DOI: http://doi.org/10.4038/jbt.v4i1-2.41

ISSN 2738-2028 (Online) | Vol. 4 | No. 1 & 2 | 2020 January & July

JBT

Journal of Business and Technology

International peer-reviewed journal | Publish semi-annually

Impact of Labor Costs and Investment in Human Capital on Financial Performance: Evidence from Listed Companies in Sri Lanka

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Abstract

The wealth of a company depends on physical assets and intangible assets. The objective of this study is to identify the impact of labor costs and investment in human capital on the financial performance of listed companies in Sri Lanka. The study is based on secondary data and collected from published annual reports of the selected listed companies in Sri Lanka over the period of 2014 and 2018. The sample consists of fifty-nine (59) companies selected using stratified sampling covering both high and low market capitalization companies in each sector for a period of five (05) years. Labor cost, Investment in human Capital, Return on Assets (ROA) and Earning per share are the variables included in the study. Findings proved that there is a significant positive impact of average Labor Cost on ROA and there is a weak positive correlation between earning per share and average labour cost. Companies with high market capitalization show a moderate positive correlation and companies with low market capitalization are not statistically significant. This study concluded that labour cost and investment in human capital have a positive impact on the financial performance of Sri Lankan listed companies and this relationship is varied based on market capitalization. So, the efforts taken by companies to improve human capital is encouraging and those may directly influence the value creation process of an organization.

Keywords: *Human capital, Intangible assets, Investment, Labor cost*

Introduction

Companies earn profit and maintain their existence within the present economy merely depending upon the intangible assets or intellectual assets. Through intellectual capital, the firms are able to quickly adapt to the changes and remain competitive in the markets. Intellectual capital has increasingly become a source of competitive advantage due to innovation (Obeidat et al., 2017). The Organization for Economic Co-operation and Development (OECD) (1996) defined the knowledge economy as an economy during which the assembly, distribution and use of information is that the main driver of growth, wealth creation and employment across all industries and not only those industries classified as high-tech or knowledge intensive.

Foray (2006) pointed that knowledge intensive organizations have successfully created and disseminated both information and knowledge in efficient ways. Bontis (1999) stated that human capital is employee-dependent, such as employees' competence, commitment, motivation and loyalty, etc. Contemporary business firms require a higher level of knowledge mainly in terms of competence and skills, a high degree of technological innovation, and a high degree of interaction between personnel and clients to generate competitive differentiation strategies based on the level of service and assistance provided to the clients (Veltri and Silvestri,

2011). Therefore, it is necessary for companies to invest in their development of human capital, organizational processes and corporate knowledge base in order to make competitive advantage sustainable and durable.

In a Malaysian study, Gan and Saleh (2008) found that human capital efficiency (HCE) has great importance in improving the financial performance of companies. According to Perera and Thrikawala (2012), the investment in human capital influences the performance of the companies in Sri Lanka. They further concluded that the investment on human capital (HC) represents only a few percentages on companies' total assets. The companies have not given considerable importance to the investment of HC.

Although many empirical studies have been conducted in the western countries on the subject of investment on human capital, relatively little or very less empirical studies have been conducted regarding this subject in Sri Lanka (Perera and Thrikawala, 2012) and the numerical relationship is rarely studied and the sample of companies selected for previous studies were considerably limited. Thus there is a vital need of studying the impact of human capital on financial performance of Sri Lankan companies and problem of this research is identified as: *What is the impact of labor costs and investment in human capital on financial performance of listed companies in Sri Lanka?*

Therefore, followings questions are addressed in this research.

i. Do labour costs influence on the financial performance of listed companies in Sri Lanka?
ii. Does investments in human capital influence on the financial performance of listed companies in Sri Lanka?
iii. Does the level of market capitalization influence the relationship between human capital and financial performance of listed companies in Sri Lanka?

Research Objectives

i) To study the impact of labor costs on the financial performance of listed companies in Sri Lanka.
ii) To study the impact of investments in human capital on the financial performance of listed companies in Sri Lanka.
iii) To study the impact of the level of market capitalization on the relationship between human capital and the financial performance of listed companies in Sri Lanka.

Review of Literature

The growth of the professional services industry and also the many new knowledge-based firms that have fueled the economic process also reflects the increasing importance of evaluating IC (Bontis, 1999). In Fortune, Thomas Stewart defined Intellectual Capital (IC) as "the intellectual material that has been formalized, captured and leveraged to supply a higher-valued asset." The phenomenon's popularity has even led major accounting firms like Ernst & Young to say that current accounting standards do not capture IC accurately and must therefore be revisited (Bontis, 1999).

Klein and Prusak (1994) contributed to the creation of a universal definition by defining IC as the intellectual material that may be formalized, captured and leveraged to supply the next value asset. Within the same vain, Edvinsson and Malone (1997) defined IC as the knowledge which will be converted into value. Stewart (1997) argued that intellectual resources like knowledge, information, and skill, are the tools for creating wealth and defined IC as the new wealth of organizations. Sullivan (2000, p. 17) defined IC as "knowledge that may be converted into profits". Consistent with Edvinsson and Malone (1997) IC may be defined as the gap that is observed between a firm's book and value. Also, Kok (2007) argued that a technique for determining the intellectual (intangible) assets of a corporation is to check market to value. These arguments have supported the

character of IC. The intellectual assets of an organization are intangible in nature and, thus, do not have a particular shape or an appropriate financial value. They are characterized as "hidden assets", since it's difficult to spot their contribution to a firm and quantify them in a financial statement (Fincham and Roslender, 2003).

The initial usage of the term IC goes back some decades (Bontis, 2001; Kujansivu, 2005). Pulic (2000) proposed the Value-Added Intellectual Capital (VAIC) method to supply information about the value creation efficiency of tangible and intangible assets within a corporation. Rather than valuing the IC of a firm, the VAIC method mainly measures the efficiency of firms' three forms of inputs: physical and financial capital, human capital, and structural capital, namely the Capital Employed Efficiency (VACA), the Human Capital Efficiency (VAHU), and therefore the Structural Capital Efficiency (STVA). In step with Boldizzoni (2008) Human Capital is semantically the mixture of human and capital. HC are often limited to micro (individual) (e.g. personal attributes technical competence and creativity) or macro (organization) levels (e.g. teamwork, healthy work environment). Sveiby (1997) defined HC as "the capacity to act in an exceedingly big variety of situations to make both tangible and intangible assets". Voluntary disclosure of labor cost information is positively related to analyst forecast accuracy. Further tests show that the advantage of voluntary labor cost information is more pronounced for firms with high information uncertainty and for analysts with less firm-specific experience and analysts affiliated with small brokerage houses (Kim et al., 2017).

Most of the researchers who have done research on measuring corporate performance tested with the efficiency of IC have used Return on Assets (ROA), Return on Equity (ROE) and Earning Per Share (EPS) in their researches (Chen et al., 2005, Phusavat et al., 2011, Firer and Williams; 2003, Mondel and Ghosh; 2012, Najibullah; 2005, Ranjani and Jayendrika; 2010). Phusavat et al. (2011) confirmed the relationship between human capital and financial performance in the manufacturing industries in Thailand by measuring Return on Assets (ROA). As a quantitative measurement, Rompho (2017) used the ratio of employee-related expenses to the number of employees which reflects the firm's employee investments. However, results of the study indicated no relationship between human capital level and financial performance in terms of financial performance measured by both Return on Equity (ROE) and price-to-book ratio.

According to the analysis of Mondal and Ghosh (2012), the relationships between the performance of a bank's intellectual capital, and financial performance indicators, namely profitability and productivity, are varied. The results of their study suggest that banks' intellectual capital is a significant factor for competitive advantage. HC in Australia has a greater influence on the value creation capability of the monetary sector. Around two thirds of the sample companies have very low levels of IC efficiency. The performance of varied components useful added intellectual coefficient (VAIC) and overall VAIC varies across all subsectors within the financial sector. As a result of higher level of human capital efficiency, investment companies have high value VAIC, as compared to banks, insurance companies, diversified financials and RIETs. Insurance companies are more focused on physical capital instead of human and structural capital resulting in lower VAIC (Joshi et al., 2013). In a Malaysian study, Gan and Saleh (2008) found that human capital efficiency (HCE) had great importance in improving the financial performance of companies. Phusavat et al. (2011) investigated IC in large manufacturing companies in Thailand and found a positive relationship between company performance and IC. In an Italian study, Veltri and Silvestri (2011) discovered a positive relationship between accounting values and market value on the one hand, and IC and market value on the other. They also found that investors value HCE more than the other components of IC.

Research Methodology

Based on the previous research studies and review of literature, conceptual model (Figure 1) for testing the impact of HC on the

Financial Performance of Listed companies of Sri Lanka was developed. HC (Human Capital) is considered as independent variable of this model and FP (Financial Performance) is the dependent variable. Labor Costs (LC) and Investment in Human Capital (IHC) are considered as the sub variables of Human Capital. There are two FP measures identified as the dependent variables; such as Return on Assets (ROA) and Earning Per Share (EPS). Accordingly, there are two dependent variables incorporated to the conceptual framework to test the FP in two different aspects.

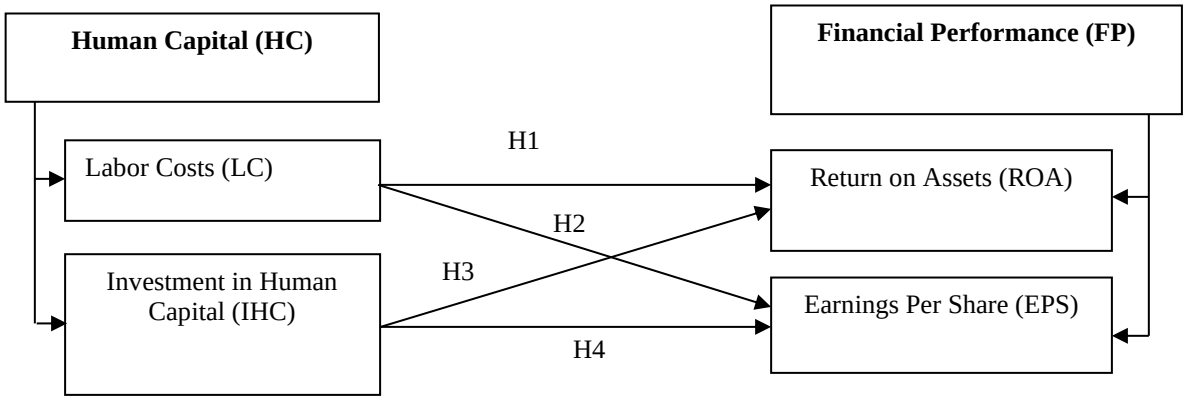

Figure 1. Conceptual Model developed based on literature

H1: *There is a significant impact of Labor Costs (LC) on Return on Assets (ROA) of listed companies in Sri Lanka.*

H2: *There is a significant impact of Labor Costs (LC) on Earning per Share (EPS) of listed companies in Sri Lanka.*

H3: *There is a significant impact of Investment on Human Capital (IHC) on Return on Assets (ROA) of listed companies in Sri Lanka.*

H4: *There is a significant impact of Investment on Human Capital (IHC) on Earning per Share (EPS) of listed companies in Sri Lanka.*

Table 1: Operationalization of Variables

Variable	How to Measure	Literature
Labour Costs	Average labour cost on labor related tasks and activities	Dae-Borg (2009) Bhoite & Shaukat (2017) Perera &Thrikawala (2012)
Investment in Human Capital	Indicator at corporate annual report on training and development activities, health and welfare activities.	Dae-Borg (2009) Hatch & Dyer (2004) Bhoite & Shaukat (2017) Perera &Thrikawala (2012)
Number of employees	Average no of employees of selected company	Dae-Borg (2009) Bhoite & Shaukat (2017) Perera &Thrikawala (2012)

Return on Assets (ROA)	ROA is calculated by dividing a company's net income by total assets.	Firer and Williams (2003) Chen et al. (2005) Kongkiti et al. (2011) Mondel and Ghosh (2012) Perera &Thrikawala (2012)
Earnings per Share (EPS)	Earnings per share is calculated by subtracting preferred dividends from net income and dividing by the weighted average common shares outstanding	Johannes (2014) Wet (2013) Famil et. al (2017)

Source: created, based on literature

The number of Employees were used as a control variable of total labour costs thus, average labour cost (total labour costs divided by number of employees) was used as the independent variable and tested the impact of average labour cost on ROA and EPS. Also, market capitalization was used to select the companies for the sample and accordingly, the sample consists of the companies with a high market capitalization as well as a low market capitalization.

The population includes all the companies listed in the Colombo stock exchange by 31st of March 2019. Considering the market capitalization, fifty-nine (59) companies including two companies with highest market capitalization and the two companies with lowest market capitalization in each sector were selected for the study during the period of 2014-2018. Number of observations of the study is two hundred and ninety-five (295). Secondary data and company annual reports of all selected companies and other publications were used to collect the data.

Data Analysis and Discussion

Table 2 presents the results of correlation analysis among HC, LC and FP (ROA and EPS). The correlation coefficient between average labour costs and investment in human capital on ROA are 0.419 and 0.217, respectively. Thus, there is a positive correlation between average labour costs and investment in human capital on ROA. Correlation coefficients of both variables with ROA are statistically significant. The correlation among EPS and average labour costs is 0.023 which presents a weak positive relationship. However, investment in human capital has a weak negative relationship with EPS which is -0.096. However, both correlation values are not statistically significant.

Table 2: Correlations Analysis – HC/LC vs FP

Indicators	Return on Assets (in %)-ROA		Earnings per Share EPS	
Average Labour Cost (ALC)	Pearson Correlation	.419**	Pearson Correlation	.023
	Sig. (2-tailed)	.000	Sig. (2-tailed)	.689
Investment in Human Capital (IHC)	Pearson Correlation	.217**	Pearson Correlation	-.096
	Sig. (2-tailed)	.000	Sig. (2-tailed)	.098

Source: Secondary data

As per the findings of LC - ROA model (in table 3), the adjusted R^2 value which represents the coefficient of determination is 0.173 which presents that 17% of ROA is determined by ALC. The overall model is statistically significant as the probability value is almost zero which less than 0.05 and the coefficient is statistically significant.

Table 03: Regression Output of LC – ROA

Model

R	R Square	Adjusted R Square	Std. Error of the Estimate
.419	.175	.173	11.613

Model Coefficients		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.029	1.04		.028	.978
	Average Labour Cost	5.72	.000	.419	7.89	**.000**

Table 04: Regression output of IHC – ROA Model

	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.217	.047	.044	12.483

Model Coefficients	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.565	1.441		1.085	.279
Investment in Human Capital	6.357	1.669	.217	3.809	**.000**

Table 05: Regression Output of LC – EPS Model

R	R Square	Adjusted R Square	Std. Error of the Estimate
.023	.001	-.003	50.77

Model Coefficients		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.492	4.563		2.957	.003
	Average Labour Cost	1.271	.000	.023	.401	**.689**

Table 06: Regression output of IHC - EPS Model

R	R Square	Adjusted R Square	Std. Error of the Estimate
.096	.009	.006	50.553

Model Coefficients		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	23.250	5.837		3.983	.000
	Average Labour Cost	-11.214	6.760	-.096	-1.659	**.098**

There is a weak positive correlation between earning per share and average labour cost. The adjusted R^2 value, which represent the coefficient of determination, is -0.003 and it indicates that EPS is not determined by ALC. The overall model is also not statistically significant as the probability value is 0.689 which greater than 0.05 (table 04). The adjusted R2 value which represents the coefficient of determination is 0.044 and it presents that only 04% of ROA is determined by IHC. There is a weak positive correlation between ROA and IHC. The overall model is statistically significant as the probability value is almost zero which less than 0.05. There is a weak positive correlation between earning per share and average labour cost. The adjusted R2 value which represents the coefficient of determination is 0.006 and it indicates that 0.06% of EPS is explained by IHC which generally a very small percentage. The overall model is also not statistically

significant as the probability value is 0.098 which greater than 0.05 (Table 05 and 06).

Findings proved that there is a significant positive impact of ALC on ROA. Thus hypothesis 01 is accepted with statistical evidence. So, it can be concluded that when companies increase the spending on employees; for example, for their wages and salaries, bonuses, obligatory payments, gratuity and other labour costs etc. It positively affects the financial performance of the organization as these factors motivate them to work better and make them more productive. As there is no significant impact the hypothesis 02 is rejected in this study. So, the findings indicate that ALC does not significantly affect the EPS of companies, the researcher should conclude that expenses made on operational and management activities of employees does not affect the earning per share of companies. This may imply that than the value generated from human capital of the organization there can be number of other factors that affect the EPS. As the findings are statistically significant, hypothesis 03 is accepted. Similar to the conclusion made with the hypothesis 01, it is evident that investment on human capital especially on training and development activities by the organizations has a significant relationship with the ROA. Thus, researcher can conclude that organizations should invest in training and development of employees in order to enhance the performance of the organization. As the findings are not statistically significant hypothesis 04 is rejected. As similar to the conclusion made at hypothesis 02, there is no significant impact on investment in human capital i.e investment on training and development activities on the EPS of the Sri Lankan listed companies (Table 7).

Table 7 : Summary of Hypotheses Testing

Hypotheses	Result	Decision
H1: There is a significant impact of Labor Costs (LC) on Return on Assets (ROA) of listed companies in Sri Lanka.	Statistically Significant	Accepted
H2: There is a significant impact of Labor Costs (LC) on Earning per Share (EPS) of listed companies in Sri Lanka.	Statistically Insignificant	Rejected
H3: There is a significant impact of Investment on Human Capital (IHC) on Return on Assets (ROA) of listed companies in Sri Lanka.	Statistically Significant	Accepted
H4: There is a significant impact of Investment on Human Capital (IHC) on Earning per Share (EPS) of listed companies in Sri Lanka.	Statistically Insignificant	Rejected

When considering the results of hypotheses testing H1 and H3 are accepted and H2 and H4 are rejected as the findings are not statistically significant. Accordingly, the researcher has to consider on answering research question of this study while achieving the objectives based on the results of hypotheses testing.

Most of the past researchers who conducted research on human capital and financial performance have used ROA to measure the

financial performance of organizations (Firer and Williams, 2003; Chen et al., 2005; Kongkiti et al., 2011; Mondel and Ghosh, 2012; Perera & Thrikawala, 2012). Thus, among the dependent variables, ROA can be considered as the commonly used measurement of financial performance. The findings of the study revealed that investment in human capital influences the performance of the companies in Sri Lanka. These findings go in line with the findings of the Clarke M., et al in 2010 and Segal G., et al in 2009.

Table 8 presents the regression findings of the sample companies with high and low market capitalization. Further objective 03 aims to study the impact of the level of market capitalization on the relationship between human capital and financial performance of listed companies in Sri Lanka. Accordingly, correlation and regression analysis were conducted separately for the companies with high market capitalization and for the companies with low market capitalization. The researcher wanted to test and understand whether there is a significant difference between the results for two different segments based on their market capitalization. With the correlation and regression findings for companies with high market capitalization is observed that all the hypotheses are achieved as there are statistically significant impacts of independent and dependent variables. Correlation coefficients of all four models such as ALC – ROA, IHC – ROA, ALC – EPS and IHC – EPS present a moderate positive correlation, thus it can be concluded that human capital cause to increase the financial performance of Sri Lankan companies.

When analyzing the companies with low market capitalization, researchers could observe debatable findings as all the regression models are not statistically significant. Regression coefficients are negative in three models (ALC – ROA, ALC – EPS and IHC – EPS) and it is positive for one model (IHC – ROA) but each variable is statistically insignificant. So, researcher had to reject all the hypotheses with regard to companies with low market capitalization. These findings imply that listed companies with low market capitalization have a considerably lower level of financial performance and also human capital does not affect considerably for the performance of those companies. There can be number of reasons behind these findings. As the third objective of this study is to identify the impact of human capital on the financial performance of companies based on the level of market capitalization; it is evident that companies with high market capitalization has a significant impact while companies with low market capitalization does not have a

Table 8: High and Low market comparison - Source: Compiled from data analysis

Market Cap	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig
High	*LC – ROA*	.486	.236	.231	11.645087	.000
Low		.027	.001	-.006	10.820295	.743
High	*LC – EPS*	.258	.067	.060	24.24737	.018
Low		.116	.013	.006	67.60428	.116
High	*IHC – ROA*	.193	.037	.031	13.072559	.000
Low		.102	.010	.004	10.767567	.221
High	*IHC – EPS*	.240	.058	.051	24.36606	.003
Low		.102	.010	.004	10.767	.461

significant impact on their performance. So, the level of market capitalization has a mediating effect on the financial performance of Sri Lankan listed companies with regard to the support and contribution of human capital of those companies. As per the findings of LC - ROA model for the companies with high market capitalization, correlation value is 0.486 and it indicates that there is a moderately positive correlation between variables. The adjusted R^2 value which represents the coefficient of determination is 0.231 and it presents that 23% of ROA is determined by ALC of well performing companies. The overall model is statistically significant as the probability value is almost zero which is less than 0.05. As per the findings of LC – EPS model for the companies with high market capitalization, correlation value is 0.258 and it indicates that there is a weak positive correlation between variables. The adjusted R^2 value which represent the coefficient of determination is 0.06 which presents that 06% of EPS is determined by ALC of well performing companies. The overall model is statistically significant as the probability value is almost zero and is less than 0.05.

Findings of ROA – IHC model for the companies with high market capitalization presents a correlation value of 0.193 and it is a weak positive relationship and IHC - EPS model for the companies with high market capitalization presents a weak positive correlation between variables which is 0.240. The regression findings of ROA – ALC model for the companies with low market capitalization, the correlation value is 0.027 which is a very low relationship. The adjusted R^2 value which represents the coefficient of determination is -0.006 and it presents that there is no relationship between ROA and ALC of companies with low market capitalization.

EPS – ALC model for the companies with low market capitalization, the correlation value is 0.116 and the adjusted R^2 is 0.006 which is almost zero and it indicates that there is no correlation between variables. The overall model is also not statistically significant as the probability value is 0.166. IHC - ROA model for the companies with low market capitalization, the correlation value for the model is 0.102 which is a very weak correlation between variables and the adjusted R^2 value is .004 and it is almost zero, so the researcher can interpret that there is no relationship between investment in human capital and ROA of Sri Lankan companies with low market capitalization. EPS – IHC model for the companies with low market capitalization, the correlation value is 0.102 and the adjusted R^2 is 0.004 which is almost zero, so the correlation presents that there is no relationship between variables. The overall model is also not statistically significant as the probability value is 0.461 which is greater than 0.05.

Conclusion

As it was observed that labour cost and investment in human capital enhance the extent of ROA of companies' researcher can decide that, in Sri Lankan listed companies the efficiency of utilizing human capital is at a satisfactory level. Thus, Sri Lankan companies may employ different strategies to reinforce the invested capital in human capital. The findings of this study provide important insights on the actions taken by companies in managing human capital like their effort of employing high skilled labour in most of the positions. Further with the improvement of information technology and other supporting services, companies may tend to produce enough training and development facilities for managerial and operational level employees. Accordingly, the allocation of funds on enhancing the efficiency and productivity of human capital of companies are at a substantial level. For theoretical implications, it is important to notice that ROA and EPS ratios are embedded during a firm's tangible assets (e.g., land, factory, machinery, inventory, and working capital) and are a part of a firm's products and services delivered to its customers. Therefore, HC cannot be separately considered from revenue generation and a firm's long-term profitability. Further for managerial implications, the findings imply that Sri Lankan listed companies employ a substantial level of human capital and also it is a big impact on financial performance.

However, the extent of expenses and investment made by companies are at different levels when comparing among companies. The findings of this study have implications for Sri Lankan listed companies because it provides them with a chance to critically analyze the contribution of human capital to their organization and can aid the look of strategies for enhanced corporate performance. This can also help the management of companies in all the sectors, especially those in finance and leasing businesses, knowledge-based industries to grasp the contributions of varied components of human capital to their business growth. This study will help decision makers remember of the importance of human capital as a key factor that may enhance a firm's ability to take care of their competitive position.

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