

# Effect of Business Models on Intellectual Capital Disclosure: Empirical Studies in Indonesian Manufacturing Companies

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The purpose of this study is to examine the effect of business models on intellectual capital disclosure (ICD). The novelty in this study is the use of indicators of product quality, cost efficiency, and innovation indicators contained in the company's business model variables, besides using company size, leverage and ROA as a control variable on the intellectual capital disclosure variable. The population in this study consisted of manufacturing companies on the Indonesia Stock Exchange for the period 2015 - 2017. The sample was determined by the purposive sampling method. The total sample of this research is 225 data samples. This study uses multiple regression analysis for hypothesis testing. The results of this study indicate that the business model has a positive and significant effect on intellectual capital disclosure.

**Key words:** *Business Model, Product Quality, Cost Efficiency, Innovation, ICD.*

## Introduction

The company's financial statements become the basis in making investment decisions for investors, however related to the management of intangible assets, financial reporting that has been running has a weakness. For example, many companies listed on the capital market are driven by the creation and use of intangible assets, such as intellectual capital (IC). These increasingly important assets contribute significantly to a company's competitiveness (OECD, 2012), and have the potential to improve capital market efficiency (Petty and Guthrie, 2000).



However, although current economic growth is associated with IC, the framework for disclosure of IC is not available in financial reporting (CFA Institute, 2007). To compensate for these limitations, Petty and Cuganesan (2005) state that this information is reported voluntarily by the company, to better meet stakeholder information needs. Many companies try to fulfill more reliable information, voluntarily completing their financial reporting with non-financial narrative information (Abeysekera, 2010; Hajj and Ghazali, 2013). Non-financial narrative information included in this case is disclosure of intellectual capital.

Intellectual capital is an important form of capital, which refers to intangible resources, to create corporate value (Ashton, 2005), as well as providing competitive advantage to companies (Edvinsson and Malone, 1997; Stewart, 1997). The concept of intellectual capital and the concept of a business model are concepts that concern the transformation of resources (capital) into value, as stated by Soewarno and Ramadhan (2020) that the intellectual model can increase the value of a company. In the economic development dominated by the service industry, intellectual capital is documented as the most important type of capital (OECD, 2006). This raises concerns when financial statements become less relevant to the value of the company (Lev and Zarowin, 1999; Zéghal and Maaloul, 2011). Solutions in order to overcome this, several components of intellectual capital can be mentioned in the narrative section of the annual report. Related to this, it is greatly influenced by factors of the company's business model.

The company's business model is the process of how the company provides value to customers, persuades customers to pay value, and turns those payments into profit (Teece, 2010). It reflects about what customers want, how they want it, how companies can fulfil these desires, then get rewards, so as to make a profit. Developments in the global economy have changed the traditional balance between customers and suppliers. Communication and computing technology, as well as the development of global trade that is quite open, indicates that customers have more choices. Diverse customer needs can be addressed through technology development in providing information at a lower cost.

The company's development cycle requires companies to re-evaluate the value propositions they present to customers in many sectors. This condition encourages companies to better consider how to cope with customer needs more intelligently, as well as how to capture the value of providing products and services. Without a well-developed business model, innovators will fail to provide or capture the value of innovation. The business model articulates logic, data and other evidence about how to create business and provide value to customers. In a short sense, business models (BM) are articulated by how companies will convert resources and capabilities into economic value (Teece, 2010).



A business model embodies an organisational architecture and business finance. This does not merely refer to the financial aspect, but is also implicit about customer behaviour, revenue and cost behaviour, the changing nature of user needs, and the possible response of competitors. The business model outlines the business logic needed to make a profit (if available to be obtained) and determines the way in which a company enters the market (Teece, 2010).

The business model also explains how companies acquire and use various forms of physical capital, financial capital and intellectual capital to create value. The development of a successful business model must be differentiated and difficult to replicate. Business model innovation is an act of modifying a company's existing system of activities and updating the core business logic, in order to determine and take advantage of opportunities. Business model innovations illustrate how companies change themselves by referring to previous conditions, to achieve better performance and have competitive advantages (Kuratko and Audretsch, 2013; Morris *et al.*, 2011), which enable them to exploit and use opportunities (George and Bock, 2011). This can be included in an explanation in the company's annual reporting, as has been done in the UK where companies are listed under stock exchange regulations, requiring company leaders to include an explanation of their business model in the annual report (Financial Reporting Council / FRC, 2010).

This study aims to examine the effect of the business model on intellectual capital disclosure. Novelty in this study is the use of indicators of product quality, cost efficiency, and innovation contained in the company's business model variables. The results of this study are expected to be able to contribute in how IC, which are incorporated in processes and resources, have capabilities and competencies that can produce competitive advantages so as to create value, through the business model developed by a company.

## **Business Model**

The concept of the business model emerged at the beginning of the information age and soon became a major topic in the business and management literature. The emergence of this concept in current discourse can be traced back to the beginning of the first half of the 2000s when "e-commerce" companies or "dotcoms" were internet-based. The concept of the business model is intended to capture the e-commerce model of doing business, or just an "e-business model." The current conception of the business model refers to the way companies, in the general sense as economic agents or production units, create and capture value for their customers (Amit and Zott, 2001).

The business model is a simplified representation of how to create and maintain customers – create and retain customers to make and offer different values from competitors and attract customers to pay that value. This can be done by having the right business model. Thus, the



business model is not a financial or technical plan but rather a conceptualisation of the whole business (Teece, 2010). The right business model plays an important role in developing long-lasting value differences in the minds of customers between a company's goods or services and its competitors (Hitt *et al.*, 2002). Many writers have tried to reimagine this business model concept. For example, Mitchell and Coles (2004) defines a business model as a combination of 'who', 'what', 'where', 'when', 'why', 'how' and 'how much' the organisation uses to provide goods and its services (offering value) and developing resources to continue its efforts. Whereas Morris, *et al* (2005) define the business model as a brief representation of how a set of interrelated decision variables in the area of business strategy, architecture, and economics are handled to create a sustainable competitive advantage in a predetermined market.

Customers are looking for market offerings to meet their diverse needs. Making such offers and sending them to the market requires a variety of resources and capabilities as well as systems or organisational structures to coordinate activities in a cost-effective manner (George and Bock, 2011). The business model becomes a necessary feature of a market economy in which there are various transaction costs derived from various ways of using resources based on technology available to companies (Teece, 2010). The business model helps managers connect their company's resources and capabilities with current and potential customers using a combination of various technologies. Heterogeneity in customer needs and resources that are controlled by the company and the technology used in an industry cause variations in the form and strategic adoption of business models in an industry (Desyllas and Sako, 2013).

### **Intellectual Capital**

The development of science makes a difference in finding organisational solutions to achieve competitive advantage. This is marked by the birth of the concept of intellectual capital. Intellectual capital is an intellectual resource owned by a company that is difficult to imitate, resulting in a company's competitive advantage (Barney, 1991). The same thing was stated by Brennan (2001), that intellectual capital is a science that is used to produce high asset values in order to increase company value.

The role of intellectual capital has a big influence on company profits, but it still rarely gets company attention. This can be seen from the traditional accounting information system. Information about intellectual capital is not calculated in traditional accounting systems (Abeysekera and Guthrie, 2005). This condition is suspected because intellectual capital refers to non-physical capital, which is intangible (intangible assets), which are difficult to measure.

Bontis (1998) suggests that intellectual capital is a set of intangible assets (resources, abilities and competencies) that drive organisational performance and value creation. Pulic and Marko (2003) argue that the components of intellectual capital consist of: (a) human capital, namely



the ability possessed by employees that can be contributed to the creation of added value of the company, (b) structural capital or organisational capital, namely the company's ability to meet the company's processes in meeting the efforts of employees to produce overall business performance, (c) customer capital or relational capital, namely the company's ability to interact with outside parties so as to increase added value for the company.

### **The Relationship between Intellectual Capital Disclosure and Business Models**

The theory used by researchers to research resource-based view theory, Resource-Based View Theory is the basis for the relationship between business models and intellectual capital disclosure. Barney (2001) argues why companies always try to outperform each other. This shows that economists believe that the competitive advantage that causes a company to outperform others, and give rise to a competitive advantage itself, arises from firm resources. This discussion of firm resources develops into a theory often referred to as Resource-Based View Theory (RBV).

Resource-Based View Theory (RBV) is a theoretical concept born from the research of economists around the world, where this theory is believed to provide answers in creating competitive advantage for a company. World economic experts carry out continuous research to find out how companies get competitive advantage so that corporate strategies can be implemented efficiently and effectively. RBV was born from four sources of theories that have been developed previously, namely the traditional study of distinctive competencies, Ricardian economics, Economic penrosianism, and the anti-trust implication of economics. This theory is the initial foundation in finding out how a company can have superior performance compared to other companies.

Porter (1981) revealed that company resources are the strengths that companies can use to implement corporate strategies. Strategy is a theory about companies about how to achieve superior performance in the market (Drucker, 1994). The resources in question are assets, capabilities, organisational processes, firm attributes, information, knowledge, and whatever is under the control of the company that allows the company to implement its strategy efficiently and effectively (Lengel and Daft, 1983). Enterprise development requires resources to determine strategic markets (Barney and Arikan, 2006). In general, resources can reduce costs that need to be incurred by the company but can increase the revenue obtained by the company in implementing its strategy (Barney and Arikan, 2006).

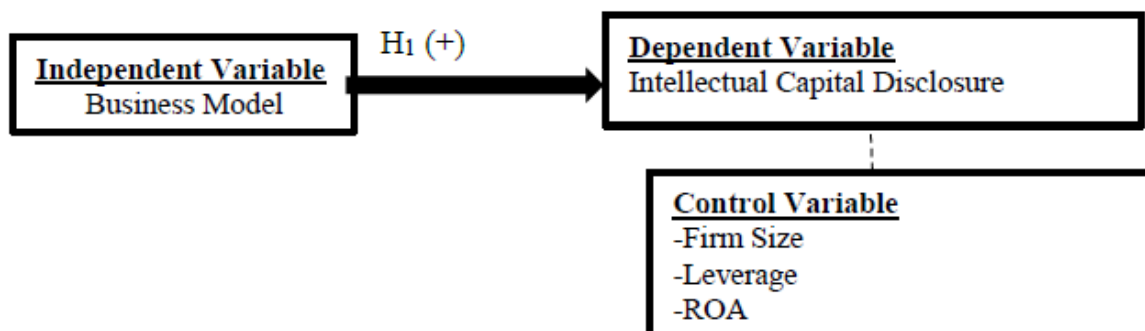
Another theory that is also related to intellectual capital is stakeholder theory. Stakeholder Theory states that a company is an entity that operates for its own interests and also for the interests of stakeholders (shareholders, creditors, consumers, suppliers, government, society, analysts and other parties) (Ghozali and Chariri, 2007). This indicates that the stakeholders are

parties that must be served and have the right to be treated fairly, to participate in controlling the management of economic resources used by the company.

IC is one of the resources used in order to achieve competitive advantage, so disclosure related to this becomes an important matter in the company's annual reporting. IC Disclosure is one of the voluntary disclosures in which companies make disclosures outside the financial statements in order to add information provided to investors. The disclosure is also intended to increase investor confidence in companies where there is information about intangible assets that can add value to the company compared to competitors or other companies (Barney and Arikan, 2006).

The logical relationship between IC assets, value creation, and business models, is how IC's are incorporated in the processes and resources that are capabilities and competencies that can produce competitive advantage so as to create value, through the company's business development. This study examines the effect of business models on IC disclosure on manufacturing companies in Indonesia. The relationship between variables in this study is illustrated in Figure 1.

**Figure 1.** Conceptual Framework



## Research Methods

The dependent variable in this study is IC disclosure. Whiting and Miller (2008) review studies of IC disclosures and their determinants, and report that analysis of content is almost always used to measure levels. This approach involves coding qualitative and quantitative information into predetermined categories to obtain patterns in the presentation and reporting of information (Guthrie, *et al.*, 2004). This technique can be applied in several ways. These methods are carried out by counting keywords, sentences or parts, or reading the entire text (Gamerschlag, 2013). Li, *et al.*, (2008) argue that although keywords are the smallest unit of measurement, they provide the most sense.

Gamerschlag, (2013) argues that identifying specific keywords on IC is the most reliable form of content analysis, because it always produces the same score and can be easily imitated by other researchers. The measure used in this study is the emergence of keywords found in the annual reports of companies listed on the IDX. Keywords are defined using the framework proposed by (Sveiby, 1997) and modified by (Guthrie, *et al.*, 2004), which have been used successfully in several IC studies (Whiting and Miller, 2008). The Intellectual Capital Framework shown in Table I has three IC categories which include internal capital, external capital, and human capital, with 24 components. The researcher identified the appearance of 24 keywords, then the scoring technique was recorded on the coding sheet. The total value of the disclosure is then calculated for each company, which is then made a measurement index. The index in question is the ratio of the disclosure score submitted by the company, to the maximum score (24).

**Table 1:** Intellectual Capital Framework

Internal Capital	External Capital	Human Capital
Intellectual property rights	The brand	Education
Corporate Culture	Customer	Skills
Patent / Copyright / Trademark	Company name	Competency / Knowledge of work relations
Information Systems	Customer satisfaction	Academic Qualifications
Network System	Customer loyalty	Professional Qualifications
Management Process	Distribution Network	Human Capital / Resources
Management Philosophy	Business Collaboration	The Entrepreneurial Spirit, the Ability to Innovate, Proactive and Reactive, the Ability to Change
Financial Relations	License Agreement	Human resources training

To measure the level of IC disclosure, previous empirical studies have used a dichotomous (weighted) approach (Abeysekera, 2010; Guthrie and Petty, 2000; Haji and Ghazali, 2013; Li *et al.*, 2008). In this approach, when an item is disclosed, it is given a value of 1, while if not disclosed is given a value of 0. Cooke (1989) argues that the dichotomous approach is more objective than the weighted approach because it gives all the things that are equally important. Similarly, Abeysekera (2010) argues that assigning weights to various types of IC disclosures can cause errors due to scaling bias.

As for the measurement of business models we are using measurements with a score on the business model indicators that exist in the company, namely product quality, cost efficiency, and innovation (Cucculelli and Bettinelli, 2015). This study uses content analysis from annual reports of manufacturing companies listed on the Indonesia Stock Exchange (IDX) from 2015-

2017. After determining the level of IC disclosure, the relationship between IC disclosure and business models is tested using multiple linear regression.

### Population and Sample

The population data used in this study are all manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the 2015-2017 period. Manufacturing companies are selected as data populations because manufacturing companies are expected to carry out the most CSR activities. The purposive sampling technique was chosen as the sampling technique in this study, namely taking a sample based on the availability of information and compliance with predetermined criteria. Based on the criteria, this study looked at 75 manufacturing companies listed on the Indonesia Stock Exchange in 2015-2017, thus the sample used was 225 sample data.

The type of data used in this study uses secondary data, namely the company's annual report. The data used in this study is sourced from the company's annual report which can be accessed through the Indonesia Stock Exchange ([www.idx.co.id](http://www.idx.co.id)) and Bloomberg terminal. The analytical method to test the regression model hypothesis in this study is as follows:

$$ICD = \beta_0 + \beta_1 BM + \beta_2 SIZE + \beta_3 LEV + \beta_4 ROA + \epsilon$$

### Results and Discussion

Descriptive statistical analysis provides a description of research data that can show the maximum, minimum, standard deviation, and mean values. Descriptive statistics on this study are presented in Table 2.

**Table 2:** Descriptive Statistics of Research Variables

	N	Minimum	Maximum	Mean	Std. Deviation
ICD	225	0.167	0.958	0.579	0.190
BM	225	0.333	1.000	0.719	0.206
SIZE	225	24.416	33.162	28.485	1.703
LEV	225	0.071	0.926	0.437	0.201
ROA	225	-0.136	0.377	0.051	0.076
Valid N (listwise)	225				
ICD	=	Intellectual Capital Disclosure			
BM	=	Business model			
SIZE	=	Company size			
LEV	=	Leverage			
ROA	=	Return on assets			



Requirements in testing the classical assumptions conducted in this study consist of normality test, multicollinearity test, autocorrelation test and heteroscedasticity test. From the normality test and all the classic assumption tests that have been done, it can be concluded that the data is normally distributed, and has met the statistical requirements for testing multiple regression models. Hypothesis testing is done in research using multiple regression tests with the assumption of least square. The results of the examiners of this study are shown in Table 3.

**Table 3:** Regression Testing Results

Variable	Exp Sign	Coefficient Regression	t <sub>calculated</sub>	Significant
(Constant)		-1.008	-5.783	0.000
BM	+	0.257	5.096	0.000
SIZE	+	0.051	7.902	0.000
LEV	+	-0.117	-2.058	0.041
ROA	+	0.273	1.736	0.084
<i>F<sub>hitung</sub></i>		38.235		
Signification		0.000		
<i>R<sup>2</sup></i>		0.410		
<i>Adjusted R<sup>2</sup></i>		0.399		

\*\*\* = sig 1%, \*\* = sig 5%, \* = sig 10%

Based on the table above, if the probability value indicates a number less than 0.050 then the results of the regression test can be said to support the research hypothesis. The statistical F test results show that each p-value of 0.000 indicates that all independent variables in the regression model describe the dependent variable. The results of the coefficient of determination test on the regression test that shows the adjusted R square value of each regression model is 0.399 which shows that the variability of the dependent variable can be explained by the independent variable at 39.9%.

The influence of the business model on the level of IC disclosure in manufacturing companies in Indonesia is tested through testing the first hypothesis. The results of the test show a significance level or p-value of 0.000 where the value is smaller than 0.050 and a beta coefficient of 0.257 so that the first hypothesis is accepted. It can be concluded that the business model influences the level of IC disclosure.

The results of this test indicate that the business model run by a company will affect intellectual capital. This indicates that the application of the business model is able to encourage non-physical investment. Management has a belief that investing in intellectual capital is considered important to maintain the continuity of the company, because through intellectual capital it is expected to always be able to create uniqueness. This is in line with RBV Theory that a company must be able to create competitive advantage in order to maintain the company's



survival. In addition, if it is associated with stakeholder theory, then company management is expected to be able to carry out activities expected by stakeholders. The company's management is expected to be able to perform good management of all the potential of the company, so that it will create added value for the company, and can further increase the value of the company.

### **Conclusions and Limitations**

This study aims to examine and analyse the effect of business models on IC disclosure. Manufacturing companies listed on the Indonesia Stock Exchange (IDX) from 2015-2017 became the samples used in this study, respectively. The results of this study are that the business model has a positive and significant influence on IC disclosure. However, this study has several limitations as follows: (1) limited research using a sample of companies in the manufacturing sector as an illustration of intellectual capital disclosure in Indonesia; (2) from the aspect of the business model, there are limitations to the literature regarding the further relationship between business models on IC disclosure; (3) subjectivity about understanding the framework used to determine the level of IC disclosure. Differences in understanding and views of researchers indicate the subjectivity of the research conducted.

The limitation of this research is the basis for researchers to provide suggestions for further research developments, where further research is expected to (1) be able to expand the sample of companies from various industrial sectors in Indonesia; (2) reduce the subjectivity aspect, further research is expected to determine the quality of IC disclosure using measurements of numerical values and monetary values; (3) use other measurements that can also be indicators of business models including, brand and export.



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