Determinants of Intellectual Capital Disclosure : Evidence From Shariah Listed Companies

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Abstract

This paper aims to investigate the determinants of intellectual capital disclosure (ICD) in the annual reports of the Malaysian listed Shari'ah approved companies. Using a content analysis, a disclosure index was developed which consists of 31 modified disclosure items to measure the ICD in the 2013 annual reports. The obtained data were analyzed using correlation and regression analysis. This paper also utilizes the ordinary least squares regression analysis to test the relationship between intellectual capital disclosure and company characteristics. The findings show that there is a significant relationship between profitability and intellectual capital disclosure. Although the scope of this study is only limited to one-year annual reports for the year 2013, it able to provide a starting point for future research on the issue of transparency and disclosure in Shari'ah approved companies. In addition, the result of this study is expected to give several benefits to the investors and shareholders of listed Shari'ah approved companies, academicians as well as to researchers.

Keywords: Intellectual Capital Disclosure, Shari'ah Companies, Malaysia

INTRODUCTION

Information disclosure in an annual report is the presentation of information required for the most favourable operation of efficient capital market as well as provides the users with substantial and relevant information to assist them in their decision making process. As stated by Mavridis (2005), intellectual capital is known as an intangible asset with the potential to create value for the enterprise and society itself. Basically, intellectual capital is divided into three different classes which include relational capital, structural capital and human capital. Intangible assets such as the skill of the workforce, intellectual property, processes, brand names, and loyalty are the fundamental feature in determining whether an organization gains competitive advantage against others (Guthrie and Petty, 2000).

According to Marr (2003), there are five generic reasons why an organisation should evaluate and address their intellectual capital in the report annually. Firstly, it helps to assist the organisation in inventing their policy and business strategy. Secondly, it enables companies to evaluate their strategy implementation. Next, it will assist in the organisation's strategic development, diversification and expansion decisions. Fourthly, it makes intellectual capital reporting becomes a basis for managing benefits and compensation, and last but not least to communicate with the

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external potential investors, suppliers and shareholders. The intellectual capital issues relative to the listed companies are acknowledged to have increasing attraction among some researchers. According to Dumay and Tull (2007), there is an increasing affliction among organisations to address intellectual capital in their annual reports. The inefficiency to address their intellectual capital would give some impacts towards the organisations.

Marr (2003) has identified some impacts in case the company fails to disclose their intangible assets. One of them is small shareholders may not be unveiled to some important non-physical information compared to the larger shareholders. Other than that, the managers may take advantage of their positions and employ in the insider trading as they have hidden knowledge about the intangible assets of the company. Furthermore, the financial outsiders may distinguish the wrong firms' valuation that may induce higher risk profiles.

There are very few studies (Abeysekera and Guthrie, 2005; Omar, 2008; Yi and Davey, 2010) that concerned about the determinants of intellectual capital revelation for the disclosed companies in Asian countries. In Malaysia, only few studies have identified the issues associated with the determinants of intellectual capital disclosure. Thus, this study aims to investigate the correlation between the firm characteristics and intellectual capital disclosure in their annual reports by the Malaysian listed *Shari'ah* approved companies.

The organization of this study is divided into five sections. Section 1 sets forth the rationale, significance and objectives of the study. The second section discusses about previous studies which are relevant to intellectual capital disclosure. The probable variables are discussed in this section. Next, Section 3 provides a detailed description of the research design and methods used. Subsequently, Section 4 gives the data analysis and results of the study. The results obtained from statistical method analysis are presented in a series of figures and tables with descriptive texts and discussions. Finally, the fifth section concludes this study. It views empirical findings and identifies issues for further research to explore.

LITERATURE REVIEW

There are some empirical studies conducted globally to investigate the intellectual capital disclosure. For instance, Guthrie and Petty (2000) in Australia; Brennan (2001) in Ireland; April, Bosma and Deglon (2003) in South Africa; Abeysekera and Guthrie (2005) in Sri Lanka; Bukh, Nielsen, Gormsen and Mouritsen (2005) in Denmark; Guthrie, Petty and Ricceri (2006) in Hong Kong and Australia; Oliveira, Rodrigues and Craig (2006) in Portugal; Omar (2008) in Bahrain; Yi and Davey (2010) in China; Wang, Sharma and Davey (2016) in China and Indian and Cuozzo, Dumay and Lombardi (2017) in a structured literature review. Furthermore, there is a small number of studies being conducted in Malaysia related to the intellectual capital reporting, for example, Goh and Lim (2004); Zuliana (2007); Ousama, Fatima and Majdi (2012); and Poh, Kilicman and Ibrahim (2018) in the financial performances of local banks.

Even though the studies of the intellectual capital reporting drivers exist in Malaysia, there are limitations on those studies. Some studies show that there are relationships between firm size, leverage and industry type with the intellectual

capital disclosure. However, there is a need to explore a broader view on other important concerned variables that will determine the intellectual capital disclosure (ICD) practices in Malaysian listed *Shari'ah*-compliant companies. This study would extend the previous studies mentioned above by focusing on some selected *Shari'ah*-compliant companies which are listed under Bursa Malaysia (BM) and also Securities Commission (SC).

There are few determinants of ICD that will be investigated in this study such as firm size, firm leverage and profitability. There is a positive relationship between the intellectual capital disclosure and the firm size, which was proven in the prior empirical studies (Guthrie et al., 2006; Oliveira et al., 2006; Bruggen, Vergauwen and Dao, 2009; Ousama et al., 2012).

According to Buzby (1975), big companies have a propensity to undergoing a good internal management information system and adequate resources to disclose more information. However, the studies done by Bukh et al. (2005) and Williams (2001) show that the company size does not affects the intellectual capital disclosure.

Firm leverage has also become one of the important variables which may give influences to the determinants of intellectual capital disclosure in the annual reports. There is a connection between firm leverage and intellectual capital disclosure proven by few studies (White, Lee and Tower, 2007; Zuliana, 2007; Omar, 2008). Due to the possibility of having financial distress, the companies with high leverage face high risk. Hence, the external parties such as creditors and public may demand more information including the intellectual capital disclosure to mitigate the risks concerned. In addition, the companies with higher leverage may voluntarily disclose more information like intellectual capital to convince the creditors that the company's value is not solely depends on financial performance (Ousama et al., 2012).

Nevertheless, there are some studies that verify a negative relationship between leverage and intellectual capital disclosure (Depoers, 2000; Oliveira et al., 2006; Whiting and Woodcock, 2011; Ousama et al., 2012). Furthermore, some previous studies have examined the relationship between profitability and the intellectual capital disclosure in the annual reports (Williams, 2001; Oliveira et al., 2006; Zuliana, 2007). According to Ousama et al. (2012), the companies with high profitability level have more reasons to indicate that they are better companies by presenting more intangible facts about their intellectual capital. However, previous studies also show the negative relationship between the profitability and the intellectual capital disclosure (Oliveira et al., 2006; Whiting and Woodcock, 2011).

RESEARCH METHODOLOGY

Since this research engages in hypotheses testing that will investigate the determinants of the intellectual capital disclosure in annual reports by Malaysian listed *Shari'ah* approved companies', his is an empirical quantitative study. This study used the 2013 annual reports of each selected *Shari'ah* approved companies as the source of the required data.

The dependent variable for this study is the intellectual capital disclosure in annual

reports by the Malaysian listed *Shari'ah* approved companies'. The intellectual capital disclosure was measured using a disclosure index that was developed by adopting prior disclosure items based on content analysis generated from previous studies on intellectual capital disclosure, with significant modifications for this research (Guthrie and Petty, 2000; Brennan, 2001; Williams, 2001; Goh and Lim, 2004; Olsson, 2004; Abeysekera and Guthrie, 2005; White et al., 2007; Whiting and Woodcock, 2011; and Ousama et al., 2012).

The modified disclosure items are viewed from the 2013 annual reports for the measurement of intellectual capital disclosure. The disclosure index consists of three main categories: structural capital (SC), relational capital (RC) and human capital (HC) which was later analyzed using descriptive statistics. Identifying the presence or absence of intellectual capital items in the annual reports for each category is the simplest form of the content analysis method (Guthrie and Petty, 2000; Bukh et al., 2005). Major researchers have adopted manual coding in their research and some studies apply a computerized content analysis (Bontis, 2003 and Oliveira et al., 2006).

This study used both measures, which are adopting manual coding and utilizing a software tool (PDF-XChange Viewer software) in the content analysis. These measures assist in achieving a higher level of objectivity and reliability (Oliveira et al., 2006). This research will use an unweighted dichotomous procedure to measure the intellectual capital related items in the annual reports. Based on this procedure, if the item is disclosed, it is given a score of 1, if not, it is scored 0. The study utilized a computerized content analysis of the annual reports using a list of modified disclosure items. Table 1 shows the modified disclosure items used in this study.

Table 1. Modified Disclosure Items

Disclosure Items	
Human Capital (HC)	Employees, Know-How, Training, Vocational Qualification, Education, Work-related Knowledge, Work-related Competencies, Entrepreneurial spirit and innovativeness, Employees Benefits
Structural Capital (SC)	Intellectual Property, Management Philosophy, Management Processes, Corporate Culture/Values, Information/Internal Networking Systems, Financial relations, Management Quality/Awards, Product focused, Research and Development, Company Structure
Relational Capital (RC)	Brands, Company Names, Customers, Customer Satisfaction, Company Reputation, Distribution Channels, Business Collaborations, Franchising Agreement, Licensing Agreements, Favourable Contracts, Market Share, Knowledge Sharing

(Source: Guthrie and Petty, 2000; Brennan, 2001)

After going through the manual coding using computerized software, the intellectual capital disclosure can be determined by the ratio of the recorded information items found in the annual report divided by the maximum number of information items in the disclosure index. The measurement of the intellectual capital disclosure (ICD) will be calculated as follows:

$$ICD_p = \frac{TADS_p}{MRDI_p}$$

Where

⬜ *ICDp* = the disclosure index for the intellectual capital disclosure of company *p*

⬜ *TADSp* = the total actual disclosure score for company *p*

⬜ *MRDIp* = the maximum relevant disclosure items of company *p*

The data for independent variables were obtained through annual reports and Osiris databases. The independent variables will be measured as follows:

1) **Firm size (FSIZE)** is measured by the total assets of company at the end of a reporting year, as measured by the prior studies (Williams (2001); Bozzolan, Favotto and Ricceri (2003); Ousama et al. (2012).

2) **Firm leverage (FLEVERAGE)** is measured by the ratio of total liabilities over the shareholder's equity which consistent with the prior studies (Williams, 2001; Oliveira et al., 2006; Zuliana, 2007; Omar, 2008; Ousama et al., 2012).

3) **Profitability (PROFITABILITY)** is measured by the return on shareholders' equity before taxation (Ousama et al., 2012).

This study chose the latest 665 listed *Shari'ah* approved companies which were announced in May 2014. However, PN17 companies, finance sector's companies and few other companies have to be excluded due to some reasons. According to Ousama and Fatima (2010) and Ousama et al. (2012), the companies from the finance sector are abided by some additional set of laws and requirements, which may influence their disclosure practices. PN17 companies are also being eliminated from the total population due to their financial problems, which may affect the disclosure of information in their annual reports. Furthermore, the companies from the infrastructure (IPC) sector and SPAC sector are also being excluded from the study due to the data variance that does not suit the specific cope of the study. Thus, after eliminating few mentioned companies, the remaining number of companies were 653 companies. A sample of 30 percent has been selected from each sector resulting in 196 sample companies.

Table 2 shows the number of companies and sample of this study. There are some different statistical tools used in this study to achieve the research objectives like descriptive statistics, correlation and regressions. The next sub-sections will explain further on how the tools being applied related to this study. In this study, the descriptive statistics will be used to measure the mean and standard deviation of the intellectual capital disclosure, structural capital (SC) disclosure, relational capital (RC) disclosure and human capital (HC) disclosure. In addition, the analysis is also used to measure the descriptive statistics of the independent variables of the study. Correlation analysis is used to evaluate the relationship between the dependent variable and the independent variables.

This analysis showed how much the two variable covariance. All possible bivariate correlations among a set of variables will be presented in a correlation matrix. Regression analysis is another technique to measure the linear association between dependent and independent variables. This study will adopt

an ordinary least square (OLS) regression model that being commonly used in some previous intellectual capital disclosure studies (Williams, 2001; Bozzolan et al., 2003; Ousama et al., 2012).

Table 2: Sample of Study
(Source: Securities Commission as at May 2014)

	Sectors	No of companies	Excluded Companies	Remaining No. of companies	Sample
1	Consumer Products	108	0	108	32
2	Industrial Products	200	2	198	59
3	Construction	36	0	36	11
4	Trading/Services	141	1	140	42
5	Properties	64	0	64	19
6	Plantation	35	0	35	11
7	Technology	72	0	72	22
8	Infrastructure (IPC)	5	5	0	0
9	Finance	2	2	0	0
10	SPAC	2	2	0	0
	TOTAL	665	12	653	196

DATA ANALYSIS AND FINDINGS

The researcher used various types of analysis such as descriptive statistic, correlation analysis and regression analysis to analyze the data. Statistical diagnostic tests have been performed before running the regression. The descriptive statistics presented in Table 3 and Table 4. The characteristics of the variables include the standard deviation, skewness, kurtosis (the height) and Jarque-Bera (the variation of the distributions) are being analyzed. Table 3 presents the results of the descriptive statistics of the dependent variable, intellectual capital disclosure (ICD), which comprises of human capital disclosure (HCD), structural capital disclosure (SCD) and relational capital disclosure (RCD).

Table 3. Descriptive Statistical Analysis Results of ICD

	ICD	HCD	SCD	RCD
Mean	0.7711	0.2429	0.2472	0.2809
Median	0.7742	0.2581	0.2581	0.2903
Maximum	0.9677	0.2903	0.3226	0.3871
Minimum	0.3548	0.0968	0.1290	0.0645
SD	0.1069	0.0361	0.0502	0.0604
Skewness	-0.9248	-1.2390	-0.2568	-1.2628
Kurtosis	5.5979	5.7764	2.3049	5.4367
Jarque-Bera	83.0527	113.0966	6.0992	100.5798
Prob.	0.0000	0.0000	0.0474	0.0000

The results show that the means of the ICD, HCD, SCD and RCD in the annual reports of Malaysian listed *Shari'ah* approved companies were 0.7711, 0.2429, 0.2472 and 0.2809 respectively. It can be said that the Malaysian listed *Shari'ah* approved companies reveal 77.11 percent of the intellectual capital disclosure index's items in their annual reports, which comprise of 24.29 percent from the human capital items, 24.72 percent from the structural capital items and 28.09 percent from the relational capital items.

Table 4 then illustrates the descriptive statistical results for the variables of this study. From the descriptive results, the mean values for firm size, firm leverage and profitability are 12.5035, 47.6605 and 0.9686 respectively showing the similar value of their median as in the table 4 (12.5854, 43.1421, 1.0158). The skewness values for the firm size, firm leverage and profitability lie within the range of -1 and +1 as well as the value of kurtosis for the independent variables are 2.2440, 2.1436 and 3.3951 respectively. These values show that the sample is normally distributed.

Table 4. Descriptive Analysis

	ICD	FSIZE	FLEV	PROF
Mean	0.7711	12.5035	47.6605	0.9686
Median	0.7742	12.5854	43.1421	1.0158
Maximum	0.9678	13.8138	106.9204	1.7216
Minimum	0.3548	10.9485	3.1843	-0.3188
SD	0.1069	0.6858	26.3999	0.3845
Skewness	-0.9248	-0.1225	0.3039	-0.7362
Kurtosis	5.5979	2.2440	2.1436	3.3951
Jarque-Bera	83.0527	5.1053	6.0992	18.7871
Prob.	0.0000	0.0779	0.0116	0.0001

The correlation matrix for this study is presented in Table 5. The table shows the correlation analysis results between all the variables. For the initial analysis of the relationship between the dependent variable and the independent variables, the intellectual capital disclosure is not significant to firm size ($p>0.10$) and firm leverage ($p>0.10$). However, profitability ($p<0.0$) is significant to the intellectual capital disclosure. These results signify that firm size and firm leverage are not significantly related with ICD. Bryman and Cramer (1997) recommend that simple correlations between independent variables should not be considered harmful until they exceed 0.80 or 0.90. In this study, the highest correlation coefficient between the independent variable is 0.1531, which is much lower than the value of 0.80. Thus, none of the variables show multicollinearity problem. The correlation results show that they do not seem to be a problem amongst the independent variables.

Table 5: Correlation Analysis Results

	ICD	FSIZE	FLEV	PROF
ICD	1.0000	0.0862 *0.2321*	0.0773 *0.2839*	0.2494 *0.0005**
FSIZE		1.0000	0.1120 *0.1200*	0.1531 *0.0330*
FLEV			1.0000	0.0081 *0.9109*
PROF				1.0000

Notes: *Significant at 1 percent level; the correlation coefficients are shown in the bold values; the significance levels are shown in italic values

In verifying the results of the determinants of intellectual capital disclosure in the Malaysian listed *Shari'ah* approved companies, the regression analysis was carried out. The results in Table 6 report that the *F* value and the significant F-statistics were 4.73 and 0.0033 (p<0.05) respectively which indicate that the independent variables (firm size, firm leverage and profitability) are jointly influencing ICD in the companies' 2013 annual reports. Nonetheless, only 6.95 percent of variation in the dependent variable (intellectual capital disclosure) can be explained by the independent variables in this model. However, the rest 93.05 percent fluctuation in ICD can be explained by other residuals, which are not included in this model. An adjusted R^2 of 5.48 percent for the intellectual capital disclosure regression model indicates that there are only 5.48 percent of associations between ICD and its determinants. In addition, the results specify that profitability is statistically significant (*p*<0.01). In opposition, firm size and firm leverage are not significant.

Table 6: Regression Analysis Results

Variables	Coefficient	Standard error	t-statistic	Significant
Constant *NEW_FSIZE*	0.6112	0.1374	4.45	0.000
FLEV	0.0064	0.0112	0.58	0.565
PROF	0.0003	0.0003	1.00	0.316
	0.0678	0.1980	3.43	0.001*
R-squared (R^2)				
Adjusted R^2	0.0695			
F-statistics	0.0548			
Prob(F-statistics)	4.73			
	0.0033			

Notes: *Significant at 1 percent

The results of this study are consistent with the findings of prior studies, yet they are also incoherent with others. The results of firm size and firm leverage are found not significant which are consistent with previous ICD studies for firm size (Bukh et al., 2005; and Williams, 2001) and firm leverage (Depoers, 2000; Oliveira et al., 2006; Whiting and Woodcock, 2011; Ousama et al., 2012). In contrast, the findings are inconsistent with some other studies for the firm size (Guthrie et al., 2006); Oliveira et al., 2006); Bruggen et al., 2009); Ousama et al., 2012) and firm leverage (White et

al., 2007; Zuliana, 2007; Omar, 2008).

According to Ousama et al. (2012), the larger companies usually have more resources that enable them to disclose more intellectual capital information. However, in this study, the firm size does not control the decision to disclose the intellectual capital items in the Malaysian listed *Shari'ah* approved companies' 2013 annual reports. The listed companies may rely on other kinds of communication to abbreviate the conflicts between the shareholders and managers (Williams, 2001).

Hence, the results of this study indicate that firm size is not the determinants of ICD in the Malaysian listed *Shari'ah*-approved companies' annual reports. In addition, the results also show that firm leverage is not significantly related to ICD which prove the same results as prior studies done by Depoers (2000), Oliveira et al. (2006), Whiting and Woodcock (2011) and Ousama et al. (2012). However, the results are conflicting to the studies that declare the firm size as one of the drivers in determining the ICD (White et al., 2007; Zuliana, 2007; Omar, 2008). Furthermore, profitability is significantly correlated with the determinants of ICD as proved by prior studies done by Williams (2001), Oliveira et al. (2006) and Zuliana (2007). The companies with higher profitability level have more incentive to reveal more intangible information. Ousama et al. (2012) also agreed with this justification.

CONCLUSION AND RECOMMENDATION

This paper aims to examine the relationships between the company characteristics for instance, firm size, firm leverage and profitability; with the intellectual capital disclosure (ICD) in the Malaysian listed *Shari'ah* approved companies' annual reports. The data has been gathered from the 2013 annual reports of 196 Malaysian listed *Shari'ah* approved companies. In conclusion, this study investigates the association between the intellectual capital disclosure and the firm characteristics of listed *Shari'ah* approved companies in Malaysia. It begins to fill the gap of limited research with respect to ICD in Asian countries, especially in Malaysia. Based on the findings, the results show that only profitability affects the determination of intellectual capital disclosure in the Malysian listed *Shari'ah* approved companies' annual reports.

The empirical findings of the regression analysis support the hypothesis that the intellectual capital disclosure in the annual reports of Malaysian listed *Shari'ah* approved companies is influenced by the profitability, whereas, the results did not support the hypotheses of firm size and firm leverage. The findings however give implications towards some parties include investors, managers of the companies, board of directors and shareholders, in the decision making process. The study contributes to the literature in a number of further ways, most notably, it provides the first evidence of the relationship between the *Shari'ah* approved company characteristics and ICD practices in a developing Asian country, Malaysia. The findings in this study are also important to both policy makers and firms. The regulations may be necessary to develop best practice guidelines for intellectual capital disclosure and to encourage *Shari'ah* compliance with such guidelines in enhancing the disclosure of intellectual capital information in the annual reports.

The first limitation relates to the independent variables which deliberated in this study due to data availability and their relevance. The researcher dealt with difficulties in collecting data. There are some companies from the population that have to be excluded from the study due to some reasons which have been explained in previous chapter. Nevertheless, the large population of Malaysian listed *Shari'ah* approved companies ease the researcher's work to randomly select the best companies to be included in this study. In addition, regarding to the existing data, several companies still have not published the latest annual reports on their web site and do not disclose some required information in the annual reports, which lead to some difficulties to evaluate the determinants of the intellectual capital disclosure (ICD).

Second, the limitation of study relates to the variable measurement issues upon intellectual capital disclosure (ICD) practice. Intellectual capital information is recorded by manual coding and scored based on an un-weighted disclosure index, where some information is difficult to measure. Besides, the procedure involves the application of judgment on whether the intellectual capital items being considered are indeed applicable to the firm and to which category of disclosure. Third, the data for this study is limited to single year annual reports of the designated sample companies, 2013, therefore, there is a sound case for extending the present study and further research is considered necessary. Nevertheless, this study provides the current level of the intellectual capital disclosure practice in the Malaysian listed *Shari'ah* approved companies' annual reports.

It would be noteworthy to replicate this study by focusing on the trends of the intellectual capital disclosure (ICD) in few years' annual reports and comparing them to the companies in other countries' disclosure index, which have similarities to Malaysian economic development features. The study could be duplicated across a group of Asian countries to determine the intellectual capital practices in Asia rather than a single country as well as to consider how cultural issues might impact on intellectual capital disclosure (ICD). Any such future research might also usefully expand the sample size by selecting more companies and thereby devise a more extensive disclosure index in order to produce a more comprehensive understanding of intellectual capital disclosure practice in Malaysia.

Moreover, future research may incorporate more independent and control variables if some required existing data is available. Some other independent variables that can be used are industry type, ownership structure, liquidity risk, audit committee, company age, market capitalization and corporate governance. Besides, future research may also use more than one measure for in determining the value of the firm size more comprehensively. This research measured firm size by log of total assets. The other measures that can be used are turnover, market capitalization, log of total sales and the number of employees. Further research may also consider applying mixed methods for example disclosure, questionnaire survey and interviews in order to obtain a broad range of insights on intellectual capital disclosure practices.

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