

THE DETERMINANTS OF INTELLECTUAL CAPITAL DISCLOSURE AMONG MALAYSIAN LISTED COMPANIES

Siti Mariana Taliyang, Universiti Sultan Zainal Abidin
Rohaida Abdul Latif, Universiti Utara Malaysia
Nurul Huda Mustafa, Universiti Sultan Zainal Abidin

ABSTRACT

The objectives of this study are to identify the determinants and the extent of intellectual capital disclosure among Malaysian listed firms. The variables tested in this study are (1) age (2) size (3) leverage (4) profit; (5) ownership and (6) growth. A sample of 150 companies listed in Bursa Malaysia was selected consisting of five industries: Information Technology, Consumer Product, Industrial Product, Trading/Services and Finance. The result show that about 72.6 percent of the companies selected disclosed intellectual capital in their annual reports. That data show that four variables are determinants of intellectual age, size, director ownership and growth.

JEL: M41

KEYWORDS: Intellectual capital, human capital, relational capital, structural capital

INTRODUCTION

Intellectual capital (IC) disclosure has received increasing attention among companies around the world including Australian and Italian companies. In Malaysia, the development of human capital of the nation is a targeted area under the Ninth Malaysia Plan. To be competitive in the global market, a progressively developing Asian country like Malaysia has to effectively transfer from an input-driven to knowledge-driven economy that focuses more on utilizing human knowledge and skills, rather than on production of labor-intensive goods (Goh, 2005). IC has been regarded as a prominent source of competitive advantage for various organizations, which influence the level of innovativeness and creativity. This in turn leads to improved business performance and country economic growth (Nik Maheran et al. 2006). However, in Malaysia few companies report identifiable intangible assets. Tan (2000) found that only 0.2 percent of total assets of companies listed on the Bursa Malaysia (formerly known as Kuala Lumpur Stock Exchange) revealed intangible assets other than goodwill. He also noted that the number of companies reporting identifiable intangible assets was insignificant.

The disclosure of intellectual capital in Malaysian companies may be influenced factors such as; director ownership, firm age, level of leverage, size of firm, profitability and firm's growth. This study is conducted to investigate the factors which affect the voluntary intellectual capital disclosure among Malaysian listed companies. The remainder of the paper is organized as follows. Section 2 briefly discusses the relevant literature. The next section will succinctly discuss the data and methodology used in this study. Section 4 provides the empirical findings and section 5 concludes the paper.

LITERATURE REVIEW

Intellectual capital is defined as intangible assets including technology, customer information, brand name, reputation and corporate culture. These assets are invaluable to a firm's competitive power (Low and Kalafut, 2002). Low and Kalafut (2002) conclude that intellectual capital consists of three components. The first component is tacit knowledge and innovativeness of the employees. The second

component is infrastructure of human capital such as good working systems, innovation and improvement processes of structural capital. The last components is external relationships of the firm such as customers' capital. Nick Bontis, (Director, Institute of Intellectual Capital Research, Associate Editor, Journal of Intellectual Capital), states "Intellectual Capital is the currency of the new millennium. Managing it wisely is the key to business success in the knowledge era." There are many reasons for the companies to disclose intellectual capital information in their annual reports. They are (a) to help organizations formulate their strategies, (b) to assess strategy executions, (c) to assist in diversification and expansion decisions, (d) to use as basis for compensations and to communicate measures to external stakeholders (Marr et al., 2003).

Three approaches to measuring intellectual capital have been suggested by Brennan (2001). The first is to employ existing value-based measures. The value of intellectual assets is the difference between the market value of the firm and its book value. A second approach is known as "Skandia Navigator". This approach was introduced for a Swedish firm named, Skandia. This approach refers to methods which identify and quantify critical success factors in five dimensions of the company's business (Brennan, 2001). The model proposed by Edvinson and Malone (1997) includes five dimensions: financial, client, human, processes, renewal and development as elements of the intellectual capital system. The third approach refers to the Intellectual Capital Index. Through this approach, a key measures of individual firm success must be first identified and weighted by importance to provide a single summary index. Some researchers argue a single aggregate measure is unhelpful Booth (1998).

Bruggen (2009) examines determinants of Australian firm's decisions to disclose intellectual capital in their annual reports. The IC disclosure in this study is measured by a modified methodology of Bontis (2003) and Vergauwen and Van Alem (2005). That is, the 36-intellectual capital related terms collected by researchers in the World Congress on Intellectual Capital. The authors found that, industry type and firm size plays key roles as determinants for the disclosure of intellectual property in their annual reports.

Another study conducted by White et al. (2007) found that key drivers for IC disclosure are board independence, level of leverage and firm's size. These variables have a significant relationship with the level of voluntary intellectual capital disclosure among biotechnology companies in Australia.

For the purpose of this study, the signaling theory suggests that more profitable firms will disclose more information to their stakeholders about good performance. Signaling theory is based on two general assumptions (Myers and Majluf, 1984). Firstly, managers are better informed than shareholders or the public concerning the firm's positions. Secondly, given that managers have an information advantage, they may choose to disclose information in an attempt to signal the firm's position to the public.

DATA AND METHODOLOGY

Hypotheses Development

Bukh's et al. (2005) found that, there is no significant relationship between firm age and firm intellectual capital disclosures. Additionally, the study conducted by White et al. (2007) found no significant relationship between firm age and the level of voluntary intellectual capital disclosure among biotechnology companies in Australia. This leads to the first hypothesis as follows:

H1: There is no significant relationship between firm age and intellectual capital disclosure

Bozzolan et al. (2003) investigate the annual reports of 30 non-financial companies listed in the Italian Stock Exchange in 2001. Adopting Guthrie and Petty's (2000) framework with some modifications, they conclude that company size and industry influence the amount of intellectual capital disclosure in Italian companies. Additionally, the study conducted by White et al. (2007) found that firm size had a significant

relationship with the level of voluntary intellectual capital disclosure among biotechnology companies in Australia. This leads to the second hypothesis as follows:

H2: There is a significant relationship between firm size and intellectual capital disclosure

The study conducted by White et al. (2007) found that level of leverage had a significant relationship with the level of voluntary intellectual capital disclosure among biotechnology companies in Australia. Based on these findings we propose:

H3: There is a significant relationship between level of leverage and intellectual capital disclosure

Singh and Van der Zahn's (n.d.) intellectual capital study confirms Craswell and Taylor's (1992) study of voluntary reserve disclosures, in that there was no significant association with ownership structure.

H4: There is no significant relationship between ownership concentration and intellectual capital disclosure

Profitability: McNally et al. (1982) found that the profitability measure was not significant in explaining voluntary disclosure by New Zealand companies. Additionally, Meek et al. (1995) found no significant relationship between profitability and voluntary annual report disclosure by US, UK and Continental European multinational corporations. Furthermore, a study conducted by Zaludin (2007) found that profitability does not affect the level of intellectual capital disclosure in Malaysian's companies. Thus, we hypothesize:

H5: There is no significant relationship between profitability and intellectual capital disclosure

A study by Akhtaruddin and Hossain (2008) indicates that growth firms benefit from higher levels of voluntary disclosure. Since, there are limited studies conducted in examining the relationship between firm growth and intellectual capital disclosure, there is no evidence to explain the relationship between both variables. Due to the result found by Akhtaruddin and Hossain (2008), it is expected that firm with high growth opportunities are more likely to disclose intellectual capital because the disclosure will benefit them. Thus, we propose:

H6: There is significant relationship between firm growth and intellectual capital disclosure

Variable Measurement

Measurement for Intellectual Capital Disclosure (Dependent variable) In order to measure intellectual capital disclosure, the study used an intellectual capital disclosure index by replicating a modified methodology by Bontis (2003) and Vergauwen and Van Alem (2005). That is, the 36- intellectual capital related terms collected by researchers in the World Congress on Intellectual Capital. The congress categorized the 36 terms into three categories; (a) human capital; (b) structural capital and (c) relational capital. Because of the presence of some general terms related to the field of intellectual capital, Bruggen (2009) modified the model by placing additional terms into the fourth category called "General Terms". None of relational capital terms appear in the sample firm's annual report. Hence, this study uses three additional terms. The additional terms are (1) investor relations; (2) customer relations; (3) supplier relations. It is expected that, these three terms give significant result in this study since some of the samples are operating in the Financial and Information Technology sectors. It is assumed that these companies are highly involved in the relation with customers, suppliers and investors. Hence, relational capital should be added to this analysis.

*Measurement for Independent variables:*The factors being studied in examining the relationship to intellectual capital disclosure are:Firm Age measured in years from the date of listing on the Bursa Malaysia until the end of year 2009. Firm Size measured by the natural logarithm of total assets of the company. Leverage measured as the level of external financing of the companies is measured by the ratio of total liabilities over total assets as at the end of the 2009 financial year. Director ownership measured based on the percentage of shares hold by the directors in the companies as at the end of 2009 financial year. Profitability measured through the ratio of operating profit (EBITDA) to total assets. Growth, measured using market to- book- value (MTBV) of common shares. MTBV is defined as the ratio of market price per share to value of equity per share at the end of the 2009 financial year.

Data Collection and Procedures

A sample of 150 companies listed in Bursa Malaysia was randomly selected across five industries: Information Technology, Consumer Product, Industrial Product, Trading/Services and Finance. The study used a secondary data gathered from various sources such as company annual reports and the DataStream database. Annual reports for 2009 were used to extract the relevant information. The 2009 annual reports were chosen as they had incorporated several changes as stipulated in the revised Malaysian Code of Corporate Governance (MCCG). After the revision of MCCG (2007) Malaysian companies are expected to voluntarily disclose more information in their annual reports.

Data was also gathered through the DataStream Database where the information regarding the company's financial data such as total assets, total liabilities, and other information can be easily obtained. To ensure the validity and reliability the data were manually cross checked using the company's annual report. Data was also gathered by accessing to the website of Bursa Malaysia. Some data collected from DataStream needed to be confirmed with Bursa Malaysia, e.g. the listing age for the companies. Several circulars from the Bursa Malaysia website were gathered to ascertain the official listing date of the companies.

The first part of the analysis describes demographic and financial characteristics of the sample firms. Descriptive analysis is carried out using Statistical Package for the Social Science (SPSS). Next, the content analysis was performed. The content of the annual reports of the relevant companies was investigated with regard to certain words. To complete this analysis a computer scanning system was used to scan the annual reports and identify IC terms in the annual reports. To enhancing the reliability of the data terms that appear in the annual reports were cross- checked through manually reading the related pages. After that, the identified are counted for the number of times it appeared in the annual report for the year. The study ignored the terms that appear in the director's profile, the name of the seminar or activities, and the repetitions of an award's name. This is because the terms that appeared in the sections mentioned above did not make sense for measuring total intellectual capital disclosure among Malaysian companies. For example, the directors of the company holds a degree in Information Systems. The information system term in this sentence do not symbolize structural capital. Hence, it is practical to disregard this term in calculating the frequencies of IC disclosure among Malaysian companies. The result of the analysis on the content of annual reports is shown in Table 2 and Table 3.

Additionally, Ordinary Least Square (OLS) regression was performed for testing the hypothesis using Statistics of Analysis Data (Stata). The following regression equation was estimated to identify the determinants of IC disclosure with the results presented in Tables 4 and 5.

$$IC\ Disclosure = \beta_0 + \beta_1(Age) + \beta_2(Size) + \beta_3(Leverage) + \beta_4(Ownership) + \beta_5(Profitability) + \beta_6(Growth) + \varepsilon_i \quad (1)$$

Where;

$IC\ Disclosure_i$	= Intellectual capital disclosure of company i
Age_i	= Age of company i
$Size_i$	= Size of company i
$Leverage_i$	= Level of leverage of company i
$Ownership_i$	= Percentage of directors ownership in company i
$Profitability_i$	= Profit of company i
$Growth_i$	= Growth of company i
β_0	= Constant
$\beta_1 - \beta_6$	= Coefficient of the explanatory variables
ε_i	= Error or disturbance terms of company i

Empirical Findings

Table 1 shows the descriptive statistics. The left side reports information for the Ace market. The right side reports data for the Main Market. Mean, standard deviation, minimum and maximum data are reported for each variable. ACE Market contributed 30 companies in the IT sector while Main Market contributed 120 companies in Consumer Product, Industrial Product, Trading/Services and Finance sectors. Table 1 indicates that there is a small difference of about 0.68 percent in means of total intellectual capital disclosure between of both markets. The ACE Market indicates about 2.91 percent of IC disclosure while the Main Market shows a value of 3.59.

Table 1: Descriptive Result

	ACE MARKET				MAIN MARKET			
	Mean	Std. Deviation	Min	Max	Mean	Std. Deviation	Min	Max
AGE	5.270	1.741	2.000	10.000	15.130	10.202	2.000	49.000
SIZE	17.229	1.319	13.203	19.095	20.104	1.976	17.212	26.202
LEVERAGE	0.5486	0.8829	0.0164	3.848	0.5252	0.2886	0.0942	1.917
OWNERSHIP	0.2571	0.2155	0.000	0.7912	0.1487	0.1946	0.0000	0.8704
PROFITABILITY	-0.3500	1.390	-7.337	0.2639	0.0306	0.2216	-1.371	0.4021
GROWTH	1.106	1.892	-5.910	5.560	0.6929	1.858	-16.810	5.030
IC DISCLOSURE	0.0290	0.0249	0.000	0.0769	0.0358	0.0312	0.000	0.1282

This table shows the descriptive results for Malaysian companies listed in ACE and Main Market.

Table 2 shows that structural capital is the most frequently disclosed category followed by relational capital. In contrast, the result found by Bruggen (2009) stated that it was very hard to find relational capital items disclosed in the annual reports of Australian firms. The differences above are consistent with the expectation that adding extra terms under relational capital would give significant influence to this study compared to the study done by Bruggen (2009).

Table 2: Intellectual Capital Disclosure – by Industry

Industry / Items	Human Capital	Structural Capital	Relational Capital	General Terms	Total
Information	19	51	12	1	83
Consumer Product	17	17	12	1	47
Industrial Product	6	16	14	0	36
Trading / Services	26	23	20	0	69
Finance	75	52	93	1	221
Total	143	159	151	3	456

This table shows the number of companies disclosed intellectual capital in their annual report. The companies were categorized according to its industry while intellectual capital was categorized according to its components.

It clearly shows that Malaysian firms absolutely engaged in investor, customer and supplier relations. By scrutinizing all industries selected, the results show that the finance and information technology industries disclosed more intellectual capital items than other industries. This result supports the result found by Bruggen (2009), where Australian firms involves in High-tech industries and Information System were among the industries that frequently report about intellectual capital.

Of the 39-IC related terms, only 15 terms appeared in the annual reports of Malaysian listed companies as shown in Table 3. Of those terms, “human capital” was frequently disclosed with a score at 138 times followed by investor relation at 111 and information system at 97. Additionally, out of 150 samples, the result also found that 72.67 percent of companies disclosed IC in their annual reports reflecting a very high disclosure of IC in Malaysia.

Besides that, in terms of disclosure location, IC information is reported in several sections in the annual reports. This information commonly appeared in the financial statements and notes to financial statements, followed by a director’s report, statement of corporate governance and other operational reports. Intellectual capital work is mostly managed by senior management Bontis (2001), so the location of IC disclosure demonstrates the company’s concerns in reporting intellectual capital.

Table 3: Intellectual Capital Disclosure – by Terms

Human Capital	Times	Structural Capital	Times	Relational Capital	Times	General Items	Times
Employee expertise	0	Structural capital	0	Relational capital	0	Economic value added	0
Employee know-how	0	Intellectual property	54	Supplier knowledge	0	Intellectual capital	2
Employee knowledge	0	Cultural diversity	0	Customer knowledge	0	Intellectual resources	0
Employee productivity	0	Organizational structure	0	Customer capital	0	Intellectual asset	0
Employee skill	1	Corporate learning	1	Company reputation	0	Knowledge asset	0
Employee value	1	Organizational learning	0	Investor relation	111	Knowledge stock	0
Human capital	138	Corporate university	0	Customer relation	40	Intellectual material	0
Human asset	1	Knowledge sharing	2	Supplier relation	0	Business knowledge	1
Human value	2	Management quality	2			Competitive intelligence	0
Expert team	0	Knowledge management	3				
		Information system	97				
		Expert network	0				
Total	143		159		151		3

This table shows the frequency of intellectual capital terms appeared in the annual report of Malaysian companies.

The table 4 shows that, using a two-tailed test, the only statistically significant coefficients are: Size with ($\beta_2 = 0.004$, $p < 0.01$), Growth ($\beta_6 = 0.015$, $p < 0.05$) and Ownership ($\beta_4 = 0.093$, $p < 0.1$). However, for ownership, it is marginally significant since “p” is close to 0.1.

Table 4: Regression Result (Run Simultaneously)

Total IC	Coef.	Std. Err	t	P > t
Age	0.0001	0.0002	0.380	0.7040
Size	0.0048	0.0016	2.930	0.0040***
Leverage	0.0074	0.0113	0.660	0.5100
Ownership	-0.0187	0.0110	-1.690	0.0930*
Profitability	-0.0012	0.0056	-0.210	0.8310
Growth	0.0025	0.0010	2.460	0.0150**
				R-squared = 0.2202

This table shows the regression result if the estimated equation was run simultaneously between all independent variables and dependent variable. Note: *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

This table 5 shows that there are four significant coefficients between total IC: age with a coefficient of 0.0007 and $p < 0.01$; size ($\beta_2 = 0.058$, $p < 0.01$); ownership ($\beta_4 = -0.0324$, $p < 0.01$); and growth, with a coefficient of 0.0027 and $p < 0.05$, when these data were run individually.

Table 5: Regression Result (Run Individually)

Total IC	Coef.	Std. Err	t	P > t
Age	0.0007	0.0002	3.22	0.0020***
Size	0.0058	0.0013	4.51	0.0000***
Leverage	0.008	0.0055	1.44	0.153
Ownership	-0.0324	0.0101	-3.22	0.0020***
Profitability	0.0023	0.0017	1.36	0.176
Growth	0.0027	0.0011	2.52	0.0130**

This table shows the regression result when each independent variables was run individually against dependent variable.

Note: *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

CONCLUDING COMMENTS

The objectives of this study are to know the determinants and extent of intellectual capital disclosure among Malaysian listed firms for the year 2009. Variables tested in this study are: age, size, leverage, profit, ownership and growth. A sample of 150 companies listed in Bursa Malaysia was selected consisting of five industries: Information Technology, Consumer Product, Industrial Product, Trading/Services and Finance. Descriptive statistics, content analysis and an OLS regression model were used to analyze the data. The results show a high percentage, about 72.6 percent, of firm's selected disclosed intellectual capital in their annual reports. From six variables tested, four are identified as determinants of intellectual capital among Malaysian listed companies. Determining factors are age, size, director ownership and growth. The results support the findings by Bruggen (2009) and White et.al (2007), who find that size and ownership are significant in explaining intellectual capital disclosure.

The extent of the intellectual capital disclosure among Malaysian companies is still relatively low as indicated by the average intellectual capital disclosure of 3.59 percent for Main Market and 2.91 percent for ACE Market. However, the result also show a high percentage, about 72.6 percent, of the companies selected disclosed intellectual capital in their annual reports. The low level of the extension of IC disclosure is due to the measurement used in this study. The extent of IC disclosure is measured by dividing the number of items disclosed by the companies with the total items used in the study for each category of IC. In calculating the number of items disclosed, the repetition in the annual report is disregard in this study. This result revealed that most of Malaysian companies are aware of intellectual capital disclosure, however, they are not aware of how to measure, report and disclose this information in their annual report. This is consistent with the conclusion made by Guthrie and Petty (2000). They conclude that Australian companies report less on IC disclosure in their annual reports due to the poor understanding, inadequately identified, inefficiently managed and reported IC in a consistent framework.

It must be noted that this study has limitations. Firstly, the study was done over a limited time and was completed within a period of three months. Therefore, a sample size is limited to 150 companies and one year of data only. This small sample will not comprehensively or accurately illustrate the real situation occurring in Malaysia. Additionally, the study focused on Malaysia, and therefore the result cannot be generalized to other countries. The second limitation is related to content analysis. Analyzing the annual reports based on the specified list of intellectual capital (IC) means it may not provide the whole picture of IC disclosure practices in Malaysia. This study used a modified methodology by Bontis (2003) and Vergauwen and Van Alem (2005). A major limitation of this methodology is that it used 39 items. Finally, annual reports are analyzed using computer scanning in deriving the number of items that appear in the annual report. The computer could skip a similar item with different wordings. The study could be improved in the future in several ways. As this study has been conducted using a small sample and one year data future studies should examine larger samples. To further improve the research, the sample could be widened and focus on all companies listed in Main Market. The number of years could also be increased to five years in order to see the pattern or trend of intellectual capital disclosure among Malaysian companies. With these modifications perhaps more conclusive results could be obtained.

REFERENCES

- Akhtaruddin, M. and Hossain M. (2008) *“Investment Opportunity Set, Ownership Control and Voluntary Disclosure in Malaysia”*. JOAAG, Vol. 3 No.2, pp 25-39.
- Bontis, N. (2003), *“Intellectual Capital Disclosure in Canadian Corporations”*, Journal of Human Resource Costing & Accounting, Vol. 7 No. 1, pp. 9-20.
- Booth, R. (1998) *“The Measurement of Intellectual Capital”*. Management Accounting (UK), Vol. 76 No 10, pp 26-28.
- Brennan, N. (2001). *“Reporting Intellectual Capital in Annual Reports: Evidence from Ireland”*, Accounting, Auditing & Accountability Journal, Vol. 14 No. 4, pp. 423-436.
- Bozzolan, S., Favotto, F. and Ricceri, F. (2003), *“Italian Annual Intellectual Capital Disclosure: An Empirical Analysis”*. Journal of Intellectual Capital, Vol. 4 No. 4, pp. 543-58.
- Bruggen A. (2009) *“Intellectual Capital Disclosure: Evidence from Australia”*. Management Decision Journal. Vol. 47 No. 2, pp. 233-245.
- Bukh, P.N., Nielsen, C., Gormsen, P. and Mouritsen, J. (2005), *“Disclosure of Information on Intellectual Capital in Danish IPO Prospectuses”*, Accounting, Auditing & Accountability Journal, Vol. 18 No. 6, pp. 713-32.
- Craswell, A.T. and Taylor, S.L. (1992), *“Discretionary Disclosure of Reserves by Oil and Gas Companies: An Economic Analysis”*, Journal of Business Finance and Accounting, pp. 295-308.
- Edvinsson, L. (1997), *“Developing Intellectual Capital at Skandia”*, Long Range Planning, Vol. 30, No. 3, pp. 366-73.
- Goh and P.C (2005). *“Disclosing Intellectual Capital in Company Annual Reports: Evidence from Malaysia”*. Journal of Intellectual Capital, Vol. 5 No. 3, pp. 500-510.
- Guthrie, J. and Petty, R. (2000), *“Intellectual Capital: Australian Annual Reporting Practices”*, Journal of Intellectual Capital, Vol. 1 No. 2/3, pp. 241-51.

Low, J. and Kalafut (2002) *“Invisible Advantage – How Intangibles are Driving Business Performance”* Perseus Publishing, Cambridge.

Marr, B., Mouritsen, J. and Bukh, P.N. (2003), *“Perceived Wisdom”*, Financial Management, July/August, p. 32.

McNally, Graeme, Lee Eng & C. Roy Hasseldine. (1982), *“Corporate Financial Reporting in New Zealand: An Analysis of User Preferences, Corporate Characteristics, and Disclosure Practices for Discretionary Information”*. Accounting and Business Research, Winter: 11-20.

Meek, G.K. (1995) *“Factors Influencing Voluntary Annual Report Disclosures by US, UK and European Multinational Corporations”* Journal of International Business Studies, Vol. 26, No. 3 (3rd Qtr, 1995), pp. 555-572.

Myers, S. and Majluf N. (1984) *“Corporate Financing and Investment Decisions when Firm Have Information that Investors Do Not Have”* NBER Working Paper Series, Vol. w1396, pp -, (July 1984).

Nik Maheran Bin Nik Muhammad, (2006). *“Intellectual Capital Efficiency Level of Malaysian Financial Sector: Panel Data Analysis (2002-2006).”* UITM.

Singh, I. and Van der Zahn, J.L.W.M. (n.d.), *“Intellectual Capital Disclosures Practices of Australian Oil and Gas Firms: An Agency Theory Perspective”*, unpublished paper, Curtin University of Technology, Perth.

Tan, L.T. (2000), *“Financial Accounting Reporting in Malaysia”*, Professional Advancement Achievement Centre, Kuala Lumpur.

Vergauwen, P.G.M.C. and van Alem, F.J.C. (2005), *“Annual Report: IC Disclosure in The Netherlands, France and Germany”*, Journal of Intellectual Capital, Vol. 6 No. 1, pp. 89-104.

White G. (2007) *“Drivers of Voluntary Intellectual Capital Disclosure in Listed Biotechnology Companies”*, Journal of intellectual capital, Vol 8, No.3, pp 517-537.

Zaludin, Z. (2007) *“Factors Influencing Intellectual Capital Disclosure: Malaysian Evidence”* unpublished paper, IIUM, Malaysia.

BIOGRAPHY

Siti Mariana Taliyang currently work as a lecturer in University Sultan Zainal Abidin and can be contacted at: Faculty of Business Management and Accountancy, Universiti Sultan Zainal Abidin, Kampus Gong Badak, 21300 Kuala Terengganu, Malaysia.
Email: sitimariana@unisza.edu.my

Dr. Rohaida Abdul Latif is a lecturer in College of Business, University Utara Malaysia. She can be contacted at: Email: rohaida@uum.edu.my

Nurul Huda Mustafa currently work as a lecturer in University Sultan Zainal Abidin and can be contacted at: Faculty of Business Management and Accountancy, Universiti Sultan Zainal Abidin, Kampus Gong Badak, 21300 Kuala Terengganu, Malaysia.
Email: hudamustafa@unisza.edu.my