INTELLECTUAL CAPITAL AND FIRM PERFORMANCE: EMPIRICAL EVIDENCE FROM NON-LISTED COMPANIES IN SRI LANKA

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INTRODUCTION

The world is facing huge problems with the coronavirus (COVID-19) pandemic. The World Bank found on average; sales dropped 27% of all companies in the world due to this pandemic (www.worldbank.org). Meanwhile, both large size and medium size firms were equally affected. Nowadays, Sri Lanka is also facing a bankruptcy situation. Not only that, there are several problems raised with COVID-19 pandemic. It is noted that Fuel crises, lack of foreign currency, and import issues are the major problems in the current economy. According to past studies, intellectual capital (IC) is considered an efficient and effective resource that is important to achieve higher firm performance (FP) (Dzenopoljac et al., 2017). Meanwhile, the relationship and impact of IC on FP were based on prior studies (Khalique et al., 2020; Wu & Sivalogathasan, 2013). Researchers found different results in different studies. Most researchers found a positive impact of IC on FP (Kehelwalatenna & Gunaratne, 2010), while some scholars found a negative impact of IC on FP (Khalique et al., 2020). Even though some researchers found an insignificant impact among IC and FP (Hashim et al., 2015). Only a few studies were made in Sri Lanka on IC and FP. Wu and Sivalogathasan (2013) also conducted a study to analyze the effect of IC on the organizational performance of the Apparel industry of Sri Lanka. However, their results reveal that the IC positively impacted FP. However, they only take a few apparel industries for sampling. Due to the inclusiveness of results and shortage of study, the problem of this study is "whether there is an impact on IC on FP in non-listed companies in Sri Lanka."

The primary objective of this study was to identify the impact of IC and its components on FP. Meanwhile, research questions were created based on the objective of this study. What is the impact of IC on FP in Sri Lanka's non-listed companies? This is the research question of this study. The researchers have extensively focused on the connection between IC and FP as per the literature review. However, there was a shortage of studies related to IC and FP worldwide and in Sri Lanka. Therefore, this research was empirically significant. In Sri Lanka, Kehelwalatenna & Gunaratne (2010) conducted a study to identify the impact and relationship between IC, FP, and investors' responses. They found a significant positive relationship between IC, FP, and investors' responses. However, they only used selected sectors in Colombo Stock Exchange (CSE) as the sample. It was the main limitation of that study. According to the previous studies, there was a gap in the literature in a few areas of this study. Due to that, this study used Sri Lankan non-listed companies based on the study's objective. Furthermore, this study intends to evaluate the impact of IC and FP within the Sri Lanka context. Additionally, this study mainly focuses on resolving the empirical gap between IC and FP in Sri Lanka by conducting a literature survey. The non-listed private companies registered under the National Chamber of Commerce were taken as the study sample, which,

however, becomes a limitation when generalizing the results of this study. It is better to do research with listed companies. The only questionnaire survey was performed. It is better to include qualitative data collection and analysis.

METHODOLOGY

This study collected primary data through structured questions (questionnaires) using survey methods within a specific period (Saunders et al., 2013). For this survey, non-listed companies registered under the department of register of companies in Sri Lanka are taken as the population. The national chamber of commerce database was used as a sampling frame for this study due to the unavailability database of companies. After removing the listed companies, only 310 private companies were selected. The sample size was calculated using G power software's convenience sampling technique. The sample size was 146, and a 67.33% satisfactory respondent rate was achieved in this study. According to the previous studies, the operationalization of variables of this study is included in table 1.

Table 1 Operationalization of variables

Variables	Abbreviations	Measurement	References
Independent variables Intellectual capital	Human capital (HC) Customer capital (CC) Structural capital (SC) Social capital (SOC) Technological capital (TC) Spiritual capital (SPC)	9 questions were used 7 questions were used 8 questions were used 8 questions were used 9 questions were used 7 questions were used	Khalique et al., (2020)
Dependent variables	Firm performance (FP)	10 questions were used	Khalique et al., (2020)
Control variables	Firm size	2 questions were used	Sardo & Serrasqueiro (2018)

The previous studies and existing literature provide the opportunity to create and investigate the following research hypotheses in this study (Khalique et al., 2020). However, seven hypotheses were developed based on the literature. (H_1) HC positively impacted FP, (H_2) CC positively impacted FP, (H_3) SC positively impacted FP, (H_4) SOC positively impacted FP, (H_5) TC is positively impact FP, (H_6) SPC positively impacted FP, and (H_7) IC is positively impacted to FP.

In this study, the primary source of data was used. All the data were in the form of a questionnaire. Furthermore, the statistical package social science (SPSS) was used to measure correlation and descriptive statistics. Not only that, smart partial least squares (PLS) 3 software was used to measure the proposed hypothesis using the structural model and measurement model of this study. Construct reliability, convergent validity, and discriminant validity were tested under the measurement model. Path coefficients r squared, and f squared were measured under the structural model. There were 59 latent variables included in the structural model.

Therefore, Smart PLS software is considered the most suitable method for measuring complex models.

RESULTS AND DISCUSSION

HC, CC, SC, SOC, TC, and SPC are considered the independent variables, and FP thought as the dependent variable of the descriptive statistics. SPC had the highest standard deviation, while CC had the lowest standard deviation. In addition, CC had the highest mean value, and TC had the lowest mean value of the results of descriptive statistics. According to the Pearson correlation analysis, a strong correlation can be seen between FP HC and TC. However, there was a weak correlation between FP with CC and SPC. Not only that, there was a moderate impact among SOC and FP. The results of the measurement model achieved the required construct validity through composite reliability and individual factor loadings. In addition, convergent validity was achieved through the required average variance extracted from this study, and discriminant validity was achieved through the required minimum Fornell-Larcker criterion values. Therefore, the result of the measurement model of this study was statically significant. The findings of the structural model are interpreted in below table 2.

Table 2 Summary of findings in structural model

	β value	Standard deviation	t Statistics	p Values	F squared	R^2
CC -> FP	0.140	0.052	2.690	0.007	0.099	0.899
HC -> FP	0.105	0.056	1.875	0.061	0.046	
SOC -> FP	0.078	0.053	1.477	0.140	0.038	
SPC -> FP	0.321	0.053	6.080	0.000	0.737	
SC-> FP	0.427	0.047	8.984	0.000	1.047	
TC -> FP	0.184	0.042	4.378	0.000	0.191	

Source: Constructed based on the results of the structural models

According to R^2, 89.9% change was explained by sub-variables of IC. According to the results of the structural model of this study, a significant impact can be identified among CC, SC, TC, SPC, and IC on FP. Therefore, the hypotheses H_2, H_4, H_5, H_6, and H_7 were accepted. In addition, an insignificant impact can be identified among HC and SOC on FP. Therefore, hypotheses H_1 and H_3 were not accepted. Unqualified and inexperienced employees are the primary factors that reduce the level of HC, and lack of social programs and lack of collaboration among employees are the reasons which tend to reduce the SOC. Due to that, HC and SOC have no significant impacts on FP. This result was consistent with previous studies, such as (by Hashim et al., 2015). Although CC, SC, TC, SPC, and IC significantly positively impacted FP. Respectively those results were consistent with the previous studies' results, namely (Khalique et al., 2020; Wu & Sivalogathasan, 2013; Ramayah et al., 2011; Hashim et al., 2015; Kehelwalatenna & Gunaratne, 2010).

CONCLUSIONS AND IMPLICATIONS

The analysis results provided a good understanding of the relationship and impact among each variable. The first result demonstrates the impact on IC and FP. The second result interprets the relationship between each component of IC and FP. According to the results of this study, only HC and SOC had an insignificant impact on FP. All other capitals had a significant positive effect on FP. According to the results of these studies, each capital included under IC played a crucial role in the value creation process. Due to the unavailability of a database of companies, only registered private companies under the National Chamber of Commerce were used. It was considered one of the limitations of the data collection of this study. In addition, this study provides a good platform for theory development, model creation, and policy development related to the IC and its components. This study provides knowledge to managers, entrepreneurs, and policymakers to increase the competitive advantage by efficiently utilizing the IC and its components. Arrangement of seminars, flexible working time, and incentives are activities that can minimize the drawbacks of the HC. Then, it helps to create employee productivity. As a result of the higher employee productivity, the FP tends to increase in the future. Subsequently, Policy makers can impose a new policy to increase the wage level of the employees. Then it will be affected to create of HC within the organization. This study was restricted to registered companies in the National Chamber of Commerce. But future researchers must cover all the companies in Sri Lanka as their population. Future researchers can take samples from particular business enterprises and international chambers of commerce. Then it will help to increase the sample size of future research. Due to that, future results will be more efficient and effective in understanding IC and its components with this study results.

Keywords: Firm performance, integrated intellectual capital model, intellectual capital

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