

THE EFFECT OF FIRM CHARACTERISTIC ON INTELLECTUAL CAPITAL DISCLOSURE IN ISLAMIC BANKING: EVIDENCE FROM ASIA *

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Abstract

This research aims to investigate the relationship between firm's characteristic (firm size, profitability, leverage, and company age) and intellectual capital disclosure. This research also uses control variables such as board size, firm's audit, and role of duality. Sample in this research are 34 Islamic bank's annual reports collected by pooled data.

Dependent variable in this research is intellectual capital disclosure. Dependent variable is measured by content analysis method. Content analysis is supported by disclosure index that measured variety of intellectual capital disclosure. It is also supported by word count that represented volume of intellectual capital disclosure respectively. Independent variable in this research are firm's characteristic, consists of firm size, profitability, leverage, and company age. Data are analyzed by using SPSS program 16.00 version.

Result of analysis indicates that there exist a significant relationship between variety of intellectual capital disclosure with all firm characteristic except for firm's size. In other side, there is significant association volume of intellectual capital disclosure with all firm's characteristic except for profitability. The influence of firm characteristic on intellectual capital mechanism on human, structural, and relational capital disclosure, based on two matrixes, is also explored.

Keywords: *Firm Characteristic, Intellectual Capital Disclosure, Content Analysis, Islamic Banking*

1. INTRODUCTION

Service industry is an industry which obtains its income by doing service activities as its industry's output. Service activities in the service industry represent its 'knowledge' (Widyaningrum, 2004). In other words, the 'knowledge' makes the major incomes in service industries. Therefore, 'knowledge' is critical asset for the service industry that

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must be reported to both shareholders and its stakeholders. However, the 'knowledge' which is an important component of the industries can not be found in the reporting of company assets in the financial reports in the traditional accounting.

Since in the 1990's, attention to the intangible assets management practice has increased dramatically (Harrison and Sullivan, 2000). Petty and Guthrie (2000) and Sullivan and Sullivan (2000) mentioned that one of approaches that can be used in the assessment and measurement of intangible assets is intellectual capital. The main focus of intangible assets was the intellectual capital management, information technology, sociology, and accounting [(Petty and Guthrie, 2000) and (Sullivan and Sullivan, 2000)].

Knowledge, innovation, and skills which were owned by companies were the components of the intellectual capital (Li, et al, 2008). Petty and Guthrie (2000) concluded that knowledge and intellectual capital could cause greater significance and become an essential commodity on the size of company business's value compared to the company's financial size.

Cerbioni and Parbonetti (2007) stated that intellectual capital disclosure was part of the voluntary disclosure. Intellectual capital was available valuable information for investors. It could help them to reduce uncertainty about future prospects and to facilitate the assessment of company's accuracy (Bukh, 2003).

One of the industries which used knowledge in getting business income is the financial institution. Bozolan et. al (2003) stated that financial institutions require a different reporting with other business sectors. Firer and Willlliam (2003) stated that the bank was one of the most intensive intellectual capital's industries. In addition, the overall bank has more employee homogeneity than the other economic sectors (Kubo and Saka, 2002).

In this modern era, Islamic banking had become global phenomenon, including in minority Moslem society countries. Based on Mc Kinsey's research (2005) reported by Agustianto (2009), stated that total assets of global Islamic banking market reached 0.75 billion U.S. dollars in 2006. In 2010, it was estimated would reach one billion U.S. dollars. Growth rate of 100 Islamic bank in the world reached 27 percent annually. It was higher than growth rate of 100 largest conventional banks, which only reached 19 percent per year (Agustianto, 2009). Asian Banker Group (2008) stated that Asia was profitable market area for Islamic banking.

Accountability in Islam was reflected in the commitment to provide services needed by the Muslims and the community through the disclosure (Haniffa and Hudaib, 2004). One of the avenues to demonstrate their accountability and commitments in serving the needs of the Muslim community and society in general is via disclosure of relevant and reliable information in their annual reports. Unlike conventional banks which tend to emphasize on disclosure of profit, risk assessments and other non-social aspects, IFIs need to disclose information that are vital in their annual reports.

Unlike conventional banks, which only focused on profit, Islamic banks are expected to perform necessary disclosures to help users create reports in a decision in

the knowledge based economy. According to Siddiqi (1995) which stated that Islamic financial institution include Islamic bank must comply with the percepts of *Shari'ah Islami'ah* in their all activities including reporting. Moreover, disclosure reflects implementation the role of Islam in economic regeneration and social justice. Haniffa and Hudaib (2004) also argued that Islamic financial institutions need to disclose information. It was caused by importance to support religious decision by providing accountability to Alloh SWT and society (Haniffa dan Hudaib, 2004). This opinion in line to Al Qur'an in which said "O you who believe! Fulfil (all) your obligations" (Al-Maidah (5) : 1). At the highest level are the divine obligations which arise from the contractual relationship between man and *Allah* (see Al-Baqarah (2) : 30) which is to constantly worship Him and fulfil His commands as stated in the *Qur'an*: "Say: Truly, my prayer and my service of sacrifice, my life and my death, are all for *Allah*, the Cherisher of the Worlds" (Al-An'am (6) : 162).

This research is then developed on the basis of previous research by Li, et al (2008) which studied about the effect corporate governance on intellectual capital disclosure in UK firms. The present study expands such research by taking Islamic banking in Asia as samples. With the same methods the researcher tests those findings in the Islamic banking in Asia's perspective.

The purpose of this research is to find out the effect of firm characteristics (firm size, profitability, leverage, and company age) on intellectual capital disclosure in Islamic banking in Asia. Firm characteristics are chosen as independent variable. Since, in the agency theory, signalling theory, legitimacy theory, and cost and benefit framework, the disclosure of the firm was influenced by many factors like, stakeholder interest, cost and benefit of the firm, reducing asymmetry information, and make it reputation and competitive advantages (Oliveira, et.al, 2008).

The remainder of the paper is structured as follows. Section 2 lays out main theories and hypothesis. Section 3 describes the sample and the variables used. Section 4 describes the research results. Sections 5 report conclusion, limitation and recommendation of the research.

2. THEORIES AND HYPOTHESIS

Li et al. (2008) stated that there were limitations on theory perspectives which can be basic of intellectual capital disclosure analysis. The theory that can be used as basic theory on intellectual capital disclosure analysis were: legitimacy and stakeholders (Abeysekera and Guthrie, 2005), signaling (García-Mécca and Martínez, 2005), media agenda setting (Sujan and Abeysekera, 2007), agency (Patelli and Prencipe, 2007), and information asymmetry (Amir and Lev, 1996).

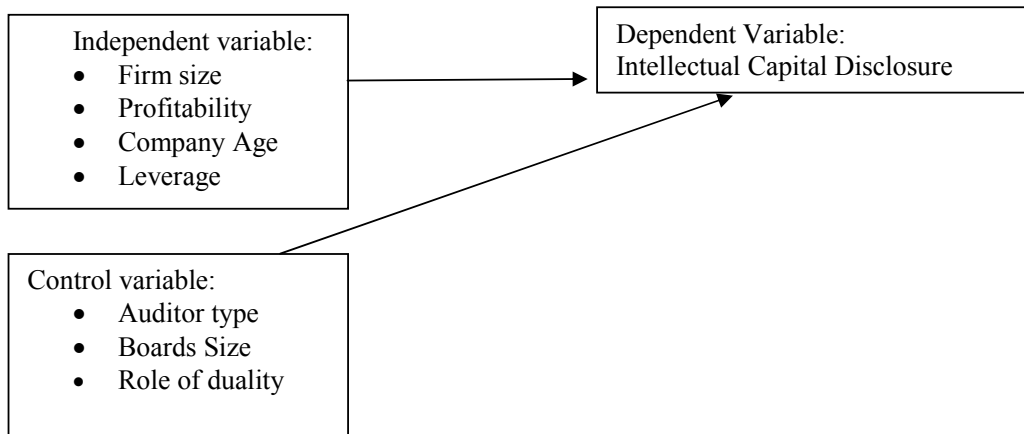
Abeysekera (2006) stated that the development of theoretical framework in intellectual capital is in the infancy period. The definition of intellectual capital made by expert was not the same, but the conclusion can be drawn that intellectual capital is part of intangible assets. Mouritsen (1998) stated that intellectual capital was the extent

on knowledge of the organization capacity. An extent on knowledge of the organization was beneficial for the organization changes in the business environment. Many experts and institutions had defined *intellectual capital*. There was no fixed definition about *intellectual capital*. The most comprehensive definition that has been developed was CIMA (2001). *Intellectual asset* is:

“Possession of knowledge and experience, professional knowledge and skill, good relationship, and technological capacities, which when applied will give organization competitive advantage”

Most intellectual capital disclosure studies are cross-sectional and country specific. Examples include studies in Australia (e.g. Guthrie and Petty, 2000; Sujan and Abeysekera, 2007), Ireland (Brennan, 2001), Italy (e.g. Bozzolan et al., 2003), Malaysia (Goh and Lim, 2004), UK (e.g. Williams, 2001), and Canada (Bontis, 2003). Relatively few longitudinal studies have been reported (e.g. Abeysekera and Guthrie, 2005). Some studies focus on specific aspects of intellectual capital disclosure, such as human capital reporting (e.g. Subbarao and Zeghal, 1997), while others conduct international comparative studies (e.g. Vergauwen and van Alem, 2005; Cerbioni and Parbonetti, 2007).

2.1. Theory Framework



2.2. Hypothesis Development

Firm size (TA). Singhvi and Desai (1971), Cooke (1992), Wallace et al. (1994), Craig and Diga (1998) found the relationship between the firm’s size and the level of disclosure. In some researches were found positive relationship between company size and the vastness. Freedman and Jaggi (2005) found that the larger companies with more activity, the more effect on stakeholders. According to these researches, the hypothesis would be:

H_1 : There is positive correlation between firm’s size and intellectual capital disclosure.

Profitability (ROA). In the presence of disclosure cost, firms with performance exceeds the threshold will disclose. While the contrary condition will happen accordingly (Verrecchia, 1983). Baginski et. al (2000) found that causal factor in which attribution of voluntary disclosure was earning management. Moreover, Baginski et. al (2000) argued that voluntary information was disclosed more for external user compare to forecast news. It could be used to expand financial reporting models. In other words, were on the contrary be stated that according to Baginski (2000) there was more voluntary disclosure while it could both firm's profitability and forecast news.

Shingvi and Desai (1997) found positive relationship between profitability and disclosure. Companies which had higher profitability was better disclose than companies with lower profitability ((Ullmann, 1985; Haniffa and Cooke, 2005). According to these researches, it can be developed the hypothesis below:

H_2 :There is positive correlation between profitability and intellectual capital disclosure.

Leverage (LEV). Jensen and Meckling (1976), Smith and Warner (1979) in Karpik and Belkaoui (1989) stated that there was agreement in the level of debt leverage intended limiting management's ability to create a wealth transfer between shareholders and bond holders. Mangena and Pike (2005) stated that leverage affect the levels of agency problem because of the disclosure in line to the increasing in level of debt. Tan and Tower (1999) in Mangena and Pike (2005) reported that there was negative correlation between leverage and levels of disclosure by using Finnish, Singapore and Australia companies. According to these researches, it can be developed the hypothesis below:

H_3 :There is negative correlation between leverage and intellectual capital disclosure.

Company age (AGE). Owusu-Ansah (1998), Akhtaruddin (2005) stated that the vastness of companies phase were affected by age including the development and growth. Hossain (2008) analyzed the extent of disclosures by bank. He concluded that there was negative relationship between age of company to the extent of disclosure. According to these researches, it can be developed the hypothesis below:

H_4 :There is negative correlation between company age and intellectual capital disclosure.

Bias may occurs as a result of other factors. It can be avoided by having a control to some variables as validity of measurement (Bryman and Bell, 2007). To avoid bias that has been occurred in these studies, researcher use control variables such as board size, type of independent auditor, and role of duality

Auditor type (AUDITYPE). Large and well-known auditing firms may incite companies to disclose more information (Singhvi and Desai, 1971, Firth, 1979). The assertion of large auditing firms promote high levels of disclosure was supported by

several arguments. Dumotier (1998), Raffournier (1998), Chalmers and Godfrey (2004) argued that the firms in which used large auditing firm was preserved their reputation. It caused large auditing firms have greater expertise (Mora and Rees, 1998). Malone, et. al (1993) found that small auditing firm were often sensitive to the economics consequences of the loss client. According to these researches, researcher can predict that intellectual capital disclosure is significantly influenced firm audit.

Role of duality (RDUAL). Decision-making power resulting from concentration role of duality could impair the board's oversight and governance roles, including disclosure policies. Separation of the two roles provide the essential checks and balances on management behaviour (Blackburn, 1994). Haniffa and Cooke (2002) found that there was ineffective monitoring of managerial opportunistic while CEO entrenchment. According to these researches, it can be predicted that there is negative influence between role of duality and intellectual capital disclosure.

Board Size (SIZE). Board size plays an important role against earnings management (Zhou, 2004). The number of commissioners with variety of educational backgrounds and expertises have better ability to distribute the working load (Klein, 2006) and to improve the quality of decision making, better represent the interests of stakeholders, and to eliminate the dominance of the CEO (Zhou, 2004). Empirical facts found that when the board of commissioners with a number of less then quality it will be better monitoring (Yermack, 1996) because of agency problems will increase in accordance with board size (Conger, et. al.,1998). Yermack (1996) found that there was negative relationship between market value and number of commissioners. Jensen (1993) argues that when the board of commissioners consisting of seven or eight people, they will serve less effective and easier for the CEO to control. According to Conger, et. al. (1998) to be an empowered board, the board of commissioners should be small enough to create a group kohesif. According to these researches, it can be predicted that there is negative correlation between board size and intellectual capital disclosure.

2.3. Data and Statistic Summary

Population is not known because there is no actual index taken from special institution that reported the number of Islamic bank in Asia. This research uses purposive sampling technique. Purposive sampling technique is selecting sample technique applied by taking the sample based on certain criteria developed in the research objectives (Hartono, 2005). The criteria of purposive sampling in this research are:

- a. full pledged Islamic Banking, which are located in Asia and listing in each country's stock exchange,
- b. has a website that can be used to download the annual report,
- c. Islamic banks which publish English version annual report from 2003 to 2007 on their respective websites,
- d. annual reports that was taken from the website of each bank is also the only annual report which provide complete information in accordance with the variables included in this research.

The address of each country's stock exchange website were taken from the notes of Asia Encyclopedia. Number of Islamic banks could be seen in Appendix I. Table 1 shows the number of Islamic banks which are became sample of research.

Table 1
Number Islamic Banks in Asia

No.	Description	Number Islamic Bank	Percentage
1	Population of Islamic Bank in Asia which were listed in the stock exchange	31	100 %
2.	Number of Islamic Bank listed which has not bank's website and provide the annual report can be downloaded	(13)	42%
3.	Number of Islamic Bank listed which has bank's website and provide the annual report can be downloaded	18	58%

Source: secondary data, processed.

The next step is to visit the Islamic banks website. Then, researcher is downloaded the annual report as an object in this research. However, not all Islamic banks listed which were had bank's website also publishes annual report. Only some Islamic banks which can be sample based on purposive sampling criteria. Table 2 below shows the amount of the annual report can be downloaded from their website and Islamic bank annual report which can be analyzed.

Table 2
Annual Report Sample

No.	Description	Amount Annual Report	Percentage
1	Annual Report downloaded and seen (from total number Islamic bank provide annual report in its website)	61	100 %
2	Annual Report which are not require purposive sampling criteria	(27)	(44.2623%)
3	Annual Report which are matched on purposive sampling criteria (final annual report sample)	34	53.125%

Source: Secondary data, processed.

Secondary data used in this research are 34 the Islamic bank's annual reports in Asia. There is limitation of the number of Islamic banks that meet the purposive sampling criteria. Only 34 annual reports are taken by using panel data (pooled data) in 10 Islamic banks of seven countries.

2.4. Variables Measurement

a. Dependent Variable

The measurement of intellectual capital disclosure in this research adopted Li, et. al (2008). The amount of intellectual capital components in Li, et. al (2008) was as 61 components. Thus, from 61 components revealed by the company and then divided by the number of 122 point (for 2 matrixes format such as text and number). In this research, researcher excludes graph/picture as one of matrix format by Li, et. al (2008) caused in accordance Ahmad (2004) that argues that graph/picture would involve a high level subjectivity. Ahmad (2004) also used text and number for measuring word count for content analysis. As for how to calculate the components is the dummy variable method, using the technique dichotomy score with the formula:

$$ICDI_j = \frac{\sum_{i=1}^{n_j} X_{ij}}{n_j}$$

n_j = number of items that j th expressed by the company, consisting of 122 (ie 61 items in two formats), $X_{ij} = 1$ if the company reveals i th item, if 0 if the company does not reveal, so that $0 \leq 1 \leq ICDI_j$.

This research takes 2 proxies of intellectual capital disclosure. These proxies are variation of intellectual capital disclosure (ICDI) and volume of intellectual capital disclosure (ICWC).

b. Independent Variable

i. Firm size

Firm size selected because it was important for a potential disclosure research (Hossain, 2008). The measurement of firm size of this research refers to the Haniffa and Cooke (2005), Freedman and Jaggi (2005) using the natural logarithm of total asset size as a proxy of firm size.

ii. Profitability

Profitability is represented as return on assets (ROA). It is measured by counting net income divided by total assets.

iii. Leverage

Haniffa and Cooke (2005) and Freedman and Jaggi (2005) used the leverage as one of their proxy in their research. It is measured by calculating the ratio of debt to total equity. This ratio indicates how much of the total assets of the company were acquired or funded by debt.

iv. Company age

It is measured by counting the age of the company from the date of company its establishment. Data on the date of the company establishment obtained from the company history in the annual report. Then the data is performed by date cut off in December 31.

c. Control Variable

Firm audit is signed as AUDITYPE. It is measured by dummy variable. 1 if the firm audited by big 4 and 0 if otherwise. The big 4 firm audit are Deloitte and Touche, KPMG, Price Water House, Coopers and Cap Gemini, and Ernest and Young.

Role of duality is signed as RDUAL. It is measured by dummy variable, 1 if there is role of duality, 0 if there is no role of duality in the firm.

Board Size measured by counting the number of board commissioners in the firm.

3. RESULT

This research uses SPSS program 16.00 version in data analysis. The first stage of data analysis is testing of classic assumption. It consists of normality test, multicollonerality test, autocorrelation test, and heteroscedasticity test. Then, examination of hypothesis develop before is testing by multiple regression analysis by using T test and F test.

Regression Formulation

$$ICD = \beta_0 + \beta_1LnTAi + \beta_2ROAi + \beta_3LEVi+ \beta_4AGEi + \beta_5BDSIZEi + \beta_6AUDITYPEi+ \beta_7RDUALi + \epsilon_i$$

3.1. Classic Assumptions Test

a. Normality Test

Normality test aims to test normality of distribution in the regression model on residual variables (Ghazali, 2005). Normality test use the test of *One Sample Kolmogrov Smirnov*. The decision on normality data is based on the value of *asymp. sig (2-tailed)*. If *asymp. sig > 0,05*, it means that data is normal. Although, if *asymp. sig < 0, 05*, it means data is abnormal. The table below shows the result of *One Sample Kolmogrov Smirnov in normality test*.

Table 3
Normality Test (Kolmogorov-Smirnov Results)

Description	ICDI	ICWC
<i>Kolmogorov-Smirnov Z</i>	0.426	0.872
<i>Asymp. Sig (2-Tailed)</i>	0.993	0.432
Interpretation	Data is normal	Data is normal

Source: secondary data, processed

b. Multicollonireality Test

Multicollonireality test aims to test whether the regression model found the correlation between the independent variable. A good regression model should not happened correlation between independent variables (Ghazali, 2005). Multicollonireality can be known by seeing (1) tolerance value and (2) variance inflation factor (VIF). Tolerance measures the levels of variability on independent variable chosen which is not explained by other variables. The value of tolerance and VIF cut off used is < 0.10 and $VIF > 10$. If there is tolerance value of < 0.10 and $VIF > 10$, it can be said that there is multicollonireality on regression models. Table below shows the result of multicollonireality test.

Table 4
Result of Multicollonireality Test

Model	Collinearity Statistics		Interpretation
	Tolerance	VIF	
(Constant)	-	-	
Inta	.281	3.564	No Multicollonireality
age	.330	3.028	No Multicollonireality
roa	.711	1.407	No Multicollonireality
lev	.427	2.345	No Multicollonireality
auditype	.693	1.443	No Multicollonireality
bdsiz	.425	2.351	No Multicollonireality
rdual	.575	1.739	No Multicollonireality

Source: secondary data, processed

c. Autocorrelation Test

Autocorrelation test aims to test whether there is correlation between the errors in the period t disturber and error t disturber on the previous period in the linear regression model. The test begins with the determination of the hypothesis examination (Ghazali, 2005).

Table 5
Result of Autocorrelation Test

Description	ICDI	ICWC
Durbin-Watson value	2.319	2.049
dl	1.015	1.015
du	1.979	1.979
7-du	5.021	5.021
Interpretation	There is no autocorrelation	There is no autocorrelation

Source: secondary data, processed

d. Heteroscedasticity Test

Heteroscedasticity test aims to examine test whether residual variance going dissimilitude from one observation to the observation of others in the regression model. To know whether there was heteroscedasticity or not can be seen on scatter plots or by Park test (Ghazali, 2005). Based on the Park’s scatter plots, can be noted that there is no heteroscedasticity.

3.2. Hypothesis Test

Descriptive Statistics

Descriptive statistics in the research conducted to explore the value of mean and standard deviation of the variables of research. Descriptive statistics in a research conducted to find the mean value and standard deviation of each variable. The descriptive statistical results are as follows.

Table 6
Descriptive statistics

Variable	Mean	Standards Deviation	N
Icd	.3549	.07589	34
lnicwc	8.3332	.62630	34
Lnta	14.6862	1.38234	34
Age	14.8235	10.19944	34
Roa	2.8913	3.40015	34
Lev	64.3660	31.20812	34
auditype	.82	.387	34
bdsiz	8.9412	1.36939	34
rdual	.24	.431	34

Source: secondary data, processed

The table shows the result of descriptive statistics for knowing mean and standard deviation values of 34 sample annual reports. Information of descriptive statistics obtained on the results test are (a) mean of LNTA is 14.6862 and standard deviation is 1.38234, (b) mean the company’s profitability (ROA) is 2.8913 and standard deviation is 3.40015, (c) mean of the company age of is 14.8235 and standard deviation is 10.19944, (d) mean of the company’s leverage (LEV) is 64.3660 and standard deviation is 31.20812, (e) mean of the type of independent auditors firm (AUDITTYPE) is 0.82 and standard deviation is 0.387, (f) mean of board size (BDSIZE) is 8.9412 and standard deviation is 1.36939, and (g) mean of role of duality (RDUAL) is 0.24 and standard deviation is 0.431.

Table 7
Amount of Two Format Intellectual Capital Disclosure

No	Intellectual Capital	Amount (ICDI)	Percentage (ICDI)	Amount (ICWC)	Percentage (ICWC)
1	Human Capital	437	29.7 %	42558	24.5 %
2	Structural Capital	550	37.3%	86922	50.1 %
3	Relational Capital	486	32.9%	44059	25.4 %
Total		1473	100 %	173539	100 %

Source: secondary data, processed

The mean index (ICDI) is 0.3549 with slight variation in variety human, structural, and relational capital disclosure, and the mean aggregate word count (ICWC) is 5.104 words. ICDI ranges from 0.2 to 0.49. ICWC ranges from 1.502 words to 13.992 words.

The rankings of the mean human, structural, and relational capital disclosure change according to the disclosure measure employed. Structural capital ranks highest (37%) for the disclosure index score. Structural capital ranks the highest in term of word count, while human capital and relational capital are joints highest for focus, each forming 24.5 % and 25.4 % of total annual report word count. In all cases, human capital is in third place, although not far behind other two. The structural-relational-human ranking for word count (50.1%, 25.4%, and 24.5% of total intellectual capital respectively) is not consistent with findings from prior intellectual capital disclosure studies (e.g Guthrie and Petty, 2000; Bozzolan et. al, 2003; Goh and Lim, 2004, and Vandemale, et.al, 2005), demonstrating systematic differences in the level of reporting on intellectual capital elements that are the most value and stakeholder relevant (Vargauwen et. al, 2007), relational capital would seem to be the most important in this regard. Although, it was consistent to Li, et. al (2006) found that structural capital are slightly more prominent than relational and human capital disclosures in bank's annual report. Bounfour (2003) also found that in Nordic countries (The Netherlands, Denmark, and Sweden) excel in Internet home access and are leading countries in Europe for innovation and technology, while and innovation and investment.

Table 8
Descriptive Statistics for Intellectual Capital by category by Two Formats

Intellectual Capital Categories	Format	Min	Max	Max possible	Mean	%	SD
Human Capital	Text	4	19	22	11.26	51.18	4.114
	Numbers	0	6	22	1.59	7.22	1.635
	All	4	21	44	12.85	29.20	4.698

Structural Capital	Text	8	17	18	12.76	70.88	2.119
	Numbers	0	8	18	3.41	18.94	1.971
	All	8	22	36	16.18	44.94	3.459
Relational Capital	Text	5	15	21	11.35	54.04	2.268
	Numbers	0	7	21	2.94	14	2.074
	All	5	21	42	14.29	34.02	3.904
Intellectual Capital	Text	23	47	61	35.382	58.01	6.3581
	Numbers	0	16	61	7.94	13.01	4.431
	All	25	58	122	43.32	35.51	9.240

Source: secondary data, processed

Table 8 shows descriptive statistics for intellectual capital category by two formats. It can be seen that human, structural, and relational capital are disclosed in all two forms in the sample annual report. No one for human, structural, and relational capital in text form do we observe all possible items disclosed. On average 35 (58.01%) of the intellectual capital items in the research instrument have text disclosure. This falls to 13.01 % for disclosure in numerical form.

The results confirm that intellectual capital disclosures are still mainly in text form, in line with previous studies (e. g Guthrie and Petty, 2000; Breenan, 2001. The extensive use of numerical information in intellectual capital disclosure identified in the study in encouraging, supporting the finding Sujan and Abeysekera (2007).

Result of Multiple Regression

Table below shows the result of effect of firm characteristic on intellectual capital disclosure by multiple regression analysis.

Table 9
Result of Multi regression Test

Variable	ICDI			ICWC		
	Coefficients	t	Sig.	Coefficients	t	Sig.
(Constant)		2.622	.014	-	6.567	.000
Lnta	-.346	-1.207	.238	-.040	-2.072	.048
Age	.691	2.613	.015	.161	2.219	.035
Roa	.430	2.388	.025	.266	-.729	.473
Lev	.522	2.245	.034	-.215	2.387	.025
auditype	-.336	-1.842	.077	-.151	-.821	.419
Bdsize	-.368	-1.577	.127	-.390	-2.326	.028
Rdual	-.296	-1.476	.152	-.175	-1.218	.234
R Square	.400			.500		
Adjusted R Square	.238			.365		
Std. Error Estimate	.06625			.49904		

F	2.472	3.711
Sig.	.044a	.007a

Sources: secondary data, processed

Significant at 0.05

Discussion

Adjusted R² table shows the value of 0.238 on ICDI and 0.365 on ICWC. This can be seen the value of the independent variables. The firm size, profitability, leverage, and company age as proxy of firm characteristic can explain the variations in dependent variables. In the intellectual capital disclosure (ICD) by variation (ICDI) shows that adjusted R² only 23.8 % and 76.2 % explained by other variable outside the model. Intellectual capital disclosure (ICD) by volume (ICWC) shows that adjusted R² 36.5 and 64.5 % explained by other variable outside the model.

From the F test or ANOVA test, F value on ICDI obtained probability value of 2.472 with significant values of 0.044. The significant values was less than 0.05, so the regression model can be used to predict intellectual capital disclosure (ICD) or it can be said that firm characteristic affect simultaneously the variation of intellectual capital disclosure (ICD). In ICWC, F value on ICWC obtained probability value of 3.711 with significant values of 0.07. The significant values was less than 0.05, so the regression model also can be used to predict intellectual capital disclosure (ICD) or it can be said that firm characteristic affect simultaneously the volume of intellectual capital disclosure (ICWC).

a. Firm Size

The finding shows that in ICDI, *t* value is 1.207 at negative position. It held insignificant association showed on probability value shows 0.238 ($\rho > 0.05$). This findings consistent to Almilia and Retrinasari (2007) that found firm size only positively significant to mandatory disclosure. In the case voluntary disclosure, firm's size is not significant. Intellectual capital disclosure include on voluntary disclosure (Cerbioni and Parbonetti, 2007).

In ICWC, *t* value is 2.072 at negative position. It held significant association showed on probability value shows 0.048 ($\rho < 0.05$). This result is consistent with Singhvi dan Desai (1971); Cooke (1992); Wallace et al.(1994) Craig dan Diga (1998).

b. Profitability

The finding shows that in ICDI, *t* value is 2.382 at positive position. It held significant association showed on probability value shows 0.025 ($\rho < 0.05$). This finding in line with Skinners, 1994; Frankel et. al, 1995; and Trueman, 1997 which found that positive return or profitability makes more disclosure by the firm.

In ICWC, *t* value is 0.729 at negative position. It held insignificant association showed on probability value shows 0.473 ($\rho > 0.05$). This finding consistent to Lim. et. al (2007), Li, et. al (2008), and Oliveira et, al (2008).

c. Leverage

The finding shows that in ICDI, t value is 2.388 at positive position. It held significant association showed on probability value shows 0.034 ($\rho < 0.05$). On ICWC, the finding also indicates that t value is 2.387 at positive position. It was also held significant association showed on probability value shows 0.025 ($\rho < 0.05$). These findings are not consistent to Tan and Tower (1999) in Mangena and Pike (2005) indicate that the negative association of Finnish companies use, and the company's Singapore and Australia respectively. Mangena and Pike (2005) state that the level of leverage affect the agency problem because the disclosure in line with the increased level of debt.

d. Company Age

The finding shows that in ICDI, t value is 2.613 at positive position. It held significant association showed on probability value shows 0.015 ($\rho < 0.05$). In ICWC, t value is 2.219 at positive position. It also held significant association showed on probability value shows 0.035 ($\rho < 0.05$). The findings consistent to Kakani et. al (2001) found that newer and smaller firms take to the market in spit of disadvantages like their lack of capital, brand name, and reputation.

e. Boards Size

The finding shows that in ICDI, t value is 1.577 at negative position. It held significant association showed on probability value shows 0.127 ($\rho < 0.10$). This finding in line Mak and Li (2001), Lakhali (2003) and Nasir and Abdulla (2004) which found no relationship between board size to the level of supervision and voluntary disclosure.

In ICWC, t value is 2.326 at negative position. Although, it held significant association showed on probability value shows 0.028 ($\rho < 0.05$). This finding in line with Yermack (1996) who found discovered that there is a negative relationship between market value and the number of commissioners. According to Yermack (1996), when the board of commissioners with the number of members will increase slightly the quality of supervision. It means that the volume of disclosure of intellectual capital is influenced by the amount of a company's board of commissioners.

f. Audit Type

The finding shows that in ICDI, t value is 1.842 at negative position. It held significant association showed on probability value shows 0.077 ($\rho < 0.10$ or weak in levels of significant). The finding in the case ICDI as dependent variable was in line with Wallace et. al (1994), Hossain et. al (1995), Depoers (2000) says that there is no empirical association support between the size of a strong company with a broad audit of the information revealed.

In ICWC, t value is 0.821 at negative position. It held insignificant association showed on probability value shows 0.419 ($\rho > 0.05$). The finding consistent to Ahmed and Courtis (1999) found that there was no significant association between audit firm and level of voluntary disclosure but they found audit form and mandatory disclosure.

g. Role of Duality

The finding shows that in ICDI, t value is 1.476 at negative position. It held insignificant association showed on probability value shows 0.152 ($\rho > 0.05$). In ICWC, t value is 1.218 at negative position. It also held insignificant association showed on probability value shows 0.234 ($\rho > 0.05$). The finding confirms the findings of Ho and Wong (2001) which found negative insignificant relationship in levels of voluntary disclosure caused the dominant personality.

4. CONCLUSION, LIMITATION, AND RECOMMENDATION

a. Conclusion

- i. Firm size only significant influence on volume of intellectual capital disclosure,
- ii. Profitability only significant influence on variety of intellectual capital disclosure,
- iii. Both variety and volume of intellectual capital disclosure are influenced by leverage,
- iv. Both variety and volume of intellectual capital disclosure also influenced by company age.

b. Limitation

- i. Bias may occur by counting all word in the phrase or sentence in content analysis methods. It is caused that different grammar used in the sentence can influence the number of word.

c. Recommendation

- i. Take research samples in larger areas. For example in Asia-Africa.
- ii. Add the number of annual report as samples of the year 2008.
- iii. Add the cultural value as a variable in the model by using Hofstede's cultural indexes.
- iv. Examine the influence of the ownership structure of each component of intellectual capital disclosure such as human capital, structural capital, and relational capital.
- v. Use only key of word for word count analysis in order to avoid bias which may occur in grammar problem.

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