

**RELATION BETWEEN INTELLECTUAL CAPITALS: CASE STUDY
SOME COMPANIES IN INDONESIA**

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Abstract

Intellectual Capital (intellectual capital) or intellectual capital has a very important and strategic role in the company. Intellectual capital, by Nahapiet and Ghoshal (1998). refers to the knowledge and abilities possessed by a social collectivity, such as an organization, an intellectual community, or professional practice. Intellectual capital represents valuable resources and the ability to act based on knowledge. This study aims to see the relationship between intellectual capital variable at several companies listed on the Stock Exchange for financial statements ending in 2011-2016. This study uses descriptive statistical data analysis, correlation test and causality test. From the research done on intellectual variable of capital, there is a picture of weak data and correlation between intellectual capital variable and there is no causal relation between causality among intellectual capital variable in carefully.

Keyword: Intellectual capital, financial performance, correlation and causality

I. INTRODUCTION

A company substantially has a difference between market value and book value. These differences can be explained through the unrecorded intellectual capital assets in the company in the Statement of Financial Position. Intellectual capital can be the basis of capital for the company (international federation of accountants 1998), including assets related to employee knowledge and employee expectations, consumer trust in companies in products, brands, finance, information systems, administrative procedures, patents, trademarks, and process of business enterprise efficiency in Brennan (2000). Companies use three types of capital: physical capital (such as fixed assets, shares), financing capital (cash, investments, accounts receivable) and intellectual capital see Lynn (1998). Intellectual capital has compositions such as patents, copyrights, property rights and Franhises. In Ihyaul Ulum (2008) The emergence of "new economy", which in principle is driven by the development of information technology and science also trigger the growth of

interest in intellectual capital (IC) Petty and Guthrie (2000) and Bontis (2001). One area that attracts both academics and practitioners is that related to the use of IC as one of the instruments to determine the value of the company Stewart (1997); Edvinsson and Malone (1997); Sveiby (2001). This has become a vexed issue, where some authors have confirmed that established management and reporting systems have continuously lost their relevance for not being able to present essential information for executives to manage knowledge-based processes and intangible resources in Bornemann and Leitner (2002).

The empirical analysis of external financial disclosure practices according to the FASB (2001) adds an IC dimension to the five categories Jenkins presented in his report. Background with the increasing recognition of ICs in pushing the company's value and competitiveness, the exact measurement of the company cannot yet be set. Pulic (2000) does not directly measure company ICs, but proposes a measure of VAIC composite mainly Physical capital, human capital and structural capital. Bozzolan et al measures the IC by adding Industry and Size. In Indonesia, research on IC has not been done. In Ivada (2004) examines the perceptions of accountants for IC recognition and reporting. However, Astuti (2004) examined the relationship between IC and firm performance in Central Java by using questionnaires developed by Bontis (1998). Likewise, Ivada and Bawono (2006) reviewed the Intellectual Capital Realization Process (ICRP) related to efforts to map and form IC inventory for the company. Finally, Setiarso (2006) examines ICs for the empowerment of SMEs. While research that specifically uses VAIC™ as an IC instrument has so far not been found. The Ihyaul Ulum (2008) study measures the intellectual capital performance of the banking sector in Indonesia and then ranks the bank based on the best performance index (BPI) measured using VAIC™. The banking sector is chosen as the ideal object of this research because (1) presented financial statement data (balance sheet, profit / loss) of publications that can be accessed at any time; (2) banking sector business is "intellectually" intensive in Firer and William (2003); and (3) overall employees in the banking sector are "intellectually" more than the other economic sectors in Kubo and Saka (2002).

The practice of intellectual capital disclosure (IC) in the company's annual report has become a theme that attracts many researchers in different countries see Williams, (2001); Brennan, (2001); April et al., (2003); and Bozzolon et al., (2003). This theme is interesting because the IC is believed to be the driving factor and the company's value creator (value driver & creation). Several studies have shown that ICs contribute significantly to firm performance in Ulum, (2008a, b; 2009); Chen et al., (2005); and Tan et al., (2007).

Problem Restrictions and Problem Formulation

Research related to IC exposure in Indonesia limited number, focus of research conducted on banking not yet found many research conducted in Indonesia raised about IC only focusing on company performance. There are still few who reveal about the practice of intellectual capital in companies in Indonesia. The scope of the research is the disclosure of IC in the annual report on 70 companies listed on the Indonesia Stock Exchange, with a sample of banking companies registered in Indonesia with annual reports from 2011 to 2016.

II. LITERATURE STUDY

2.1. Intellectual Capital

Intellectual Capital is defined in many by researchers such as Brooking (1996) for example defines the IC as follows: "IC is the term given to the combined intangible assets of the market, intellectual property, human-centered and infrastructure - which enable the company to Function "Roos et al. (1997) states that: "IC includes all the processes and the assets which are not normally shown on the balance-sheet and all the intangible assets (trademarks, patents and brands) which modern accounting methods consider " Stewart (1997) : "IC is intellectual material-knowledge, information, intellectual property, experience-that can be put to use to create wealth". While Bontis (1998) acknowledges that: "IC is elusive, but it is found and exploited, it may provide an organization with a new resource-base from which to compete and win" Bontis (1998).

In general, the researchers identified three main constructs of the IC, namely: human capital (HC), structural capital (SC), and customer capital (CC). Simply put, HC represents the individual knowledge stock of an organization represented by its employees (Bontis et al 2001). HC is a combination of genetic inheritance; education; experience, and attitude about life and business (Hudson 1993). SC covers all non-human storehouses of knowledge within the organization. These include databases, organizational charts, process manuals, strategies, routines and everything that makes the value of a company greater than its material value. While the main theme of CC is the inherent knowledge in marketing channels and customer relationship where an organization develops it through the business path (Bontis et al 2000).

2.2. Conceptual framework

Research conducted by Bozzolan et al (2003) conducted a study in Italy concerning the disclosure of intellectual capital practices in the financial statements of the year 2001, this study revealed the development of intellectual capital voluntary disclosure related to consumer variables measured by industry and firm size is not considered important in fact - facts reporting. In a study conducted by Suhardjanto and Wardhani (2010) the relationship between intellectual capital disclosure as the dependent variable and firm characteristics (size, profitability, leverage, and length of listing on Indonesia Stock Exchange and corporate governance) as independent variables. This study used 80 annual reports from companies listed in Indonesia Stock Exchange in 2007. The sample of research was selected by using proportional purposive sampling method. The results showed that the average level of intellectual capital disclosure was only 35%. Multiple regression analysis is used to test the hypothesis. Statistical analysis shows that firm size and profitability are predictors of the intellectual capital disclosure level. The implication of this study is that firms with high total assets and profitability should show more attention to report intellectual capital information because it is a crucial information considered by investors, to reduce information gaps and to increase shareholder value.

In Brennan's research (2001) conducted research on intellectual capital reporting of the company's annual financial statements in Ireland with market prices and book value and financial statement content analysis at 11 companies listed on the Stock Exchange, saw two of the 11 companies, significantly in the market and value books find companies that have substantially non physical, intangible, intellectual capital assets. In Ulu research (2011) using telecommunication companies

with analysis of intellectual capital disclosure practices in the annual report of telecommunication companies in Indonesia. The percentage of disclosure of IC components in the annual report of telecommunication companies in Indonesia is relatively high when compared with some findings in other countries. In 2007, there were still some IC attributes that were not disclosed at all by Telecommunication companies, such as 'patent', 'copyright' and 'trademark'. In 2008, all the IC attributes have been disclosed by the company, it's just that not all telecom companies reveal it. Of the 6 telecom companies that became the object of this study, none of the companies revealed all the IC attributes in its annual report. The maximum number of attributes disclosed is 24. From the research conducted by Bannany shows that bank profitability and bank risk are very important, the research result shows the investment in the information technology system, the efficiency of the bank into the banking sector and the investment in the variable intellectual capital, in this research but have significant influence on intellectual capital.

2.3. Research hypothesis

According to the above discussion intellectual capital can explain the company's most powerful condition in banking, so far the research see the company's performance in terms of intellectual capital, in this research see the reverse side, that is by disclosure of financial statement of company to see intellectual capital disclosure, so this research hypothesis :

H1 = there is correlation between intellectual capital component

H2 = there is a causality relationship between intellectual capital component

III. RESEARCH METHODOLOGY

3.1 Research design

In a study proposed by Kamath (2008) and Clarke et al., (2010) explained that VAIC is a sum of the values of VACA, VAHU, STVA. VACA value is the efficiency of Structural Capital and Human Capital. The value of IC is not simply created for the company independently, other intellectual capital owned by companies such as physical and financial value. VAIC values can identify the intellectual capabilities of an organization and are considered BPI or commonly referred to as Business Performance indicators. VAIC is the sum of the three previous components, namely: VACA, VAHU and STVA. In this study the model of IC from Pulic (2000) with $VAIC = VACA + VAHU + STVA$.

3.2. Population, Samples and Sampling Methods

Research population of banking companies listed in Indonesia Stock Exchange is 70 companies with sample criteria of companies issuing financial statements during the period 2011 to 2016. Collection of samples of data in use from the stock exchange of Indonesia that has been published by ICMD.

3.3 Data Analysis Method

This research is done using multiple regression using SPSS. 23 with descriptive statistical test, correlation test, and causality test.

IV. RESEARCH RESULT

In the results of this study began with the explanation of the results by using descriptive statistics method. Descriptive statistics are methods related to the collection and presentation of a data cluster so as to provide useful information. Classification into descriptive statistics and inferencing statistics is done based on the activities undertaken.

Table 1 : Result for statistic descriptive test

	<u>_STVA_</u>	<u>_VACA_</u>	<u>_VAHU_</u>	<u>_VAIC_CM_</u>
Mean	0.432110	0.890121	2.406197	3.728427
Median	0.504925	0.398350	1.933375	3.085925
Maximum	4.237500	11.12600	9.392300	12.62350
Minimum	-27.52360	0.000500	-0.308900	-27.48800
Std. Dev.	1.675434	1.675337	1.587195	2.931419
Skewness	-12.89929	4.241118	1.874664	-2.650735
Kurtosis	201.3029	22.09817	6.747910	36.68666
Jarque-Bera	699818.5	7642.045	491.8251	20350.69
Probability	0.000000	0.000000	0.000000	0.000000
Sum	181.4861	373.8507	1010.603	1565.939
Sum Sq. Dev.	1176.166	1176.030	1055.540	3600.559
Observations	420	420	420	420

Author analysis with software

From table 1 above presented results for descriptive statistics. Descriptive statistics only provide information about the data they have and do not draw any inferences or conclusions about the larger parent group. Examples of descriptive statistics that often appear are, tables, diagrams, graphics, and other magnitudes in magazines and newspapers. With descriptive statistics, the data collection obtained will be presented with a brief and neat and can provide core information from existing data sets . Information that can be obtained from these descriptive statistics include the size of data centering, the size of data dissemination, and the tendency of a data cluster Correlation is basically a value that shows about the relationship between two or more variables and the magnitude of the relationship, this means that the correlation does not show a causal relationship. If it is understood as a cause-and-effect relationship, it is not because of the knowledge of the correlation coefficient but because the reference to the theory or logic that interpreted the results of the calculation, therefore correlation analysis requires theoretical reference that supports the cause and effect relationship in the variables that are analyzed.

Table 2 : Result for correlation

	STVA	_VACA_	_VAHU_	_VAIC_CM_
				0.682633470073170
STVA	1	0.03226767323316997	0.1711142166211518	4
	0.032267673233169		-	0.525709213614161
VACA	97	1	0.1186529823453303	7
	0.171114216621151			0.571430434386855
VAHU	8	-0.1186529823453303	1	7
	0.682633470073170			
_VAIC_CM_	4	0.5257092136141617	0.5714304343868557	1

Author analysis with software

By looking at table 1 above, the correlation coefficient for 2 X and Y variables can be calculated using the formula developed by Karl Pearson. For the strength of the relationship between the variables in detail, explain the correlation coefficient is between -1 to 1, while for the direction is expressed in the form of positive (+) and negative (-).

To facilitate an interpretation of the strength of the relationship between two variables the authors provide the following criteria (Sarwono: 2006):

- 0: There is no correlation between two variables
- > 0 - 0.25: Correlation is very weak
- > 0.25 - 0.5: Correlation is enough
- > 0.5 - 0.75: Strong correlation
- > 0.75 - 0.99: The correlation is very strong
- 1: Perfect correlation

Furthermore, followed by the test of causality, the problem of causality or causality is actually a matter of probability. For example, what is the probability of decreasing a person's depression after treatment is given. However, in Indonesia, the problem of causality is rarely associated with probability. Does X affect Y we see from statistical inference and rarely involve causal inference. This is explained in table 3 below:

Table 3: Result for causality granger

Pairwise Granger Causality Tests

Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
VACA does not Granger Cause _STVA_	419	0.80643	0.3697
STVA does not Granger Cause _VACA_		0.04434	0.8333
VAHU does not Granger Cause _STVA_	419	1.27571	0.2593
STVA does not Granger Cause _VAHU_		0.02476	0.8750
_VAIC_CM_ does not Granger Cause _STVA_	419	0.01475	0.9034
STVA does not Granger Cause _VAIC_CM_		42.1655	2.0010

VAHU does not Granger Cause _VACA_	419	0.18063	0.6711
VACA does not Granger Cause _VAHU_		1.67222	0.1967
_VAIC_CM_ does not Granger Cause _VACA_	419	0.01615	0.8989
VACA does not Granger Cause _VAIC_CM_		25.5086	7.0007
_VAIC_CM_ does not Granger Cause _VAHU_	419	0.61685	0.4327
VAHU does not Granger Cause _VAIC_CM_		0.19986	0.6551

Author analysis with software

Sometimes researchers do not just want to know a variable correlated with other variables or not. Who wants to know more is the cause or occurrence of dependent variables, or what independent variables that cause the emergence of dependent variables. In the context above, the kind of research that should be used must also be different from the research whose purpose "simply" wants to know the correlation or the relationship between the two variables. If the main purpose is to know the cause-effect in a particular order then the type of research is experimental design or "causal-comparative" design, not co relational design.

V. CONCLUSION

From this research explain how the process of relationship between variable intellectual capital by using descriptive statistic test, correlation test and causality test. By combining these three tests it is believed to be able to see how correlation and causal relationships relate to intellectual capital variables. The existence of the initial analysis process by using descriptive statistical analysis can provide an overview of data and collection of data obtained will be presented with a brief and neat and can provide core information from existing data sets. Information that can be obtained from these descriptive statistics include the size of data centering, the size of data dissemination, and the tendency of a data cluster

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