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Intellectual capital disclosure trends: Singapore and Sri Lanka

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Findings – The study identified IC disclosure differences between Sri Lankan and Singapore firms, and suggest reasons for differences from country perspectives. The paper highlights the need for a uniform methodology in intellectual disclosure framework to establish consistent disclosure practices.

Practical implications - This study highlights the need to establish a uniform methodology for financial disclosure under International Financial Reporting Standards (IFRS) that can mobilize globally uniform disclosure intellectual capital disclosure practices.

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Keywords

intellectual capital, intellectual capital disclosure, Singapore Sri Lanka, developing country

Disciplines

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Paper type Research paper

1. INTRODUCTION

1. Introduction

The paradigm shift from focusing on tangible assets to non-tangible assets not recognized in financial statements to increase competitiveness of firms has challenged the decision relevance of information provided by financial reporting system (Bontis, 2000; Coy, 2001). The recent mega corporate collapses in several developed countries (e.g. Enron in US, HIH in Australia) has heightened the need to review provision of relevant information to investors (Clarke & Dean, 2007). In particular, it is pointed out several assets that enable firms to enhance competitiveness and future profitability are not recognized in financial statements such as knowledge assets represented by employees' collective capabilities, information systems in firms are relevant information for investor decision-making (Stewart, 2001; Skyrme and Associates, 1997).

Industry sectors making increasing contribution to national economies is an additional factor that has heightened the need to make disclosure beyond disclosure made through financial reporting systems. Many assets of firms in these industry sectors that are economic value creators are not recognized in financial statements (Canibano, Garcia-Ayuso & Sanchez, 2000; Granof & Zeff, 2002; Stewart 2001). The expansion of technology-based, communication, and industry sectors that heavily depend on human innovation and capabilities (such as research and development sector) are examples (Bontis, 2000; Dzikowski, 2000). The intellectual capital (IC) represents a subset of such assets not recognised in financial statements.

Deleted:

The literature provides a number of definitions of IC (Stewart 1997; Union Fenosa 1999; Martensson 2000; Ordonez de Pablos 2002) with IC as value creators of firms (Lynn, 1998). IC is “intellectual material that has been formalised, captured and leveraged to produce a higher-valued asset” (ASCPA and CMA, 1999, pp4; The Society of Management Accountants of Canada, 1998, pp3), and if successfully managed leading to future benefit that does not have a physical or financial embodiment (Bernhut, 2001).

The disclosure of IC becomes important to signal investors about affairs of firms in an intense globally competitive economic environment. IC can give rise to agency problems as ‘insiders’ of firms can take advantage of such information to earn excess profits (Thompson & Randall, 2000; Scott, 2000). Disclosure of IC in annual reports helps to make capital markets more efficient by reducing information asymmetry between ‘insiders’ and investors. Additionally, IC disclosure helps the capital market to provide a more accurate market capitalization of firms (Guthrie et al., 1999).

Different factors, local and global, may intervene in determining IC disclosure of firms, and the level of economic development in a country, whether it is a developed, moderately developed, or developing country could be one of them. For instance, in 1998, Singapore implemented a regulatory framework founded on a disclosure philosophy to encourage greater disclosure by firms listed on Singapore stock exchange (Cheng et al., 2002). During the same period, Sri Lanka amended the long overdue *Code*

of Intellectual Property Act No.52 1979 to help firms to build a foundation for a knowledge-based economy (Wickremaratne 2000).

This paper contributes to understanding of IC disclosure practices by comparing firms in a moderately developed country setting (Singapore) and developing country setting (Sri Lanka). This study uses annual reports of top 20 firms by market capitalization as source documents over three continuous years (1998-2000). The empirical findings from Sri Lanka is compared with an unpublished project provides findings for Singapore (Cheng, Fok & Low, 2002).

This comparative study investigates two research questions. First, whether there is an increasing trend of IC disclosure across the three-year period. Second, whether the types and level of IC disclosure provide insights into the importance attached to IC categories and items. In examining the two research questions, this paper is organized into following sections. Section 2 focuses on the conceptualisation of IC and development of hypotheses. Section 3 outlines the research design, sampling procedures, data collection methods. Section 4 presents the analysis of findings followed by discussion of the results. Section 5 offers concluding remarks, limitations of study, implications for policy decisions, and suggestions for further research.

2. LITERATURE REVIEW & HYPOTHESES DEVELOPMENT

Disclosure of IC

With competitive advantage and success in business during the 1990s primarily driven by non-tangible assets such as IC, capital markets being increasingly interested in IC disclosure. Grojer and Johanson (1999) suggest that IC disclosure should improve capital market efficiency and contribute to better corporate governance.

Firms have rated IC disclosure among the top ten information needs of investors (Taylor and associates, 1999) but presently accounting disclosure in annual reports is more suited to disclose a firm's physical capital. The deficiency in disclosure for investors decision-making is a concern, and accounting regulators may need to re-think about disclosure requirements to meet decision-making interests of investors. Research can contribute to this vacuum by undertaking longitudinal research to demonstrate implications of IC disclosure over a continuum. Researchers have taken similar undertakings to investigate IC trends in Australia (Sujan & Abeysekera, 2007), Sri Lanka (Abeysekera & Guthrie, 2005), and IC trends between countries; Australia and Sri Lanka (Abeysekera, 2007).

With the sparse longitudinal research studies on IC disclosure, the present study seeks to expand prior research on IC disclosure practices by performing a longitudinal analysis of IC disclosures in annual reports. The study investigates annual reports disclosure for each of the three years (1998 to 2000), of top 20 publicly listed firms by market capitalization listed on the Colombo Stock Exchange and comparing its results with counterpart firms in Singapore Stock Exchange from the unpublished study. Adopting a disclosure scoring

system we measure the extent and quality of disclosure provided in annual reports of sample firms as done in Singapore study. The comparison of findings between Singapore and Sri Lanka contributes to similarities and differences of IC disclosure in a global phenomenon context.

Conceptualisation of IC

The International Accounting Standards (IAS) IAS 38 has acknowledged the difficulty in quantitatively verifying IC processes for financial reporting purposes (IAS 38), which is the accounting standard of intangible assets, as a reason for not classifying IC as assets in financial reports. As Catasus (2004) points out, the IAS 38 revisited traditional accounting classification-related concepts such as identifiability, control and future economic benefit. However, the effect of the use of traditional accounting standards to produce a classification model whose financial statements provide limited information about the affairs of firms, and the prudent approach adopted by International Financial Reporting Standards (IFRS) has increased the 'unexplained' gap between the fair price and the reported value (net book value) of the firm. An asset meets the identifiability criterion when it meets one or the other of the following two criteria: (i) it is separable; that is, it is capable of being separated or divided from the entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, asset or liability; (ii) it arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations (Picker & Hicks, 2003). These changes to the IFRS to redefine recognition of intangibles have both financial reporting and taxation implications (Koch, 2003). Since stakeholders

are not fully aware of the gap between the fair value and reported value of the firm (Lev, Sarath & Sougiannis, 1999), this increase in the ‘unexplained gap’ may tend to support the function of IC disclosure as bridging the ‘unexplained gap’ so that stakeholders can make more informed economic decisions.

IC categories

IC has been categorised in several ways for analysis and interpretation (OECD¹ 1999; Abeysekera and Guthrie 2004). The recent literature, in general, delineates IC along three dimensions, (1) ‘internal (structural) capital’, (2) ‘external (relational/customer) capital’ and (3) ‘human capital’ (Brennan 2001; Ordonez de Pablos 2002; Bozzolan, Favotto and Ricceri 2003; Abeysekera and Guthrie 2004, 2005).

Internal capital includes intellectual properties, processes, organisational culture, etc., whereas external capital represents the relationship with various stakeholders (Roos, Roos, Edvinsson and Dragonetti 1998). External capital is the knowledge embedded in organisational relationships with customers, suppliers, investors, and strategic alliance partners (Bontis 1998). External capital can be considered proprietary (e.g. brand, licenses, favourable contracts) or non-proprietary (e.g. customer loyalty, business collaborations). “Proprietary” suggests that firm largely controlling the value of the asset and the enjoyment of benefits through ownership. “Non-proprietary” suggests that firm has no control but has some influence over such assets (Guthrie et al., 1999). Human capital is the set of assets contributed as employees including employees’ education, skills, training, experiences and entrepreneurial spirit. They are usually non-proprietary to

¹ Organisation for Economic Co-operation and Development

the firm but creates economic value and should be measured and reported on the balance sheet from a value-based perspective. In this paper, we classify IC into three categories to understand the changes that have taken place from a theoretical perspective: internal, external and human capital and is the same classification used in Singapore study of IC disclosure practices.

Hypotheses Development

Trends in Voluntary IC Disclosure

Firms believe that IC is a key strategic resource that directors should disclose regularly (Waterhouse & Svendsen, 1998). There is positive expectation that IC disclosure practices will intensify with the growing perception among investors of firms (Abdolmohammadi et al., 1999) with firms perceiving IC disclosure can improve performance of firms (Bontis, 2000).

IC disclosure can positively contribute to a firm in two ways. First, it can influence the perception of investor value by disclosing growth prospects. Second, firms can disclose about effective governance of assets with economic worth but not recognized in financial statements (Skyrme & Associates, 1997). If investors perceive IC disclosure to be of value to investors, then we can expect an increasing trend of IC disclosure as found by Williams (2000) with thirty UK-listed companies from 1996 to 2000, which motivated our first hypothesis:

H₁: Ceteris paribus, the level of IC disclosure is likely to increase over time in both countries.

Disclosure of IC categories

Table 1 summarizes IC variable by category in previous studies. Most studies show that external capital is the most disclosed category with the exception of New Zealand (Steenkamp, 2007). Majority of them have been single country studies, and have not contrasted their results with studies of other countries that adopted similar research methodologies. As demonstrated by previous studies, the disclosure levels have varied among the three categories, and notably they have not been investigated from an inter-country perspective. Table 1 summarizes the percentage disclosure of each IC category in previous studies:

Table 1: Percentage disclosure of IC variables by categories

Study	Country	External Capital	Internal Capital	Human Capital
Abeysekera and Guthrie (2005)	Sri Lanka	44%	20%	36%
April et al. (2003)	South Africa	40%	30%	30%
Bozzolan et al. (2003)	Italy	49%	30%	21%
Brennan (2001)	Ireland	40%	30%	30%
Citron et al. (2005)	UK	60%	26%	14%
Goh and Lim (2004)	Malaysia	41%	37%	22%
Guthrie et al. (1999)	Australia	40%	30%	30%
Oliveira et al. (2006)	Portugal	48%	25%	27%
Oliveras & Kasperskaya (2005)	Spain	51%	28%	21%
Steenkamp (2007)	New Zealand	36%	11%	53%
Sujan and Abeysekera (2007)	Australia	48%	31%	21%
Vandamaele et al. (2005)	Netherlands, Sweden & UK	40%	30%	30%

Based on these studies, which motivated our second hypothesis:

H₂: There are differences in the level of reporting among the three categories of IC (external, internal and human) between the two countries in year 2000.

3. RESEARCH METHODOLOGY

Sample Selection

A sample consisting of top 20 listed companies for 1998, 1999 and 2000 year by market capitalization from Colombo stock exchange, and is comparable to Cheng et al. (2002) sample from the Singapore Exchange (SGX). This study used annual reports as source documents as they are most widely distributed and regularly produced documents (Campbell, 2000). Annual reports are a channel that a firm seeks to establish an image in the public domain, and communicates with investors (Lang & Lundholm 1993).

Content Analysis Design

The study employed content analysis since the aim this study is to assess the extent of IC disclosure trends of listed firms by the amount (i.e. frequency count) and type (i.e. categories) of IC disclosure in annual reports. Content analysis research method in this study codifies information into pre-defined categories to appraise patterns in IC disclosure through “systematic”, “objective” and “reliable” analysis (Abbott & Monsen 1979:504; Krippendorf, 1980). Intellectual capital disclosure research confirms such analysis of annual reports to be empirically valid (Guthrie *et al.* 1999; Brennan, 2001; Bozzolan *et al.* 2003).

IC framework

The IC framework used in both Sri Lankan and Singapore study had three IC categories. IC items are basic units of IC which are categorised into three major IC categories

(Brooking, 1996). However, IC items in the Sri Lankan study was more detailed than that was used in Singapore study which replicated Guthrie and Petty (2000) IC framework. The Sri Lankan study used 10 items in internal capital (7 in Singapore study), 10 items in external capital (8 in Singapore study), and 25 items in human capital (6 in Singapore study) category. Due to this reason this study does not compare IC items between the two studies, but compares IC categories and disclosure trends only.

Measure of IC Disclosure

The content analysis of annual reports involved using a numerical coding scheme when reading each annual report and recording information related to each attribute. For each firm, qualitative appearance of IC disclosure denoted 1; numerical (non-fiscal) appearance of IC disclosure denoted 2; and monetary (fiscal) IC disclosure denoted 3 as shown in Table 2. The reporting unit was the frequency of appearance (frequency count) of IC item pre-defined in the coding framework in annual reports, with above-mentioned weightings attached to each disclosure based on previous studies (Guthrie & Petty, 2000; Sujan & Abeysekera, 2007).

As in previous studies, this study measured discretionary IC disclosure only (Guthrie and Petty 2000; Brennan 2001; April *et al.* 2003; Bozzolan *et al.* 2003). Both studies excluded IC disclosed to comply with accounting standards, law (Companies Act, Banking Act), and Exchange listing requirements since mandatory disclosure does not indicate the level of management commitment towards IC disclosure. To include compulsorily disclosed IC in the analysis could obscure the desired focus on the initiatives taken by firms in voluntary disclosure (Guthrie *et al.* 1999).

Table 2: Three-way numerical coding system

Code/Score	Description
1	Item appeared in AR <i>in narrative form</i>
2	Item was given a <i>numerical</i> value in the AR
3	Item was given a <i>monetary</i> value in the AR

Singapore study had three coders and the inter-rater (coder), they overcame reliability problem by having two coders rating the same IC disclosure item independently. Each coder would read all annual reports and record information pertaining to two of three major IC categories on a coding sheet. A second independent coder would do likewise in coding of each IC item. Where there might be grey areas in the classification process or identification of IC that could lead to inconsistencies by any two coders when coding the first ten annual reports, all three coders clarified these doubts via discussions. Each coder then proceeded to carry out the coding independently. This initial exercise enabled coders to develop a reliable coding outcome. The Sri Lankan study undertook similar approach but to establish inter-rater (coder) reliability with two coders only.

Data Analysis

To compare with findings of this study with Singapore study, this study applied non-parametric tests, as data did not conform to normality. The Friedman test compared three years samples for IC disclosure trends, as in H₁. Additionally, Wilcoxon-Signed Ranks test compared each year's data with every other year for changes in IC disclosure. The Kruskal-Wallis test ranked IC disclosure in 2000 year to determine differences in IC disclosure by category, as in H₂. The next section presents the results and discussion of the statistical tests.

4. RESULTS AND DISCUSSION

Results of Analysis

This study tested the hypotheses for statistical significance using the conventional 5 per cent significance level.

Disclosure Trend Hypothesis (H₁)

Table 3 presents the Friedman test for the first hypothesis (H₁) that confirms differences in the level of IC disclosure across the 3-year period. The result for Singapore showed a significant increase in the level of IC disclosure for firms from 1998 (mean rank 1.95) to 2000 (mean rank 2.10) at p-value of 0.000, thus providing support for H₁. The result for Sri Lanka was not significant for overall IC disclosure providing no support for H₁.

The result for Sri Lanka showed an increasing trend for internal capital and external capital. However, human capital trend from 1999 to 2000 has decreased but not at significance level. The result for Sri Lanka showed an increase but the statistical significance applies to internal capital disclosure category only, but Singapore study showed statistical significance for both internal and human capital disclosure category.

Table 3: Friedman test of differences in IC disclosure over a 3-year period (n=60)

	Singapore			
	Mean Rank			
Category	1998	1999	2000	P-value

Internal	1.94	1.96	2.11	0.022*
External	1.98	1.96	2.07	0.260
Human	1.94	1.92	2.14	0.005*
Overall	1.95	1.95	2.10	0.000*
Sri Lanka				
Mean Rank				
Category	1998	1999	2000	P-value
Internal	1.45	2.00	2.55	0.028*
External	1.90	1.75	2.35	0.358
Human	1.84	2.12	2.04	0.565
Overall	1.77	2.01	2.22	0.076

Table 4, shows results IC disclosure trends at the categorical level between years. Singapore showed a significant difference between 1999 and 2000, and 1998 and 2000, for all categories and overall intellectual capital. The result for Sri Lanka showed a statistical difference for overall intellectual capital between 1998 and 2000 only.

Table 4: Wilcoxon-signed ranks test for differences in IC disclosure between two years (n=20)

	Singapore						Overall	
	Internal		External		Human		Z-value	P-value
Comparison Btw years	Z-value	P-value	Z-value	P-value	Z-value	P-value	Z-value	P-value
1998 and 1999	-0.745	0.457	-0.848	0.397	-0.014	0.989	-0.215	0.830
1999 and 2000	-2.301	0.021*	-2.496	0.013*	-2.982	0.003*	-4.458	0.000*
1998 and 2000	-2.515	0.012*	-1.226	0.220	-2.464	0.014*	-3.442	0.001*
	Sri Lanka						Overall	
	Internal		External		Human		Z-value	P-value
Comparison Btw years	Z-value	P-value	Z-value	P-value	Z-value	P-value	Z-value	P-value
1998 and 1999	-1.680	0.093	-0.533	0.594	-0.887	0.375	-1.603	0.109
1999 and 2000	-1.404	0.160	-1.275	0.202	-0.791	0.429	-1.834	0.067

1998 and 2000	-1.305	0.192	-1.304	0.192	-1.294	0.196	-2.275	0.023*
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Singapore study suggested the mandatory reporting of corporate governance, which has come into effect on 1st January 2003, encouraged firms to disclose the credentials, expertise and educational levels of their directors. The human capital, one of the three categories of intellectual capital, are pivotal to a firm's success, disclosing educational qualifications of employees may signal to investors about high calibre staff in their firms and superior hiring policies (Cheng et al., 2002).

Although not at significance level (see Table 3), there was upward trend in IC disclosure in Sri Lankan context but the reasons for increase was different from that of Singapore. First, the global competition for capital requires firms to uphold investor confidence by means of proactive IC disclosure to counter the negative effects of socio-political factors, such as the civil war in the country during the study period. Second, such an emphasis could help counter the negative impact of protective labour legislation on investor confidence (McSheehy, 2001). Amendment of intellectual property act may have positively influence internal capital disclosure at significance level (Code of Intellectual Property Act No.40., 2000).

IC Categories Hypothesis

When Kruskal-Wallis technique tested the second hypothesis (H₂) in Singapore study and the results have shown a significant difference at p-value of 0.011 supporting H₂, with human capital being the most disclosed as shown in Table 5 at significance level.

However, Sri Lankan firms showed external capital as the most disclosed category but not at a significance level.

Table 5: Kruskal-Wallis test of differences in IC disclosure among the IC categories for 2000 (n=20)

Category	Mean Rank-Singapore	Mean Rank-Sri Lanka
Internal	187.17	23.30
External	219.68	30.50
Human	225.49	19.88
P value	0.011*	0.096

Using Mann-Whitney test, Singapore study reported differences at significance level between IC categories - internal and external, and internal and human capital category as shown in Table 6. However, Sri Lankan study found no statistical significance for differences between categories. In contrary to Singapore study, Sri Lankan study found differences between external capital and human capital at significance level which was not valid to Singapore study.

TABLE 6: MANN-WHITNEY TEST ON DIFFERENCES BETWEEN EACH PAIR OF CATEGORIES (N=20)

No.	Variable	Singapore		Sri Lanka	
		Z-value	P-value	Z-value	P-value
1.	Internal and External	-2.360	0.018*	-1.323	0.186
2.	External and Human	-0.280	0.779	-2.102	0.034*
3.	Internal and Human	-2.880	0.004*	-0.750	0.453

Given the shortage of land and natural resources in Singapore, human assets are critical to Singapore's economic success. The transformation into a knowledge-based economy places even greater importance on human assets *vis-à-vis* other IC assets. This probably explains the increase in human capital disclosure in 2000. Cheng et al. (2002) attribute the observed aberration in IC disclosure to the financial crisis underwent in 1999 year,

which adversely affected the earnings of many firms. Additional disclosure would involve increased expenditures and this may have driven firms to omit IC as non-mandatory disclosure. Moreover, firms rather concentrated on restructuring efforts to strengthen their financial position (Cheng et al., 2002). The IC disclosure difference between external and human capital category at significance level may have been due to the emphasis on external capital by Sri Lankan firms to counter the negative effects of socio-political factors (such as the civil war) and help counter the negative impact of protective labour legislation on investor confidence (McSheehy, 2001).

5. CONCLUDING REMARKS

Implications of Findings

One major observation from this comparative research is the challenge to the accounting profession is to establish a consensus about a methodology for IC disclosure (Guthrie et al., 1999) that is consistent with International Financial Reporting Standards in accounting. A consistent disclosure methodology enables IC to compare across firms globally for investor resource allocation. As demonstrated in previous studies, Guthrie and Petty in Australia, Brennan in Ireland (Brennan, 2001), Olsson in Sweden (2001), and Subbarao and Zhegal in their study of several nations of human capital (Subbarao & Zeghal, 1997), have shown that the difference in fundamental assumptions and frameworks between countries can result in different outcomes that are not comparable between firms and nations. Though not ideal, a uniform methodology represents a step in the right direction and once established open to refinement.

While it may be demanding on firms to impose mandatory IC disclosure, it would be more advisable for the standard setters to employ mechanisms to motivate firms to disclose their IC. One such mechanism could be the prestigious Annual Report Award, jointly organized by the Institute of Certified Public Accountants of Singapore, Singapore Institute of Management and the Singapore Exchange. The inclusion of IC disclosure as the criteria for the assessment of the award will serve to motivate firms to increase the extent and quality of IC disclosure in their annual reports. This is especially true for firms that make use of annual reports as the main reporting mechanism to establish their corporate image in the public sphere. The effectiveness of the award in improving IC disclosure is already being demonstrated in Singapore (Cheng et al., 2002).

Limitations

This comparative exploratory research has four limitations. Firstly, study has limited external validity due to sample size of twenty listed firms only, and findings may not be representative of firms in Singapore and Sri Lanka. Secondly, the study used year 2000 annual reports only in testing of H₂. Thirdly, the market capitalization was the basis of selection of sample firms that used it as proxy for firm size. This study did not consider the influence of industry specific factors in IC disclosure. For example, technology and communication-based firms may disclose more IC as they rely more on non-tangible assets in economic value creation, the mix of industry sectors in the two samples may have influenced results. Fourth, this study investigated IC disclosure between IC categories for year 2000 only.

Suggestions for Future Research

Although exploratory in nature, this comparative study has provided much insight and added to the debate of IC disclosure at a global level. The differences in IC disclosure between a developing country such as Sri Lanka and moderately developed country such as Singapore, demonstrates similarities and differences, but they cannot entirely attribute to the stratification of developing country versus moderately developed country. Further research is hence necessary to make such definitive conclusions.

Additionally, there are four suggestions for future research. Firstly, an expanded sample size for comparative IC disclosure studies can provide more insights about IC disclosure practices. Secondly, extending the period of longitudinal analysis may provide an in-depth trend in IC disclosure. Thirdly, alternative disclosure media to annual reports (such as websites) may provide corroborative evidence in investigating IC disclosure practices. Fourth, IC disclosure studies have alluded to other determinants such as industry type (Sujan & Abeysekera, 2007), leverage (Ahmed and Courtis, 1999) and listing status. Further IC disclosure research that includes these variables can enrich investigation of inter-country IC disclosure practices.

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