

Determinants of Intellectual Capital Disclosure: Evidence from Indian Pharmaceutical Sector

¹Mohammed shameem VT; ²Dr. V Kavida & ³Yusaf Harun K

¹M.com(Accounting and Taxation), Dept. of Commerce, Pondicherry University (India)

²Associate professor, Dept. of Commerce, Pondicherry University (India)

³Research Scholar, Dept. of Commerce, Pondicherry, University (India)

ARTICLE DETAILS

Article History

Published Online: 30 July 2018

Keywords

Intellectual Capital, IC disclosure, Firm-specific variables

Corresponding Author

Email: vtmohammedshameem[at]gmail.com

ABSTRACT

Globalization and rapid technological development have created the lot of changes in the different sects of human life, including business sector. One of it is that traditional accounting and reporting practices couldn't explain the exact status of the business because of increasing importance of intangible assets rather than tangible. As an evidence for this, researchers have identified the growing disparity between book value and market value of the company. Hence, this paper is an effort to identify the determinant of Intellectual capital disclosure which is firm-specific in Indian context. As far IC concerned, it possesses a vital role because of as said before increasing disparity between market value and book value of companies. Literature are saying IC can explain or at least can reduce this disparity. This study has chosen leading pharmaceutical companies included in Pharma sector. For this study, annual reports of a sample of 10 companies from NSE Pharma Index are analyzed over a three-year period from 2015-2017. Content analysis has been applied to calculate Intellectual Capital Disclosure score and Regression models are used to examine the relationship between IC disclosure and the selected variables. Results reveal that IC disclosure in Indian pharmaceutical sector is increasing year by year. While considering multiple regression analysis, the age of the company and number of independent directors are showing a significant positive relationship with Intellectual Capital disclosure. In other hand, variables such as value added intellectual coefficient (VAIC) and leverage, size of the firm and profitability are showing an insignificant relationship with IC disclosure.

1. Introduction

Knowledge and information are considered as most important factors in the present knowledge intensive era. Presently performance of a firm not only depending on physical assets but intangible assets too. Service sector companies like pharmaceutical companies, software companies, finance companies etc. mostly depend on intangible assets for value creation and sustain their survival. Past studies are revealing that the disparity between book value and market value are increasing and effect of tangible assets to explain the value of a firm. Stewart (1997) and Edvinsson and Malone (1997) argue that the value of a firm's Intellectual Capital can be represented by the difference between the book value and the market value of the firm. So the evidence is asking for to inculcate more information on intellectual capital to enhance accurate decision of stakeholder with regard to the company. Disclosure of Intellectual capital is not mandatory in any country because of that most of the studies on intellectual capital disclosure are evidencing a less count of information in the annual reports.

Indian pharmaceutical industry has a wider space in the country. A large number of the population provides a broader market to the pharmaceutical products. This industry occupies the front position among science-based industries and which belongs in the complex field of drug manufacture and technology. It also occupies a very high rank in the third world in terms of technology, quality and amount of drugs manufacturing. It is the one sector in India which has got many

patents for their product as well as a high knowledge-intensive industry. Those intangible assets are giving an edge in the market. Hence, it is crucial for a stakeholder to know about companies' intellectual capital to reach into the right decision. Indian companies have the capacity to compete with other companies, which are situated in developed countries. Hence it is essential to disclose sufficient information about the immaterial resources and intellectual capital in their annual report.

Intellectual Capital includes the value of employee knowledge, business training and proprietary information of the business organization that provides the competitive advantage to that organization in the market. Apart from that past studies are proving that merely physical assets couldn't explain the value of a firm. Intellectual assets have a significant influence on the market value of the company. Most of the studies indicate that the increased intellectual capital disclosed firms have more value in the market. Nowadays, intellectual capital became an essential part of every company. Enormous intellectual capital offers more acceptability in general public.

2. Objectives of the study

This study aims to identify the extent of Intellectual Capital disclosure in Indian pharmaceutical industry and identify the firm-specific factors which impact the disclosure of intellectual capital.

3. Review of Literature

Literature review Intellectual capital (IC) is considered as intangible assets or knowledge resources which can create value for firms and maintain a competitive edge for them (Stewart, 1997; Sveiby, 1997). It is widely believed by researchers in the field (e.g. Sujan&Abeysekera, 2007; Guthrie &Petty, 2000; Sveiby, 1997) that IC is composed of three elements:

- (1) Internal capital or Structural capital;
- (2) External capital or Relationship capital; and
- (3) Human capital.

Structural capital refers to the knowledge embedded in the organisational structure, processes, databases, procedures, routines, systems, and culture, which is created by employees or brought in, but which stays in the organisation when employees go home after work (Guthrie et al., 1999; Pablos, 2003; Wong & Gardner, 2005). Relationship capital refers to the knowledge embedded in the relationships external to the organisation, such as suppliers, customers, business partners, etc. (Wong & Gardner, 2005). Human capital refers to the individual's knowledge such as qualifications, skills, efficiencies, values, and experiences within an organisation, which goes home with employees after work (Guthrie et al., 1999).

A large number of empirical research reveals that IC is a key component that enhances corporate performance. Riahi-Belkaoui (2003) mentioned that intellectual capital is the only resource that satisfies the characteristic of strategic assets like valuable, rare, imperfectly imitable, hardly substitutable, and capable of generating sustainable competitive advantage. Last few years several empirical studies are conducted to find out the strategic importance of intellectual capital on corporate financial performance. Hitt et al., (2000) proved that the role of intangible capital is more dominant as compared with tangible capital. Teece (2000) states that intangible assets of the firm and its IC are the keys to gaining the sustainable competitive advantage and considered as the drivers of the economic growth. Researchers like D.G. Marvidis (2004), S. Najibullah (2005), Ming-Chin Chen et al. (2005), Hong Pew Tan et al., (2008), K.H. Chan (2009), Cheng et al. (2010), K.H. Samuel (2011), Komnencic & Pokrajcic (2012) etc. have reported a positive association between intellectual capital of the firms and their respective financial performances. P. Kujansivu & A. Lonquist (2007)'s study shows that value of intellectual capital and value creation efficiency of intellectual capital of Finnish companies are somehow related.

In the meantime, several empirical studies have been conducted in various countries to examine the extent of intangible assets reporting in the corporate annual reports. Guthrie & Petty (2000), for example, examine the intellectual capital reporting practices of top 20 Australian companies (in terms of size). They have employed content analysis of the published annual reports using Sveiby (1997) developed IC framework to determine the extent of intellectual capital disclosure (ICD). In their study, they have found that the key components of IC are poorly understood, inadequately identified, inefficiently managed, and inconsistently reported in the Australian context. In another study, Oliveras et al. (2008)

have analyzed the annual reports of 14 listed companies over a time period from 1998 to 2002 in Spain. Their empirical results show the decreasing trend in the hidden value (differences between market value and book value) of Spanish companies and the level of disclosure of intellectual capital items in the annual reports is low. However, they find increasing trend in the reporting of intellectual capital and the style of reporting is 'narrative'. April et al. (2003) conducted an empirical analysis of intellectual capital measurement, management, and reporting of South African mining companies. They also have employed 'content analysis' technique to analyze the annual reports of 20 listed mining companies besides collecting necessary data through interviews with senior officials. They use 24 intellectual capital indicators covering main three categories of human, internal, and external capital for data analysis. Empirical results show that South African mining companies report the low amount of intellectual capital information in their annual reports and external intellectual components like business collaborations, favourable contracts comprise the major part of IC disclosure. They conclude that South African mining companies rate IC highly but due to the non-existence of proper reporting systems and structures companies are lacking in measurement and reporting of intellectual capital. In another study by Guthrie et al. (2006) investigate the reporting of intellectual capital items by the listed companies in Australia and Hong Kong. Their results reveal that voluntary IC disclosure is low and qualitative rather than quantitative in both countries.

Singh & Kansal (2011) investigate inter-firm intellectual capital (IC) disclosures and its variations in top 20 listed pharmaceutical companies in India and they find that IC disclosure of sample companies are low, narrative and varying significantly among companies. Chander & Mehra (2011) examine the extent of intangible asset disclosure by 243 companies in India. To examine the level of disclosure of intangible asset information they analyze the annual reports of these companies using content analysis and study results show that the overall disclosure of intangible assets is low in India. Bhasin (n.d.) makes a survey about IC reporting practices of 16 Indian IT companies in their annual reports. He concludes that IC reporting of these companies is 'almost negligible and it had not received any preference from the mentors of these corporations'. In another study (Mondal and Ghosh), we find that Indian knowledge companies disclose the lesser amount of IC information in their annual reports and the most reporting items are external capital.

4. hypothesis development

Intellectual Capital Efficiency

IC components are intangible in nature which are not getting importance in the financial statement of the company. It is not included in accounting information disclosure criteria. Companies frequently report information about their activities than mandated by regulatory authorities (Williams-2001) Shareholders require information about assets those are vital for increasing value of the firm. Intellectual capital is an essential part of knowledge-intensive Industries like pharmaceutical sector, IT sector, biotechnology industry etc. which increases the performance and creating the value of the firm. Botosan (1997) argues that voluntary disclosure of intellectual capital may empower investors and other related

parties to better assess future wealth creation capabilities of the firm. Therefore, the knowledge-based companies disclose positive information about their intellectual capital through their annual report.

H1: There is a positive relationship between the level of IC disclosure and IC efficiency.

Independent Directors

The roles of independent directors become vital over the years due to the need to meet the changing business, economic and social environment. Therefore, a large number of independent directors may be more effective will ensure to disclose more information to outside stakeholders to ensure transparency and equity in the company dealings. So, the large number of independent directors can be expected to have an impact on voluntary disclosure of relevant information including IC related issues in the annual reports. The literature has generally posited that independence of the board of directors from management provides effective control and monitoring and control of firm activities (Fama and Jensen, 1983). Bueno et al. (2004) consider that the number of independent directors leads to greater supervision and to the maximization of the value of the organization.

H2: There is a positive relationship between the level of IC disclosure and number of independent directors.

Firm size

According to Roberts et al. (2005), firm size plays an important role in determining the extent of information disclosure in annual reports. Ousama & Fatima (2010) explain the relationship between firm size and the extent of disclosure. Inchausti (1997) explains that agency cost will increase due to conflicts between the company's managers and their stakeholders and the source of such conflicts in large companies is the complex relationships of the managers with the stakeholders. In order to mitigate agency costs burden, large companies voluntarily disclose more information. Guthrie et al. (2006) argue that large companies are more progressive and innovative because they have the financial resources that enable this type of behaviour. Since intellectual capital is considered as vital assets, information about those assets also is to be disclosed. Prior studies by Guthrie et al. (2006), Bozzolan et al. (2003), Garcia-Mecaet al. (2005) find a significant positive relationship between size and IC disclosure. However, Bontis (2003) reports in significant results in the said relationship. Hence, we hypothesize that;

H3: There is a positive relationship between the level of IC disclosure and firm size.

Profitability

The connection between profitability and the level of the disclosure are examined by a lot of studies. Some of them are showing the significant positive relationship (Eg: Wallace and Naser-1995, Alam & Deb-2010) and some other studies showing an insignificant relationship (Eg: Brammer & Pavelin-2006), Hossain & Hammami-2009). Highly profitable companies are voluntarily providing more information in their annual reports in

order to justify their financial performance and to reduce political costs (Watts & Zimmerman-1986). Another opinion is that profitable companies signal that they are better companies and the contributory factor for the huge profitability of these companies could be due to their intellectual capital (Ousama et al., 2012).

H4: There is a positive relationship between the level of IC disclosure and profitability.

Leverage

Debt holders always wanted to disclose more information. Therefore highly levered companies are expected to disclose more Intellectual Capital in order to reduce agency cost. According to Botosan (1997), disclosures reduce the cost of equity of a firm. The voluntary disclosures include not only financial information but also IC information to convince external parties that the company is strategically competent.

H5: There is a positive association between the level of IC disclosure and leverage

Age

Age is included in this study as a proxy measure of risk. Studies show that there is a positive relationship between risk and information disclosure by a firm. Researchers also agree that investors of higher risk firms can reduce their information cost if they are given additional information (Lang & Lundholm, 1993). According to Whiting & Woodcock (2011), firms will disclose less than the younger one, which is considered as risky firm. Kim & Ritter (1999) argues that younger companies need to disclose more non-financial information than older companies for their valuation.

H6: Age has a negative association with the level of IC disclosure.

5. Significance of the study

Therefore, above literature review presents that in the knowledge economy, intellectual capital is considered as strategic assets but companies are not interested to disclose much about it. In many countries including India, there are no guidelines for disclosure of intellectual capital. Companies voluntarily disclose such information but research results show that such disclosure is very low. Companies in the service sector, where intellectual capital plays a vital role as compared to tangible assets, also report the low amount of information about their important assets. Hence it is important to know what are the factors which are specific to a firm determine the intellectual capital disclosure.

6. Research Method

Under this paper, examined the level of intellectual capital disclosure in the pharmaceutical sector apart from that identified the firm-specific determinants of the intellectual capital disclosure. This study is based on 10 pharmaceutical sector firms which are included in the National Stock Exchange (NSE) pharma index. This study consists of data for the period of 2015 to 2017, the annual report of 2015, 2016, 2017 financial years of selected companies are collected from prowest database.

Content analysis has been used to calculate Intellectual Capital Disclosure Index (ICD). The sources of data, for this study used, are annual reports. According to Lang & Lundholm (2003) corporate annual report is important for two reasons; firstly, it is considered as an important source of company information by external users and secondly, the disclosure level in annual reports is positively correlated with the amount of corporate information communicated to the market and to stakeholders using other media. The annual reports also offer an opportunity for a comparative analysis of management attitudes and policies across reporting periods (Niemark 1995, Guthrie et al., 2004). Panel data regression has been used here to know the firm-specific factors which are determining the Intellectual capital disclosure.

Measurements of Variables

Dependent variable:

The main objective of this study is to determine the factors that influence the voluntary disclosure of IC information in sample companies' annual reports. Therefore, the dependent variable of this study is the extent of IC disclosure. 33 IC disclosure items are selected used by (Badrul, Khan, & Rahman, 2015) and some elements are added by researchers with a notion that elements will be appropriate in the Indian context, which are collected from past studies. In order to measure the extent of IC disclosure. The disclosure list consists of three categories of intellectual capital: namely, human capital (15), internal capital (8) and external capital (10). Since IC disclosure list is prepared based on literature from developed countries, a pre-test is conducted taking 10 annual reports for the year 2010 of randomly selected companies and no major discrepancies found in pre-testing results. An unweight dictums procedure is followed in calculating the index. Under this procedure, the disclosure of a specific item in the annual report is given a score of 1. On the other hand, if the item is not disclosed, it is scored as 0. This scoring technique is selected to avoid any potential issues of subjectivity that may arise when a weighted scoring format is applied (Williams, 2001). The extent of IC disclosure is a ratio of the total number of items found in the annual report divided by the maximum number of items in the disclosure list. The extent of intellectual capital disclosure is calculated as follows:

$$ICDi = \frac{TDSi}{MDi}$$

Where ICDi is the extent of IC disclosure index of companies, TDSi is the total disclosure score for company i and MDi is the maximum disclosure score (i.e., $n \leq 35$)

Independent Variable:-

The independent variables of this study are measured as follows:

(1) Efficiency of Intellectual Capital (VAICTM): The independent variable intellectual capital efficiency is measured by Pulic's (2000) VAICTM model (value creation efficiency of intellectual capital) in this study. It is the very popular model among the researchers in measuring corporate intellectual

capital efficiency. It is a measure of corporate intellectual ability (Pulic, 2000), providing an easy-to-calculate, standardized, and consistent basis of measure, enabling effective comparative analyses across firms. Data used in the calculation of VAIC are based on financial statements. The procedures for calculating VAIC are as follows:

$VAIC^{TM}_i = CEE_i + ICE_i$; $ICE_i = HCE_i + SCE_i$, where

$VAIC^{TM} = VA$ intellectual coefficient for firm i;

$CEE_i = VA_i / CE_i$, indicator of VA efficiency of capital employed for firm i.

$HCE_i = VA_i / HC_i$; refers to indicator of VA efficiency of human capital for firm i;

$SCE_i = SC_i / VA_i$; refers to indicator of VA efficiency of structural capital for firm i;

$VA_i = \text{Output} - \text{Input}$ (Total Income – Operating Expenses excluding Salaries and employee benefits)

$CE_i = \text{book value of the net assets for firm } i$

$HC_i = \text{Salaries and employee benefits for firm } i$;

$SC_i = VA_i - HC_i$ structural capital for firm i.

(2) Firm Size (FS): It is measured by the natural log of total assets of a company at the end of a reporting year (e.g. Bozzolan et al., 2003).

(3) Profitability (PF): It is measured by the return on assets (ROA), i.e., the ratio of net profit –after tax to total assets.

(4) Leverage (DE): Leverage is measured by total debt to shareholders' equity, in line with the earlier studies (e.g. Zuliana, 2007; Omar, 2008).

(5) No. of Independent Directors: (ID): It is measured by counting the number of independent directors in the company's board.

(6) Firm age (AGE): It is measured by subtracting the year 2015 from the year of inception.

Multiple Regression Model

Panel Data Regression Model is applied to know determinants of IC disclosure. The model as follows:

$$ICD_{it} = \alpha + \beta_1 (VAIC^{TM})_{it} + \beta_2 (PF)_{it} + \beta_3 (FS)_{it} + \beta_4 (DE)_{it} + \beta_5 (AGE)_{it} + \beta_6 (ID)_{it} + \epsilon$$

Where ICD_{it} = extent of intellectual capital disclosure of company i in year t,

$VAIC^{TM}_{it}$ = intellectual capital efficiency of company i in year t,

PF_{it} = profitability of company i in year t,

FS_{it} = size of company i in year t,

DE_{it} = leverage of company i in year t,

AGE_{it} = age of company i in year t,

ID_{it} = number of independent directors in the board i in year t,

α = regression intercept,

β_i = parameters to be estimated, $i = 1, 2, \dots, 6$,

ϵ = error term of the regression.

7. Result and Discussion

As mentioned earlier, the objective of this study is to investigate the effects of IC efficiency and some firm-specific factors on the voluntary disclosure of IC items on the annual reports of leading pharmaceutical companies in India and the

categorized level of IC. In this section, we will present and analyze the categorized level of IC, descriptive results, correlation analysis and multiple regression results of the study.

Element Based IC Disclosure

The below tables and charts show Intellectual Capital disclosure of selected pharmaceutical companies based on the three elements of Intellectual Capital namely internal capital, external capital, and human capital.

Table 1- Element Based Intellectual Capital Disclosure

Elements of Intellectual Capital	2015	2016	2017	TOTAL	%
Structured capital	41	43	47	131	54.58
Relational Capital	50	57	68	175	58.33
Human Capital	75	88	98	261	54.38

Source: Author's compilation

While considering Table-1 it is clear that relational capital has disclosed 58.33% in three years by the selected Indian pharmaceutical companies. It is the highest disclosed element among the three IC elements. Structured capital has disclosed 54.58% in three years and Human capital has disclosed 54.38

which is the lowest percentage among the three elements of IC. It is clear that all the three elements are increasing year-by-year. It shows the evidence that the firms are knowing the importance of ICD and gradually improving the disclosure of IC information through their annual report.

Descriptive Results

Table 2- Descriptive Statistics of All Variables

	N	Mean	Minimum	Maximum	Std. Dev.
ICD	30	57.27273	36.36364	81.81818	9.886792
VAIC	30	3.900022	-5.747363	9.15678	2.409356
FS	30	5.06007	4.480173	5.573917	0.318366
DE	30	0.46622	0.148121	1.11843	0.227491
PF	30	0.115915	-0.041583	0.228337	0.071125
ID	30	5.8	4	9	1.540264
AGE	30	3.756117	3.218876	4.532599	0.442098

Table-2 displays the descriptive statistics of all the explanatory variables such as ICD index, VAICTM, FS, DE, PF, ID, and AGE. It is based on three years' data for the year 2015-2017. The result shows that ICD varies from 36.36% to 81.82% and the average level of disclosure is 57.28%. Thus sample Indian pharmaceutical companies disclose Intellectual Capital at an average level. Intellectual Capital efficiency (VAICTM) varies between -5.75 to +9.16 with an average of 3.9.

So selected sample companies are not that much intellectually efficient. The average profitability (PF) of sample companies is 11.59%.

Multicollinearity test

Table-3 represents the correlation between the explanatory variables and existence of multicollinearity problem if any.

Table 3- Correlation matrix

	ICD	VAIC	FS	PF	DE	ID	AGE
ICD	1						
VAIC	-0.047447	1					
FS	0.328168	-0.485938	1				
PF	-0.148433	0.577124	-0.64352	1			
DE	0.109017	-0.109835	0.397155	-0.476407	1		
ID	0.242907	-0.235375	0.343296	-0.232349	0.045325	1	
AGE	-0.116459	0.095489	-0.328661	0.025251	-0.281857	-0.148715	1

The correlation table reveals that the correlation coefficient of the explanatory variables among themselves are almost normal in general except VAIC with profitability (PF) and profitability with firm's size (FS). These two are less than 90%. The study of Gujarati (2004) says that if the correlation between two variables is not exceeding 90%, the variables may be

considered as free from the problem of multicollinearity. These findings suggest that multicollinearity among variables is unlikely to create a serious problem in the interpretation of the multiple regression results.

Multiple Regression Analysis

Fixed effect regression model is selected as the suitable one for regression analysis. It is based on Hausman specification model which is reported in Table-15. In Hausman test, the null

hypothesis is that random effect is appropriate when P value is more than 5% and the alternative hypothesis is that fixed effect is appropriate when P value is less than 5%.

Table 5- Hausman Test

Chi-Sq. Statistic	Prob.
14.420663	0.0253

Here P-value against chi-square value is less than the significant level 0.05 (5%), then the null hypothesis is rejected

and the alternative hypothesis is accepted i.e. fixed effect model is appropriate.

Table 6- Multiple Regression Results

$$ICD_{it} = \alpha + \beta_1 (VAIC^{TM})_{it} + \beta_2 (PROFIT)_{it} + \beta_3 (SIZE)_{it} + \beta_4 (LEVERAGE)_{it} + \beta_5 (AGE)_{it} + \beta_6 (ID)_{it} + \varepsilon$$

Dependent Variable: ICD			
Independent Variable	Coefficient	t-Statistic	Prob.
C	-747.5569	-3.002145	0.0095
VAIC TM	0.844353	1.096232	0.2915
FS	-24.94286	-0.951774	0.3574
PF	-36.68876	-0.719818	0.4835
DE	-4.91227	-0.329398	0.7467
ID	4.029338	1.412481	0.1797***
AGE	242.517	3.138886	0.0073*
MODEL SUMMARY			
R-squared	0.7982		
Adjusted R-squared	0.581986		
F-statistic	3.691708		

Here * and *** denote significance level at 5% and 20% level

$$ICD_{it} = -747.5569(C) + 0.84435 (VAIC^{TM}) - 24.94286(FS) - 36.68876(PF) - 4.912270(DE) + 4.029338 (ID) + 242.5170 (AGE)$$

Table-6 shows the multiple relationships between descriptive variables and the extent of Intellectual Capital disclosure. Here R^2 value is 0.7982 which reveals that the independent variables collectively explain 79% variance in Intellectual Capital disclosure. So the explanation power of the model is very high. Adjusted R^2 is 0.581986 which means the explanatory power of the model is 58%.

Here the age of the companies (AGE) and extent of Intellectual Capital disclosure is statistically significant at 5% level. So there is a positive relationship between company's age and disclosure of Intellectual Capital. More experienced companies are showing more Intellectual Capital in their annual reports. In the case of independent directors, there can see a significant relationship at 20% level. For a small sample study, we can consider p-value as large as .20 but there are no hard rule (Learning, Reserved, & Learning, n.d.). So this result is evidence for, there has a positive relationship with the number of independent directors and intellectual capital disclosure. In other words, if the firm's board of directors effectiveness is more it will lead to disclosing more kind of information on intellectual capital.

VAIC shows a value of 0.2915. It means that the Intellectual Capital performance and the extent of Intellectual Capital disclosure are not significant even though it has shown a relationship as expected. Firm size (FS), profitability (PF), leverage (DE) are showing the value more than 5% level of significance and the relation are also as not expected.

8. Conclusion

The pharmaceutical sector is one of the knowledge-intensive industry and intellectual capital in this sector is the primary capital. In case of pharmaceutical industry, accounting numbers are not that much efficient due to the less ability of the financial statements to reflect the Intellectual Capital of a company. Intellectual Capital information is essential to investors to know the ability to increase the value of the company. This study is conducted to find out factors influencing the extension of Intellectual Capital disclosure by using three years' annual reports (2015-2017) of top 10 indexed Indian pharmaceutical companies.

Age of the companies influencing the extent of Intellectual Capital disclosure. It is inconsistent with previous studies in this field. It shows that more experienced companies are intended to

show more Intellectual Capital in their annual reports. The study reveals that the effectiveness of the board of directors has an impact on intellectual capital disclosure. Other variables such as VAIC, firm size, leverage, profitability, are not significant at the level. So further studies are required to understand the clear

picture of the determinants of Intellectual Capital disclosure. This study can be used as a reference for future studies examining the extent and determinants of the Intellectual Capital disclosure in the Indian context.

References

- Edvinsson, L., & Malone, M. S. (1997). *Intellectual capital: The proven way to establish your company's real value by measuring its hidden brainpower*. London: Judy Piatkus.
- Stewart, T. A. (1997). *Intellectual capital : The new wealth of organizations*. New York, Doubleday Dell Publishing Group.
- Lang, M., & Lundholm, L. (1993). Cross-sectional determinants of analysts' ratings of corporate disclosures. *Journal of Accounting Research*, 37 (2), 353-83.
- Niemark, M. (1995). *The hidden dimensions of annual reports: Sixty years of social conflict at general motors*, Markus Wiener, Princeton, NJ.
- Guthrie, J., Petty, R., Yongvanich, K., & Ricceri, F. (2004). *Using content analysis as a research method to inquire into intellectual capital reporting*. *Journal of Intellectual Capital*, 5(2), 282-93.
- Sveiby, K. E. (1997). *The new organizational wealth: managing and measuring knowledge based assets*. Berrett-Koehler Publisher, San Francisco, CA.
- Sujan, A., & Abeysekera, I. (2007). *Intellectual capital reporting practices of the top Australian firms*. *Australian Accounting Review*, 17(2), 62-74.
- Wong, M., & Gardner, C. T. (2005). *Intellectual capital disclosure: New Zealand evidence, paper presented at 2005 AFAANZ Conference, Melbourne*. Retrieved from www.afaanz.org/web2005.pdf
- Pablos, P. (2003). *Intellectual capital reporting in Spain: a comparative view*. *Journal of Intellectual Capital*, 4(1), 61-81
- Guthrie, J., Petty, R., Ferrier, F., & Wells, R. (1999). *There is no accounting for intellectual capital in Australia: a review of annual reporting practices and internal measurement of intangibles, paper presented at the OECD Symposium on Measuring and Reporting of Intellectual Capital, Amsterdam*.
- Riahi-Belkaoui, A. (2003). *Intellectual capital and firm performance of US multinational firms: a study of the resource-based and stakeholder view*. *Journal of Intellectual Capital*, 4(2), 215-226.
- Hitt, M. A., Bierman, L., Shimizu, K., & Kochhar, R. (2001). *Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource based perspective*. *Academy of Management Journal*, 44(1), 13-28.
- Teece, D. J. (2000). *Managing intellectual capital: Organizational, Strategic, and Policy Dimensions*. Oxford University Press, Oxford.
- Najibullah, S. (2005). *An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance in context of commercial banks of Bangladesh*. Retrieved from <http://sb.iub.edu.bd/internship/autumn2005/0220175.pdf>
- Mavridis, D. (2004). *The intellectual capital performance of the Japanese banking sector*. *Journal of Intellectual Capital*, 5(1), 92-115.
- Hong P. T., David P., & Phil, H., (2008). *The evolving research on intellectual capital*. *Journal of Intellectual Capital*, 9(4), 585 – 608.
- Chan, K. H. (2009). *Impact of intellectual capital on organizational performance. An empirical study of companies in the Hang Seng Index (Part 2)*, *The Learning Organization*, 16(1), 22-39.
- Cheng, M., Lin, J., Hsiao, T., & Thomas W. L. (2010). *Invested resource, competitive intellectual capital, and corporate performance*. *Journal of Intellectual Capital*, 11(4), 433– 450.
- Komnencic, B., & Pokrajcic, D. (2012). *Intellectual Capital and Corporate Performance of MNCs in Serbia*. *Journal of Intellectual Capital*, 13(1), 106-119.
- Guthrie, J., & Petty, R. (2000). *Intellectual capital: Australian annual reporting practices*. *Journal of Intellectual Capital*, 1(3), 241-51.
- Oliveras, E., Gowthorpe, C., Kasperskaya, Y., & Perramon, J. (2008). *Reporting intellectual capital in Spain*. *Corporate Communications*, 13(2), 168-181.
- April, K. A., Bosma, P., & Deglon, D. A. (2003). *IC measurement and reporting: establishing a practice in SA mining*. *Journal of Intellectual Capital*, 4(2), 165-180.
- Guthrie, J., Petty, R., & Ricceri, F. (2006). *The voluntary reporting of intellectual capital: comparing evidence from Hong Kong and Australia*. *Journal of Intellectual Capital*, 7(2), 254-272.
- Singh, S., & Kansal, M. (2011). *Voluntary disclosures of intellectual capital: An empirical analysis*. *Journal of Intellectual Capital*, 12(2), 301 – 318
- Chander, S., & Mehra, V. (2011). *A study on intangible assets disclosure: An evidence from Indian companies*. *Intangible Capital*, 7(1), 1-30.
- Bhasin, M. L. (n.d.) *Intellectual Capital Reporting Study of IT-Sector Corporations in India*. *Australian Journal of Business and Management Research*, 1(1), 16-28.
- Mondal, A., & Ghosh, S. K. (Forthcoming). *Intellectual capital reporting trends in India: An Empirical study on selected companies*. *International Journal of Financial Management*.
- Williams, S. (2001). *Is intellectual capital performance and disclosure practices related?*. *Journal of Intellectual Capital*, 2(3), 192-203.
- Botosan, C. A. (1997). *Disclosure level and the cost of equity capital*. *The Accounting Review*, 72(3), 323-49.
- Bueno, E., Salvador, P., Rodríguez, O., & Martín de Castro, G. (2004). *Internal Logic of the Interactions among Intangibles in a Model of Intellectual Capital: The Cognitive Neuron of the Intellectus Model*. In IC Congress, Helsinki.
- Roberts, C., Weetman, P., & Gordon, P. (2005). *International financial reporting: A comparative approach*. Essex: Pearson Education
- Ousama, A. A., Fatima, A. H., & Majdi, A. R. H. (2012). *Determinants of intellectual capital reporting: Evidence from annual reports of Malaysian listed companies*. *Journal of Accounting in Emerging Economies*, 2 (2), 119– 139

33. Bozzolan, S., Favotto, F., & Ricceri, F. (2003). Italian annual intellectual capital disclosure: An empirical analysis. *Journal of Intellectual Capital*, 4(4), 543-558.
34. Garcia-Meca, E., & Martinez, I. (2005). Assessing the quality of disclosure on intangibles in the Spanish capital market. *European Business Review*, 17(4), 305-313.
35. Bontis, N. (2003). Intellectual capital disclosures in Canadian corporations. *Journal of Human Resource Costing and Accounting*, 7(1/2), 9-20.
36. Wallace, R. S. O., & Naser, K. (1995). Firm specific determinants of the comprehensiveness of mandatory disclosure in the corporate annual reports of firms listed on the stock exchange of Hong Kong. *Journal of Accounting and Public Policy*, 14, 311-68.
37. Brammer, S. J., & Pavelin, S. (2006). Voluntary environmental disclosures by large UK companies. *Journal of Business Finance & Accounting*, 33 (7-8), 1168-88.
38. Hossain, M., & Hammami, H. (2009). Voluntary disclosures in the annual reports of an emerging country: the case of Qatar. *Advances in Accounting, Incorporating Advances in International Accounting*, 25(2), 255-65.
39. Watts, R., & Zimmerman, J. (1986). *Positive Accounting Theory*, Prentice Hall, Englewood Cliffs, NJ.
40. Whiting, R. H., & Woodcock, J. (2011). Firm characteristics and intellectual capital disclosure by Australian companies. *Journal of Human Resource Costing & Accounting*, 15 (2) 102 – 126
41. Kim, M., & Ritter, J. R. (1999). Valuing IPOs. *Journal of Financial Economics*, 53(3), 409-37.
42. Badrul, M., Khan, A., & Rahman, A. (2015). Advances in Accounting , incorporating Advances in International Accounting Intellectual capital disclosures and corporate governance: An empirical examination. *International Journal of Cardiology*, 31(2), 219–227. <https://doi.org/10.1016/j.adiac.2015.09.002>
43. Williams, S. (2001). Is intellectual capital performance and disclosure practices related?. *Journal of Intellectual Capital*, 2(3), 192-203.
44. Learning, C., Reserved, A. R., & Learning, C. (n.d.). *Jeffrey M. Wooldridge/Introductory Econometrics A Modern Approach*.
45. Pulic, A. (2000). VAICTM- An accounting tool for IC management. *International Journal of Technology Management*, 20(5, 6, 7, 8), 702-714
46. Zuliana, Z. (2007). *Factors influencing intellectual capital disclosure: a Malaysian evidence*, Master thesis, International Islamic University Malaysia, Kuala Lumpur.
47. Omar, I. H. J. (2008). Voluntary intellectual capital disclosure: evidence from Bahrain, working paper, University of Bahrain, Bahrain
48. Gujarati, D. N. (2004). *Basic Econometrics*, (4th Ed.). New Delhi, Tata McGraw-Hill Publishing Company Limited.

Appendix 1: List of Intellectual Capital Items

Item	Description
INTRNAL CAPITAL CATEGORY	
<i>Intellectual properties</i>	<i>It is a term that encompasses patents, copyrights, trademarks, trade secrets, licenses, commercial rights, and other related fields.</i>
<i>Management philosophy</i>	<i>The way leaders in the firm think about and its employees i.e. the way a firm is managed.</i>
<i>Corporate culture</i>	<i>Specific reference to working culture</i>
<i>Processes</i>	<i>Management or technical processes implemented</i>
<i>Systems</i>	<i>Information systems</i>
<i>Networking</i>	<i>The systems available in a firm that allows interaction of people via a broad array of communication media and devices.</i>
<i>Financial relations</i>	<i>Defined as a favorable relationship the firm has with investors, banks, and other financiers, financial rating, financial facilities available, and listings.</i>
<i>Research and Development</i>	<i>Description of current R&D activities. The discussion includes policy, strategies and/or objectives of R&D activities as well as competitors' information</i>
<i>Information and knowledge sharing</i>	<i>Description of internal and external sharing knowledge and information.</i>
EXTERNAL CAPITAL CATEGORY	
<i>Brand</i>	<i>Description of brands owned/bought by the firm.</i>
<i>Customer satisfaction and loyalty</i>	<i>Reference to overall satisfaction of customers</i>
<i>Quality standards</i>	<i>Includes ISO accreditations, reference to quality initiatives</i>
<i>Company image/reputation</i>	<i>It refers to the perception of a firm by the stakeholders</i>
<i>Favorable contract</i>	<i>Favorable contract signed</i>
<i>Business collaborations</i>	<i>Reference to informal collaborations with business partners which did not lead to formal agreements.</i>
<i>Licensing agreements</i>	<i>Any partnership or collaborative agreements with other firms</i>
<i>Franchising agreements</i>	<i>Any franchise agreements signed</i>
<i>Distribution channels</i>	<i>Reference to supply chain management and distribution</i>

Market share	Any mention of product/division market share or competitive position
Supplier relations	General discussion of supply relations
Environmental policies	Statement of environmental policies and activities
Social policies	Description of company's relationship with local communities
Awards and achievements	Lists of company's awards and achievements. It reflects market recognition of company's leadership position and competitive advantages.
New services	It refers new/wider services offered by acquiring new businesses or expanding the original businesses (new branches), new products (excluding new products developed from R&D process, which is covered in
HUMAN CAPITAL CATEGORY	
Number of employees	Clear detail of total number of employees.
Know-how	Description of knowledge, know-how, expertise or skills of directors and other employees
Vocational qualifications	Additional qualification held by employees and directors
Employee training	Any mention of training program
Employee education	Education of directors as well as other employees
Work related knowledge	It mainly relates to knowledge that employees have related to their current job description, including employees' previous working experiences
Entrepreneurial spirit, Innovativeness	It refers to employee engagement, empowerment, and creativity
Union activity	Trade union relations
. Employee thanked	Thanks given to the employee
Employee involvement in the community	Company and employee involvement in community based activities
Employee share and option scheme	Employee share and option ownership plan
Employee benefits	Employee benefits such as provident fund, gratuity and group insurance
Profit sharing	Employee profit sharing
Health and safety	Employee occupational health and safety
Equity issues	Equity issues such as race, gender, disability and ethnic group.
Recruitment policy	This item refers to recruitment policies, selection process, etc. The recruitment process guarantees the work-related competence of employees