parts are expected to be an effort for companies to reduce information asymmetry.

Empirically, research on IC disclosure about stakeholder theory and signaling theory has been carried out, including by Bukh et al. (2005). They explained in the IPO condition, IC information disclosure is very necessary to provide clear information to potential investors and be the initial information that will be the valuation of potential investors and later reflected in stock prices. They found that in the IPO process on the Danish exchange most of the prospective issuers had provided complete information about IC in the prospectus even though it was done voluntarily. Based on the factors that drive the disclosure of IC information, Bukh et al. (2005) explain managerial ownership and industry type are factors that influence companies to make IC disclosures, while the size and age of the company are not factors that encourage IC disclosures by companies going to IPO.

Abdolmohammadi's research (2005) also found that disclosure of IC information has an influence on market capitalization in companies included in Fortune 500 in America. Besides, he also found that in 1993 - 1997 IC information disclosure was done by many companies included in the new economic era and showed an increase in IC information disclosure every year. This shows the disclosure of IC information is becoming increasingly realized by companies to provide clear and complete information to investors.

Orens et al. (2009) found the disclosure of IC information affects the value of the company, and conversely, the value of the company becomes one of the bases for companies to improve the quality of disclosure of IC information. This study also complements the findings of previous studies which agreed that the relationship between IC disclosure and corporate value is one-way. Thus he positioned the firm's value variable to be the causal variable of IC disclosure just as other researchers positioned company size, ownership structure, profitability, and so on. Bukh et al. (2005), Abdolmohammadi (2005), and Orens et al. (2009) found an influence between IC disclosure and firm value different results were stated by Hassan et al. (2009) who found IC disclosures made in a mandatory manner had an influence on firm value in a negative direction, whereas disclosures made voluntarily did not affect firm value.

Previous research on IC disclosure and company value shows inconsistencies. Therefore, the relationship between IC disclosure and company value is still an interesting research to be studied by trying a new model such as that conducted by Orens et al. (2009) because when referring to the agency theory the condition of the company can be a factor that encourages companies to make various efforts to reduce agency conflict caused by the information asymmetry problem. In another section, studies that reveal reciprocal relationships between IC disclosure and company value are rare. Therefore, research to conduct empirical testing of reciprocal relationships between IC disclosure and company value can be considered as another alternative in testing the relationship between the two variables by involving the size and growth variables of the company as a factor suspected of motivating companies to make IC disclosures.

This study aims to analyze empirically the influence of company size on IC information disclosure, empirically analyze the effect of company growth on IC information disclosure, and analyze empirically the effect of IC information disclosure on company value, and vice versa. In line with these objectives, this study uses a non-recursive model analysis of publicly listed companies listed on the Indonesia Stock Exchange. This study found that finding firm size and firm growth was a variable that determined companies to disclose IC information. In addition, this study found a reciprocal relationship between IC disclosure and company value. This shows that the disclosure of IC is a factor that determines the value of the company, and at different times the condition of the company's value is one of the factors that encourage companies to disclose the complete IC. Thus, the results of this study provide support for the signaling theory which proves that the completeness of information about a company's IC will be a factor that can reduce the information gap between the principal and agent. The research findings also provide support for stakeholder theory that requires companies to go public to always pay attention to the information needs of investors.

2. Literature Review

2.1 Stakeholders Theory

The company is carrying out its activities has a responsibility towards the stakeholders. Donaldson & Preston (1995) divide company relations with stakeholders into three dimensions namely empirical, instrumental, and normative dimensions. The empirical dimension is intended to describe and/or explain how companies behave. The instrumental dimension is intended to describe what will happen if the company behaves in a certain way. The normative dimension is related to the moral decency of corporate behavior. Stakeholder theory seeks to describe what managers do for stakeholder relations, what will happen if managers adhere to the principles of stakeholder management, and what managers must do dealing with stakeholders (Jones, 1995).

Attention to stakeholders is expected to further enhance the value of the company (Jensen, 2002). Stakeholder theory is a managerial conception of strategy and organizational ethics. The central idea is that an organization's success depends on how well it manages relationships with key groups such as customers, employees, suppliers, communities, financiers, and others who can influence the realization of its objectives. The manager's job is to maintain the support of all these groups, balance their interests while making the organization a place where stakeholder interests can be maximized over time (Freeman & Phillips, 2002).

Their opinion shows that companies need to make strategic efforts to increase the value of their companies. One of the strategic efforts that companies can do is to submit reports relating to the activities they carry out in one year regularly. Reporting this activity will show how the company behaves and at the same time describe what will happen if the company behaves in this way. In another part, the reporting of company activities is an illustration of how the company deals with key groups such as customers, employees, suppliers, and investors.

One of the reports that must be done by companies is reporting on IC or known as IC disclosure. IC disclosure is very important because, for many companies, IC represents a significant proportion of the total value, however,

many companies ignore IC reporting. The reluctance to report ICs makes companies that have abundant ICs appear less valuable than they are (Guthrie, Petty, & Ricceri, 2006). They added, ICs cannot be recognized in financial statements because they do not meet the accounting definition of an asset. The lack of correlation between costs incurred and the value of future benefits means that the financial information on the IC provided under existing reporting standards is not enough to measure its value. Thus, financial accounting standards have not been able to fully meet the challenges of knowledge-intensive companies.

Abeysekera (2007) explains the annual report is an ideal medium to reveal IC because it provides a good proxy for measuring the comparative position and trends of ICs between companies, industries, and countries. Also, annual reports are instruments that companies use to convey problems and messages comprehensively. Nielsen et al (2006) suggested that disclosure of IC in an annual report can be done by combining numbers, visualization, and narrative so that it is useful in creating corporate value. The creation of corporate value can occur if the information presented in the annual report describes the company's activities that are credible, integrated and "true and fair".

Measurement of IC disclosures in company annual reports can be done using content analysis methods using indexes (Bukh et al., 2005; Guthrie et al., 2006). According to them, content analysis is very appropriate to use because this method uses the codification of qualitative and quantitative information into predetermined categories to trace patterns in the presentation and reporting of information. This methodology seeks to determine the manifest content of written communication using systematic, objective and reliable analysis. Therefore, many IC researchers use this method to test IC disclosures in annual reports (Guthrie et al., 2006).

Quantitatively, the instruments used in the content analysis method use the IC index. According to Bukh et al (2005), the disclosure index is used to measure the amount of information about IC included in the prospectus. This tool is most often applied to measure the level of disclosure in an annual report. Disclosure index consists of counting the number of items associated with information that contains a particular report, based on a list of index items that may have been predetermined.

IC disclosure in this study, using the method used by Bukh et al (2005), Guthrie et al (2006), and Yi & Davey (2010) using the Intellectual Capital Disclosure index (ICD Index) based on weighting as follows:

Score 5 : if IC information is disclosed in quantitative/monetary form with narration;

Score 4 : if IC information is disclosed in quantitative/monetary form only, without narration;

Score 3 : if IC information is disclosed in narrative form;

Score 2 : if IC information is disclosed and discussed with limited references, or only briefly presented when discussing other information;

Score 1 : if the company states that the disclosure of IC items is immaterial;

Score 0 : if IC information is not disclosed.

The components of IC disclosure are described as follows:

Table 1. IC disclosure item

Item	Description
1. Internal Capital	
a. Intellectual property	Comprises patents, copyrights and trademarks
b. Management philosophy/corporate culture	Consists of the vision, attitudes, experiences, beliefs and values of a company
c. Management processes	Relating to processes within a company
d. Information systems	Details on the development, application and impact of information systems
e. Financial relation	Relationships between the company and finance providers, such as banks
2. External Capital	
a. Brands reputation	Details of brands and reputation building
b. Customers	Information (indicators) relating to customers

Item		Description
c.	Customer satisfaction	Indicators of customer satisfaction
d.	Distribution channels	Information regarding how a company's service and products reach its customers
e.	Business partnership	Business collaboration involving the company
f.	Licensing agreements	Held by a company
g.	Market share	Information about the market share of a company for any products
3.	Human Capital	
a.	Employee	Information (indicators) relating to employees
b.	Education/training	Education or training programs provided by a company
c.	Work-related knowledge	Obtained from the job or training by employees
d.	Entrepreneurial spirit	Characterized by innovation and risk-taking

Source: Bukh et al (2005), Guthrie et al (2006), dan Yi & Davey (2010)

Disclosure of IC information in Indonesia has been regulated in the Decree of the Chairman of Bapepam - LK No. Kep-431 / BL / 2012 concerning the Submission of Issuer's Annual Report. The regulation aims to improve the quality of information disclosure of issuers' annual reports as an important source of information for investors and stakeholders in making decisions. One aspect related to this research, the annual report is urged to provide information about the number of employees and a description of competency development, for example, aspects of employee education and training that have been carried out. Thus, the nature of IC disclosure in Indonesia is still very limited and voluntary.

2.2 Signaling Theory

Signaling theory is intended to overcome the problem of information asymmetry that occurs in the market (Morris, 1987; Spence, 2002). According to them, signaling is a form of communication between the two parties using various communication media. The media requirements that can be used to communicate information to other parties must be confirmed. This means that all information submitted must be following the actual situation. Information as a signal can be an observable action, or an observable structure to show the hidden characteristics or quality of a signaler. Therefore, signaling theory is very useful to distinguish the behavior of two parties who have access to different information (Connelly, Certo, Ireland, & Reutzel, 2011).

Signaler will convey information/signals will depend on the nature of the information/signal itself. If the information/signal possessed by the signaler is positive then he will convey it to outside parties because it is related to the imaging of the company they manage, and vice versa if the information is negative then it is likely that they decide not to submit it (Connelly et al., 2011). This condition shows that the company will continue to strive to maintain its good name through the delivery of information to stakeholders, with the hope that the company's value can still be maintained or enhanced.

Karasek & Bryant (2012) explain signaling theory by suggesting interactions between three elements namely information, signaling, and perception. The interactions between the three are described as follows:

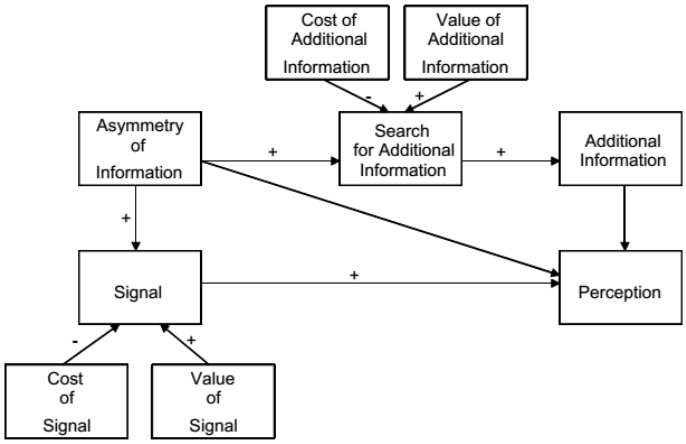

Figure 1. Information, signaling, and perception

Figure 1 shows the information asymmetry will encourage the signaler to give the signal more fully to the receiver. Meanwhile, the existence of information asymmetry will also encourage the receiver to look for additional information that will ultimately be perceived by the receiver in decision making. In creating a signal two components will be considered, namely the cost of signal and the value of the signal. The relationship between the cost of a signal is inversely proportional to the signal. This is meant the greater the cost that must be incurred by the signaler in providing information, the lower the signaler impulse gives the signal/information to the receiver. Then, the relationship of the value of the signal is directly proportional to the signal which is interpreted as the greater the value of the benefits of the signal for the receiver, the stronger the signaler's impulse gives the signal/information. Similarly, in the search for additional information, the cost of finding additional information and the value of additional information each have the same relationship.

IC information disclosure is a signal that will give a perception to the receiver. When IC information submitted in an annual report meets stakeholder expectations, it certainly will reduce information asymmetry regarding IC governance. Conversely, if IC information is not fully revealed, it is also possible that interested parties will seek additional information about the existence of IC in the company as a basis for decision making. IC disclosure as a signal that will be received by stakeholders as receivers, is thought to have an impact on the company's value.

2.3 Firm Size and IC Disclosures

Stakeholder theory provides a rational reason for the company's necessity to express its various activities in various media, including an annual report (Jones, 1995). Submitting a report becomes very important for the company to do to maintain stakeholder trust. (Karasek & Bryant, 2012) asserted that a little more information provided by the company would shape the recipient's perception of the company as the signal provider. Thus we suspect, the quantity and quality of the reports presented by the company will also influence the quality of decision making on the company. It is very possible if the company can provide complete information including regarding IC as intangible assets will encourage stakeholder decisions by company expectations.

The pressure on the need to submit a complete annual company report seems to be viewed in terms of company size. Companies with large assets and work with high technology have abundant IC resources (Petty & Cuganesan, 2005; Guthrie et al., 2006). Ownership of IC resources will encourage large companies to make more extensive IC disclosures because large-scale companies usually become the focus of stakeholder attention. Therefore, IC disclosure becomes a means for companies to improve communication with stakeholders with a greater volume of information (Petty & Cuganesan, 2005).

Oliveira et al (2006) added that large companies are very likely to operate in different markets or sectors to obtain financing in various countries, and of course are required to provide more information to stakeholders, especially financial analysts about ICs as intangible assets they have. Another case is that larger companies get tighter supervision from government agencies, therefore better reporting will reduce the pressure of supervision.

Regarding empirical evidence that company size influences IC disclosure is also stated in research An et al (2011) which explains, generally reports more IC information than small companies. According to the large companies usually have more forms of intellectual capital, and are therefore expected to report more IC information. Both large

companies have a wider range of stakeholders and more responsibility to stakeholders. Thus they must disclose more IC information to demonstrate accountability to stakeholders.

Based on the description, the relationship between company size and IC disclosure has sufficient theoretical and empirical support as an argument to propose the following hypothesis:

H_1: Firm size has a positive effect on IC disclosure.

2.4 Company Growth and IC Disclosures

Companies in growing conditions require more adequate disclosure because this will reduce the occurrence of information asymmetry. Therefore, the company will disclose various information needed by interested parties in more detail (Abdolmohammadi, 2005; Bukh et al., 2005; Hanifa & Rashid, 2005; Oliveira et al., 2006). In other words, companies with rapid growth tend to disclose things transparently including IC disclosures.

Abeysekera (2011) added that companies with high growth rates also have high-income potentials, and these companies tend to disclose wider IC information to provide information to investors with the potential revenue to be gained in the future. Meanwhile, Whiting & Woodcock (2011) argues that disclosure to IC in a broader manner is also possible by companies newly listed on the stock exchange. Companies with relatively new growth will try to show their ability to stakeholders to open up opportunities to access sources of funds from investors.

Various opinions of previous researchers, we suspect that the drive to disclose IC tends to be done more freely by companies with high growth rates. Meanwhile, for companies that tend to be in poor growing conditions, there is a tendency for companies to behave not to provide complete IC disclosures. Chances are, companies with poor growth have concerns that the report concludes that growth is not good due to inadequate IC problems. This means that there is a tendency for the company to maintain its image in terms of managing its IC.

Petty & Cuganesan (2005) also Taliyang et al (2011) found that companies with negative growth tend to not disclose IC reporting adequately. Conversely, companies with positive growth tend to reveal more complete IC reporting.

Based on the description, the relationship between company growth and IC disclosure has sufficient theoretical and empirical support as an argument to propose the following hypothesis:

H_2: Company growth has a positive effect on IC disclosure.

2.5 IC Disclosures and Firm Value

Information asymmetry between the principal and agent has long been the concern of researchers to explore it further, including (Spence, 2002) which explains that the information gap between the principal and agent can be reduced if the party who has the information can send a signal to related parties. The signal can be an observable action or an observed structure that is used to show the hidden characteristics (or quality) of the signaler.

By its nature, the signaler will convey information will depend on the nature of the information itself. If the information possessed by the signaler is positive then he will pass it on to outside parties because it is related to the imaging of the company they manage, and vice versa if the information is negative then it is likely that they decide not to submit it (Connelly et al., 2011). Thus it can be understood that the nature of information greatly determines the signaler's decision to deliver it to an outside party, and the delivery of information by the signaler does not rule out the possibility of adjusting the extent of disclosure.

Regarding the importance of information in decision making and company management (Bontis, 2002) states that the disclosure of IC information is one of the important information that must be presented by the company in addition to the information in the form of company financial statements. As quoted by Bontis (2002), Rylander et al., Mentioned that two important things become the basis for the need for IC information presentation namely, first: the increased use of intangible assets in the form of ICs by companies to further increase the information asymmetry gap. Second: many companies do not consider it important to disclose IC to external parties even though the information is very important in explaining the strategy and implementation of company management.

Realizing the importance of disclosure of IC has now made many public companies in several countries including Indonesia disclose IC even though most are still voluntary (Abeysekera, 2011; Abhayawansa, 2014; Bontis, 2010; Husin, Hooper, & Olesen, 2012; Orens et al., 2009; Sonnier, 2008; Vafaei, Taylor, & Ahmed, 2011; White, Lee, & Tower, 2007; Yi & Davey, 2010). Thus the extent of IC disclosure by companies will vary depending on each company's goals associated with each interest.

Voluntary disclosure of company information in useful decision making can be considered an early stage in solving the problem of alleged weaknesses in traditional financial reporting. The benefits of voluntary disclosure are related

to improving weaknesses in the capital market which are traditionally oriented towards financial statements, reducing volatility, reducing internal trade caused by ownership of information only known by internal parties (Kristandl & Bontis, 2007).

The existence of IC disclosures made by companies has attracted the interest of researchers in several countries to relate them to the value of the company. Research conducted by Abdolmohammadi (2005) found that IC disclosure influences the market capitalization value of Fortune 500 companies. Also, the results of his research reveal significant differences regarding IC disclosure between new and old economic sectors, where the disclosure of IC is more much was disclosed to companies categorized in the new economic sector.

The effect of IC disclosure on firm value was also stated by Orens et al (2009) who explained that in cross-sectional analysis, the extent of IC disclosure had a positive effect on firm value. Also, they revealed the widespread disclosure of IC information in Europe followed by the declining information asymmetry. Vafaei et al (2011) also found IC disclosure had a positive effect on firm value based on country and industry characteristics. Furthermore, they found that the development of IC disclosures that were relevant to investor needs only occurred in the United Kingdom and Australia.

Where most researchers find IC disclosure has an impact on firm value, given the signaling theory we suspect that corporate value is a signal from stakeholders that companies must respond to organize IC disclosure. This derivation is based on the thought of Karasek & Bryant (2012) which explains in the theory of signaling that there is an interaction between information, signaling, and perception between signalers and receivers. Thus, when companies submit IC disclosures in annual reports, they are the signalers and stakeholders as receivers. Conversely, stakeholder responses to IC disclosures are reflected in the value of the company, this is a signal that is shown by stakeholders to the company as a receiver.

The company's response to the company's value as a signal given by stakeholders, in other parts is a form of corporate behavior. Donaldson & Preston (1995) explain that stakeholder theory has an empirical dimension that describes corporate behavior. This opinion is also in line with the opinion of Jones (1995) which states that one form of corporate behavior in stakeholder theory includes actions taken by managers when dealing with stakeholders.

Empirically, Orens et al (2009) found the value of the company is a factor that drives companies to disclose IC information. In other words, when the condition of the company's value in the current period shows an unfavorable situation, the company will try to improve the condition through the full disclosure of IC information.

Based on theoretical arguments and supported by several empirical evidence from the results of previous studies, the following hypotheses are proposed:

H3a: IC disclosure has a significant effect on firm value.

H3b: Firm value has a significant influence on IC disclosure.

3. Methodology

The variables studied consisted of company size, company growth, intellectual capital disclosure, and firm value. The following is an explanation of each variable:

Company Size (SIZE)

Company size indicates the size or scale of business. Proxies of company size in this study refer to research by Ferreira et al., (2012), Oliveira et al. (2006) which is formulated as follows:

$$\text{Firm size} = \ln \text{total asset} \quad (1)$$

Company Growth (GRWT)

Sales growth measures how well the company maintains its overall economic position (Petty & Cuganesan, 2005; Taliyang et al., 2011) formulated:

$$\text{Growth} = \frac{\text{Sales}_t - \text{Sales}_{t-1}}{\text{Sales}_{t-1}} \text{x } 100\% \quad (2)$$

IC Disclosure (ICD)

IC disclosure is measured using a content analysis approach developed by White et al (2007) by using a 0-5 score on each component of IC information based on the disclosure model used by Bukh et al (2005), Guthrie et al (2006), Yi & Davey (2010) (see Table 5). Next, each IC component item disclosed is calculated using the ICD index:

$$\text{Score} = (\sum_i^m di / M) \text{ x } 100\% \quad (3)$$

Firm Value (PBV)

Price to Book Value (PBV) illustrates how much the market values the book value of a company's shares (Hassan et al., 2009; Orens et al., 2009). Company value is formulated as follows:

$$\text{PBV} = \frac{\text{Stock price per share}}{\text{Book value per share}} \quad (4)$$

All of these variables were tested empirically in the manufacturing sector using financial statement data and annual reports of the Indonesia Stock Exchange (IDX) in 2011-2013.

The analysis technique used is the non-recursive path analysis model which is a structural equation model that allows for a reciprocal relationship between construct variables in the model (Bryne, 2009). The research model is as follows:

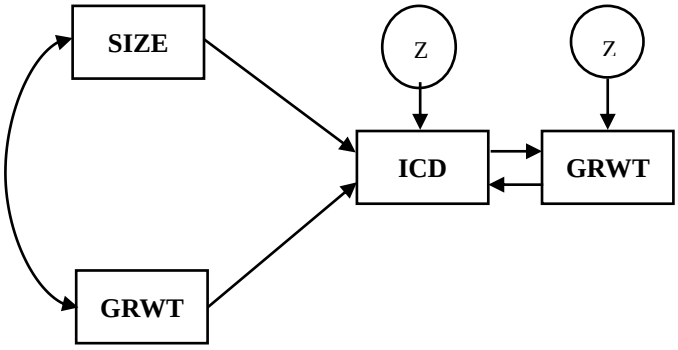

Figure 2. Non-recursive ICD and PBV research model

Based on the model, the equation can be arranged as follows:

$$ICD_t = SIZE_t + \rho GRWT_t + Z_1 \quad (5)$$

$$PBV_{t+1} = SIZE_t + \rho GRWT_t + ICD_t + Z_2 \quad (6)$$

$$ICD_t = SIZE_t + \rho GRWT_t + PBV_t + Z_2 \quad (7)$$

4. Result

Table 2 shows the size of the company proxy by the natural logarithm of total assets shows an increasing trend, where this increase is in line with the increase in IC disclosure. Unlike an increase in company size, company growth showed a decline in 2012 and improved again in 2013, but this condition instead made the company increase IC disclosure. This finding is different from the research findings of Petty & Cuganesan (2005) and Taliyang et al (2011) which suggest that companies with negative growth tend to not disclose IC reporting adequately. Conversely, companies with positive growth tend to reveal more complete IC reporting. It might be different for companies in Indonesia, they prefer to make adequate disclosures about ICs to keep giving confidence to stakeholders.

Table 2. Variable description (N = 237)

Variable	2011	2012	2013	Trend (%)	
SIZE	14.38	14.50	14.62	0.83	0.83
GRWT	14.90	8.49	10.03	-43.02	18.14
ICD					
▪ *Internal Capital*	28.20	33.05	35.78	17.23	8.26
▪ *External Capital*	26.21	29.47	32.33	12.44	9.70
▪ *Human Capital*	27.06	27.85	31.22	2.89	12.13
PBV	2.50	2.95	2.58	18.00	-12.54

Table 2 shows the overall composition of the ICD variable has increased which shows companies in Indonesia are trying to meet the interests of their stakeholders through better IC disclosure. In terms of the disclosure component, almost all components are disclosed in a balanced manner. This condition shows that companies in Indonesia understand the importance of IC disclosure for their stakeholders. In other parts, it seems that there is a good awareness that the disclosure of IC as a signal must be conveyed to stakeholders. Furthermore, the PBV variable of public companies in Indonesia showed a reasonable development even though in 2013 it experienced a decline that was not too drastic. This situation reflects that the market still believes in the prospects of companies in Indonesia.

As described in the research methodology, the analysis technique used is the non-recursive model path analysis. According to Bryne (2009), there are basic and additional assumptions when using a non-recursive model. The following shows the test results for the intended assumptions

Table 3. Testing results for path analysis assumptions

Requirements	Criteria	Value	Result
Sample	> 100	237	
Data normality	Coef. Mardia < 2,58	-1.609	
Outlier	P1 dan P2 > 0,00	P1 dan P2 > 0,00	Qualify
Multicolinearity	Determinant of sample covariance matrix > 0	16.747	
Stability Index	IS < 1	.443	

In addition to meeting the required assumptions, the path analysis model developed in this study shows the absolute fit measures represented by chi-square, probability values, GFI, and RMSEA as well as the incremental fit measures represented by AGFI and TLI are considered to have fulfilled the requirements required in the path analysis so the model is declared fit with the data as shown in the following figure:

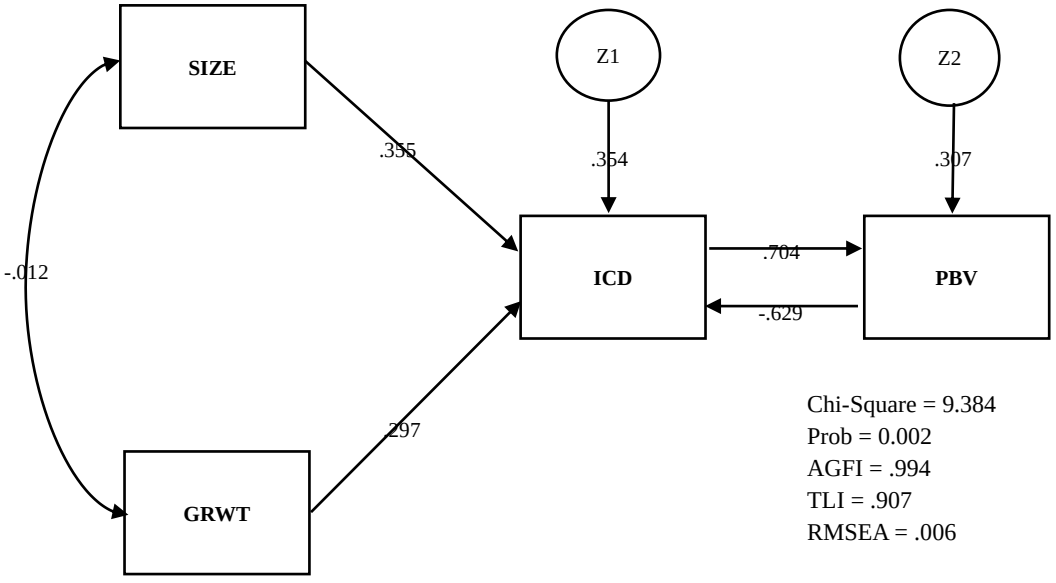

Figure 3. Non-recursive model ICD and PBV

After the model is declared fit with the data, all exogenous variables are tested for their effects on endogenous variables following the developed hypothesis. Table 4 shows the SIZE and GROWTH variables for the ICD variable having a probability value below alpha 5%, as well as the ICD variable for PBV, and vice versa.

Table 4. Regression weight non-recursive ICD and PBV

			Estimate	S.E.	C.R.	P
ICD	<---	SIZE	.347	.090	3.873	***
ICD	<---	GRWT	.505	.150	3.374	***
PBV	<---	ICD	.423	.146	2.901	.004
ICD	<---	PBV	-1.049	.451	-2.326	.020

Table 4 shows SIZE has a positive relationship with ICD with a path coefficient of 0.355 and GRWT with a path coefficient of 0.297. Thus SIZE has a stronger influence than the company's growth in disclosing IC. Simultaneously, SIZE and GRWT affect ICD by 0.354 or 35.40%. This means that 64.60% is caused by other factors not examined. ICD and PBV have a reciprocal relationship where the path coefficient of ICD to PBV is 0.704 with a positive direction, but conversely, the relationship of PBV to ICD has a negative direction with a path coefficient of -0.662 with a total effect of 30.7%.

5. Discussion

Hypothesis testing results that show SIZE variables have a positive effect on ICD. This finding is in line with research findings of Petty & Cuganesan (2005), Guthrie et al (2006), and Oliveira et al (2006) who concluded that the greater the size of the company shown by the total assets it has, will encourage companies to make more IC disclosures complete. When looking at Table 4, it can be seen that in terms of assets, all companies experience an increase in total assets and also in terms of disclosure. In another part of this finding revealed that as a public company, increasing the size of the company motivates companies to be able to account for stakeholders in the form of more complete IC disclosure. Referring to stakeholder theory, this finding shows that companies with large asset ownership will always try to convey their business activities following the needs of stakeholders, because the larger the company the higher the attention and demands of both parties towards the company (Ferreira et al., 2012; Guthrie et al., 2006; Petty & Cuganesan, 2005; Taliyang et al., 2011).

Variable GRWT was found to have a significant effect on IC disclosure in a positive direction. This finding reflects that companies in better growth conditions will be the concern of stakeholders. IC disclosure is the most important thing done by the company to maintain confidence and strengthen the company's positive image (Connelly et al., 2011; Karasek & Bryant, 2012). This finding also supports the findings of Abeysekera (2011) which explains that companies with good growth tend to make more complete IC disclosures. But in Table 3 the trend of variable growth in 2012 is inversely proportional to the disclosure of IC. We conclude, the company is trying to give stakeholders confidence about various information about IC. This finding illustrates that companies in Indonesia have very good awareness in establishing good relations with stakeholders. This is as explained by Donaldson & Preston (1995) as well as Jones (1995) who argued that one form of corporate behavior in stakeholder theory includes actions taken by managers when dealing with stakeholders.

IC disclosures made by companies in this study were found to influence firm value. This shows that the more extensive the IC disclosure made by the company, the better the investor's perception of the company is appreciated by the share price. This finding strengthens the signaling theory which explains that the positive signals given by companies to reduce information gaps will get a good response from the stockholders. At a different time lag, the condition of the company's value that slumped would encourage companies to make more complete disclosure of IC information. The finding of a reciprocal relationship between IC disclosure and firm value reinforces the findings of Orens et al., (2009).

Theoretically, these findings provide additional conclusions to the signaling theory that under different conditions, the signaler can change the role of a receiver and vice versa the receiver can become a signaler. This means that the relationship between the company and stakeholders can take place both ways. This is in line with the proposition of Karasek & Bryant (2012) which explains in the theory of signaling that there is an interaction between information, signaling, and perception between signalers and receivers.

This research has implications on the strengthening of signaling theory which shows the completeness of information outside the financial information provided by the company will be a factor that can reduce the information gap between the company and stakeholders. Also, research findings reinforce stakeholder theory, where public companies must always pay attention to the information needs of stakeholders. This research also informs companies

to make improvements to the content of non-financial information to increase stakeholder confidence. Thus, it is time for OJK (Financial Services Authority) to regulate various provisions for the presentation of annual reports by perfecting several IC component disclosure items that are voluntary to be mandatory.

This research is limited to one sector that cannot be generalized to other sectors. Therefore, researchers suggest that similar studies be conducted involving all sectors of the Stock Exchange. Types of industrial variables and intellectual capital value-added (VAIC) can be considered variables about IC disclosure.

References

Abdolmohammadi, M. J. (2005). Intellectual Capital Disclosure and Market Capitalization. *Journal of Intellectual Capital*, *6*(3), 397-416. https://doi.org/10.1108/14691930510611139.

Abeysekera, I. (2007). Intellectual Capital Reporting between a Developing and Developed Nation. *Journal of Intellectual Capital*, *8*(2), 329-345. https://doi.org/10.1108/14691930710742871.

Abeysekera, I. (2011). The Relation of Intellectual Capital Disclosure Strategies and Market Value in Two Political Settings. *Journal of Intellectual Capital*, *12*(2), 319-338. https://doi.org/10.1108/14691931111123449

Abhayawansa, S. A. (2014). A Review of Guidelines and Frameworks on External Reporting of Intellectual Capital. *Journal of Intellectual Capital*, *15*(1), 100-141. https://doi.org/10.1108/JIC-04-2013-0046

An, Y., Davey, H., & Eggleton, I. R. C. (2011). The Effects of Industry Type, Company Size and Performance on Chinese Companies' IC Disclosure: A Research Note. *Australian Accounting Business and Finance Journal*, *5*(3), 107-116.

Bontis, N. (2002). *Intellectual Capital Disclosure in Canadian Corporations*. Ontario, Canada.

Bontis, N. (2010). Assessing Knowledge Assets : A Review of The Models Used to Measure Intellectual Capital. *International Journal of Management Review*, *3*(1), 41-60. https://doi.org/10.1111/1468-2370.00053

Bryne, B. (2009). *Structural Equation Modeling With AMOS: Basic Concepts, Applications, and Programming (Multivariate Applications)* (2nd ed.). Massachusetts, United States of America: Palgrave Macmillan.

Bukh, P. N., Nielsen, C., Gormsen, P., & Mouritsen, J. (2005). Disclosure of Information on Intellectual Capital in Danish IPO Prospectuses. *Accounting, Auditing & Accountability Journal*, *18*(6), 713-732. https://doi.org/10.1108/09513570510627685

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling Theory: A Review and Assessment. *Journal of Management*, *37*(1), 39-67. https://doi.org/10.1177/0149206310388419.

Donaldson, T., & Preston, L. E. (1995). The Stakeholder Theory of The Corporation: Concepts, Evidence, and Implications. *Academy of Management Review*, *20*(1), 65-91. https://doi.org/10.5465/amr.1995.9503271992

Ferreira, A. L., Branco, M. C., & Moreira, J. A. (2012). Factors Influencing Intellectual Capital Disclosure by Portuguese Companies. *International Journal of Accounting and Financial Reporting*, *2*(2), 278-299. https://doi.org/10.5296/ijafr.v2i2.2844.

Freeman, R. E., & Phillips, R. A. (2002). Stakeholder Theory: A Libertarian Defense. *Business Ethics Quarterly*, *12*(3), 331-349. https://doi.org/10.2139/ssrn.263514

Guthrie, J., Petty, R., & Ricceri, F. (2006). The Voluntary Reporting of Intellectual Capital: Comparing Evidence from Hong Kong and Australia. *Journal of Intellectual Capital*, *7*(2), 254-271. https://doi.org/10.1108/14691930610661890.

Hanifa, M. H., & Rashid, H. M. A. (2005). The Determinant of Voluntary Disclosures in Malaysia: The Case of Internet Financial Reporting. *UNITAR E-Journal*, *2*(1), 22-42.

Hassan, O. A. G., Romilly, P., Giorgioni, G., & Power, D. (2009). The Value Relevance of Disclosure : Evidence from The Emerging Capital Market of Egypt. *The International Journal of Accounting*, *44*, 79-102. https://doi.org/10.1016/j.intacc.2008.12.005

Husin, N. M., Hooper, K., & Olesen, K. (2012). Analysis of Intellectual Capital Disclosure - an Illustrative Example. *Journal of Intellectual Capital*, *13*(2), 196-220. https://doi.org/10.1108/14691931211225030

Jensen, M. C. (2002). Value Maximization, Stakeholder Theory, and the Corporate Objective Function. *Business Ethics Quarterly*, *12*(2), 235-256. https://doi.org/10.2307/3857812

Jones, T. M. (1995). Instrumental Stakeholder Theory: A Synthesis of Ethics and Economics. *Academy of*

Management Review, *20*(2), 404-437. https://doi.org/10.5465/amr.1995.9507312924

Karasek, R., & Bryant, P. (2012). Signaling Theory: Pasr, Present, and Future. *Academy of Strategic Management Journal*, *11*(1), 91-100.

Kristandl, G., & Bontis, N. (2007). The Impact of Voluntary Disclosure on Cost of Equity Capital Estimates in a Temporal Setting. *Journal of Intellectual Capital*, *8*(4), 577-594. https://doi.org/10.1108/14691930710830765

Morris, R. D. (1987). Signalling, Agency Theory and Accounting Policy. *Accounting and Business Research*, *18*(69), 47-56. https://doi.org/10.1080/00014788.1987.9729347

Nielsen, C., Bukh, P. N., Mouritsen, J., Johansen, M. R., & Gormsen, P. (2006). Intellectual Capital Statements on Their Way to The Stock Exchange Analyzing New Reporting Systems. *Journal of Intellectual Capital*, *7*(2), 221-240. https://doi.org/10.1108/14691930610661872.

Oliveira, L., Rodrigues, L. L., & Craig, R. (2006). Firm-Specific Determinants of Portuguese Intangibles Reporting : Evidence from The Portuguese Stock Market. *Journal of Human Resource & Accounting*, *10*(1), 11-33. https://doi.org/10.1108/14013380610672657.

Orens, R., Aerts, W., & Lybaert, N. (2009). Intellectual Capital Disclosure, Cost of Finance and Firm Value. *Management Decision*, *47*(10), 0025-1747. https://doi.org/10.1108/00251740911004673.

Petty, R., & Cuganesan, S. (2005). Voluntary Disclosure of Intellectual Capital by Hongkong Companies: Examining Size, Industry and Growth Effects Over Time. *Australian Accounting Review*, *15*(2), 40-50. https://doi.org/10.1111/j.1835-2561.2005.tb00291.x

Sonnier, B. M. (2008). Intellectual Capital Disclosure: High-Tech versus Traditional Sector Companies. *Journal of Intellectual Capital*, *9*(4), 705-722. https://doi.org/10.1108/14691930810913230

Spence, M. (2002). Signaling in Retrospect and the Informational Structure of Markets. *The American Economic Review*, *92*(3), 434-459. https://doi.org/10.1257/00028280260136200

Taliyang, S. M., Latif, R. A., & Mustafa, N. H. (2011). The Determinants of Intellectual Capital Disclosure among Malaysian Listed Companies. *International Journal of Management and Marketing Research*, *4*(3), 25-33.

Vafaei, A., Taylor, D., & Ahmed, K. (2011). The Value Relevance of Intellectual Capital Disclosures. *Journal of Intellectual Capital*, *12*(3), 407-429. https://doi.org/10.1108/14691931111154715.

White, G., Lee, A., & Tower, G. (2007). Drivers of Voluntary Intellectual Capital Disclosure in Listed Biotechnology Companies. *Journal of Intellectual Capital*, *8*(3), 517-537. https://doi.org/10.1108/14691930710774894

Whiting, R. H., & Woodcock, J. (2011). Firm Characteristics and Intellectual Capital Disclosure by Australian Companies. *Journal of Human Resource Costing & Accounting*, *15*(2), 102-126. https://doi.org/10.1108/14013381111157337.

Yi, A., & Davey, H. (2010). Intellectual Capital Disclosure in Chinese (Mainland) Companies. *Journal of Intellectual Capital*, *11*(3), 326-347. https://doi.org/10.1108/14691931011064572.