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## Sri Lankan Intellectual Capital Disclosure: An Empirical Analysis

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### ABSTRACT

This study examines voluntary Intellectual Capital (IC) disclosure provided by Sri Lankan firms in annual reports from the year 2016/17. A 100-firms sample, from the Colombo Stock Exchange (CSE)-listed firms. Findings suggest that Sri Lankan firms, on average, are aware of the significance of IC disclosure. Concerning the descriptive analysis, the results indicate that most of the information reported (41 percent) is related to human capital; 31 percent is related to relational capital and the 21 percent concerns structural capital disclosure. The results also suggest that industry nature and firm size play a key role as a determinant for the disclosure of IC in Sri Lankan annual reports. As there is no definite IC disclosure framework has been established within Sri Lankan firms. Concurrently as Sri Lanka passes through its post-war-recovery phase, reform of its mutually agreed financial reporting framework is essential to reduce information asymmetry and therefore reducing the agency costs.

**Keywords:** Intellectual capital, disclosure, financial reporting

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## INTRODUCTION

IC reporting is mostly unregulated in Sri Lanka, so regulators should enhance the reliability of IC reporting process within Sri Lanka. The results also confirm the explanatory power of size and in part, industrial nature in the IC disclosure. Other prior studies also suggested the industry effect on the extent of disclosure.

The comprehensive financial reporting process is serious for the survival and long-term success of firms. The significance of financial reporting lies in their impact on stakeholders' wealth (Brüggen, Vergauwen, & Dao, 2009). In recent past, there has been increasing dissatisfaction with traditional financial reporting and its ability to provide stakeholders with sufficient information on a firm's ability to create wealth (Bozzolan, Favotto, & Ricceri, 2003). The traditional financial reporting model is inadequate in meeting the information needs of users (Francis & Schipper, 1999) as its usefulness, measured by the association between accounting data and capital market values, has decreased substantially over the past 20 years. Intellectual Capital (IC) plays an increasingly important role in sustaining competitive advantages and creating corporate value (Bollen, Vergauwen, & Schnieders, 2005). Sound IC disclosure reduces agency problems by bridging the information asymmetry gap that exists between management and shareholders.

In contrast, inadequate financial disclosure often misleads shareholders and has adverse effects on their wealth, as suggested by the wave of recent financial reporting scandals (Karamanou & Vafeas, 2005). Bozzolan, O'Regan, and Ricceri (2006) note that a primary objective of IC disclosure is to satisfy the information needs of users in a manner that enables both decision-making and accountability. Some studies examine the extent of IC disclosure (Beattie & Thomson, 2007; Boone & Raman, 2001; Bukh, Nielsen, Gormsen, & Mouritsen, 2005). These studies generally show that although IC disclosure is still low, there has been an increase in IC disclosure over the years. Hence, despite difficulties in measuring IC, as indicated by Lambert (1998), there must be reasons for firms to disclose IC. Bukh, Nielsen, Gormsen, and Mouritsen (2005) find that IC disclosure in the Danish firm is considered as relevant information for investors and as important information of a firm's strategy. However, financial analysts prefer more disclosure on a strategy on IC. This research seeks to reduce a gap in the extant literature on the IC disclosure in Sri Lanka as an example

of an emerging market. This study would hopefully benefit academics, researchers, policy-makers, and practitioners of Sri Lanka and other similar countries through exploring the causes of IC disclosure and pursuing strategies to improve the current status of it.

This paper is organized as follows: Section 1.2 presents a review of the empirical studies that investigate the determinants of intellectual capital disclosure; Section 1.3 addresses research methods; Section 1.4 reports the results and discussion, and Section 1.5 summarises the conclusion.

## **LITERATURE REVIEW**

Most of the firms around the world progressively rely on IC in their value creation process rather than on traditional production factors such as physical and financial capital (Mouritsen, Larsen, & Bukh, 2001). IC and intangible assets pose complex information asymmetry challenges for governments, regulators, practitioners, and academics (Bozzolan et al., 2006). In this context, several standard setters and professional bodies have attempted to foster improved business reporting by adopting a user focus, i.e., by investigating the information needs of investors and other stakeholders. While recent decades have seen some gradual convergence in accounting practice and disclosure cultures, the scope still exists for considerable variation across national boundaries (Vanstraelen, Zarzeski, & Robb, 2003) and at corporate levels, particularly in the area of voluntary disclosures.

The importance of IC information to stock market participants' investment decision-making processes is well documented in the literature. For example, Holland (2006) finds that analysts and fund managers demand and use IC information in their investment decisions and valuation of firms. Orens and Lybaert (2007) show that financial analysts who use more forward-looking and more internal-structure information (non-financial information), offer more accurate forecasts. García-Meca and Martínez (2007) find that analyst reports provide varying amounts of IC related information while Barth, Kasznik, and McNichols (2001) observe that analyst coverage is significantly higher for firms with intensive R&D and advertising expenses relative to their industry.

In the context of the importance of IC, managers should have incentives to provide greater IC disclosure to support the stock market. Fama and Jensen (1983) argue that the separation of ownership and

control in the modern firm creates information asymmetries between the managers and the outside investors. Consequently, this increases agency costs such as reduced liquidity of the company's shares, management reputation, and higher cost of capital (Healy & Palepu, 2001). Healy and Palepu (2001) suggest that increased disclosure reduces information asymmetry and therefore reducing the agency costs. Aboody and Lev, (2000) argue that the information asymmetry between managers and investors is more acute for investments in IC than for investments in physical and financial assets because IC is unique to specific firms and cannot be inferred by looking at other firms.

Guthrie and Petty (2000) consider a sample of 19 top Australian listed companies by market capitalization and one IC best practice company to investigate IC voluntary disclosure in Australia. Built on Sveiby's (1997) framework of IC classification for a content analysis (involving the codification of IC information in the annual reports in accordance with a selected framework of intellectual capital indicators), Guthrie and Petty find that IC attributes are expressed discursively and qualitatively rather than quantitatively and that no definite IC reporting framework has been established. Despite its contribution to Australian IC disclosure literature, the study is only limited to the results of 20 out of over 1,600 companies listed on Australian stock exchange. There have been several studies in different countries utilizing the same methodology as Guthrie and Petty (Brennan, 2001; Bozzolan et al., 2003; April, Bosma, & Deglon, 2003; Goh & Pheng, 2004; Abeysekera & Guthrie, 2005). Although these studies all indicate the lack of a consistent IC reporting framework and the extensive disclosure of external capital, some differences in terms of the extent of IC disclosure can be found across companies. For example, in Brennan (2001), IC related items in the sample of 11 knowledge-based Irish listed companies are disclosed less frequently than those in Guthrie and Petty's sample. However, their sample is tiny so that results must be considered with caution. Likewise, different proportions of IC categories (human capital, internal capital, and external capital) are found in Sri Lanka compared to those in Guthrie and Petty's study. In essence, these studies use the same framework, but the results are different, which may be due to differences in time, sample sizes, country-specific regulations, and culture. Bozzolan et al. (2003) investigate the annual reports of 30 nonfinancial companies listed on the Italian Stock Exchange in 2001. Adopting Guthrie and Petty's (2000) framework with some modifications, they conclude that

company size and industry nature influence the amount of IC disclosure in Italian companies. In summary, the mixed outcomes in the extant literature and determinants of IC disclosure are not known, yet suggest a significant gap in understanding IC disclosure in emerging countries.

## **METHODS**

The population of interest in this study is (initially) the 299 listed firms on the CSE, as at February 2017. This study excludes financial, investment and securities sector firms because their unique financial attributes, the intensity of regulation, and/or intensive use of leverage are likely to confound the outcomes being studied (Pratheepkanth, Hettihewa, & Wright, 2015). Also, the risk of missing data was minimized by excluding firms that were not listed throughout the review period. After the eliminations, 100-firms sample, randomly drawn from the stock exchange-listed firms (Saunders et al., 2009), was analyzed. The sources of the data were the 2016/17 financial reports. In determining the level of intellectual capital disclosure provided by the firm, content analysis was performed on annual reports.

### **IC disclosure measures**

This study uses content analysis, a method that has been applied by prior literature in measuring ICD (Beattie & Thomson, 2007; Li, Mangena, & Pike, 2012; Li, Pike, & Haniffa, 2008). The study applies framework tested by Li, Pike, and Haniffa (2008), which provides a comprehensive list of voluntary IC items divided into three categories such as human, relational, and structural items.

The scoring of the financial reports against the checklist was performed manually by reading the whole financial reports. Each intellectual capital item was scored based on three presentational formats such as text, numerical, and graphical, thus receiving a maximum of three points. A firm can score a maximum of 183 points (61 intellectual capital items times three formats). After scoring all 61 IC items in the three presentational formats, the IC disclosure score(s) for each company are computed as an index by dividing the sum items disclosed by the total number of items expected. For each firm, the study created four disclosure indices to capture the overall intellectual capital (ICDI), human capital (HICDI), relational capital (RICDI) and structural capital (SICDI) (Li, Mangena, & Pike, 2012).

**Table 1. List of Voluntary IC Items**

	<b>Human Capital</b>	<b>Relational Capital</b>	<b>Structural Capital</b>
1	Number of employees	Customers	Intellectual property
2	Employee age	Market presence	Process
3	Employee diversity	Customer relationships	Management philosophy
4	Employee equality	Customer acquisition	Corporate culture
5	Employee relationship	Customer retention	Organization flexibility
6	Employee education	Customer training & education	Organization structure
7	Skills/know-how/expertise/knowledge	Customer involvement	Organization learning
8	Employee work-related competences	Company image/reputation	Research & development
9	Employee work-related knowledge	Company awards	Innovation
10	Employee attitudes/behavior	Public relation	Technology
11	Employee commitments	Diffusion & networking	Financial dealings
12	Employee motivation	Brands	Customer support function
13	Employee productivity	Distribution channels	Knowledge-based infrastructure
14	Employee training	Relationship with suppliers	Quality management & improvement
15	Vocational qualifications	Business collaboration	Accreditations (certificate)
16	Employee development	Business agreements	Overall infrastructure/capability
17	Employee flexibility	Favorite contract	Networking
18	Entrepreneurial spirit	Research collaboration	Distribution network
19	Employee capabilities	Marketing	
20	Employee teamwork	Relationship with stakeholders	
21	Employee involvement with the community	Market leadership	
22	Other employee features		

Source: Li, Pike, and Haniffa (2008)

### The model

Previous studies have highlighted the relevance of industry and size in determining the amount of social and environmental disclosure (Mathews, 1997). The study estimated using regression, to investigate whether these variables are relevant in explaining the amount of IC disclosure, the following general equation.

$$\text{Disclosure amount} = f(\text{industry, size})$$

## RESULTS

Table 2 and Table 3 show the results of data processing in the form of descriptive statistics and regression results

**Table 2. Descriptive statistics**

	Mean	Median	Min	Max	SD	
Overall IC disclosure	0.35	0.32	0.10	0.91	0.159	
Human capital disclosure	0.41	0.32	0.12	0.98	0.262	
Relational capital disclosure	0.31	0.31	0.00	0.89	0.206	
Structural capital disclosure	0.29	0.26	0.06	0.93	0.204	
– Consumer discretionary	0.32	0.24	0.11	0.74	0.078	
– Consumer staples	0.28	0.32	0.00	0.88	0.076	
– Energy	0.36	0.34	0.02	0.81	0.122	
Overall IC disclosure by industry sectors	– Health Care	0.23	0.38	0.17	0.82	0.089
– Industrials	0.21	0.21	0.13	0.62	0.061	
– Information technology	0.26	0.32	0.20	0.71	0.261	
– Materials	0.42	0.34	0.04	0.66	0.211	
– Telecommunication Services	0.30	0.31	0.02	0.69	0.311	
– Utilities	0.33	0.42	0.03	0.74	0.085	

The mean index for overall intellectual capital disclosure is 0.35 (minimum from 0.10 to maximum 0.91), which implies that 35 percent of items were disclosed. The study observes that human capital disclosure, relational capital disclosure, and structural capital disclosure is 0.41, 0.31, and 0.29, respectively. These results indicate that Sri Lankan firms, on average, are aware of the importance of intellectual capital disclosure. The firms appear to provide slightly higher human capital disclosure (ranging from 0.12 to 0.98) than both with relational capital disclosure and structural capital disclosure.

A multiple regression analysis at both overall and category level was conducted to investigate the multiple effects of size and industry on the amount of overall IC disclosure in the Sri Lankan market. The results are shown in Table 03. The model Adjusted R<sup>2</sup> value of overall IC disclosure indicate that 0.866 percent of the observed variability in overall IC disclosure can be explained by the control variables (industry and size). The F-statistics and significance level shows that the overall IC disclosure model generates statistically significant outcomes. The impact of firm size on overall IC disclosure is significant at the 1 percent level (t=24.87 and p=0.000).

**Table 3. Multiple Regression Results for Overall Index And Each Category**

	Dependent variable			
	Estimate	St. err	t	p-value
<i>Overall index</i>				
Independent variables				
Intercept	1.298	0.385	3.37	0.001
Size	0.908	0.036	24.87	0.000
Industry	0.004	0.006	0.581	0.563
<i>Model summary</i>				
R <sup>2</sup>	0.869			
Adjusted R <sup>2</sup>	0.866			
F-statistic	320.67			
p-value	< 0.000			
<i>Human capital</i>				
Independent variables				
Intercept	0.709	0.635	1.17	0.267
Size	0.609	0.060	10.12	0.000
Industry	0.012	0.010	1.15	0.251
<i>Model summary</i>				
R <sup>2</sup>	0.533			
Adjusted R <sup>2</sup>	0.523			
F-statistic	55.26			
p-value	< 0.000			
<i>Relational capital</i>				
Independent variables				
Intercept	65.548	8.615	7.609	0.000
Size	0.558	10.816	0.684	0.496
Industry	0.717	0.137	5.229	0.000
<i>Model summary</i>				
R <sup>2</sup>	0.220			
Adjusted R <sup>2</sup>	0.204			
F-statistic	13.687			
p-value	< 0.000			
<i>Structural capital</i>				
Independent variables				
Intercept	1.189	0.760	1.56	0.121
Size	0.023	0.072	0.315	0.754
Industry	0.032	0.012	2.62	0.010
<i>Model summary</i>				
R <sup>2</sup>	0.071			
Adjusted R <sup>2</sup>	0.052			
F-statistic	3.716			
p-value	< 0.028			



## DISCUSSION

The results in descriptive statistic table diverge from Abeysekera and Guthrie (2005), who conclude that the most reported accounting category was relational capital, and the second most reported was human capital. These outcomes also sharply contrast with Bozzolan et al. (2003), who reveals that disclosure by Italian firms mainly occurs with regard to relational capital disclosure. Brügggen, et al. (2009) who concludes that disclosure by Australian firms mainly occurs with regard to structural capital, disclosure. Vandemaele, Vergauwen, and Smits (2005) indicate that firms in the Netherlands, Sweden, and the UK are disclosing more about external structure compared to other ICD categories. Consequently, this study concludes that there seems to be an awareness of the importance of intellectual capital; the reporting practices are far from systematic. There is no established and mutually agreed framework for intellectual capital disclosure within Sri Lankan firms similar to existing studies (Bozzolan et al., 2003).

The regression result is consistent with the study conducted by Bozzolan et al. (2003) and Beaulieu, Williams, and Wright (2002) who observed that firm size influence the amount of IC disclosure in Italian firms. However, the industry nature in that model is not statistically significant. This result is supported by Bontis (2003). The firm size and industry nature generate adjusted  $R^2$  of 0.523, 0.204, and 0.052 for, respectively, human capital, relational capital, and structural capital disclosures. These levels of correlation are statistical significant as indicated by the corresponding F-values and significance levels of, respectively,  $F= 55.26$  and  $p= 0.000$ ,  $F= 13.687$  and  $p= 0.000$ ,  $F= 3.716$  and  $p= 0.028$ . In explaining the variations in intellectual capital disclosure both at the overall and category level, firm size shows a statistically significant association with human capital disclosure, but firm size has no statistically significant effect on relational capital and structural capital disclosure. The coefficient of industry nature on relational capital and structural capital disclosures are statistically significant at the 1 percent level. However, the only model that insignificantly affects human capital disclosure is industry nature. Mathews (1997) and Gray (2002) provide evidence regarding the factors that influence the different disclosure practices observed between firms. It has been revealed that size and industry nature are the two main factors in explaining different reporting behaviors.

## CONCLUSION

This study examines Sri Lankan IC disclosure practices and has provided an analysis of the main factors explaining these reporting patterns. It is apparent that firms in Sri Lanka disclose average amounts of information about their IC, particularly on human capital. This finding is not comparable with Australian (Guthrie & Petty, 2000) and Italian (Bozzolan et al., 2003) voluntary reporting practices while it is comparable with the Irish one (Brennan, 2001). Sound financial disclosure reduces agency problems by bridging the information asymmetry gap that exists between management and shareholders (Bozzolan et al., 2006).

In contrast, poor financial disclosure often misleads shareholders and has adverse effects on their wealth, as suggested by the wave of recent financial reporting scandals (Karamanou & Vafeas, 2005). On the other hand, Bozzolan et al. (2003) note that managers would like to offer additional relevant/useful information to the public, there are concerned on the risk of such information being used by competitors. As Williams (2001) points out, such disclosures may attract unwanted attention. Therefore, even if there are sufficient arguments to convince managers of the necessity of disclosing information on the firm's intangible assets, it is feared that disclosure could have a negative effect on the firm itself, especially, if the firm has a strong IC base. Though, IC is recognized in the literature as an integral part of a firm's value-creating processes (Chaminade & Roberts, 2003) and is the key to building competitive advantage and creating significant shareholder value (Holland, Intellectual capital and the capital market - organization and competence, 2003). IC disclosure may be associated with better financial reporting practices. Since, IC reporting is mostly unregulated in Sri Lanka, so regulators should enhance the reliability of IC reporting process within Sri Lanka. The results also confirm the explanatory power of size and in part, industrial nature in the IC disclosure. The industry effect on the extent of disclosure was also suggested by other prior studies (Bozzolan et al., 2003; Meca, Jorge, & Conesa, 2003; Olsson, 2004) in relation to the type of disclosure studies based on multi-industry samples highlight the dominance of the disclosure of external capital information (Bozzolan et al., 2003); on the contrary, other studies considering specific industries suggest that in some cases disclosure pattern may be different. For instance, Olsson (2004) in investigating IC disclosure in the Swedish retail industry, highlights a skewing towards information on IC. About the size effect results are

consistent with previous analyses of single countries that demonstrate a positive and significant relationship between IC disclosure and size (Bozzolan et al., 2003; Meca, Jorge, & Conesa, 2003), and on size and disclosure in general (Ahmed & Courtis, 1999).

### **Limitations of the paper and future research directions**

The limitation is the difficulties inherent in discovering and adjusting for variations in the IC disclosures, business scope, and/or financing portfolio across firms. Especially, the IC disclosures may be influenced by variables other than those considered in this study. The difficulties from accounting principles differing between firms have been greatly mitigated over the past decade by the increasing adoption and use of International Financial Reporting Standards (IFRS). Future research should consider including many countries across the emerging to developed continuum, to support more generalized conclusions. In addition to this, a longitudinal study might be more able to validate findings.

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