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The Sri Lankan Journal of Banking and Finance (SLJBF) is a referred Journal bi-annually published research papers and scholarly work by the Department of Banking and Finance, Wayamba University of Sri Lanka. The main objective of the SLJBF is to publish scientific research findings that address issues and developments related to economics in general and money, banking, financial markets in particular at both national and international level. All research articles submitted are double blind reviewed prior to publishing. Views expressed in the research articles are not the views of the Department of Banking and Finance, Wayamba University of Sri Lanka or the Editorial Board.

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Department of Banking and Finance

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Editorial Preface

We are pleased to present Volume 4(2) of the Sri Lankan Journal of Banking and Finance (SLJBF), a refereed journal of Banking and Finance published by the Department of Banking and Finance, Wayamba University of Sri Lanka. SLJBF provides a unique platform for researchers, academicians, professionals, and research students to impart and share knowledge in the form of high-quality research papers to infuse innovative systems and methods to the economy and finance as a whole. In line with that SLJBF invites you to join with us by writing quality manuscripts in the discipline of economics, banking and finance.

We received a good response for the call for papers and out of the paper received five papers selected for the publication through the rigorous blind review process. We wish to thank all the authors who contributed to this issue by submitting their novel research findings. The volume 4(2) of SLJBF deals with timely important topics, COVID-19 Pandemic and its Potential Impact on Informal Sector Workers in Sri Lanka, Finech and Financial Inclusion in The Age of COVID- 19, Financial Performance of Life Insurance Companies in Sri Lanka, Effect of Income Source Diversification on Financial Performance, Impact of Corporate Governance on Capital Structure Dynamics Thus, the journal has widened its scope to appeal to a wider readership with varied interest and needs.

On this occasion, I would like to extend my sincere thanks to the dedicated panel of distinguished reviewers, members of the editorial advisory board, members of the editorial board and the assistant editors for their unstinting and voluntary contribution to make this issue a success. The continued support of the governing body of the Wayamba University of Sri Lanka in this endeavor is also acknowledged.

Prof. R.A Rathanasiri
Editor in Chief
Sri Lankan Journal of Banking and Finance
Department of Banking and Finance, Wayamba University of Sri Lanka

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Aims and Scope

The Sri Lankan Journal of Banking and Finance (SLJBF) is a refereed Journal bi-annually published research papers and scholarly work by the Department of Banking and Finance, Wayamba University of Sri Lanka. Sri Lankan Journal of Banking and Finance (SLJBF) publishes theoretical and empirical papers spanning all the major research fields in economics, banking and finance The aim of the SLJBF is to bringing the gap existing in the theory and practice of Economics, Banking and Finance by encouraging researchers, academicians, professionals, and research students to impart and share knowledge in the form of high quality research papers to infuse innovative system and methods to the economic and financial system as a whole. Thus, the journal's emphasis is on theoretical and empirical developments and policy-oriented research in economics, banking and finance.

Core Principles

- Publication in the journal of banking and finance is based upon the editorial criteria cited and the evaluation of the reviewers (each manuscript will be sent two reviewers);
- Priority is given for novelty, originality, and to the extent of contribution that would make to the particular field.
- Conceptual papers based upon current theory and empirical findings and contribute to the development of theory in the domain of Banking and Economics are also welcome.

The journal welcomes and publishes original articles, literature review articles and perspectives and book reviews describing original research in the fields of economics, banking and finance. The core focus areas of the journal include;

- Financial Intermediation
- Bank Solvency and Capital Structure
- Banking Efficiency
- Bank Failure and Financial crisis
- Behavioral Finance

- Corporate Finance
- Corporate Governance and Ethics
- Credit Rating
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COVID-19PANDEMIC AND ITS POTENTIAL IMPACT ON INFORMAL SECTOR WORKERS: EVIDENCE FROM SRI LANKA

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ABSTRACT

The COVID-19pandemic and associated countermeasures have caused a number of short- and long-term socio-economic consequences. This study aims at evaluating the potential impact of the above on informal workers in Sri Lanka. By employing both descriptive and regression techniques and nationally representative labour force survey data, a number of potential impacts were derived and discussed. Informal employees account for nearly half of the total informal workforce and majority of them employed in sectors whose labour demand is highly elastic. There is a wage penalty factor for informal employees and the wage penalty factor is much higher for low-skilled informal employees than that of their high-skilled counterparts. Above major findings imply that informal employees are at a higher risk towards losing jobs and earnings due to the pandemic related economic shock. Some of those impacts are already visible in recent data. Appropriate policy measures are urgently needed in improving labour market conditions of the above group.

Keywords – Covid-19, Labour Market, Informal employees, Impact, Sri Lanka

1. INTRODUCTION

The coronavirus (COVID-19) has shaken the whole social fabric of our world and, as of mid-June 2021, 178 million infected cases and around 4 million deaths have been reported[1]. In Sri Lanka, the virus hit at three waves, as of now, around 3.3 million of infected cases and 2435 deaths have been reported (Epidemiology Unit of the Ministry of Health, 2021). The first confirmed case of COVID-19reported in the early part of 2020 and strict lockdown measures along with various other interventions brought the spread of the virus under control by mid-2020. However, the country witnessed the second wave during the latter part of 2020, in contrast to the first one, the infected cases were found in various parts of the country. The third wave, the worst in terms of its spread and casualties, struck quietly unexpectedly at the beginning of the second quarter of 2021. Throughout the pandemic period, some of the essential services, such as public health, utility services, duties of police and armed forces, were provided while activities related to agriculture and exporting were mostly allowed to perform. In most of the other sectors, production and distribution activities were mostly discouraged during the heights of the respective waves and people were encouraged to use online means of performing activities. During the intervals between respective waves, economic activities almost returned to normal, however, the length of such intervals remained very short.

COVID-19 induced travel restrictions and social distancing disturbed the forces of supply of and demand for labour in the economy. In the short-run, it could generally be expected that both labour demand and supply in the majority of economic sectors decline during the COVID-19 pandemic. As a result, the pandemic may have had an impact on the level of labour force participation, employment, unemployment, wages, and informality in the labour market. In addition, it is also possible that workers moving from the sectors whose activities are largely disturbed from the pandemic to the sectors that were mostly allowed amidst the pandemic environment. In the context of Sri Lanka, this paper aims at analysing some of the short-run labour market effects of Covid-19. In recent months, a number of studies have attempted to analyse the effect of COVID-19 on labour markets, in particular, in developed countries. Nevertheless, a limited number of attempts have been made in investigating the short-run effects of COVID-19 on the labour markets in developing countries. It is expected that this study will be an important addition to this limited literature. In particular, this study may be useful in understanding the potential employment and wage effects due to COVID-19 induced economic shock. A brief review on literature in section two will be followed by a discussion on

[1]* Department of Economics, University of Colombo, Email: pmdunu@yahoo.com
As per https://www.worldometers.info/coronavirus/, accessed on 01st July 2021.

methodology and data in section three. The first part of the fourth section will discuss some of the policy initiatives introduced by the government in tackling the negative consequences due to COVID-19 related travel restrictions and social distancing measures while the second half present a discussion of the data on recent changes in the labour market. The final section makes some concluding remarks along with some recommendations for consideration.

2. LITERATURE REVIEW

2.1 Nature of informal employment

According to Guha-Khasnobis et al., (2006), writings on the dual nature of the economy date back to the 1940s. In the field of Economics, Lewis (1954) and Harris and Todaro (1970) argue that the economy comprises two sectors, namely an urban-sector and a rural-sector. The characteristics of the rural sector closely resembled the informal sector; however, the word "informal" employment was firstly used in the report documented by the International Labour Organization (ILO) Employment Mission in Kenya (Guha-Khasnobis et al., 2006). In subsequent years, one could observe that the term "informal" employment has been used in heterogeneous contexts with a multiplicity of different and often competing meanings (Guha-Khasnobis et al., 2006). The lack of clear-cut conceptualization has led to difficulties in defining the term as well as measuring it. According to WTO & ILO (2009), the existing ideas on informal employment could be categorized into three main schools of thoughts: (i) the dualist school, (ii) the structuralist school, and (iii) the legalist school. The dualist school views the informal sector as an inferior segment of a dual labor market with no direct links to the formal sector while the structuralist school defines it as consisting of small firms and unregistered workers subordinated to large capitalist firms. In contrast to both these views, the legalist school characterizes informal sector as an economic segment consisting of micro-entrepreneurs preferring to operate informally to avoid the costs associated with registration and related business and labor regulations (Fields, 2005).

Based on the idea of multi-segmented labor markets, there emerged an integrated approach for conceptualizing informal employment (Fields, 2005). This new approach encompasses the important elements of the aforementioned three schools. Accordingly, the lower segment is dominated by households engaging in survival activities with few links to the formal economy, as the dualists suggest; the upper segment with micro-entrepreneurs who choose to avoid taxes and regulations, as the legalists suggest; and the intermediate

segment with micro-firms and workers subordinated to larger firms, along the lines suggested by the structuralists[2].

2.2 Covid-19 and its impact on informal employment

Lee et. al., (2020) argue unemployment does not reflect the actual scale of disruption for workers in the case of COVID-19 pandemic due to few reasons. First, many keep jobs but are not working, hence, they are counted as employed. Second, some have lost their jobs, but do not engage in searching for jobs due to low probability of finding a job, and they are counted as inactive. Finally, some are working fewer hours than previously, and are counted as employed though their actual earnings remain low. Moreover, the authors argue that the impact of COVID-19 have been disproportionate, particularly making certain segments of the workforce even more vulnerable. In particular, informal workers, youth, and females are at a disadvantage position compared to the other workers. Lemieux, et.al., (2020) found that COVID-19 caused a 32 per cent decline in aggregate weekly work hours among workers aged 20-64 during February 2020 – April 2020 in the Canadian labour market. Moreover, the authors found that half of the total job losses are attributed to workers in the bottom earnings quartile. Beland et. al., (2020) examined the short-term effect of COVID-19 on Self-employed workers in Canada for the period of February 2020-May 2020. The authors found that COVID-19 had a negative impact on entrepreneurship, in particular, a sizable share of small businesses run by women, less educated persons, in the sectors such as art, culture, & recreation and sales and service occupations went out of business. Webster et. al., (2020), using enterprise surveys conducted by the World Bank, examined the impact of COVID-19 on the labour market in Southern European countries. The authors found that despite various measures adopted by governments in supporting firms, a sizable share of small firms closed down in sectors such as hospitality and non-essential travel and retail services. *Balde* et. al., (2020) examined the impact of COVID-19 on the informal sector in three Sub-Saharan countries; namely Burkina Faso, Mali, and Senegal. The authors found that COVID-19 had a severe effect on workers in the informal sector. In particular, a sizable share of informal workers working in high-risk sectors lost their jobs and the

[2] Over the years, the ILO along with national statistical agencies has made tireless efforts in developing a definition for the informal sector for the purpose of data collection. The enterprise-based definition of employment in the informal sector, adopted in 15th of ICLS, combined with a broader, job-based concept of informal employment adopted at the 17th ICLS. Accordingly, the informal sector includes: (i) employments in informal enterprises (small-unregistered or unincorporated) including employers, employees, own-account operators, and unpaid family workers) and (ii) informal employment outside the informal sector. Outside the informal sector refers to the formal sector and the household economy.

other informal workers witnessed a decline in their earnings. Francis-Devine and Powell (2021) found, during the pandemic period, that employment levels for those age 16-24 and 65+ have fallen by 8 per cent in the United Kingdom. This is much higher compared to 0.4 per cent decline in employment for people aged 25-64. The authors found the ethnic minority groups, females, and low paid workers have severely affected due to the COVID-19 pandemic. Djoumessi (2021) found that a larger proportion of workers suffered a wage cut while around one-third witnessed a temporary job suspension in Cameroon. In contrast, around 7 per cent of workers in the sample of 1,310. Masri, et. al., (2021) examined the short-term impact of COVID-19 on Labour market, poverty, and inequality in Brazil. The authors found that sector most susceptible to the shock because they are more contact-intensive and less tele-workable, such as construction, domestic service, and hospitality suffered large job losses and reduction in hours in Brazil. In addition, their analyses indicated the low-income workers experience the largest decline in earnings. Schotte et. al., (2021), using a difference-in-difference design, found that informal self-employed persons were most often forced to stop their activities during the lockdown. Similarly, recovery of employment is somewhat slower for women than that of for men. In addition, there is a persistent negative effect on working hours and earnings related to self-employed workers and women. The International Labour Organization (ILO, 2020) examined the effect of COVID-19 on labour market in the Philippines and predicted that one quarter of the total employment in the Philippines is likely to face job disruption due to the COVID-19 pandemic. Moreover, the study found that some of the sectors that display medium to high risk of being disrupted by COVID-19 also have large shares of workers in occupations likely to be disrupted by digitalization. The ILO (2020) conducted that the negative labour market impact of the pandemic is more pronounced among vulnerable and part-time workers, young people, overseas workers, and women. Kapoor (2020) argues that, in the context of the labour market in India, a sizable share of informal workers could be affected due to the dual shock of pandemic and lockdown. In particular, the author argues that COVID-19 could affect most informal workers in terms of income and job losses. Barker et. al., (2020) examined the impact of COVID-19on labour migration in Bangladesh and Nepal and found that rate of out migration and remittance per migrant has declined during the pandemic period. The author argued that these effects could lead to greater prevalence of food insecurity among migrant households.

2.3 Informal employment in Sri Lanka's labour market

A number of studies have examined nature, magnitude and determinants of informal employment in Sri Lanka (Gunatilake, 2008). Informal employment accounts for over two-third of the total employed persons in Sri Lanka (DCS, 2016; Gunatilake, 2008). Reflecting the overall weaknesses of the economic

structure, the share of informal employment slightly declined during the last decade[3]. Compared to females, there is a higher probability that males take up informal employment, party as the last resort (Gunatilake, 2008). For instance, around 63 per cent of total employed males hold informal employment as against the 54 per cent of total female employed workers[4]. Around a half of the total employed persons in the non-agriculture sector engages in informal economic activities[5]. In terms of businesses, there are over 950 thousand non-agriculture businesses operating informally and the trade sector accounts for over 40 per cent of total businesses in the informal sector, and the services sector accounts for 33 per cent (DCS, 2016). It is interesting to note that 75 percent of the informal businesses are located in the rural sector, indicating that *informality is largely a rural phenomenon in Sri Lanka*. Probability to engage in informal employment is higher among individuals whose human capital stock remains low, in terms of education, training, and language ability. Moreover, members belong to certain ethnic groups and vulnerable groups also engage in informal employment (Gunatilake, 2008). Given the sheer size of the informal employment in the total workforce and the nature of the individuals involved in informal employment in Sri Lanka's labour market, it would be useful in analysing the potential impact of COVID-19 for informing policy makers for possible policy interventions.

3. RESEARCH METHODOLOGY

3.1 Mean and quintile regression

In the literature, it is argued that informal wage employees are exploited in the job market (Badaoui et. al., 2007). In particular, an informal wage employee is paid a salary which is lower than what is paid for a formal wage employee even if both workers are identical in all observable characteristics except the status of the job, i.e., informal vs. formal. The size of the wage differentials, however, is determined by labour market conditions including labour market institutions. In the context of Sri Lanka, this study employs mean and quintile regression approaches to estimate wage differentials and the following section briefly outline the above two regression approaches adopted in investigating wage penalty associated with an informal employee.

Following Mincer (1973) and subsequent literature;

[3] The share declined from 63 per cent in 2006 to 60 per cent 2016.

[4] In terms of absolute numbers, 4.8 million workers engage in informal employment in Sri Lanka, out of which 3.3 million are male.

[5] In the agriculture sector, 87 per cent of total employed workers are in informal sector. One of the main reasons for this is that agricultural activities in Sri Lanka are mostly small-scale.

$$y = X\beta + \varepsilon \quad (1)$$

In eq. (2), y is a vector, the dependent variable, representing log monthly wage, and X is a matrix consisting of variables such as age, age-square, highest level of education, gender, ethnicity, and marital status. The matrix X also contains a dummy vector that takes 1 if a worker is a wage employee holding an informal job, and zero otherwise and ε is the iid disturbance term.

As Buchinsky (1994) suggests, mean regression techniques have never been satisfactory approaches when considering heterogeneous populations. To consider the potential heterogeneous impacts, we specify the q^{th} – quintile ($0< q<1$) of conditional distribution of the dependent variable, given a set of variables Xs, as follows:

$$y_q = X\beta_q + \varepsilon_q \quad (2)$$

Cameron and Trivedi (2009) show that estimation of equation (1) based on the q^{th} quantile regression involves minimizing the absolute value of the residual using the following objective function:

$$Q_N(\beta_q) = \sum_{i=1}^{N} \left[\left|y - X^{\iota}\beta_q\right|\right] = min\left[\sum_{i:y\geq X^{\iota}\beta} q\left|y - X^{\iota}\beta_q\right| + \sum_{i:y<X^{\iota}\beta} 1-q\left|y - X^{\iota}\beta_q\right|\right] \quad (3)$$

This study makes use of Labour Force Survey (LFS) 2018, collected and disseminated by the Department of Census and Statistics (DCS) of Sri Lanka, for estimating above regression models[6]. The LFS is a nationally representative survey which collects data on a quarterly basis and covers around 25,000 households in a year. It collects demographic and education related data for all the individuals residing in a selected household whereas labour market related data are collected for people who are age 15 and above. It covers areas such as labour force participation, employment, unemployment, underemployment, labour market informality, social security contribution, secondary job holdings, wages & remuneration, and training. According to the DCS, informal employment consists of (a) *all unpaid family workers,* (b) *all employers and own account workers in informal sector,* (c) *all paid employees who do not have a permanent employer,* and (d) a*ll paid employees whose employers are not contributing to pension scheme or provident fund on their behalf.* Accordingly, the last two categories fall into the studyarea of this study; i.e., paid employees

[6] LFS 2018 was used for the analysis since micro data for 2019 was not accessible at the time of the research.

who either do not have an employer and employees whose employers are not contributing to social security schemes such as pension and provident fund. Table 1 provides the variables employed in the regression framework, along with how such variables are defined in this study.

Table 1: Variables and Definitions

Name of the variable	*Definition*	*Source*
Log hourly wage	Hourly wage: Monthly gross wage / (number of usual hours of work per week * 4.2)	Labour Force Survey 2018
Informality dummy	Assign 1 If a worker holds an informal employment, 0 otherwise	
Education level dummy		
Less than Grade 8	Assign 1 if a worker has completed less than Grade 8, 0 otherwise	
Grade.8-10	Assign 1 if a worker has completed Grade 8 or above, but not completed GCE O/L, 0 otherwise	
GCE O/L passed	Assign 1 if a worker has passed GCE O/L, but not completed GCE A/L, 0 otherwise	
GCE A/L passed	Assign 1 if a worker has passed GCE A/L, but not completed a degree, 0 otherwise	
Degree & above	Assign 1 if a worker has completed a degree or above, 0 otherwise	
Gender dummy	Assign 1 if a worker is a male, 0 otherwise	
Age	Age in years	
Ethnicity dummy		
Sinhala	Assign 1 if a worker belongs to Sinhala ethnic group, 0 otherwise	
Marital dummy		
Single	Assign 1 if a worker is a single, 0 otherwise	

Source: Author's construction

3.2 Employment elasticity

In the empirical literature, there are two methods that have generally been used for calculation of employment elasticities. These are based on a compound annual growth rate (CAGR) approach that gives the 'arc' elasticity and regression approaches that provide point elasticity (Misra and Suresh, 2014). The formula for calculation of 'arc' elasticity of employment can be presented as follows;

$$e_j = \frac{\Delta L_j / L_j}{\Delta Y_j / Y_j} \quad (4)$$

where L_j denotes employment of the j^{th} sector and Y_j denotes output of j^{th} sector. The numerator refers to the percentage change in employment, while the denominator refers to the percentage change in income, which is essentially the GDP growth rate, in j^{th} sector. Elasticity was estimated using data for 2015-2019 and the average (of employment and output of each sector) of nearby two years; i.e., 2015 and 2016 for the beginning period and 2018 and 2019 for the end period, were considered in order to avoid any year specific fluctuation in employment and GDP data[7].

4. RESULTS AND DISCUSSION

4.1 COVID-19 Induced Policy Responses

It was reported in the media that the Department of Labour initiated a tripartite dialog where employers' and workers' unions along with the ministry officials conducted regular meetings to discuss issues arising from the COVID-19 pandemic (Daily News, 2021)[8]. In most sectors, workers' unions broadly agreed to some wage cuts while employers' associations agreed to avoid firing of workers. However, it is not clear to what extent those agreements materialized in practice. The government and the Central Bank introduced a number of policy measures in countering the negative effects emanating from COVID-19 pandemic which kept fast spreading around the world and in the country. The policy interventions covered some of the areas such as the monetary sector, financial sector, public expenditure, export & imports, agriculture production, tax revisions, and external financial arrangements (see Table 2. In this paper, our focus is mainly on areas which may directly have influenced labour market outcomes. In particular, the government aimed at granting some financial reliefs to businesses which were affected hard by the COVID-19 pandemic and households whose income generating activities were affected due to travel restrictions and social distancing measures. Central Bank of Sri Lanka reduced its policy rates in the beginning of the year and continued to lower it significantly in subsequent months to stimulate private investments[9]. The private sector firms, largely battered by the COVID-19 related demand and

[7] The period 2015-2019 was considered for estimating employment elasticities partly because the uniqueness of the political-economic policy framework adopted this period, which is somewhat different from the previous policy regime.

[8] For more information;
https://dailynews.lk/2021/05/01/features/248005/%E2%80%98govt-fully-backing-labour-force-amidst-challenges%E2%80%99

[9] In response to adverse economic situations, the Central Bank of Sri Lanka reduced the Standing Deposit Facility Rate (SDFR) and the Standing Lending Facility Rate (SLFR) by 50 basis points on 30th January 2020. This and the subsequent revisions into both rates resulted SDFR and SLFR to stand at 4.5 and 5.5 per cent respectively by the mid July by 2020.

supply shocks and uncertain future, faced difficulties in financing new investments and working capital requirements as the interest rate prevailed prior to witnessing the pandemic. In addition, the Central Bank of Sri Lanka reduced both Bank Rate and the Statutory Reserve Ratio. All these measures contributed to enhance the liquidity in the market at lower financing costs thereby allowing businesses to access finance for investment and working capital requirements.

Table 2: Selected COVID-19 Induced Policy Responses

Monetary policy	**Intervention(s)**
Standing Deposit/Lending Facility Rates	Reduced
Bank Rate and Statutory Reserve Ratio	Reduced
Special credit schemes	Introduced
More funds for self-employment promotion	Expanded
More working capital facilities for Small & Medium firms	Expanded
Concessional loan scheme of LKR 150 billion to assist micro, small & medium, and self-employment	Introduced and expanded
Financial sector	
Extending moratorium period for COVID-19 affected businesses	Introduced and expanded
Setting interest rate upper ceilings	Introduced
Import/export related measures	
Import restrictions on unessential imports, motor vehicle, luxury goods	Introduced and expanded
Removal of Cess on exports	Introduced
Removal of some taxes on imports (health related goods)	Introduced
Government expenditure	
Expansion of fertilizer subsidies	Introduced
Provision of subsidies for low-income families	Few rounds

Source: Annual Report 2020, Central Bank of Sri Lanka

The Central Bank of Sri Lanka also introduced a special credit scheme to help businesses, self-employment, micro, small & medium, which were affected by the COVID-19 pandemic related demand and supply shocks. In the financial sector, the government requested financial institutions to grant a debt/interest moratorium for businesses severely affected by the COVID-19 pandemic (see Table 2). The government of Sri Lanka introduced a number of restrictions on imports. Some imports, in particular motor vehicles and luxury goods, were banned from importing while quantitative restrictions were imposed on some other imported goods and services. Nevertheless, in order to facilitate the efforts on countering the pandemic, import duties were reduced on some imported medical equipment and goods. Further, the government removed/reduced Cess on some exports to facilitate trade during the pandemic period. With respect to public expenditure, the government granted a small cash transfer (LKR 5,000 per poor households) to facilitate consumption expenditure and this cash transfer was implemented a few times during the pandemic. In particular, the

government encouraged domestic food production by granting fertilizer subsidies as well as certified prices for 16 selected crops. It aimed at guaranteeing domestic food security. Broadly speaking, above measures may have provided some relief to labour market participants and businesses which were severely affected directly and indirectly during the lockdown periods. In addition, it is important to note that the government provided a special permission for some businesses (such as exporting firms) to operate during the lockdown period.

4.2 Impact of COVID-19 on Informal Employees

4.2.1 Sri Lanka's labour market: some stylist facts

The effects of Covid19 on Sri Lanka's labour market will be determined by a number of factors such as the length of the travel restrictions and social distancing measures in operation, the efficacy of the government policy interventions, decisions made at household- and individual-levels, and the characteristics of the prevailing labour market. Sri Lanka's labour market faces some long-standing issues, among them, high level of informality, youth unemployment, and NEET rate are critical in determining the impacts of the COVID-19 on the labour market outcomes. According to DCS, over two-third (67 per cent) of total employed persons engage in the informal employment and this share has slightly declined during 2014-2020. Out of the informally employed person, 43 per cent work as informal employees. In fact, this ratio has increased over the time (see Table 3). In addition, the share of informal employees in the *formal sector* has increased during the last decades, raising concerns over informalization of the formal sector. For instance, the share of informal employee in the formal sector increased from 7.3 per cent in 2006 to 8.5 per cent in 2019. Agriculture sector has traditionally been one of the major sectors which accommodates a sizable share of informal workers. Out of the total informal workers, nearly one-third of the informal workers engage in the agriculture sector. It needs to be noted that informal employees represent over 53 per cent of total informal workers in non-agriculture. In absolute terms, non-agriculture sector informal employees numbered 1.8 million in 2020. Table 4 reports data on economic sector-wise distribution of informal employees. Accordingly, around 20 per cent of total informal employees were in the construction and related sector, and retain and wholesale sector accounted for around 10 percent of the total informal employees. Sectors such as domestic servants and transport and storage account for around 5 percent of the informal employees. Informal employees are not protected by labour laws/regulations and they are not entitled to social security contribution or paid leaves. Most of them are paid on a daily and weekly basis. In Sri Lanka, informal employment have largely been concentrated among less educated individuals. For instance, around 84 per cent of the total workers, studied at most up to Grade 5, and 72

per cent of the total workers, schooled at most Grade 10, were holding informal employment in 2019 (see Table 5).

As highlighted above, there are at least three key concerns regarding informal employment discussed above. First, over two-third of the total workforce continues to hold informal employment. Second, over 2 million of workers work as informal employees in the non-agriculture sector. Finally, informal employment is mostly held by less educated members in the labour market. It could reasonably be expected that informal employees in the non-agriculture sector were severely at distress due to the travel restriction, social distancing measures, and lockdowns imposed in reducing the spread of the pandemic.

Table 3: Labour Market Informality

Year	Informal workers (% out of total employment)	Informal employee (% out of total informal employment)	Informal workers in non-agriculture sector (% of total informal workers)	Informal employee in non-agriculture sector (% out of total informal employment in the sector)
2014	69.8	42.1	61.9	54.3
2015	69.4	41.3	63.1	51.6
2016	69.7	43.6	64.8	54.0
2017	68.1	43.2	65.9	52.5
2018	68.0	43.3	65.8	53.0
2019	66.7	43.0	65.1	52.8
2020	67.0	42.6	63.0	52.9

Source: Author's calculation based on Labour Force Survey, 2020

Table 4: Informal Employees (as % of Total Informal Employees)

Agriculture	19.90
Non-Agriculture	80.10
Construction and related sectors	19.93
Retail and whole sales	10.09
Domestic servants and related activities	6.06
Transport & storage	4.94
Food manufacturing	3.72
Textile & apparel related	4.00
Furniture and timber related activities	3.76
Education activity related	2.24
Motor vehicle repairing and sales	2.21
Hotels & restaurants related	2.19
Other industries	20.10

Source: Author's calculation based on Labour Force Survey, 20

Table 5: Informal Employments Vs. Education Level

	% of informal employment held (relative to total employed under each category)	% of informal workers (relative to total informal workers under each category)
Grade 5 & below	83.7	19.6
Grade 6-10	71.9	56.8
GCE (O/L)	49.7	15.2
GCE (A/L) & above	21.1	8.2
Total	67.0	100

Source: Author's calculation based on Labour Force Survey, 2020

4.2.2 Size of the wage penalty for informal employees?

This study estimated the wage penalty factor for informal employees at mean and quintiles (0.2, 0.4, 0.6, and 0.8). Table 6 reports the estimated results. The estimated coefficient of informality dummy - which takes 1 if a worker is an informal wage employee, and zero otherwise - is negative and statistically significant at conventional level of significance both at mean regression as well as at every quintile indicating that informal wage employees are paid less in the job market compared to their counterparts holding formal jobs. For instance, the wage penalty factor at the mean is -0.34 and it implies, monthly wage of an informal employee is 34 per cent lower than an identical worker holding a formal job.

The quantile regression results indicate that the size of the wage penalty factor gets smaller at upper quintiles. For instance, at the lowest quintile, the estimated coefficient of informality dummy is 0.44 while at the top quintile it is 0.22. It implies that monthly wages of informal employees in the lower end of the wage distribution earn much lower wage compared to their counterparts. In contrast, the gap between informal and formal wages at the upper part of the wage distribution remains somewhat smaller. In other words, low-wage informal workers, who are generally the low skilled workers, ate at a higher disadvantage compared to high-wage informal workers, who are generally the skilled workers. During the COVID-19 pandemic, most private sector businesses laid off their workforce and/or cut wages to absorb the negative demand and supply shocks. It is highly probable that such decisions inflicted a disproportionate impact on informal wage employees in general, in particular, on low-wage informal wage employees.

Table 6: Informal Employee Wage Penalty

	Mean regression	q.(0.2)	q.(0.4)	q.(0.6)	q.(0.8)
Constant	9.10 (0.05)***	8.66 (0.07)***	9.07 (0.08)***	9.31 (0.06)***	9.46 (0.07)***
Informality(a)	-0.34 (0.01)***	-0.44 (0.01)***	-0.34 (0.02)***	-0.29 (0.009)***	-0.22 (0.01)***
Education (ref. group: < Gr.8)					
Grade.8-10	0.22 (0.02)***	0.24 (0.03)***	0.21 (0.02)***	0.21 (0.02)***	0.20 (0.03)***
GCE O/L passed	0.36 (0.02)***	0.40 (0.03)***	0.34 (0.02)***	0.35 (0.02)***	0.36 (0.03)***
GCE A/L passed	0.54 (0.02)***	0.53 (0.02)***	0.50 (0.02)***	0.53 (0.02)***	0.55 (0.03)***
Degree & above	0.83 (0.02)***	0.79 (0.03)***	0.69 (0.02)***	0.70 (0.03)***	0.84 (0.04)***
Gender (Male=1)	0.30 (0.001)***	0.27 (0.01)***	0.25 (0.01)***	0.25 (0.006)***	0.28 (0.01)***
Age	0.03 (0.002)***	0.04 (0.004)***	0.03 (0.004)***	0.03 (0.003)***	0.02 (0.003)***
Age square	0.0003 (0.00002)***	-0.0004 (0.00004)***	-0.003 (0.00005)***	-0.0003 (0.00003)***	-0.0002) (0.00004)***
Ethnicity effect	Yes	yes	yes	yes	yes
Marital effect	yes	yes	yes	yes	yes
R^2		0.3	0.29	0.24	0.21
No of observations					10,552

Note: (a) (informal employee=1). Standard errors are reported in parentheses and *, **, and *** indicate the estimated coefficients are statistically significant at 10%, 5%, and 1% respectively.

Source: Author's construction

4.2.3 Employment elasticity: sectoral analysis

As discussed previously, the governments around the world introduced travel restrictions and social distancing measures in preventing the spread of COVID-19 pandemic. By the end of June, 2021, the number of COVID-19 cases reached 182 million people and the number of deaths passed 4 million. In Sri Lanka, around 250 thousand people were infected and closer 3000 people died due to the pandemic. All of the above resulted in either supply or demand shocks to the economy. Those supply and demand shocks translated into reduction in output. The responsiveness of employment to output, or employment elasticity, provides useful information in estimating the COVID-19 related employment effect in an economy.

Table 7 reports elasticity estimation by sub-sectors in the economy. Accordingly, employment elasticity in the agriculture sector is negative (-1.70), indicating growth of agricultural output is associated with decline in employment. It is expected that labour moves to the other sectors during the process of economic development. However, reduction in output, in particular due to pandemic related situations , could increase employment in the sector. According to our estimates, over 85 thousand employment opportunities were created within the agriculture sector during the year of 2020. This elasticity-based forecast is somewhat closer to the actual number of employment opportunities created within the agriculture sector (97 thousand), as estimated based on the Labour Force Survey 2020, by the DCS (2020). According to our elasticity estimates, economic growth has strong positive relationships with sector such as construction, education, and accommodation & food services sectors[10]. For instance, 1 per cent output growth in construction and education sectors associates with 2 per cent and 2.6 per cent, respectively, increase in employment. Similarly, 1 per cent growth of output in accommodation & food services leads to 1.5 per cent growth in employment. According to our estimates, the construction and accommodation & food services sectors are expected to witness job losses amounting to 155 thousand and 134 thousand respectively. It could be expected that some of these workers, in particular migrants from rural areas, may have gone back to their native areas and employed in the agriculture sector. Some of the sectors such as information & communication, financial services, health & social services, and education may have created employment opportunities during the pandemic. Accordingly, in terms of employment losses, construction, accommodation & food services, manufacturing, and other activities were the most vulnerable sectors during the pandemic period. Among the sub-sectors in the other activity

[10] Construction sector include sub-sectors such as construction, electricity, gas steam and air conditioning supply, water supply, sewerage, waste management and remediation activities

category, the real estate activities and Arts, entertainment and recreation were mostly vulnerable during the pandemic. It is important to note that the share of informal employees is higher in sectors such as construction, agriculture, accommodation & food services, and education and there is a greater likelihood that employers in those sectors to lay off some informal employees in response to COVID-19 induced demand and supply shocks.

Table 7: Elasticity of Employment by Sub-sector

	Growth of output (2015-2019) (A)	Growth of employment (2015-2019) (B)	Employment elasticity (C=B/A)	Growth of output during 2020 (D)
Agriculture, forestry and fishing	3.94	-6.43	-1.70	-2.42
Mining & quarrying	11.91	2.09	0.18	-12.51
Manufacturing	10.54	4.94	0.48	-3.87
Construction, electricity, gas steam and air conditioning supply, water supply, sewerage, waste management and remediation activities	9.71	20.55	2.04	-10.98
Wholesale and retail trade, repair of motor vehicles and motor cycles	11.74	5.26	0.46	1.41
Transportation and storage	8.85	2.02	0.23	-6.71
Accommodation and food services activities	10.61	15.92	1.47	-39.42
Information and communication	34.45	5.01	0.16	13.72
Financial and insurance activities	32.49	18.90	0.61	9.40
Education	9.93	27.40	2.60	0.86
Human health and social work activities	12.30	11.78	0.96	4.34
Other activities	7.22	-6.83	-1.00	-3.08

Source: Author's calculation based on Labour Force Survey Annual Reports, DCS

4.2.4 COVID-19 and labour market: short-term impacts

In this section, a number of labour market indicators will be examined in order to assess the short-term impacts of the Covid-19. As mentioned in the methodology section, the relevant data for this assessment are extracted from the reports published by the Department of Census and Statistics based on its Labour Force Surveys. At the time of this study, the DCS has not published the Annual Labour Force Survey report for 2020, instead it has published an annual bulletin which contains, as usual, only a snap short on some key labour market indicators. Hence, this limitation prevents this study from conducting an in-depth analysis into the effects of COVID-19 on Sri Lanka's labour market. It is expected to enrich this study in future when disaggregated data are available in future.

In Sri Lanka, low female labour force participation has been identified as one of the major labour market issues and a number of initiatives have been taken by successive governments in encouraging females to enter into the labour market (ILO, 2016). During 2020, compared to previous years, overall labour force participation has declined, and, in particular, female labour force participation has declined significantly compared to that of the male. For instance, male labour force participation declined from 73 per cent in 2019 to 72 per cent in 2020, while female labour force participation declined from 34.5 per cent in 2019 to 32 per cent in 2020. Low female labour force participation could be due to two factors, (a) fewer number of females join the labour force (either received jobs or started looking for jobs), and/or (b) some females lost their jobs and majority of them avoided searching for alternative employment opportunities. It could be argued that some females avoided joining the labour force for reasons such as (a) lack of sureness on finding a suitable job due to uncertainty surrounding both the pandemic and present economic environment, (b) increased responsibility at household level due to closer of schools, kindergartens, and day-care centers, (c) limited access to financial and social capital, and (d) not being able to complete training/education due to the pandemic. Labour force participation in urban sector has declined drastically compared to that of rural areas, indicating COVID-19 has affected disproportionately. This may be partly due to the fact that some urban centres, in particular within the Western Province, witnessed prolonged lockdowns in 2020. Moreover, travel restrictions and social distancing measures brought about a severe blow to economic activities in the urban centres compared to that in the rural sector.

The argument, some females lost their jobs and the majority of them avoided searching for alternative employment opportunities, could partially be supported through published data on female share of total employed persons in 2020. According to DCS (2020), the share of females in total employed

declined from 34.4 per cent in 2019 to 32.8 per cent in 2020. In absolute terms, the total number of jobs lost during 2020 was 181 thousand and the number of jobs lost among females was 185 thousand. In fact, the number of jobs among male increased by around 4 thousand in 2020 Among the three major economic sectors, the agriculture sector created around 98 thousand jobs during 2020 and both industrial and services sectors witnessed some employment losses. The industrial sector los around 105 thousand jobs while the job losses in the services sector amounted to 173 thousand. It is highly probable that sectors whose activities were severely disrupted due to travel restrictions and social distancing measures - such as construction, accommodation & food services, entertainments & recreation, and real estate sub-sectors – may have witnessed those job losses. In contrast, the government declared the agriculture related activities as essential and allowed people who engage in those activities to normally function during the lockdown period. As a result, the agriculture sector was minimally affected by the pandemic related travel restrictions and social distancing measures. In 2020, the share of female workers declined with respect to all the employment status[11]. In particular, the decline was somewhat significant with respect to *own account workers* and *contributing family worker* categories. The female shares in the own *account worker* category declined from 26.2 per cent in 2019 to 24.1 per cent in 2020 whereas for the case of *contributing family workers,* the above share declined by around 2.2 per cent for the same period. With respect to the employee category, the female share declined by around 1 percent in 2020 compared to the year 2019. It could reasonably be expected that the majority of females who lost jobs fall into the employment status of *employee* and *own account worker*.

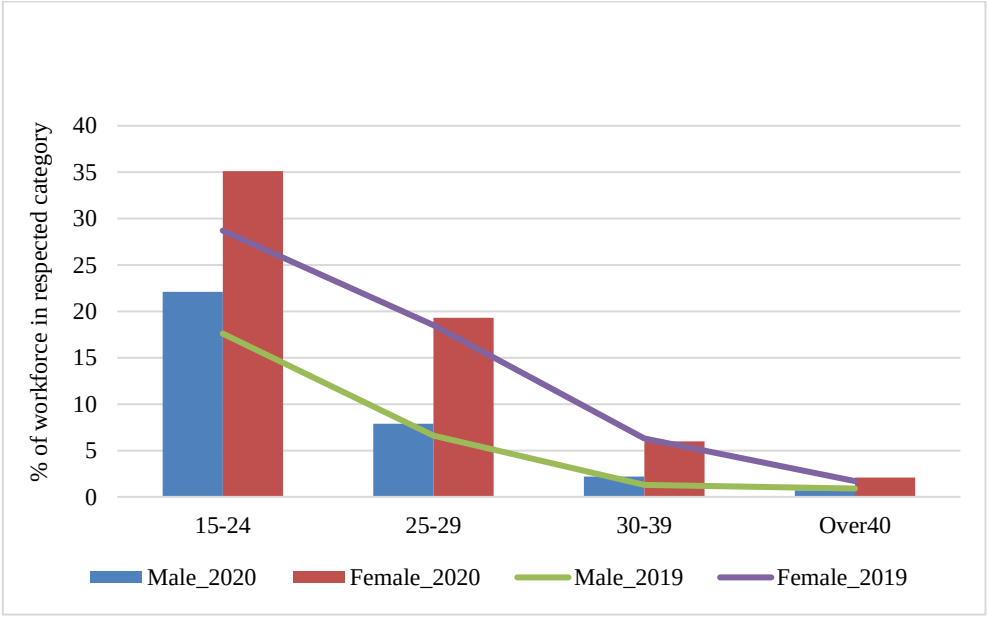
Economic slowdown, largely due to Covid-19, resulted in an increase in unemployment during 2020. For instance, the overall unemployment rate has increased from 4.8 per cent in 2019 to 5.5 per cent in 2020. The female unemployment rate increased from 7.4 per cent in 2019 to 8.5 per cent in 2020 whereas among male, the unemployment rate increased from 3.3 percent to 4 per cent during the above two years. As discussed in the literature, an increase in unemployment rate during the COVID-19 was found in a number of countries. In particular, firms witnessed supply and demand shocks owing to measures taken for controlling the spread of the pandemic and most of them were cautious in new recruitments. Instead, some firms laid down workers to face the negatives associated with the pandemic though the government implemented a number of measures to redress the severely affected sectors. In addition, the government initiated a tripartite dialog among stakeholders (employee unions and employer associations) to

[11] Employment status consists of four categories; namely (a) employees, (b) employers, (c) own account workers, and (d) contributing family workers.

avoid job losses and severe wage cuts. However, such mechanisms were mostly operated in the formal sector.

Unemployment data at disaggregated level, by age-gender, show that unemployment rate was higher for young and females across all the age groups (see Figure 1). More importantly, the unemployment rate for youth and females has increase sharply in 2020 compared to that of older unemployment rate. This implies that effect of COVID-19 on unemployment has been disproportionately distributed by gender and age group. In particular, young females have become the most vulnerable group in the labour market due to the pandemic. OECD (2020) also found that young and females were at higher risk of falling into unemployment due to the pandemic. It is also highly probable that the share of NEET youth may have increased during the pandemic thereby idling young human resources in the economy.

Figure 1: Unemployment Rate (%) by Gender and Age-Group 2019 vs. 2020



Source: Annual Report Labour Force Surveys 2019 & LFS Annual Bulletin, 2020.

Average hours worked per week is one of the other labour market indicators that may have been affected due to travel restrictions and social distancing measures adopted in containing the spread of the COVID-19 pandemic. As theoretically expected, the share of total workers who work 0 hours during the preceding week, i.e. the worker has a job but not at work during the reference week, increased from 6.4 per cent in 2019 to 14.6 in 2020. During the second quarter of 2020, the government imposed country-wide traveling restrictions,

and later such restrictions were extended only for the Western Province. Moreover, restrictions on selected economic activities, such as personal services, accommodation, entertainments & recreations, and hotel & restaurants, were partially restricted for a longer period. It is highly probable that the increase in the share of workers who work 0 hours may have reduced their income. It is also notable that the share of workers who engage in 40 or more hours during the reference week has declined in 2020 compared to its corresponding value for 2019. For instance, the share of total workforce engaged in 40 or more hours per week declined from 65 per cent in 2019 to 56 per cent in 2020. This implies that a sizable number of workers who usually engage in 40 or more hours of work per week stayed at home due to the COVID-19 pandemic. It is notable that the share of workers who engage in 10-39 hours of work per week has slightly changed during the pandemic period.

In addition to labour market indicators discussed above, it could reasonably be expected that COVID-19 may have influenced businesses to introduce downward adjustments to wages so that firms could improve their resilience to face the supply and demand shocks emanating from COVID-19 pandemic. Both formal private and informal sectors witnessed a decline in real wages during the pandemic period while the real wages of the public sector employees showed an increase in 2020 compared to the previous year (Central Bank, 2020). According to the Central Bank (2020) some firms revised salaries downwards as their cash flows were severely affected with the disruptions to their business activities. Moreover, a tripartite agreement, reach between the ministry of labour, the employers' federations, and labour unions on paying 50 per cent of the last paid basic salary or the minimum wages where employees were required to stay at home due to pandemic conditions. Central Bank (2020) highlighted that the COVID-19 related disruptions had a severe effect on informal sector workers' capacity to earn a living. Nominal wages of the informal private sector employees decreased during the first and the second waves of the pandemic though some recovery was reported towards the end of the year 2020. With the addition of a new non-pensionable monthly interim allowance, wages of public sector employees increased amidst the pandemic. Accordingly, real wages of the public sector employees increased by 2.9 per cent in 2020 compared to the last year.

5. CONCLUSION

The COVID-19 pandemic has swept across the world since early 2020 and many countries continue struggling to bring their economies to a pre-pandemic situation. The vaccination efforts have shown some positive results to the relief of masses around the world in general and to the people who witnessed the devastating consequences in particular. The COVID-19 pandemic as well as associated travel restrictions and social distancing measures have caused a

number of short- and long-term socio-economic consequences needing the attention of policy makers both at national and global-levels. Some of the short-term effects could be established using data collected by national statistical agencies in recent months. This study aims at assessing the effects of COVID-19 on informal wage employees in Sri Lanka. Using data from nationally representative labour force surveys, conducted and disseminated by the Department of Census and Statistics, this study employs both descriptive and regression analytical techniques investigating some facets related to informal wage employees and reflecting on such findings to draw potential impacts. The literature survey clearly indicated evidences to suggest that the short-term effects of the COVID-19 could be visible in a number of labour market indicators such as labour force participation, total employment, informality, unemployment, hours of work, and wages.

This study discussed some of the policy measures taken by the government in preventing the spread of the pandemic and in mitigating some of the effects of COVID-19 on the society, in particular to the economy. A brief overview on the key characteristics of informal workforce was discussed to provide a wider perspective on the possible effects on informal wage employees. The analysis revealed that the Sri Lanka labour market suffers from a number of issues such as low female labour force participation, high level of informality, and youth unemployment. Our analysis showed that, mostly, people with less education hold the majority of informal employment. These undelaying labour market conditions are critical in understanding the short-term effects of COVID-19 on Sri Lanka's labour market. Both mean and quantile regression frameworks strongly confirm that there is a wage penalty for informal employment. The regression results clearly confirmed the presence of a wage penalty factor for informal wage employees. More importantly, the wage penalty factor is somewhat higher for informal wage employees in the lower end of the wage distribution compared to the informal wage employee who fall into the upper region of the wage distribution. Accordingly, on average, the monthly wage of an informal wage employee is around 34 per cent lower than the wage received by formal wage employees where the both workers are identical with respect to observable characteristics. It is also found that the wage penalty factor is somewhat larger for informal wage workers who fall into the lower end of the wage distribution (low-skilled employees) compared to the informal employees who are in the upper end of the wage distribution (skilled informal employees). Our employment elasticity estimates revealed that output reduction, due to supply and demand shocks caused by the pandemic, may have been associated with larger employment losses in Construction, accommodation & food services, manufacturing, entertainments & recreation, and real estate sectors. In other words, in terms of employment losses due to the pandemic, those sectors face greater risks than the other sectors. The share of informal employees in the total workforce in those industries remains high

as well as the labour demand is elastic. The presence of a wage penalty for informal wage employees and elastic labour demand in sectors where informal wage employees constitute a larger share, imply that the pandemic and the associated travel restrictions and social distancing measures may have inflicted a significant blow to the employment and earning of informal wage employees.

Based on DCS (2019; 2020), this study briefly examined the changes into some of the selected labour market indicators during 2020. A detailed analysis cannot be conducted since the DCS has yet to publish the annual report based on the Labour Force Survey of 2020. Our analysis showed that the short-term effects of COVID-19 have distributed disproportionately where females have suffered severely compared to their counterparts. In terms of job losses, females lost around 185 thousand jobs while male gained around 4 thousand jobs during 2020. In addition, unemployment has increased among young females in 2020 compared to that of the young males. In addition, the number of hours of work has declined significantly where the share of total workers who engage 0 hours of work per week has increased whereas the share of workers who engage 40 or more hours per week has declined in 2020. More importantly, private sector employees, both formal and informal, have witnessed a decline in their real wages while public sector employees witnessed the opposite.

Our findings clearly indicate that female workers and workers holding informal jobs were at high risk towards losing jobs and earnings, in particular, those who engage in high-risk industries identified above. The labour market outcomes discussed in this paper mostly reflect the effects of that pandemic at its first and the second waves. It is expected that the third wave has much severe effects given its spread and some of the measures taken in preventing its spread. Hence, it is imperative that policy makers pay attention to this situation and come up with appropriate policy measures to improve their labour market conditions.

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FINTECH AND FINANCIAL INCLUSION IN THE AGE OF COVID 19: RECAPITULATING PANDEMIC IN 2019

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ABSTRACT

Financial inclusion is a vital barometer of overall growth in any country. In the age of Covid 19, the increased number of regulations on remote instructions has hampered achieving financial inclusion. As a result, integrating financial technology (FinTech) into financial services has become a top priority in ensuring equal access to financial products and services. As a result, the focus of this study is on the perceptions of financially deprived people about the impact of FinTech on achieving financial inclusion. The self-administered survey implemented by the study reached 88 underprivileged financial service users yielding a response rate of 73.33%/ The study effectuated quantitative study design encapsulating the constituents of Technology Acceptance Theory. The conceptual model concentrated on accessibility, availability, financial usage and quality relevance as proxies for individuals' perception of FinTech in achieving financial inclusion. Firstly, the study focused on demographic profile analysis, which includes an overview of employment categories and monthly income levels. Then, the study applied structural equation modelling to ascertain the relationship between FinTech and financial inclusion. According to the descriptive study on demographic factors, the majority of the participants are self-employed and earn between 19999 and 39000 LKR per month on average. The content,

convergent, and discriminant validity tests were used to establish reliability in the study. The study's findings emphasize the predictor; technology acceptance accounts for a large portion of the variance. As a result, the findings established a positive relationship between technology acceptance and financial inclusion. Despite the fact that the current situation appears to be unfavourable, it has created a positive perception among the community, encouraging them to make changes in their financial routines. The empirical study is a guide for policymakers to strengthen the apparatus to accept technological innovations considering their immediacy, convenience, and low cost in order to achieve financial inclusion in Covid 19.

Keywords – COVID 19, Fintech, Financial Inclusion

1. INTRODUCTION

Financial inclusion concentrates on the underprivileged in order to create transparency and equity while providing financial assistance (Bansala, 2014). Financial inclusion, according to Nguyen (2020), is the systematic process of ensuring individuals have access to and the ability to use a variety of financial services in a timely, effective, and efficient manner, particularly for the financially disadvantaged group. As a result, financial inclusion confirms the responsible and long-term accessibility and affordability of a variety of financial products such as financial transactions, payments, credit facilities, savings, and insurance (Sarma, 2016; Joshi, Singh, & Jain, 2014). So, financial inclusion reinforces socio-economic benefits by creating an equitized environment for all the participants (Neaime & Gaysset, 2018).

Technological advancements have transformed the financial services industry. Mobile money, marketplace lending, peer-to-peer (P2P) lending insurance technology, and Robo-financial advice are just a few of the exciting developments in the space (Feyen et al., 2021). Over the last decade, fintech has increased retail users' access to and convenience with financial services. Meanwhile, AI and cloud computing are reshaping financial markets. To meet customer demand, a slew of new financial institutions have sprung up to capitalize on new technologies, and the majority of incumbents have stated that digital transformation is a strategic priority (Feyen et al., 2021).

Modern digitalized technology serves as a platform that extends the financial inclusion of the underprivileged people (Bansala, 2014). Evans (2018) identified three stances of technology-driven financial models namely; 1. Bank-Oriented Model: Use of non-conventional affordable channels such as automatic teller machines, internet banking and mobile banking, 2. Bank-Led

Model: Mobile applications and involvement of retail agents, and 3. Non-Bank Led Model: endorses financial services excluded by the orthodox financial model. Hence, it has raised the concern of integrating financial technology with internet content and mobile content to achieve financial inclusion (Lenka & Barik, 2018).

The rash disaster that spreads throughout the world in the first half of 2020 has caused massive damage to human life. It was first identified as a coronavirus and later dubbed Coronavirus Disease-19, or COVID-19 (Qiu et al., 2020). The virus originated in Wuhan, China's Hubei province, and has since spread throughout the world, wreaking havoc on human economic well-being. It was discovered that by mid-June, the virus had the ability to harm 8 million public lives worldwide, with 436,000 deaths being critical. Since the medications were ineffective in establishing a treatment for the disease, republics implemented several public health procedures as a preventive measure, particularly social distance while the virus spread rapidly (Fong et al., 2020). The dangerous misadventure has the potential to drastically alter people's lifestyles as well as the business environment around the world (Ho et al., 2020).

According to Nawayseh's (2020) study conducted during the COVID 19, people have faced several barriers in modern life as a result of the lockdown, which has made it difficult for people to access food, financial services, and other necessities. As a result, many governments have implemented new programs to assist pitiful individuals in making their lives more comfortable. In particular, authorities have introduced new FinTech applications during COVID 19 to assist their general public in gaining easy access to financial transactions.

Digital asset exchanges, digital payments, digital savings and WealthTech, digital banking, digital identity, and RegTech all experienced significant growth in the global context during the COVID 19 period, while digital lending saw a decrease in transaction volume. Furthermore, the market becomes more rigid during the COVID 19 period. During the COVID 19 era, emerging market and developing economies (EMDEs) reported advanced development in transaction capacity and volume, new customers and customer retention, as well as a slight increase in operational challenges, costs, and risks compared to advanced economies (AEs) (CCAF & World Bank and World Economic Forum, 2020).

In this context, consumers and the financial industry can conduct transactions in a secure manner by utilizing financial technology (FinTech) as an innovative technology (Puschmann, 2017; Chen et al., 2019). As a result, financial institutions and technological corporations are increasingly inclined to capitalize on FinTech, which generates greater volume of international benefits

(KPMG, 2019). In the study of Gomber et al., (2018) they stated that the benefit of FinTech innovations for expansion can be obtained by balancing the future outcomes and risk for FinTech. Mobile phone became the valuable technical equipment to unbanked people in using financial services specially in developing countries. Most probably people with higher knowledge about socioeconomic resources use FinTech very effectively in providing financial services using various financial product and gather financial information while others are not so (Bharadwaj et al., 2019). Moreover, the general public's reluctance to use Fintech, particularly retail financial services, is a major barrier to the maturation process of Fintech in a country, and it takes a long time to adapt and be successful (Gomber et al., 2018; Harrison & Jan 2018).

In essence, technological advancement has accelerated rapidly in the COVID 19 era. Individuals' ability, financial willingness, and technological literacy, on the other hand, are critical factors in embracing financial technology in order to achieve greater financial inclusion. In such cases, evaluating the suitability of FinTech to achieve financial inclusion contributes to financial advancement. Therefore, the purpose of this study is to evaluate perceptions of financially disadvantaged people about the impact of FinTech on achieving financial inclusion.

2. LITERATURE REVIEW

2.1 Theoretical Framework

The technology acceptance model depicts people's likelihood and attractiveness to adopt new technology, as well as their ability to accept new technological changes and adapt to those changes in their daily lives. Various factors, according to this model, influence the user's decision on the method of using new technology and the time framework for using new technology (Maranguni & Grani, 2015). People's behavioral intentions (BI) most likely cause them to use new information technology, and in other words, they accept the new improvements as a virtuous object; similarly, the degree of end-user satisfaction with that facility grounds to continuous usage of that technology (Szajna, 1996; Mathieson, 1991). A person's attitude toward using IT can influence behavioural intention, and attitudes have two characteristics; 01. Perceived ease of use (PEOU) is an individual's belief that using an IT system will be simple and smooth and 2. Perceived usefulness (PU) is an individual's belief that using an information technology system will improve professional performance (Venkatesh & Davis, 2000).

Another theory known as the theory of diffusion of innovations explains why people adopt new technology, the process of adaptation, and the speed of adaptation of new technology differ from one another in society (Aizstrauta et al., 2015). According to these theories, Fintech, like one of the major

advancements in financial services technology, generates new opportunities for individual empowerment by increasing transparency, lowering costs, and making information more accessible to the public and boosting the efficiency of the financial ecosystem. Furthermore, Fintech subsidizes a variety of alternative banking services rather than traditional banking services, resulting in the provision of clear and simple banking services to customers today (Zavolokina et al., 2016). In most cases, the internet and mobile devices, which are major facilitating partners for Fintech in providing financial services, have an impact on the development of economic activities, economic productivity, living standards, and access to social development factors (Meso & Duncan, 2002).

2.2. Empirical Framework

In recent years, financial inclusion has emerged as the most pressing development concern. Financial inclusion is a process that ensures that all members of an economy have equal access to and use of the recognized financial system's services (Raichoudhury, 2020). An encompassing all, financial system promotes the efficient allocation of productive resources, lowers the cost of capital, vastly improves daily financial administration, and aids in the reduction of the expansion of informal credit sources. According to the aforementioned viewpoint, (Evans, 2017) defined financial inclusion as a mechanism for providing final services such as savings, credit, and insurance to customers in an economically and efficiently efficient manner.

Fintech innovations have the potential to give poor people access to financial services like payments, savings, credit, and insurance. People all over the world are denied access to basic financial services, restricting their ability to escape from the pool of poverty (Demirgüç-Kunt et al., 2018). Fintech innovations are resonating to mingle ICT tools with Finance to create a better financial system (Walsham, 2012). Evidently, it synthesizes that financial inclusion can be strengthened with financial innovation. Accordingly, Fonté (2013) study in the United States revealed that mobile banking systems and mobile payment systems assist individuals to gain access to a series of financial services due to proximity and lower cost. Ghosh and Bhattacharya (2019) elucidated the concept of “SureCash “which concentrated on a range of mobilized financial services with an aim of popularizing digital financial service framework among non-bankers.

Evans (2018) investigated the relationship between internet and mobile phone use and financial inclusion from 2000 to 2006. As a result, empirical evidence established a significant positive relationship between such mobile technology utilization and financial inclusion. Similarly, Lenka and Barik (2018) discovered a link between increased mobile phone use and financial inclusion

in SAARC countries. According to Bongomin et al. (2018), social networks improved financial inclusion in Uganda through social cohesion. Moreover, Mago and Chitokwindo (2014) revealed, economically underprivileged people in Zimbabwe have embraced mobile banking because it is convenient, quick, and secure.

However, Chai, Chen, Huang, and Ye (2018) revealed that social networking through technology has a relationship with individuals' participation in unstructured and informal markets, and it has amplified the number of informal financial transactions, particularly informal household lending. On the other hand, the digital age has exacerbated the digital divide between financial service beneficiaries and financial deprivers. Hence the assimilation of FinTech to reinforce financial inclusion would increase the financial separation (Ozili, 2018). Supporting, the study conducted by Personal and Archive, (2017) ascertained a negative relationship between mobile technology and financial inclusion obtaining data over the period of 2011-2014 from Ghana.

In the age of COVID 19 technological advancement has been emphasized due to abundance of social- distancing rules and regulations. As a result, the financial sector has prioritized the implementation of modest technology to ensure the smooth operation of services. Herein, FinTech has been assimilated into financial services to achieve financial inclusion. However, the existing literature has not focused on discovering the perceptions of the economically deprived community, which must be taken into account in order to strengthen financial inclusion. Furthermore, existing research on the use of FinTech to achieve financial inclusion yields contradictory results. Accordingly, in essence the existing literature in this field is limited and fragmented. As a result, this study will bridge the gap by elucidating the perspectives of financially disadvantaged communities on FinTech and financial inclusion with the help of Technology Acceptance Theory and Theory of Diffusion.

3. METHODOLOGY

The quantitative reasoning strategy encompassed by the study is to ascertain the relationship between individuals' perception of FinTech and financial inclusion. Herein, the study concentrated on financially underprivileged service users in Uva Province assimilating the snowball sampling technique. Uva province is designated because it stands in a low per capita income stance with the Northern and Eastern Province and it has reported the lowest household expenditure consumption compared to other provinces (Central Bank, 2020). Furthermore, the poverty index developed by Asian Development Bank (ADB) (2009) presented Uva Province as an impoverished province among the others. Accordingly, 120 self-administered questionnaires were distributed

following the survey model. Thereby, the data set is examined using the SmartPLS data analysis tool, which established a path coefficient model between FinTech and financial inclusion.

3.1 Sample Profile

There were 88 respondents, representing a response rate of 73.33 percent, and the demographic characteristics of the study sample are profiled below:

Table 01: Demographic characteristics of the sample

Description	Count	Frequency
Age Category		
20-29	14	15.91%
30-39	44	50.00%
40-49	21	23.86%
50 above	9	10.23%
Gender		
Male	37	42.05%
Female	51	57.95%
Level of Education		
Preliminary education	53	60.23%
Secondary education	28	31.82%
Tertiary education	7	7.95%
Occupation		
Public Sector	16	18.18%
Private Sector	28	31.82%
Self- employed	37	42.05%
Not engaged in	7	7.95%
Income level (Monthly)		
5000-19999	12	13.64%
19999-39000	47	53.41%
39000-59000	29	32.95%
60000 above	0	0.00%

Source: Authors Estimations based on Survey Data

Females made up 57.95 percent of the participants, with the majority being between the ages of 30-39. However, the participants' education level was deemed low, with the majority of the 53 participants having only completed their preliminary level of studies. Significantly, 42.04 percent of participants have started their own businesses, while 7.95 percent have not yet started working. Furthermore, the majority were in the income range of 19999-39000. Since the study has been limited to the economically deprived population, income distribution is set at a lower level.

3.2 Operationalization

Table 02: Operationalization

	Technology Acceptance
Perceived Usefulness	A person's belief that using an information technology system will improve job performance (Holden & Karsh, 2010).
Perceived Easiness	A person's belief that using an IT system will be simple and require little effort (Holden & Karsh, 2010).
	Financial Inclusion
The Accessibility	A sound financial system should serve many financial service users while also penetrating its service among users (Nguyen, 2020). The research focuses on how people's perceptions of financial technology affect their access to financial services.
Availability	According to (Sarma, 2016), financial innovations and the financial system must be accessible to all.
The Usage	Many scholars consider the use of financial services provided by institutes and the use of financial services by individuals and firms (Ahamed & Mallick, 2019; Nguyen, 2020). However, Sarma (2016) broadened the definition of usage by claiming that it is not only the use of a financial service but the service must be fully utilized.
Quality relevance	The quality emphasizes providing financial services in accordance with financial standards (Bongomin, Munene, Ntayi, & Malinga, 2018).

Source: Authors Constructed

3.3 Conceptual Framework

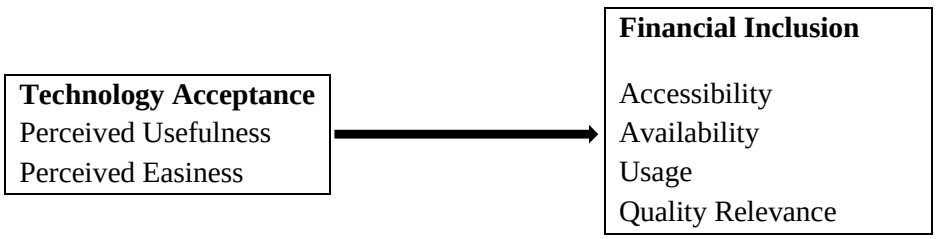

Figure 01: Conceptual Model

4. RESULTS AND DISCUSSION

The structural equation model (SEM) incorporates SmartPLS v.3 data analysis software to determine the relationship between financial technology acceptance and financial inclusion. SEM is designed and used to determine the relationships and associations between latent constructs, according to Hair et al. (2011). As a result, SEM is used in the study to test the hypothesis.

4.1 Validity and Reliability

The measurement model's reliability and validity are assessed using content, convergent, and discriminant validity tests.Convergent validity is determined by calculating Composite Reliability, the Cronbach Alpha test, and the Average Variance Extracted (AVE). According to Bacon and Sauer (1995), the internal consistency of variables is measured using composite reliability, which takes into account the reliability of latent constructs. As a result, the composite reliability threshold has been set at 0.7 and values greater than 0.7 confirm composite reliability (Bouwman et al., 2018). Table 3 ensures the dataset's overall reliability. Furthermore, Cronbach's Alpha (α) assesses the internal reliability of the latent construct (Lavrakas, 2008). According to Bouwman et al. (2018), Cronbach's Alpha (α) greater than 0.7 establishes reliability. The study's findings satisfy the test. The model's convergent validity is then confirmed using the Average Variance Extracted (AVE). Values greater than 0.5 guarantee convergent reliability (Hulin, Netemeyer, & Cudeck, 2001). When the outer loadings of each construct are greater than the other loadings, content validity is assured (Götz, Liehr-Gobbers, & Krafft; Chin & Marcoulides, 1998) It was determined that factor loadings less than 0.5 must be dropped. As a result, the standardized loadings of each item are shown in table 3, and several items were dropped from the model due to low factor loadings.

Table 3: Measurement model internal validity

		Factor Loading	Mean	SD	t-Statistics	Cronbach's α	CR	AVE
Technology Acceptance	TA_1	0.732	4.27	1.37	12.17	0.924	0.923	0.542
	TA_2	0.755	3.74	1.72	9.59			
	TA_3	0.642	3.7	1.94	7.14			
	TA_5	0.734	4.99	1.48	6.32			
Financial Inclusion	AC_1	0.840	4.45	1.85	9.57	0.857	0.865	0.528
	AV_2	0.696	3.56	1.21	13.56			
	US_3	0.778	3.51	1.78	7.68			
	QR_4	0.817	4.82	1.85	14.18			

Source: Authors Estimations based on Survey Data

Furthermore, discriminant validity is concerned with the theoretical relationship between the constructs. It held that constructs are not highly correlated with other constructs in the model (Hubley, 2014). According to Henseler et al. (2015), discriminant validity validates the model's uniqueness. The Fornell and Larcker (1981) test that measures the discriminant validity and the value concerned requires to be greater than the values of the other latent variables. Table 4 presents that study has satisfied the discriminant validity test.

Table 4: Discriminant validity

	Technology Acceptance	Financial Inclusion
Technology Acceptance	0.736	0.625
Financial Inclusion	0.643	0.726

Source: Authors Estimations based on Survey Data

4.2 Structural Equation Model

The reliability and validity test validated all of the measurement model's properties.

Financial inclusion explains 67.4 percent of the variance in the SEM model. The study's findings emphasize the predictor; technology acceptance accounts for a large portion of the variance. As a result, the findings indicate a positive relationship between technology acceptance and financial inclusion ($\beta = 0.712$, $t = 12.401$, $p = 0.00$).

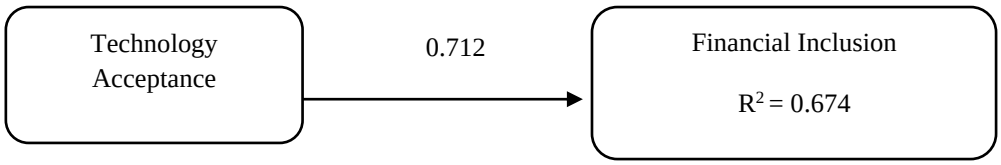

Figure 02: SEM

Cronbach's alpha and composite reliability values greater than 0.7 are used in the study to establish reliability. Furthermore, a composite reliability threshold of 0.7 has been established, and composite reliability values greater than 0.7 confirm composite reliability. Furthermore, the values of the discriminant validity must be greater than the values of the other latent variables. Finally, the study created a structural equation model to determine the relationship between underprivileged financial service users' technology acceptance and financial inclusion. As a result, the findings show that underprivileged financial service users' acceptance of technology has a significant positive relationship with financial inclusion, with coefficients of 0.712 and 0.00 probability, respectively. These findings are consistent with previous research (Evans,

2018; Lenka & Barik 2018, Bongomin et al. 2018, Mago & Chitokwindo 2014; Fonté, 2013). These studies have confirmed the positive relationship between underserved financial service users' acceptance of technology and financial inclusion.

5. CONCLUSION

The study was designed to analyze how financial technology and financial inclusion viewed the perceptions of underprivileged financial service users during COVID 19. The analysis established internal and external validity with a response rate of 73.33%. The study ascertained a positive relationship between technology acceptance of the underprivileged financial service users and financial inclusion.

As a result, the study addressed the critical issue confronting the nation during the COVID 19 era as a result of imposed distance maintaining rules and regulations. During COVID 19, policymakers and the community can develop a robust mechanism to accept technological innovations while taking into account proximity, convenience, and low cost in order to achieve financial inclusion while adhering to the remote regulatory framework. Furthermore, policy initiatives such as the National Financial Inclusion Strategy for Sri Lanka can create an environment conducive to the implementation of financial innovations that improve financial inclusion and provide adequate facilities for financial service users, particularly in rural areas. Furthermore, authorities can provide access to basic financial technology to a broad customer base in order to increase financial inclusion while avoiding generation-digital gaps.

Profoundly, inspiring the future researchers there is an emerging interest in developing a more accessible financial system, particularly through the use of digital money (Fintech) as a tool to promote financial inclusion.

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IMPACT OF INTERNAL FACTORS TOWARDS FINANCIAL PERFORMANCE OF LIFE INSURANCE COMPANIES IN SRI LANKA

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ABSTRACT

This research aims to provide comprehensive knowledge to a wide range of users by identifying and measuring the factors that impacted life insurance companies' performance in Sri Lanka. Return on asset (ROA) is taken as the dependent variable, and liquidity, premium growth, company size, underwriting risk, debt to equity, tangibility taken as independent variables. The sample of this research is 09 life insurance companies in Sri Lanka from 2014 to 2019. Data is collected from secondary sources and designed using a quantitative method. The descriptive statistics and fixed effect regression method used to differentiate; analyse the research output. The package of E-views supported in this regard for the evaluation of data. The company's size, tangibility, premium growth, and debt to equity ratio are significant determinants. Still, the company's underwriting Risk and liquidity were not significantly related to life insurance firms' profitability. Further, underwriting risk and debt to equity ratio negatively correlate with the dependent variable (ROA). tangibility, Premium growth, liquidity, and company size offers a positive relationship with the dependent variable. The research will contribute to the literature by studying the Sri Lankan life insurance industry. This research will help the investors make decisions properly, help the companies manage the risk associated with the

firms, and increase the profitability and financial performance of Sri Lankan life insurance companies.

Keywords – Life Insurance, Internal Factors, Profitability, Financial Performance

1. INTRODUCTION

1.1 Background to The Study

Insurance is the most used risk mitigation strategy in the world. Insurance companies provide unique financial services to the growth and development of every economy. The importance of insurance has increased every day in both developed and developing countries. The (Insurance Information Institute, 2019), The United States of America (USA) is the largest insurance market globally, and the USA made up over 55 % of the entire insurance market. Outside the United States, the insurance industry is divided into life and general insurance rather than life/health and property/casualty. Global insurance premiums exceeded USD 5 trillion marks for the first time in 2018, equivalent to more than 6% of the world Gross Domestic Product (GDP). World insurance premiums rose 1.5% in 2018, adjusted for inflation, to USD 5.2 trillion, reaching USD 5 trillion. In the year 2018 rise was above the 1.2 % growth recorded from 2008 to 2017. Non- life premiums grew 3% in 2018, adjusted for inflation, faster than the 2.2 % growth from 2008 to 2017. Life insurance premiums increased 0.2 % in 2018, falling behind the 0.6% rise from 2008 to 2017.

Table 01: Top 10 countries by life and non-life premiums (USD millions)

Rank	Country	Life Premiums	Non-Life Premiums	Total Premium	% of world premiums
1	United States	546,800	830,315	1,377,114	28.15%
2	China	317,570	223,876	541,466	11.07%
3	Japan	307,232	114,818	422,050	8.63%
4	United Kingdom	189,833	93,499	283,331	5.79 %
5	France	153,520	88,083	241,603	4.94 %
6	German	96,973	126,005	222,978	4.56 %
7	South Korea	102,839	78,378	181,218	3.70%
8	Italy	113,947	41,562	155,509	3.18%
9	Canada	51,592	67,927	119,520	2.44 %
10	Taiwan	98,602	18,873	117,474	2.40 %

Source: Insurance Information Institute ,2019

According to the World Bank Group, Sri Lanka is an Upper middle-income country, and the total population was 21.7 million in 2018. During 2018, the country's real Gross Domestic Product (GDP) reported at LKR 14,450 billion. (Insurance Regulatory Commission of Sri Lanka [IRCSL] 2018). The constitutional crisis highly impacted the Sri Lankan economy mentioned growth, the sharp depreciation of the Rupee against other significant currencies, transitory price pressures due to upward revisions to domestic petroleum products' prices, and further administratively determined price slowdown in industry-related activities within the country. The result was the growth rate declining to 17 years' lowest point of 3.20% in 2018. The growth was primarily assisted by service activities that expanded by 4.7% and the recovery in agriculture works, which recorded a 4.8% growth.

In 2018, the Insurance industry recorded Gross Written Premium (GWP) of LKR 181,506 million. The general insurance sector recorded a GWP of Rs. 101,203 million, and the long-term insurance sector generated GWP of Rs. 80,303 million. During the first quarter of 2019, the insurance industry has achieved a 5.7% growth in gross written premium, and it was 2,504 million increments, compared to the same period in the year 2018. At the end of 2019, 28 insurance companies in the Sri Lankan market consist of 13 life insurance companies, 13 general insurance companies, and 02 composite insurance companies. The insurance companies were required to separate their Life and General insurance businesses before January 2015 based on new rules and regulations.

1.2 Life Insurance Industry in Sri Lanka

The Life Insurance Industry in Sri Lanka has sustainable growth due to insurers' efforts to improve operational processes to assure quality service for customers, redeveloping existing products while introducing innovative life insurance products to cater to customers' changing needs. Further, improving customer awareness on insurance and enhancing products on the country's social and economic conditions will increase the demand for life insurance products (Insurance Regulatory Commission of Sri Lanka, 2018).

The Sri Lankan Life insurance industry continued its growth by recording a premium income of LKR. 80,303 million in 2018 compared to LKR 71,571 million recorded in 2017, and it was 12.2% growth. The life insurance industry of Sri Lanka depicts enhanced competition among 13 companies that are registered to carry on a life insurance business and 02 composite companies who are carrying both General & Life insurance businesses. Private life insurance companies and government life insurance companies in the Sri Lankan life insurance market.

Table 02: Life insurance companies in Sri Lanka

No.	Name of the company	The effective date of licence	Market share
1.	MBSL Insurance Company Limited	01st April 2005	0.08%
2.	Life Insurance Corporation (Lanka) Ltd.	18th December 2002	0.65%
3.	Sanasa Life Insurance Company Limited	08th July 2003	0.67%
4.	Cooplife Insurance Limited.	1st January 2015	0.78%
5.	Amana Takaful Life PLC	1st January 2015	1.02%
6.	Allianz Life Insurance Lanka Ltd.	01st of July 2008	1.62%
7.	Arpico Insurance PLC	20th October 2011	1.73%
8.	LOLC Life Assurance Limited	30th April 2010	3.25%
9.	Janashakthi Insurance PLC	12th August 1994	3.75%
10.	HNB Assurance PLC	30th August 2001	5.5%
11.	Softlogic Life Insurance PLC	08th March 2000	12.46%
12.	Union Assurance PLC	08th January 1987	14%
13.	AIA Insurance Lanka Ltd.	16th December 1987	15.86%
14.	Sri Lanka Insurance Corporation Ltd.	03rd February 1993	16.45%
15.	Ceylinco Life Insurance Limited	1st June 2015	22.18%

Source: Insurance Regulatory Commission of Sri Lanka.

1.3 Need and Importance of the Study

Scholars conducted studies in the life insurance sector based on developed and developing countries during the last decade. Burca & Batrinca (2014), Examined the determinants of financial performance in the Romanian insurance market. Batool & Sahi (2019) studied determinants of financial performance of insurance companies of the USA and UK during the Global Financial Crisis (2007–2016), and Ayele (2012) examined factors affecting the profitability of insurance companies in Ethiopia. In Sri Lanka majority of research is based on the finance & banking sector; Yapa & Ukwatte (2015) studied the new public financial management (NPFM) and accrual accounting in Sri Lanka. Liyanagamage (2018) reviewed efficiency, stability and optimum level of bank competition for sustainable development - a study of the Sri Lankan banking sector. Insurance companies provide unique services by granting financial protection to policyholders. There is a limited number of research articles based on the Sri Lanka Insurance sector, incredibly very limited on life insurance.

This study used 09 life insurance companies, including both public and private. The data was gathered from published & audited annual reports of the companies. The sample used the recent 06 years (2014-2019). The

performance of insurance companies largely depends on firm-specific factors, and this study uses six internal variables. Ayele (2012) identified firm-specific factors and profitability as dependent variables while the company's age, the volume of capital, size of the company, leverage ratio, liquidity ratio, growth and tangibility of assets as independent variables. Based on output leverage, growth, the volume of capital, size, and liquidity identified as the most important determinant factors of profitability, growth, size, and volume of capital positively affect profitability. Further, liquidity and leverage ratios are significant and negatively impacted for profitability where the company's age and tangibility of assets are not significant to profitability.

This study will contribute knowledge to a wide range of users by identifying the factors affecting profitability and determining the relationship with profitability. This research will help the investors make decisions properly, help the company manage the risk associated with the firms, and increase the profitability and financial performance of the Sri Lankan life insurance companies.

1.4 Research Problem

Profitability is an essential objective of life insurance companies. The company's profitability plays a vital role in contributing to its core market value, which can be identified through its annual profit ratio. Different studies have been conducted on the life insurance sector in different countries other than Sri Lanka. Their main focus was to determine factors affecting profitability. Due to the lack of research conducted by the researchers based on the Sri Lankan insurance industry, this research study will provide support to recognize the impact of internal factors on the financial performance of life insurance companies and help the insurance company to focus on affecting variables to minimize or lower down losses.

1.5 Research Questions,

- Do the internal factors impact the profitability of the company?
- What types of relationships have internal factors and the profitability of life insurance companies?

1.6 Objectives of the study

- To determine the relationship between liquidity and the profitability of life insurance companies in Sri Lanka.
- To determine the relationship between company size and the profitability of life insurance companies in Sri Lanka.

- To determine the relationship between asset tangibility and the profitability of life insurance companies in Sri Lanka.
- To determine the relationship between Premium growth and the profitability of life insurance companies in Sri Lanka.
- To determine the relationship between underwriting risk and the profitability of life insurance companies in Sri Lanka.
- To determine the relationship between Debt-Equity ratio and the profitability of life insurance companies in Sri Lanka.

2. LITERATURE REVIEW

Burca & Batrinca (2014) examined the determinants of financial performance in the Romanian insurance market and pointed out a few research papers on the insurance industry's performance. Most of the papers on financial performance focused on banks, finance, and listed companies. Further, research studies focusing on the insurance industry's performance are not recent, with data performed after 2000. The financial analysis is a tool used by actuaries in decision-making on the insurance company's underwriting and investment activities. International research performed by the regional countries is not considered in Sri Lanka in their research papers. Zainudin & Leong (2017) studied the firm-specific internal determinants of profitability performance: an exploratory study of selected life insurance firms in Asia. This research was conducted by using only China, Hong Kong, Taiwan, Singapore, Japan, South Korea, Thailand, and Malaysia and excluded Sri Lanka. Most of the researches were conducted based on a single country. NazishIshtiaq & Siddiqui (2018) studied factors affecting the financial performance of the life insurance sector in Pakistan have investigated the factors that affect the Pakistan life insurance sector's financial performance. Akotey & Sackey (2013) reviewed The financial performance of life insurance companies in Ghana. This research aims to assess the financial performance of the life insurance industry of an emerging economy. In particular, the study investigates the significant determinants of the profitability of Ghana's life insurance industry. Cekrezi (2015) studied Determinants of insurance companies' financial performance: Albania's case studied the factors that affect Albanian insurance companies' financial performance. Mogro & Barrezueta (2019) identified the determinants of profitability of life and non-life insurance companies: evidence from Ecuador. The purpose of this study is to identify the significant determinants of insurance profitability in both the life and non-life sectors to obtain which variables affect each market of the Ecuadorian insurance sector.

Researchers conducted by the other countries have used various measurements to measure profitability, such as ROE and ROA. Different measurements generate different outputs in research papers. Panayiotis et al.(2006) studied determinants of bank profitability in the South Eastern European Region and highlighted that ROA appeared to be the most appropriate dependent variable explained by the independent variables in studying the banking industry's profitability in South-Eastern Europe region.

Past research articles can be identifying different factors affecting the financial performance of insurance companies. Bruca & Batrinca (2014) studies the determinants of financial performance in the Romanian
insurance market mentioned the determinants of the Romanian insurance market's financial performance: financial leverage in insurance, company size, gross written premiums, underwriting risk, risk retention ratio, and solvency margin. Mogro & Barrezueta (2019) conducted a study on determinants of profitability of life and non-life insurance companies: evidence from Ecuador identified net premiums, technical reserves, capital ratio, and score efficiency are micro-determinants in the life insurance and non-life sectors micro-determinants claimed level and liquidity ratio. Further, the authors found that HHI (Herfindahl-Hirschman Index) determines profitability only in life insurance. Among the macro determinants set, the authors found that the interest rate also significantly impacts life and non-life insurance.

NazishIshtiaq & Siddiqui (2018) studied the firm's profitability and provided empirical evidence on a negative relationship between internal and insurance companies' profitability. In Pakistan, tangibility, market share, insurance leverage, net premium, and GDP were insignificant and negatively related to life insurance companies' financial performance. Cekrezi (2015) researched determinants of the insurance companies' financial performance: Albania's case has indicated leverage and risk has a negative impact on Albanian life insurance companies' financial performance (ROA)**.** Islam & Akter (2018) studied factors influencing the insurance companies' profitability in Bangladesh found that premium growth, leverage, loss ratio, and expense ratio negatively correlated with the insurance companies' profitability in Bangladesh. Daare (2016)**,** Determinants of non-life insurance companies' profitability: an empirical study in India has verified capital adequacy, premium growth, and inflation negatively correlated with ROA.

Many other studies indicate a positive relationship between internal factors and insurance firm performance in other countries. NazishIshtiaq & Siddiqui (2018) recognized that the liquidity, underwriting risk, debt to equity, equity capital, capital surplus, and inflation are positively and significantly related to life insurance companies in Pakistan. Cekrezi (2015), Determinants of the insurance companies' financial performance: Albania's case has mentioned

tangibility (fixed assets to total assets) has a positive impact on the companies' financial performance (ROA). Islam & Akter (2018) found that factors influencing the insurance companies' profitability in Bangladesh have shown that liquidity and reinsurance dependence are positively associated with profitability. Daare, (2016) studied determinants of non-life insurance companies' profitability: In an empirical study in India, size, loss ratio, liquidity, age, and GDP positively correlated with ROA.

Limited studies have emphasized there is a significant or insignificant relationship between independent variables and the dependent variables. Cudiamat & Siy (2017) studied Determinants of profitability in life insurance companies: evidence from the Philippines found the number of life insurance policies in force, GDP and inflation shown to have no statistically significant effects on ROA. Batool & Sahi (2019) study on determinants of USA and UK insurance companies' financial performance during the global financial crisis (2007–2016) have exposed firm, liquidity, leverage, asset turnover, GDP, and WTI have positive while CPI and interest rate have a significant negative impact on the USA. In the UK, liquidity, GDP, CPI, and WTI have positive, but leverage, asset turnover, and interest rate have a significant negative impact; USA insurance is efficient compared to the UK. Rahman (2018) studied determinants of profitability in the life and non-life insurance sector of Pakistan: The results mentioned leverage, business risk, and inflation rate are negative but significantly affect the profitability of the insurance firms. Company size and GDP rate have a positive and statistically significant influence on profitability. Liquidity and growth are insignificant determinants of the study. Ayele (2012) prove that factors affect the profitability of insurance companies in Ethiopia: panel evidence has emphasized that liquidity ratio and leverage ratio are negatively but significantly related to profitability and age of the company, and tangibility of assets are not especially related to profitability.

3. METHODOLOGY

3.1 Research design

This study tried to assess the relationship between internal factors and company profitability initially. This research will discuss the insurance industry in the Sri Lankan context and examine the relationship between internal factors and company profitability by analyzing the interpreted data from the selected entities.

3.2 Conceptual Framework

The conceptual framework would explain how each independent variable would affect the dependent variable. The six internal factors were used to test the impact on the profitability of the Insurance firms.

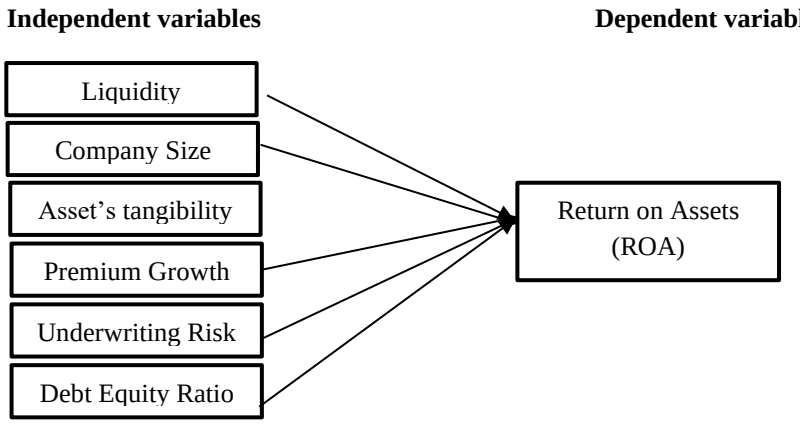

Figure 1- Conceptual Framework

3.3 Explaining variables

3.3.1. Dependent Variable

Zainudin & Leong, (2017), Firm-specific internal determinants of profitability performance: an exploratory study of selected life insurance firms in Asia mentioned there are different measurements used to measure the profitability of companies such as return on equity (ROE), return on assets (ROA) and net interest margin (NIM). The advantage of taking ROA as a profitability measurement is that it shows the efficiency of the company's management in using their real investment and financial resources to generate income. Further, ROA primarily relies on financial institutions' policy decisions and serves as external factors related to government regulations and economic conditions. Mogro & Barrezueta (2019); mainly used dependent variable to measure profitability both in the banking and the insurance sectors is the return on assets (ROA), and it captures the ability of the firm in terms of profit generation related to the total amount of assets, so it measures the operational efficiency of the firm in terms of managing its assets. It explains the effect the firm has on generating earnings using its available assets. Panayiotis et al. (2006), determinants of bank profitability in the South Eastern European Region highlighted ROA appeared to be the most appropriate dependent variable being explained by the independent variables. Bruca & Batrinca (2014), The return on assets ratio is one of the most used quantifying and measuring financial performance. It was developed in 1919 by DuPont. ROA emphasizes the company's ability to use its assets efficiently. Based on the literature, this study considers profitability as the dependent variable and Return on Assets (ROA) used to measure the performance.

3.3.2. Independent variables

i. Liquidity

Liquidity shows the ability of insurance firms to achieve their instant commitments or promises to their policyholders without having to liquidate their financial assets and increase profits on investment and underwriting activities, Zainudin & Leong, (2017). Liquidity ratios indicate the relationship of a firm's cash and other current assets to current liabilities. It shows how much current liabilities are covered by those assets expected to be converted to cash soon (Brigham & Houston (2004). There are many ratios that have found liquidity, but the most suitable and important ratio is the current ratio, and it measures the strength of a company to pay off its short-term obligation. Liquidity ratio shows the ability of the insurers to fulfil their liquid commitments with their policyholders. Insurers must keep their cash or liquid asset availability to meet immediate liabilities (NazishIshtiaq & Siddiqui (2018).

ii. Premium growth

NazishIshtiaq & Siddiqui (2018), mentioned measuring the growth of life insurance companies based on the premium. The variable of growth indicates the premium growth of long-term insurance firms which vary year to year. The premium growth compares the new premium collected in the previous year and new premium collected in the current year. The differentiate change in the amount of base year and particular year will identify the change in growth in the respective year. Zainudin & Leong (2017), Firm-specific internal determinants of profitability performance: an exploratory study of selected life insurance firms in Asia define premium growth represents the rate of market penetration of an insurance company. It is defined as the increase in premiums over the previous year.

iii. Company Size

To measure the size of an insurance company by the log of net premium. Premium is the payment from the policy holder of the insurance company against the insurance contract. The net premium is the amount earned by the life insurance company after deducting the reinsurance amount from premium income (NazishIshtiaq & Siddiqui (2018). Zainudin & Leong (2017), Firm-specific internal determinants of profitability performance: an exploratory study of selected life insurance firms in Asia have found that the company's size is a significant variable, positively affecting profitability. Kaya, (2015), The effects of firm-specific factors on the profitability of non-life insurance companies in Turkey mentioned the

natural logarithm of total assets measured the company's size. The logarithmic transformation helped eliminate extreme values in the data.

iv. Assets Tangibility

NazishIshtiaq & Siddiqui (2018), this ratio identifies fixed assets based on tangible assets from total assets. This is used to determine the tangible worthiness of a firm. It shows that a company will be able to sell those tangible assets in case of crisis, loss or bankruptcy. The tangibility ratio is the net worth calculation of the company and measures the company's tangible worth, which considers fixed and current assets of the company. Findings of the Zainudin & Leong (2017), showed that asset tangibility has a negative, insignificant relationship with the company's ROA. Tangible assets consist of assets with fixed physical forms; these are fixed assets that include land, property, plant, and equipment. Asset tangibility represents the ratio of total fixed assets to the total assets of a company.

v. Underwriting risk

This is the risk indigenous to the insurance company, and this risk of a company should be sound under crucial guidelines. Underwriting risk reflects the adequacy, or otherwise, of insurers' underwriting performance, Adams & Buckle (2003). According to NazishIshtiaq & Siddiqui,(2018), Underwriting risk is associated with insurance companies and this risk is calculated by actuaries of the company. This is based on the risk which can be claimed within a year by policyholders in case of maturity or death. In the article, Hussain (2015) stated that Macro economy and profitability of insurance companies: a post-crisis scenario in Pakistan. The underwriting risk can vary with damages due to incidents like an earthquake, floods, any other natural disasters, and terrorism leading to an increase in insurance policyholders' claims.

vi. Debt to equity ratio

The debt-to-equity ratio measures the debt which is against the equity of the firm. It also shows the debt placement of the company. To assess the extent to which the firm is using borrowed money and use different debt ratios. The debt-to-equity ratio is calculated by simply dividing its total debt (including current liabilities) by its shareholders' equity, NazishIshtiaq & Siddiqui (2018). Willy & Ondigi, (2016), factors affecting the profitability of insurance firms: the case of firms listed on Nairobi securities exchange find insurance risks management has a vital role in the profitability of the insurance sector. Though the findings of this study show that the insurance risks will raise the marginal cost of debt and equity, which increases the

cost of funds to the insurance firms, diminishing the profitability of insurance firms.

3.4 Population

This population consisted of all the life insurance companies in Sri Lanka. Sri Lankan insurance industry operates with twenty-eight registered insurance companies and has included thirteen life insurance companies, thirteen general insurance companies, and two composite insurance companies.

3.5 Sample

This research used 09 life insurance companies as the sample out of 15 companies, and the 06 companies were excluded from the selection due to the less market share and the lack of data. According to Kaya (2015), The effects of firm-specific factors on the profitability of non-life insurance companies in Turkey covers 24 out of 36 non-life insurance companies operating in Turkey. Selected companies represent more than 90% of the Turkish non-life insurance market in premium size 2006–2013. Chittaranjan (2020), Sample size and its importance in research have mentioned that the sample size for a study needs to be estimated when the task is proposed; too large a sample is unnecessary and unethical, and too small a sample is unscientific, which also unethical.

3.6 Data Collection Method

This research study would be carried out as quantitative research, and a secondary source would obtain data collection.

- The official website of IRCSL
- Annual reports of the companies
- Central Bank reports
- SEC published Reports & journal

3.7 Data analysis

Since this is quantitative research, descriptive statistics and regression analysis are used to differentiate; analyse the research output. The E-views software package was used to analyse the regression data.

3.8 Model specification

The following equation is used to identify the relationship between life insurance companies' financial performance (ROA) and internal factors. The association is tested by using the regression model.

$$Y= a+ B1X1+ B2X2+ B3X3+ B4X4+ B5X5+ B6X6+ U$$

Where;
Y = Return on Assets (ROA)
a = Intercept
X1 = Liquidity
X2 = Company size
X3= Asset tangibility
X4=Premium growth
X5=Underwriting risk
X6=Debt-to-equity ratio
u = Error term

3.9 Hypotheses Development

Liquidity means insurance firms' ability to meet their instant commitments or promises to their policyholders without liquidating their financial assets and increasing profits on investment and underwriting activities. Liquidity is not significant in determining the profitability of life insurance companies in Asian countries because it negatively relates to profitability. Zainudin & Leong (2017) and Ayele (2012), mentioned liquidity has a significant negative impact on the profitability of insurance firms in Ethiopia. NazishIshtiaq & Siddiqui (2018), Liquidity is significantly and positively related to life insurance companies in Pakistan. The study predicts that the liquidity of a company will have a relationship with its profitability.

H1 = There is a significant relationship between liquidity and the life insurance company's firm performance (ROA).

Premium growth defines a new premium collected in the previous year and collected in the current year and it is insignificantly related to the insurance company profitability performance, Zainudin & Leong (2017). The premium growth of non-life insurance companies has a positive effect and is statistically significant with profitability Kaya, (2015). There is no significant relationship between profitability and insurance companies' premium growth (Islam & Akter (2018). The study will test the premium growth's relationship with the profitability of life insurance companies in Sri Lanka.

H2 = There is a significant relationship between premium growth and the Life Insurance company's firm performance (ROA).
Company size is measured through the insurance firm's net premium after deducting the reinsurance ceded from gross premium Zainudin & Leong, (2017). Company size more effectively and strongly correlated with the profitability of the life insurance firms in Pakistan (NazishIshtiaq & Siddiqui,

2018). Company size has a positive relationship with insurers' financial performance (Burca & Batrinca, (2014). Company size positively correlated with profitability, and the relationship is statistically significant, Ayele, (2012).

H3 = There is a significant relationship between size and the life insurance company's firm performance (ROA).

Assets tangibility identifies fixed assets based on the total tangible asset, NazishIshtiaq & Siddiqui, (2018). Zainudin & Leong (2017), shows that asset tangibility has a negative, insignificant relationship with the company's profitability. NazishIshtiaq & Siddiqui (2018), Tangibility is significantly related to a dependent variable but negatively associated with ROA. Tangibility has a positive and significant relationship with the company's ROA, Cekrezi, (2015). The research assumes the relationship between asset tangibility and company profitability.

H4 = There is a significant relationship between tangibility and the life insurance company's firm performance (ROA).

Underwriting risk, defined as the loss ratio, is an indicator of performance that reflects the adequacy of insurance companies' underwriting performance positively and significantly influenced by the underwriting risk (Adams & Buckle, 2003). According to the findings, Zainudin & Leong (2017), underwriting risk has a significant positive relationship with insurance firms' profitability in Asian countries. Profitability is statistically significant and negatively related to the loss ratio (underwriting risk), Kaya, (2015). Evaluation of the literature; the insurance firms lead to the following hypothesis.

H5 = There is a significant relationship between underwriting risk and the life insurance company's firm performance (ROA).

The debt-to-equity ratio measures the debt against the firm's equity and is computed by simply dividing its total debt by its equity. Equity debt is significantly and positively related to life insurance companies, NazishIshtiaq & Siddiqui, (2018). According to Batool & Sahi (2019), debt to equity negatively relates to insurance firms' return on asset and equity in the United Kingdom. This study expects the debt to equity of a company has a relationship with the life insurance company's profitability.

H6 = There is a significant relationship between the debt-to-equity ratio and the life insurance company's firm performance (ROA).

4. RESULTS AND DISCUSSION

4.1 Descriptive statistics

Table 3: Descriptive statistics for panel data

	ROA	Tangibility	Under risk	Premium growth	Liquidity	Debt to equity	Company size
Mean	1.41	0.65	41.98	13.32	1.31	2.95	6.69
Median	1.43	0.85	34.30	12.06	1.09	3.05	6.78
Max	2.95	0.97	105.00	38.00	5.01	8.23	7.51
Min	-1.20	0.00	10.83	-3.29	0.08	0.00	5.45
Std.Dev	0.79	0.33	25.60	9.21	0.90	1.61	0.50
Skewnes	-0.34	-0.68	0.85	0.67	1.56	1.04	-0.46
Kurtosis	3.94	1.79	2.94	2.99	6.50	4.90	2.32
Observations 54							

Source: Author created based on E views result.

Descriptive statistics have included a measure of central tendency, dispersion, and normality. Kurtosis shows the "degree of sharpness"; the flatness of the data series distribution. According to the results of this study, ROA, Premium growth, liquidity, and debt to equity are greater than 03 and have heavier tails; The Tangibility, underwriting risk, and company size show platykurtic distribution because those variables have less than Kurtosis value of 03. According to the result ROA, company size shows fairly symmetrical skewness, underwriting risk, premium growth, and tangibility have moderate skewness. Premium growth, liquidity, and debt to equity ratio have high skewness.

4.2 Test for OLS assumptions

4.2.1 Normality test

Normality distribution is one of the major requirements when considering the panel data approach for research; in this study, normally, the data set distribution is tested from Jargue – Bera test. The following hypothesis developed for testing the normality in the distribution of the data.

H0: Residuals are normally distributed ($p > 0.05$)
H1: Residuals are not normally distributed ($p < 0.05$)

Table 4: Jargue – Bera test.

Jargue – Bera	Probability
1.321	0.516

Source: Author created based on E views result.

The probability value of the test is 0.516; it is above the 5% significant level, which permitted acceptance of the null hypothesis. The acceptance of the null hypothesis indicates residuals of the data set are typically distributed.

4.2.2 Unit root test (Levin, Lin, and Chu)

Table 5: Results of the levin, lin, and chu test of this study

Variable	Statistic	Probability
Return on assets	-6.41935	0.0000
Company size	-5.18927	0.0000
Debt to equity ratio	-25.5607	0.0000
Liquidity	-3.57970	0.0002
Premium growth	-8.66302	0.0000
Underwriting risk	-2.34892	0.0094
Tangibility	-17.3332	0.0000

Source: Author created based on E views result

H0 = Exist of a common unit root (panel data is not stationary) ($p > 0.05$)
H1 = Not exist of a common unit root (panel data is stationary) ($p < 0.05$)

According to the results, all the variables' probability values are significant at 5% level in the first attempt because each variable has shown less than 0.05 (5%) probability value. Therefore, the null hypothesis (panel data are not stationary) was rejected and accepted the alternative hypothesis, which indicates the data set is stationary.

4.2.3 Correlation Analysis

Table 6: Correlation Analysis

	U_risk	Tangibility	P-Growth	Liquidity	Debt/ equity	Com size
U_risk	1.00	-0.56	-0.11	-0.42	0.23	0.48
Tangibility	-0.56	1.00	0.17	0.14	-0.37	-0.39
P_growth	-0.11	0.17	1.00	-0.03	0.11	0.15
Liquidity	-0.42	0.14	-0.03	1.00	-0.17	-0.45
Debt/equit	0.23	-0.37	0.11	-0.17	1.00	0.45
Com_size	0.48	-0.39	0.15	-0.45	0.45	1.00

Source: Author created based on E views result.

According to the result, all other variables show values between 0 to 0.6, which means there is no strong relationship among variables and no strong multicollinearity.

4.3 Interpretation of the result of the regression outputs

Table 7: Correlated Random Effects - Housman test

	Chi-sq. Statistic	Probability
Cross-section random	22.233463	0.0011

Source: Author created based on E views result.

H0= Random effect model is appropriate (p> 0.05)
H1=Fixed effect model is appropriate (p <0.05)

Based on the Hausman test results, the fixed effects model is selected because the probability value is 0.0011 and significant at the 1% level. The null hypothesis was rejected, which means the random effects estimator is inappropriate, and the fixed effects estimator should be preferred.

Table 8: Chow Test (redundant fixed effects tests)

	Statistic	Probability
Cross-section F	2.953415	0.0111
Cross-section Chi-square	25.576556	0.0012

Source: Author created based on E views result.

H0= Panel least squares model modal is appropriate (p> 0.05)
H1=Fixed effect model is appropriate (p <0.05)

According to the chow test result, the Cross-section Chi-square probability value is 0.0012, less than 0.05. Therefore, reject the null hypothesis. Finally, this study chose the fixed effect model as the most appropriate model for estimating panel data based on the results.

Table 9: Fixed Effect Model

	Coefficient	Std. error	t- Statistic	Probability
Underwriting Risk	-0.009201	0.007449	-1.235199	0.2241
Tangibility	1.506686	0.539745	2.791478	0.0081
Premium Growth	0.022193	0.010352	2.143895	0.0383
Liquidity	0.158107	0.111660	1.415965	0.1647
Debt_to_Equity_Ratio	-0.138463	0.056933	-2.432023	0.0197
Company Size	1.379980	0.489630	2.818412	0.0075
C	-8.515498	3.260607	-2.611630	0.0127
R- squared	0.727299			

Adjusted R- squared	0.629406		
F- statistic	7.429547	Probability	0.000000

Source: Author created based on E views result

Under this model, the company's size, tangibility, premium growth, and debt to equity ratio are significant at 1%. The underwriting risk and liquidity of the company were not significantly related to life insurance firms' profitability. The R-squared of this model was 0.727299, which means that the independent variables explained around 73% of the variations in the profitability of the life insurance companies in Sri Lanka.

Table 10: Relationship between the Dependant variable and independent variables

Variable	Expected relationship	Actual relationship
Underwriting Risk	Significant	Insignificant & Negative
Tangibility	Significant	Significant & positive
Premium Growth	Significant	Significant & positive
Liquidity	Significant	Insignificant & positive
Debt_To_Equity_Ratio	Significant	Significant & negative
Company Size	Significant	Significant & positive

Source: Author created

The F-Statics probability value in this model is 0.0000, significant at 90% confidence interval level. It can conclude as the overall model is significant. Based on the result, only H1 and H5 were rejected, and all other four hypotheses (H2, H3, H4, H6) are supported.

4.4 Discussion

ROA and Liquidity

H1 = There is a significant relationship between liquidity and the life insurance company's firm performance (ROA).

Findings reveal an insignificant & positive relationship between the liquidity and the profitability of life insurance companies in Sri Lanka. The outcome aligns with Islam & Akter, (2018), liquidity shows a positive relationship with the change in insurance companies' profitability in Bangladesh. It is not a significant determinant. Its probability value exceeds the confidence level. Rahman, (2018), Liquidity is an insignificant variable of insurance company’s profitability in Pakistan life and non-life insurance sector. Mogro & Barrezueta, (2019), The liquidity ratio is not a significant variable for the life insurance industry in Eqador and indicates a positive relationship. Still, it is significant at 01 percent (1%) for the non-life insurance sector in Equador. Liquidity is not

significant in determining profitability of life insurance companies in Asian countries (Zainudin & Leong 2017). This study's findings do not align with some literature, Ayele (2012), which mentioned liquidity has a significant negative impact on the profitability of insurance firms in Ethiopia. NazishIshtiaq & Siddiqui (2018), liquidity is significantly and positively related to life insurance companies in Pakistan.

ROA and Premium Growth

H2 = There is a significant relationship between premium growth and the life insurance company's firm performance (ROA).

According to the findings, premium growth indicates a positive and significant relationship with the ROA at a 1% significant level. Those findings are similar to Deyganto & Alemu (2019); premium growth has a positive and significant relationship at 05% significance level with the insurance company's financial performance in Hawassa city Administration, Ethiopia. NazishIshtiaq & Siddiqui (2018), premium growth positively and significantly affected the financial performance of the life insurance sector of Pakistan. Kaya, (2015), The premium growth rates of non-life insurance companies positively impact and statistically significant at 1% level on these companies' profitability measures in Turkey. Some studies show different findings, premium growth significance, and negative relationships (Daare, 2016). Zainudin & Leong (2017); Premium growth exhibits a negative and insignificant relationship with ROA; based on this study, premium growth is not a meaningful or powerful independent variable determining the profitability of life insurance companies in Asian countries.

ROA and Company Size

H3 = There is a significant relationship between size and the life insurance company's firm performance (ROA).

The evidence shows a significant positive relationship between ROA and the company's size with a 1% significant level. This result complies with Zainudin & Leong (2017), the company size is a considerable variable and positively affects the profitability of the life insurance companies in Asia. According to the final results, Burca & Batrinca (2014), one of the significant determinants of the Romanian insurance market's financial performance is company size. It shows a positive linkage with profitability. Daare,(2016), The dimensions of the company have a positive effect on insurance profitability (ROA at a 01%)

Ayele, (2012), The regression analysis results reveal that company size is one of the most important determinants of performance of the life insurance sector in Ethiopia, and company size has a statistically insignificant relationship with

ROA. There are opposite findings in a few other studies. Deyganto & Alemu (2019) argued that the company size has no significant impact on the insurance company's Hawassa city Administration financial performance. Cekrezi (2015) said size is not a significant determinant of the level of performance of insurance companies.

ROA and Tangibility

H4 = There is a significant relationship between tangibility and the life insurance company's firm performance (ROA).

Findings show that tangibility has a positive and significant relationship with its ROA, significance at the 1% level. This finding is similar to the results of NazishIshtiaq & Siddiqui (2018), tangibility positively and significantly related to the financial performance of the life insurance sector of Pakistan. Cekrezi, (2015), Tangibility has a positive and significant relation to ROA in the Albanian insurance market. Most of the literature supports the findings of that study. Still, some literature shows different results (Zainudin & Leong, (2017), which showed that tangibility is not a meaningful and powerful independent variable in determining life insurance companies' profitability in Asian countries. Ayele (2012) said that the regression results illustrate tangibility of assets is no statistically significant relationship between tangibility of assets and profitability (ROA) of insurance companies in Ethiopia. Derbali, (2017) Tangibility is an insignificant relationship to the performance of life insurance Tunisian firms.

ROA and Underwriting Risk

H5 = There is a significant relationship between underwriting risk and the life insurance company's firm performance (ROA).

The study's findings reveal that underwriting risk has an insignificant and adverse relationship with a company’s ROA. This result is the same as Kaya, (2015). Underwriting risk is expressed as the loss ratio and the fixed effects models; there is a reverse (negative) relationship between the loss ratio and profitability measures. Bruca & Batrinca, (2014), Underwriting risk defines the efficiency of the insurer’s underwriting activity. The underwriting risk negatively influences the insurer’s financial performance, which means taking an excessive underwriting risk can affect the company’s stability through higher expenses. The findings do not comply with this study by Zainudin & Leong, (2017). Underwriting risk is positively related to a company’s ROA; it is a significant relationship with the ROA of the life insurance firms in Asia. Underwriting risk is positively and significantly associated with Pakisthan’s life insurance sector NazishIshtiaq & Siddiqui, (2018).

ROA and Debt to Equity Ratio

H6 = There is a significant relationship between the debt-to-equity ratio and the life insurance company's firm performance (ROA).

The study's findings reveal that the debt-to-equity ratio has a negative and significant relationship related to a company's ROA, with significance at the 1% level. According to Batool & Sahi(2019) the same findings as debt-to-equity ratio have a negative relationship and show significant returns on asset and return on equity of insurance firms in the United Kingdom. Debt to equity is significantly related to the fin ancial performance of life insurance companies in Pakistan, NazishIshtiaq & Siddiqui, (2018). Rahman (2018), Debt to equity ratio predicted as a negative and significant determinant of profitability in Pakistan's Life and Non-Life Insurance Sector. The result based on both models pooled OLS. It is a fixed-effect model. Malik, (2011), have found that the leverage ratio (debt to equity ratio) is negatively affected by the profitability of Pakistan's life and non-life insurance sector.

Findings depend on the model and tests used to conduct the study. Therefore, this study first did a unit root test to determine the data set's stationery and proved stationary. After that, descriptive statistics represented an overview of all the variables used in the analysis and provided the mean, minimum, maximum values, and standard deviation of the study's variables. The correlation test was used to identify the correlation between the independent variables and identify multicollinearity issues. The result proved there is no multicollinearity between the independent variables. The Hausman test was used to select an appropriate method between the fixed effects estimator and the random effects estimator; based on the result, the fixed-effect model chooses as the better one. The Chow test selects the most appropriate model among the panel least squares model and the fixed effect model to estimate panel data. The test chosen fixed effect model is the most suitable model for this study. `

Under this model, the company's size, tangibility, premium growth, and debt to equity ratio are significant at 01% significance level, and underwriting risk and liquidity of the company were not significantly related to the profitability of life insurance firms. Underwriting risk and debt to equity ratio show a negative relationship with the dependent variable (ROA). Tangibility, premium growth, liquidity and company size offers a positive relationship with dependent variable. According to the fixed-effect model's R-squared value, the independent variables explained around 73% of the life insurance companies' profitability in Sri Lanka. The F-Statics probability value in this model is

0.0000, which is significant at 99% confidence interval level. That can conclude as the overall model is significant.

5. CONCLUSION AND POLICY IMPLICATIONS

There is a lack of research articles based on the Sri Lanka Insurance sector, especially in the life insurance sector. This study aims to provide better knowledge on the internal factors that impact the life insurance firms in Sri Lanka by determining the internal factors that can influence profitability and identifying the relationship between internal factors and profitability. For this purpose, return on asset (ROA) is taken as the dependent variable and liquidity, premium growth, company size, underwriting risk, debt to equity, tangibility is taken as independent variables. The sample size of this research is six years, and panel data are gathered from 2014 to 2019 from selected 09 life insurance companies in Sri Lanka.

According to the result, underwriting risk is an insignificant and negative independent variable with profitability. Underwriting risk is inherent to insurance companies, and it is the potential loss to an insurance company. The risk is uncertain, and life insurance companies underwriting risk impacts different diseases, natural disasters, and populations and age groups. This study assumes insignificant of this variable happens based on underwriting risk fluctuations on the above factors. The negative effect shows life insurance companies having low underwriting risk having higher profitability than the companies having high underwriting risk. But that is not mean to reject the claims; insurance companies must pay claims because it is important to gain trust, gather new customers, and retain the existing customers.

Findings reveal a significant and positive relationship between tangibility and the profitability of life insurance companies in Sri Lanka. Assets tangibility explained as a fixed asset from total assets and the firm's tangible worthiness. Tangibility is a significant independent variable. Therefore, insurance companies provide attention and should maintain a sufficient level of fixed assets and total assets within the company. This is positively affected, which means the companies with high profitability show a high tangibility ratio.

Premium growth shows a positive and significant relationship with firm performance. Premium growth defines a comparison of the new premium collected in the previous year and the new premium collected in the current year; it is a primary income source for insurance companies. This factor has a positive relationship with ROA, which means the companies with high premium growth show higher profitability than other companies. Life insurance companies should pay their attention and effort to gain new policies and collect premiums from the company's retention policies. Better premium growth helps companies cover companies' costs and gain profits, further increasing the

market share. Findings reveal an insignificant & positive relationship between the liquidity and the profitability of life insurance companies in Sri Lanka. This little means liquidity is not a powerful determinant regarding the life insurance sector in Sri Lanka. Therefore, life insurance companies need not hold too many liquid assets or acquire these types of resources. Because based on the results, liquidity shows a positive relationship with the profitability of life insurance firms in Sri Lanka.

The debt-to-equity ratio has a negative and significant relationship related to company profitability. This ratio is used to measure the debt portion, which is against the company's equity portion. Debt to equity is significant, and that can be impacted to the profitability of the life insurance companies, therefore, companies should maintain the optimum capital structure. If not, that will help to decrease the profits by increasing the cost of capital. The inverse relationship between ROA and the debt-to-equity ratio reveals the companies with high debt equity ratio show low profits than other companies in the life insurance sector in Sri Lanka.

The evidence shows a significant positive relationship between profitability and size of the company. There is a positive relationship between the company's size and ROA that means large life insurance companies have higher profitability than small life insurance companies. Company size is the significant variable the life insurance companies in Sri Lanka should give suitable attention to their growth strategies. Further, mergers and acquisitions can increase firm size. Companies should put their maximum effort into capturing new businesses with high premiums, launch marketing campaigns, and comply with new technology. Life insurance companies are service-providing companies, and then people consider reputation, goodwill, and brand name; therefore, companies should always be concerned about those factors.

As the final output, this study identified the size of the company, tangibility, premium growth and debt to equity ratio are significant determinants but underwriting risk and liquidity of the company were not significant determinants to the profitability. This study will contribute literature about the Sri Lankan life insurance industry. This research helps the investors to make decisions properly, help the companies manage the risk associated with the firms, and increase the profitability and financial performance of the Sri Lankan life insurance companies.

5.2 Limitations and Future Research Directions

This study focused only on six internal factors affecting the life insurance sector financial performance in Sri Lanka from 9 out of 15 companies from 2014 to 2019. The researcher proposes that future researchers increase the sample size by taking other companies or taking more years. When growing the year’s, the

researcher should concern the data availability because Sri Lankan insurance companies have been segmented as life a general in 2015; therefore, it is challenging to collect only life insurance or general insurance data before 2014. Among six internal factors, two factors have been identified as an insignificant determinant to profitability. But there are so many other internal and external variables that have to use. Therefore, future researchers can use another suitable variable. This study used one dependent variable, namely ROA, to measure the profitability; based on the choice researcher was able to use another one or more dependent variables.

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EFFECT OF INCOME SOURCE DIVERSIFICATION ON FINANCIAL PERFORMANCE: EVIDENCE FROM SRI LANKA

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ABSTRACT

Decisions in income source diversification are very important in achieving the financial performance of finance companies. Also, diversification is one of the portfolio strategies to reduce the risk by combining various investments, and to increase the firms' financial performance indicating a sound financial strength of a company and a firmed guarantee of making the profitable investment to its depositors, shareholders, employees, and the economy at large. This study aims to investigate the effect of income source diversification on financial performance based on the data concerning finance companies listed at the Colombo stock exchange in Sri Lanka. This paper investigates the effect of income source diversification on financial performance based on the data concerning fifteen (15) listed finance companies in Sri Lanka during the period ranging from 2014 to 2020. The study measures financial performance in terms of Return on Assets, whereas income source diversification is measured by Herfindahl-Hirschman Index. Four control variables were considered namely firm size, firm age, operational efficiency, and debt to equity in order to strengthen the data analysis model. Findings of this study revealed that the HHI index and debt to equity ratio are negatively significantly correlated with financial performance while other correlations; firm size, age, and operational efficiency are insignificant at a 5% significant level. Regression

(R^2) result indicates that only 12.7% (approx.) variation in financial performance can be explained by the income source diversification and other 87.3% (approx.) variations come from other factors. Further, this study reiterated that the diversification is a sun shed for enlightening the investment process of any source with aiding through intermediation and performing through the portfolios for the finance companies, because, they always promptly concentrate the dynamic investment appraisal and management activities in Sri Lanka as well as abroad. Further, this study recommends that the managers in finance companies focus on different sources of revenue generation in order to minimize their level of risk through a diversification strategy to enhance efficiency. This study contributes to the finance sector literature of Sri Lankan markets.

Keywords – Income Source Diversification, Financial Performance Listed Financial Companies, Colombo Stock Exchange, Sri Lanka

1. INTRODUCTION

Diversification is one of the financial strategies used by financial institutions to gain competitive advantages from the existing and emerging investment markets. In other words, diversification is one of the portfolio strategies designed to reduce risk by combining various investments. In finance and investment planning, diversification improved cost efficiency through lower risk from diversification if it occurred; it lowered the required risk premiums on un-insured debt. In every country, finance is considered as the lifeblood for its economic development. It has a vital role that the finance should be provided to run the economic activities more effectively. The financial institutions have used some tools for establishing in market namely, value exchange, intermediation, risk transfer, and liquidly.

As Muthoni (2012) emphasized "Income source diversification o refers to financial institutions as well as shifting their income sources into non-intermediation income generating activities as opposed to the traditional inter-mediation income generating activities". Banks and finance companies have shifted their sales mix by diversifying income sources mainly into two sources; interest income and non-interest income. Non-interest income components include fees and commissions on loans and advances, other fees and commissions, foreign exchange trading income, dividend income and other non-interest income. Non-interest income increases bank franchise value and banks with higher non-interest income have higher market betas (Baele et al., 2007).

Financial performance is a measure of how sound financial strength of a finance company is and how is a guarantee to its depositors, shareholders, employees and the economy at large. Due to this fact, efforts have been made from time to time, to measure the financial position of each bank and manage it efficiently and effectively (Batiz-Lazo and Kassa, 2006). The financial performance (profitability and return on investment) of finance companies heavily depends on the net interest income-generating activities and the related activities' expenses. Due to some reasons, finance companies have changed their behavior of income sources, by increasingly diversifying into non-intermediary income generating activities. Rapidly changing financial environment, changing trends in the economy, customer's expectations, increased competition, regulatory pressure (Capital requirements), and the volatility of interest-based income have pushed the finance companies to think about the non-traditional ways of income generation. Finally, to survive in the intense competition of finance companies and to increase profitability, finance companies should need diversification in their income sources.

In this highly competitive financial environment, Finance companies are now more concerned about earning volatility and they are now in search of new means to generate revenue in addition to their conventional modes; called income source diversification (Ismail, et al., 2013). By engaging in those activities finance companies have been able to diversify their income sources as net interest income and non-interest income (Waithira, 2013). It contains Net Interest Income and Non-Interest Income as major revenue streams. As explained the difference between revenues generated by interest-bearing assets and the cost of servicing (interest burdened) of those particular liabilities, interest income components include: loans and advances, government securities, deposits and placement with banking institutions, other interest income. Net interest income can explain the deference between interest incomes received and interest payments make to liabilities. Net Interest income components are; loans and advances, government securities, deposits and placement with banking institutions, and other interest income. Finance companies in Sri Lanka are depending on interest base sources as their main income source.

Non-interest income components are the fees and commissions on loans and advances, other fees and commissions, dividend income, and other non-interest income. Non-interest income explained the pool of fiduciary activities income. include: service charges on fixed deposits accounts, trading revenue, fees and commissions from advisory, and underwriting fees and commission, fees and commissions from annuity sale, underwriting income from insurance and reinsurance activities, income from other insurance activities, and other non-interest income. According to the DeYoung & Rice (2004a and 2004b)) stated that non-interest income now accounts for over 40 percent of operating income

in the U.S. financial industry and their results suggest that well managed financial institutions rely relatively less on noninterest income and that institutes which stress customer relationships and service quality tend to generate more non-interest income. Moreover, the study found that the development of new financial technologies such as cashless transactions and mutual funds are associated with higher levels of noninterest income in the financial industry. They further stated that well-managed financial institutions expand more slowly into non interest activities, and that marginal increases in non-interest income are associated with poorer risk-return tradeoffs on average. For an effective income diversification strategy, financial institutions should not heavily rely on non-traditional ways of income generation (Huang & Chen, 2006). Non-interest income components are; fees and commissions on loans and advances, other fees and commissions, dividend income, and other non-interest income (Teimet, et al., 2011).

Accordingly, the growth of non-intermediation income activities suggests intermediation activities are becoming a less important part of strategies and strategically financial institutions have shifted their sales mix by diversifying in income sources (Teimet, et al., 2011). To survive in the intense competition, financial institutions need diversification in their income sources (Ismail, et al., 2013). In addition, they reported that some financial institutions are fully concentrated towards either interest income or non-interest income, which is also not a good strategy. There should be a balance between all sources of income, as over-diversification give rise to the volatility of the returns and risk of default. Ismail, et al. (2013) also stated that larger institutions have greater ability to diversify risk and should be safer in operation -and thus have lower cost of funding than smaller ones and larger institutions may have relatively better profitability than smaller ones (Teimet, et al., 2011). Income sources mean simply the way of income came from the organizations. As an example, an interest income comes from deposits, lending to the public, and non interest incomes come from advice services to customers, commission, and fee on services and profits or loss on trades and sales. Any organization should be required to document and report its financial and non-financial information to measure the financial performance which can be processed by calculating Return on Assets (ROA) or Return on Equity (ROE). ROE means how the profitability of the company is contributed by the value of shareholders' equity and it is calculated by net income divided by shareholders equity.

In the Sri Lankan context, there are lots of financial institutions which serve a variety of financial services to their customers while achieving the objective of earning profits (Ariyadasa et al., 2016). The financial stability of every organization is mainly depending on its financial performance and it also is affected by the diversification of its income sources. Financial performance is a subjective measure of how well a firm can use assets from its primary mode

of business and generate revenues. Moreover, it is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. The relationship between income source diversification and financial performance remains a controversial one in both theory and empirical findings with positive, negative exemplified. Earlier studies showed positive and negative results about the relationship between income source diversification and financial performance of banking sector organizations abroad.

When finance companies were operating in a competitive environment, which companies should be needed to be more stable as they diversified the portfolios. Also results from cause to enhance performance, risk-adjusted returns for the finance companies and to survive in the stiff competition? The research problem arising leads to need for the study, because no clear answers were found within the literature reviewed in theory or in practice and the lack of researchers regarding this topic under Sri Lankan context. Further need to investigate the strategies to face the high competition within finance companies in Sri Lankan context motivated the researcher to conduct a study regarding this area. This study will be expected to find out that are there any impacts of income source diversification on the financial performance of listed finance companies in Sri Lanka

The finance companies in Sri Lanka operate in a competitive environment without any understanding of how to make a high profit through the funds invested in defeated sources of income. In this context, the main objective of this study is to examine the effects of income source diversification on the financial performance of listed finance companies in Sri Lanka. By linking this main objective, this study tries to fulfill these two specific objectives; to provide guidelines to informal entities to manage their limited resources within a competitive environment and to provide guidance to future researchers to conduct studies in the finance sector.

2. LITERATURE REVIEW

Banks are using non-trading income methods, diversification from traditional income methods, to enhance their profitability from last decades, (Kumar, Chaudhuri, & Sharma, 2019). The continuous development of non interest earning activities identified that the traditional interest-earning ways are reducing in importance and therefore banks are entering new markets thus diversifying their income sources. Over the last two decades, the global banking sector has faced major challenges that have destabilized interest income. Specifically, the sector continues to grapple with rising nonperforming Loans, competition from non-banking entities, and unprecedented growth in financial

technologies (Gololo, 2018; Dimitrios & Mike, 2016; Psillaki & Mamatzakis, 2017). Bank diversification can take different forms. However, due to regulatory limits, the focus is on income diversification. Income diversification refers to increasing the share of the fee, net trading profits, and other noninterest income within the net operating income of a bank (Gurbuz et al., 2013). In principle, income diversification is a shift from lending activities towards non-lending activities such as investment banking, trading, and insurance (Busch & Kick, 2009). Besides, Ebrahim and Hasan (2008) view income diversification as the expansion into new income-earning financial services away from traditional intermediation services. There were some theories stated by researchers in previous studies. Some of the particular theories are as follows. In this study, three theories were explained and namely, resource Based View theory, financial intermediation theory, and Modern Portfolio theory.

2.1 Resource Based View Theory

Waithira (2013) stated in his study that the theoretical perspective that has come to be known as the resource-based view of the Firm suggests that sustainable competitive advantage often originates inside the firm, and that strategy at the firm level is therefore driven by firm-specific resources and capabilities. The effectiveness of firm strategies depends on the utilization and exploitation of existing resources. To the extent that firms have pools of underused resources, these create unique, firm-specific opportunities for exploitation (Montgomery, 1994). The resource-based view of the firm suggests that diversification arises as firms attempt to leverage non-tradable firm-specific resources, among them human resources. Studies of diversification have long been a mainstay of economics as well as strategic management research (Hoskisson & Hitt, 1990). More skeptical views offered by agency theorists emphasize the benefits that diversification offers to firm managers themselves, often at the expense of its shareholders. Resource-based view theory generally assumes that firms are organized with a single product focus and face a homogeneous factor market. Based on those assumptions, a market power view of diversification emphasizes the benefits a firm may reap at the expense of its competitors and customers. Diversification is one such strategy for exploiting existing firm-specific resources: firm diversification can be understood as a process through which managers first identify resources that are unique to their firm, and then decide in which markets those resources can earn the highest rents. Some firm resources are ‘indivisible’ and therefore ‘sticky’, and, particularly if they are intangible, difficult, or impossible to trade in the market.

2.2 Financial Intermediation Theory

Financial intermediation is a process that involves surplus units depositing funds with financial institutions that then lend to deficit units. Waithira (2013)

and Stiroh (2004) identify that, financial intermediaries can be distinguished by four criteria: first, their main categories of liabilities (deposits) are specified for a fixed sum which is not related to the performance of a portfolio. Second, the deposits are typically short-term and of a much shorter term than their assets. Third, a high proportion of their liabilities can be withdrawn on demand. And fourth their liabilities and assets are largely not transferable. The most important contribution of intermediaries is a steady flow of funds from surplus to deficit units. According to Scholtens and Van Wensveen (2003), the role of the financial intermediary is essentially seen as that of creating specialized financial commodities. These are created whenever an intermediary finds that it can sell them for prices that are expected to cover all costs of their production, both direct costs and opportunity costs. If there is no cost of financial intermediaries between buyers and sellers, intermediates may not stay. Also, it stated perfect transformation of information is important for the intermediating process.

2.3 Modern Portfolio Theory

Hassan (2017) stated that the Modern Portfolio Theory depends on the concept that investors who are fearless to risk can create portfolios to maximize the return. The modern portfolio theory helps investors and investees to classify, estimate, and control both the type and rate of expected return and risk in any investments as a complex theory, and it will aid in quantifying the risk-return relationship and the hypothesis. Investors also used this theory in accepting and reimbursing risk. According to the above theories, basic theoretical knowledge can be derived for the researcher and it is needed and advisable to conduct the proposed study as expected by the researcher. By the Resource-Based View theory, it provides an explanation about how the firm can utilize their own resources in traditional ways and gains the competitive advantages through it. The firm's strategies mainly depend on its resources and arise opportunities to expand firm capabilities. The financial intermediation theory explains those financial companies' roles in a financial market. As roles, the finance companies take deposits from surplus units and it lends to deficits units. In accelerating country development, the finance companies should need to transfer the funds to needed parties. Modern Portfolio Theory is considered a new trended theory of financial theories. Modern Portfolio theory explains that if any organization trends to bear more and more risk it will affect to generate maximum return to the organization. On the basis of the light of the review of these three theories, the resource-based view of the firm suggests that diversification arises as firms attempt to leverage non-tradable firm-specific resources, among them human resources. For this stance, the theoretical link for financial intermediation is needed to validate the process of income source diversification and this is a process that involves surplus units depositing funds with financial institutions who then lend to deficit units to identify

distinguished financial intermediaries based on the criteria: main categories of liabilities (deposits) are specified for a fixed sum which is not related to the performance of a portfolio, deposits are typically short-term and of a much shorter term than their assets, a high proportion of their liabilities are can be withdrawn on demand and liabilities and assets are largely not transferable. The diversification is implemented after verifying the most important contribution of intermediaries which is a steady flow of funds from surplus to deficit units. Then the view of diversification through financial intermediation seems to be linked to the concept that investors, who are fearless to risk, can create portfolios to maximize the return and minimize the risk classifying, estimating, and controlling both type and rate of expected return and risk in any investments. Therefore, it is to conclude that diversification is a sun shed for enlightening the investment process of any source with aiding through intermediation and performing through the portfolios.

According to the above theoretical scorecard, the scenario will be addressed with the following empirical literature. Bailey-Tapper (2010) explained the relationship among non-interest Income, financial performance, and the macro economy from evidence on Jamaican panel data for the period of twelve years from 1999 to 2000, and the study also investigated there is a positive and significant relationship between financial performance (as measured by the ROA) and non-interest income for larger financial institutions. Ismail, et al, (2013) conducted a study of "Income diversification in financial institutions of Pakistan: a blessing or curse?" and that study aimed to fill the gap in the existing literature of Pakistan by empirically exploring the relationship between income diversification and performance for the period of 2006-2013. The result shows that there is a positive relationship between income diversification and the performance of financial institutions in Pakistan and results indicate that financial institutions can increase their performance with more diversification. Tarawneh, et al., (2017) investigated the impact of noninterest income on the financial performance of Jordanian financial institutions. The empirical findings of the study were noninterest income increases the profitability of financial institutions. Hassan (2017) investigated the effect of income diversification on the financial performance of commercial banks listed at the Nairobi Security Exchange. According to that income, diversification is a costly affair for commercial banks since it has a negative impact on financial performance.it also concluded that, the size and capital adequacy had a positive impact on financial performance while liquidity had a negative impact". This research also recommended to future researchers to those studies may consider the effect of diversification of income on the performance of Islamic banks or the impact of geographical diversification on performance on commercial banks. As Asif & Akhter (2018) reviewed, exploring the influence of revenue diversification on financial performance in the banking industry) have found that Revenue diversification, in the true spirit, increases the performance of the

banking sector, but it depends upon the size and market power of the particular institutions and country as well. The findings of current SLR revealed the fact that a great deal of research work has been done on commercial banks of Asian and European economies, however, a research gap exists for those countries where the dual banking system is prevailing. Researchers have used different models for analysis, i.e., multiple regression model, generalized methods of moments, and in some cases fixed and random-effects models. However, Alhassan (2015) investigated the relationship between income diversification and bank efficiency of Ghanaian banks in an emerging market that also tested the hypothesized relationship between income diversification and efficiency and found that Ghanaian bank operates at about 17 per cent below the efficient frontier. Further, he revealed that small banks are found to have low efficiency in cost compared to large banks.

By concentrating on the above theoretical and empirical insights, the authors revealed that the income source diversification is a footprint that the key decision-makers and financial specialists take for vibrating strategic and sustainable financial decision making, so that optimal financial performance can be achieved thereafter. Income source diversification on that extent through a scanned and in-depth policy framework is a vacuum for modern financial decision-making pertaining to the investment and lending in an optimal return perspective, Income source diversification is a strategic perspective as it preserves the way to achieve financial performance in a healthy manner. In this case, it would be highly beneficial to achieve the corporate objectives on wealth maximization plus social benefits. Therefore, the spirit of the above-mentioned literature shows the evidence to fulfill the research gap to reveal the impact of income source diversification on performance of banking and other investment companies in other countries However, in the Sri Lankan context, there was a lack of studies done by the researchers regarding the relation between income source diversification and financial performance specially in the financial sector. In order to fulfill this research gap, concentrating the following conceptual and hypothetical framework, the researcher is to find the relation between income source diversification and financial performance in Sri Lankan financial sector companies in Sri Lanka.

3. CONCEPTUAL FRAMEWORK AND HYPOTHESIS

The above theoretical and empirical insights show that there is a link between the income source diversification and financial performance, so that the following conceptual model is developed based on the variables deduced from the aforesaid literature understandings, implications, and originalities as such;

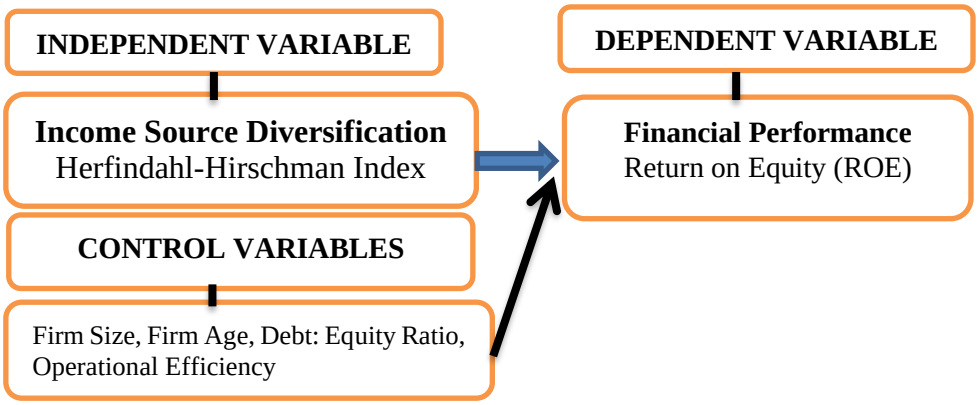

Figure 1: Conceptual Model

Source: Author Developed

In this conceptual framework, the independent variable is the income source diversification, which is measured in terms of the Herfindahl-Hirschman Index (HHI), whereas the dependent variable is the financial performance which is measured in terms of the Return on Assets (ROA). In addition, four control variables were used to strengthen the outcome of this study through the data analysis model to be constructed in the methodology. Accordingly, the study hypotheses were formulated based on the aforesaid theoretical and empirical insights, implications, and findings as discussed (Asif & Akhter, 2018; Hassan, 2017; Tarawneh, et al., 2017; Alhassan, 2015).

The hypothesis means that a tentative relationship between two or more variables builds up the researcher. Before establishing hypotheses, the researcher should clearly identify the key variables of the study. This study uses the statistical hypothesis approach to develop the hypothesis for the data analyzing part. Reasons for that the data was gathered by the researcher can test statistically.

H_1 There is a relationship between income source diversification and financial performance of Sri Lankan listed financial companies.

H_2 There is a relationship between firm size and financial performance of Sri Lankan listed financial companies.

H_{1b} There is a relationship between firm age and financial performance of Sri Lankan listed financial companies.

H_{1c} There is a relationship of operational efficiency and financial performance of Sri Lankan listed financial companies.

H_{1d} There is a relationship between debt-to-equity ratio and financial performance of Sri Lankan listed financial companies.

H_2 Income source diversification has an impact on financial performance of Sri Lankan listed financial companies.

Then, the researcher has chosen the methodology to collect the data and its analysis in order to generalize the findings for achieving the objectives of this study.

4. METHODOLOGY

4.1 Research Design

Research design is an essential part to be concentrated on. It is a strategy that a researcher formulates to conduct the whole research. Zikmund et al., (2013) iterated that the research design denoted methods and procedures for collecting and analyzing the needed information which comprises sampling methodologies, data collection techniques, data analysis, and cost schedules. Mainly, it includes the research method, selecting the population and sample, data collection, identification of variables, data modeling, data analysis and generalization of findings, etc. This study has used a descriptive quantitative data collection method as a research method. Quantitative research design is a numerical representation and explanation of the phenomena in observed data. It is a blueprint of the research as it shows how all of the major parts of the research connect with the project and coordinate to achieve the particular research objective. Further, research methodology is the specific procedures or techniques used to identify, select and analyze information about a topic. In a research paper, the methodology part allows the reader to critically evaluate a study's overall validity and reliability. This study is both longitudinal and explanatory. In general, a large collection of individuals or objects is the main focus of a scientific query and is also defined as a well-defined object. In this study, the researcher has selected 54 finance companies in Sri Lanka as a population of the finance companies which are listed in Colombo Stock Exchange (CSE) in Sri Lanka.

4.2 Sample Size

In this study, the sample consists of fifteen (15) listed finance companies out of 54 companies over the 2014 to 2020 period by using a convenient sampling method.

Secondary data was collected through the respective audited annual reports that were presented during the period as mentioned above, and these are freely available on the Internet (Through the website of the Colombo Stock Exchange

and the particular finance companies). Table 1shows the selected finance companies for the data collection purpose.

Table 1: Selected listed finance companies in Sri Lanka

No	Finance Company	Listing Code
1	Abans Finance PLC	AFSL. N0000
2	Alliance Finance Company plc.	ALLI. N0000
3	Central Finance company PLC	CFIN. N0000
4	Mercantile Investment and Finance PLC	MERC.N0000
5	Vallible Finance Plc.	VFIN. N0000
6	Associated Motor Finance Company PLC	AMF. N0000
7	Soft logic Finance PLC	CRL. N0000
8	Arpico Finance Company PLC	ARPI.N0000
9	Singer Finance (Lanka)PLC	SFIN.N0000
10	Senkadagala Finance PLC	SFCL.N0000
11	Bimput Finance PLC	BLI. N0000
12	LOLC Development Finance	NIFL.N0000
13	SMB Finance	SEMB.X0000
14	Sinhaputhra Finance PLC	SFL.P0000
15	Swarnamahal Financial services PLC	SFS.N0000

Source: Researcher's Data Collection, 2020

4.3 Measurement of Variables

This section is described to how the researcher has measured the variables identified through the literature review as well as the conceptual framework. In this case, there are three categories of variables that the researcher has taken into consideration as follows.

Independent Variable: According to the Herfindahl-Hirschman Index (HHI) model, Net interest income and Non-Interest Income (NII) is considered as an independent variable. NII includes loans and advances, government securities, deposits and placement with banking institutions, and other interest income. Non-interest income (NonII) includes fees and commissions on loans and advances, other fees and commissions, dividend income, and other non-interest income.

Dependent Variable: Dependent variable means that is changed or controlled on other variables which are independent variables. It means that a variable is affected by an independent variable. In this study financial performance is a dependent variable (Return on Equity (ROE)).

Control Variable: Control variables are unchanged and indirectly affected by the relative relationship between independent and dependent variables. As shown in Figure 1, this study used the four control variables for interpretation of results of the analyzing data namely, firm size, firm age, operational efficiency, and debt to equity.

Accordingly, the operationalization of all independent, dependent, and control variables is tabulated as follows.

Table 2: Operationalization of variables

	Variables	Indicators	Mathematical Expression	Reference
Independent Variable	Herfindahl-Hirschman Index	Index	$HHI=1-(NET/(NET+NON))^2+(NON/(NET)^2$	Tarawneh, et al. (2017)
Dependent Variable	Return on Equity (ROE)	Ratio	Profit After Tax / Shareholders Funds	
Control Variables	Firm Size	Ratio	Natural Logarithm of Total Assets	(Almazari, 2014)
	Firm Age	Number	Current year – Year of Establishment	
	Debt-Equity Ratio	Ratio	Total Debts / Total Equity	
	Operational Efficiency	Ratio	Total Operational Expenses / Net interest Income	(Almajali, 2012)

Source: Based on the survey data

5. RESULTS AND DISCUSSIONS

This study is conducted by using the techniques and procedures to describe and analyze the sample data into a meaningful context. There are three main data analysis tools used as; descriptive statistics, Pearson's correlation analysis, and regression analysis. The aim of this data analysis is to obtain the results from the data analysis to confirm the data analysis model and to find out the achievement of objectives through hypotheses testing. Figure 2 shows the graphical representation of sampled Sri Lankan listed finance companies on their financial performance (average of net interest income, other income, and net profits between periods in 2014 to 2020. In this study, the researcher has used the statistical package for social sciences (SPSS 95% & 99%) to analyze the data of the study.

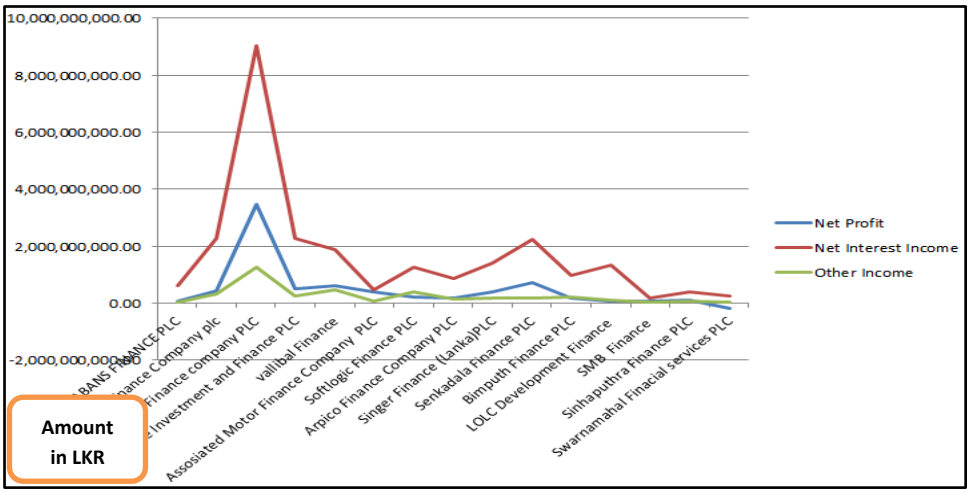

Figure 2: Income analysis, developed by researcher

Source: Based on survey data

5.1 Descriptive Statistics

First, descriptive statistics are used to describe the characteristics of a data set or nature of the data set of the sample within the data description, the study used mean and medium, and standard deviation to measure the descriptive characteristics of the studied sample. This research was purely secondary in nature. The data was collected from the annual reports uploaded on the official websites of particular finance companies as well as audited financial statements presented in the annual reports on the official website of the Colombo Stock Exchange. In Table 3, the researcher presents a descriptive analysis of the concerned variables associated with Sri Lankan-listed finance companies. This study considers ROE as a dependent variable and the independent variable (income source diversification) is measured expressed in terms of the Herfindahl-Hirschman index. In addition, the control variables are; firm size, firm age, debt to equity ratio, and operational efficiency. Mainly this analysis is helpful to identify the overall description of the variables used in the model. The summary of descriptive statistics contains the no. of observations, mean, standard deviation, minimum and maximum of one dependent variable, one independent variable, and four independent variables. The mean value is the sum of the observations divided by the total number of observations. The standard deviation is the square root of the variance and furthermore, it shows how close the data is to the mean. The variance describes the spreading of the data from the mean. It is the simple mean of the squared distance from the mean. Furthermore, the above table shows the average indicators of variables computed from the financial statements and the standard deviation that shows how much dispersion exists from the average value. Brooks, (2008) revealed

that a low standard deviation indicates that the data point tends to be very close to the mean, whereas a high standard deviation indicates that the data point is spread out over a large range of values.

Table 3 shows that descriptive statistics of the income source diversification on the financial performance of listed finance companies in Sri Lanka.

Table 3: Summary of the descriptive statistics Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
HHI	105	.00	.48	.2282	.10796
SIZE	105	8.83	10.93	9.9560	.47079
AGE	105	6.00	68.00	36.6000	20.27864
OE	105	.19	2.24	.6395	.25255
DE	105	-6.58	19.24	5.1460	4.17138
ROE	105	-68.76	276.39	12.8342	34.32188
Valid N (listwise)	105				

Source: Authors calculations based on survey data

As shown in the above table the data for the study was gathered from annual reports published by the finance companies that were totaling 105 observations from 15 companies. The average performance measured by ROE was 12.83 with a standard deviation of 34.32. The mean of income diversification (HHI1) was 0.2282 while the standard deviation was 0.108. The average firm size was 9.956 with a standard deviation of 0.470. The average Operational efficiency (OE) and Debt to equity (DE) were 0.6395, 5.146 with standard deviations of 0.2525 and 4.171 respectively.

5.2 Correlation Analysis

The researcher has the correlation analysis to measure the strength and direction of the linear relationship between the independent and dependent relationships in this study. The most widely-used type of correlation coefficient is Pearson r, also called linear or product-moment correlation. The values of the correlation coefficient are always between -1 and +1. A correlation coefficient of +1 indicates that the two variables are perfectly related positively; while a correlation coefficient of -1 indicates that two variables are perfectly related in a negative linear sense. A per the significance that Gujarati (2004) emphasized, a correlation coefficient of 0, indicates that there is no linear relationship between two variables. Table 4 shows the results obtained through the correlation analysis.

Table 4 -Correlation matrix

	HHI	SIZE	AGE	OE	DE	ROE
HHI	1.0000					
SIZE	-0.132	1.0000				
	0.139					
AGE	0.168	0.436**	1.0000			
	0.087	0.000				
OE	0.420**	-0.382**	-0.367**	1.0000		
	0.000	0.000	0.000			
DE	-0.086	0.226*	0.205*	-0.218*	1.0000	
	0.384	0.020	0.036	0.026		
ROE	-0.213*	0.023	0.062	-0.056	-0.254**	1.0000
	0.029	0.818	0.531	0.570	0.009	

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Source: Authors calculations based on survey data

Table 4 shows the outcomes of correlation analysis of all independent variables used in this study. Correlation analysis was used to test the relation with each other variable and as shown in the above table the result revealed that the independent variables are correlated with each other.

The correlation between HHI Index and ROE is -0.213 with a p-value of 0.029, it implies that there is a negative significant relationship between income source diversification and ROE at a 5% significance level. Then, the correlation between debt-to-equity ratio (control variable) and ROE is -0.254 with a p-value of 0.009, which implies that there is a negative significant relationship between debt-to-equity ratio and ROE at a 1% significant level. Other correlations of control variables; Firm Size, Firm Age and Operational Efficiency, and ROE indicate that those relationships are insignificant.

In summary, the correlation analysis shows the direction and degree of associations between variables. It does not allow the researcher to make cause and inferences regarding the relationship between the identified variables in this study. Hence, regression analysis which is discussed in the next subsection of the study gives assurance to overcome the particular shortcomings in examining the effects of selected proxies of the independent variable on the dependent variable.

5.3 Multiple Regression Analysis

In achieving the purpose of this study, the researcher used a linear regression model to investigate the effects of income diversification on financial

performance of finance companies. Here, HHI was used as determinant of income diversification. The HHI was regressed against to financial performance and there four control variables were used in this study, namely firm size, debt to equity ratio, debt to assets ratio and earning per share. According to the data analysis model for ROE, Table 5 shows the analyzed results in order to find the impact of predictors (HHI and SIZE, AGE, OE, DE) and the financial performance in ROE.

Table 5 - Model summary (R^2) – ROE

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	357[a]	0.127	.083	32.85895

a. Predictors: (Constant), DE, HHI, SIZE, AGE, OE
Source: Authors calculations based on survey data

As shown in the above table the coefficient of determination (R2) was 0.127. It was indicated that the income diversification, firm size, debt to equity, debt to assets, earning per share are jointly explained 12.7% of the variation of financial performance. It means that HHI and SIZE, AGE, OE, DE were only explained in 12.7% of variations in this study while remaining variations (87.3%) are explained by other factors. The next table (Table-6) is the ANOVA table, which reports how well the regression equation fits the data (predicts in ROA) and is shown below.

Table 6 – ANOVA

Model		Sum of Squares	df	Mean Square	F.	Sig.
1	Regression	15619.737	5	3123.947	2.893	.018
	Residual	106891.355	99	1079.711		
	Total	122511.093	104			

a. Dependent Variable: ROE

b. Predictors: (Constant), DE, HHI, SIZE, AGE, OE

Source: Authors calculations based on survey data

The above table indicates that the regression model predicts the dependent variable ROE significantly well. This indicates the statistical significance of the regression model that was run. Here the P-value is 0.018 which is less than 0.01, and indicates that the regression model statistically significantly predicts the

financial performance (ROE). This means that it is a good fit for the data. Table 7 shows the coefficient of regression and results.

Table 7 - Coefficients of regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.539	79.845		.157	.876
	HHI	-72.318	32.918	-.227	-2.197	.030
	SIZE	2.331	7.951	.032	.293	.770
	AGE	.127	.183	.075	.698	.487
	OE	2.101	15.531	.015	.135	.893
	DE	-2.413	.805	-.293	-2.998	.003

a. Dependent Variable: ROE

Source: Authors calculations based on survey data

HHI had a regression coefficient of -72.318 that indicates the effect of income diversification has a negative impact on the financial performance of listed finance companies. Meanwhile, more income source diversification may affect financial performance. The coefficient of HHI had a significant probability of 0.030. When the probability value is lower than 0.05 It indicated that the effect of income source diversification was statistically significant. The regression coefficient of firm size had a 2.331 with a p-value of 0.770 which indicates that the firm size had a positive effect on financial performance since the p-value was more than 0.05 then it was not statically significant. Firm age also had a 0.127 with a probability value of 0.487 that also indicates firm age has a positive effect on financial performance. Operational efficiency (OE) and debt to equity (DE) had 2.101, -2.413 with the probability of 0.893 and 0.003 respectively. A probability of OE was more than 0.05 therefore it was not statically significant. But the probability of DE is lower than 0.05 then was statically significant. As shown in the above table indicates the results of variation analysis. According to the above results, the model was found of F value as 2.893 with a significant probability of 0.018. When the F value was more than 1 then the variables studied in this study were jointly statically significant. If the F value was less than 1 and the p-value was more than 0.05 that indicated the model was statically insignificant. According to the above table, the regression model has a constant of 12.539, and HHI, SIZE, AGE, OE, DE have coefficients of -72.318, 2.331, 0.127, 2.101, and 2.413 as respectively. According to the above table, the resulting regression equation was:

$$\mathbf{Y= 12.539 - 72.318X_1 + 2.331X_2 + 0.127X_3 + 2.101X_4 - 2.413X_5}$$

5.4 Findings of the study

This study used the descriptive statistics, correlation and linear regression model for the analysing of data in this study. Based on the results obtained through data analysis, the following findings were noted.

1. Table 3 shows the mean and standard deviation of the variables. HHI had a mean of 0.2282 with std. deviation of 0.108 and ROE had a mean of 12.83 with std. deviation of 34.32 as target variables of the study.

2. On the basis of correlation values, the summary of significant movements is noted.

Table 8 - Findings of correlations

Dependent	Independent	HHI	SIZE	AGE	OE	DE
ROE	Pearson Correlation	-.213*	.023	.062	-.056	-.254**
	Sig.(2-tailed)	.029	.818	.531	.570	.009

Source: researcher analyzed data, 2020

According to Table 4 on the correlation matrix, the independent variable HHI is negatively correlated significantly with financial performance (ROE) at a 5% significance level. Also, the control variable Debt to equity ratio is negatively correlated significantly with financial performance (ROE) at a 1% significant level. The other control variables of Firm Size, Firm AGE, and OE are insignificant. However, the relationships among all independent and control variables with dependent variables exist as positively / negatively significant or insignificant. It means that there are associations between independent and dependent variables either positively or negatively significant and not. Therefore, the hypothesis H_1 is supported.

This study has investigated the effects of income source diversification on financial performance by using SPSS analytical methodology. According to Table 7**,** the result of income source diversification (HHI) had a negative effect on financial performance. It's mean that more income diversification may lead to lower financial performance. The results indicated that firm SIZE had a positive effect on performance. It means that if the firm size is increased by one unit it will lead to an increase in the performance by 2.331. AGE and OE also had a positive correlation with performance if those variables are increased one unit it will affect to increase performance by .127 and 2.101 respectively. DE

had a negative effect on financial performance. It's that DE increased by one unit then performance will fall by -2.413 units.

Table 5 indicates the coefficient of determination (R^2) was 0.127. Meanwhile, the variations including HHI, SIZE, AGE, OE, DE jointly represent 12.7% of variations and remained by other variables. In addition, the table indicates the final summary of the proposed model as shown in it the F value for regression was 2.893 with a significance of 0.018. Then the model was significant at the level of 0.05%. Thus, this model is enough to explain the effect of income source diversification on the financial performance of listed finance companies in Sri Lanka. Therefore, the R^2 value indicates that there is a low impact of income source diversification on the financial performance of Sri Lankan listed finance companies, so that Hypothesis 2 (H_2) is accepted. Table 9 shows the hypotheses testing and the support of those to achieve the study objectives.

Table 9 - Summary of the findings (Hypotheses testing)

Hypothesis	Independent	Dependent	Relationships (+/-)	Is there a relationship / Impact (Yes/No) *	Significant / Insignificant	Supported / Not supported
H_1	Income Source Diversification	Financial Performance		Yes		Supported
H1a	HHI	ROE	_	Yes	0.030	Supported
H1b	SIZE	ROE	+	Yes	0.770	Supported
H1c	AGE	ROE	+	Yes	0.487	Supported
H1d	OE	ROE	_	Yes	0.893	Supported
H1e	DE	ROE	_	Yes	0.003	Supported
H_2	Income Source Diversification	Financial Performance	Impact	Yes	Low	Supported

Source: Researcher analyzed data, 2020

6. CONCLUSION

6.1 Conclusion

This study was carried out with the purpose of establishing that there is an effect of income source diversification on the financial performance of listed finance companies in Sri Lanka. The results of this study reveal that Income source diversification has an impact on financial performance in the Sri Lankan financial industry. Managers of finance companies can focus on their income sources along with traditional sources of income to improve the profitability of their companies and minimize their risk levels. The diverseness of the finance industry in the modern era has become a subject of interest for the top management of banks, supervisors, directors, shareholders and stakeholders. According to the study findings through correlation matrix, there are only two negative significant relationships between HHI and Debt to Equity (OE), and ROE. Other correlations of control variables; Firm Size, Firm Age and Operational Efficiency, and ROE indicate that those relationships are insignificant. The result of regression indicated that income diversification recorded a low impact on financial performance concerning that "the coefficient of determination (R^2) indicates that the income diversification, firm size, debt to equity, debt to assets, earning per share jointly explained 12.7% of the variation of financial performance. It means that HHI and SIZE, AGE, OE, and DE were only explained in 12.7% of variations in this study while the remained variations (87.3%) are explained by other factors. The results of the F test indicated that income source diversification, firm size, firm age, operational efficiency, and debt to equity ratio have a strong effect on financial performance thus indicating the model was good enough in determining the effect of income diversification on financial performance.

6.2 Implications

Based on the statistical findings, it was noted that the theoretical review indicates the necessity of having managed the income source diversification is a wider effect to record its financial performance. Anyhow, the aim of the investment is to maximize the return through a strategic perspective. In this instance, the implementation of proper diversification strategy is an ideal way after verifying the most important contribution of financial utilization and intermediation. Therefore, the view of diversification through such financial utilization and intermediation is the utmost viable link to make depending on the concept that investors, who are fearless to risk, can create portfolios to maximize the return and minimize the risk classifying, estimating, and controlling both types and rate of expected return and risk in any investments. Also, diversification is a sun shed for enlightening the investment process of any source with aiding through intermediation and performing through the

portfolios. The results of this study help managers to improve the financial outlook of their companies by controlling income source diversification and business risk. As well as, these findings also present policy implications that finance companies may utilize their different income sources in a profitable way to reduce risk. Further, they should focus on their different income sources to prevail in a competitive investment and business environment. The revenue concentration of the managers in their finance companies increases the companies' risk taking. Therefore, the managers in finance companies should manage complexity by combining revenue sources to control agency costs, which reduce risk. Thus, when finance companies expand their income structure, they should align it with available resources.

6.3 Directions for Future Research

The study recognized that it had not thoroughly researched the status of each category of income that finance companies diversified into that influenced financial performance of the finance company. The study therefore recommends that another study be done to establish the other income sources that the finance companies diversified into that influenced financial performance of the finance companies in Sri Lanka. Also, the study recommends that another study should be done to augment the study findings on the sustainability of each of the diversified income sources.

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IMPACT OF CORPORATE GOVERNANCE ON CAPITAL STRUCTURE DYNAMICS: EVIDENCE FROM COLOMBO STOCK EXCHANGE

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ABSTRACT

This study attempts to determine the impact of corporate governance on capital structure dynamics in hotel and travelling, and manufacturing listed firms in the Colombo Stock Exchange by incorporating the financial transparency as a vital dimension of corporate governance mechanism to the previously tested governance dimensions on board effectiveness and ownership structure. The dynamic capital structure theories show that the companies have different levels of speed of adjustment which is how the companies adjust their capital structure towards the target capital structure. For this purpose, the study follows two stages in deriving the speed of adjustment and finding the impact of governance attributes on speed of adjustment and uses 20 listed firms from each sector from 2010 to 2019. The study uses Generalized Methods of Moments to analyse the data. Results reveal that financial transparency is a vital information that affect on the speed of adjustment towards the optimal capital structure in both the hotel and travelling; and manufacturing sector. Thus, this study document that the financial transparency and board effectiveness affects on both the sectors' SOA towards the optimal capital structure whereas ownership structure has significant impact only on the SOA in the manufacturing sector. Accordingly, study guides corporate managers in

adjusting their capital structure by considering governance attributes and the companies need to reform the existing policies with the implications of corporate governance and capital structure adjustments in a way which could obtain the benefits of maintaining an optimal leverage level.

Keywords – Corporate governance, hotel and travelling sector, manufacturing sector, optimal capital structure, speed of adjustment

1. INTRODUCTION

In the past decades, capital structure is increasingly being studied by the researchers with the seminal contribution by Modigliani and Miller (1958). Capital structure considers as an important issue and it is a debatable issue linking to other aspects under the corporate finance. Management should decide the most appropriate mix (optimal capital structure) of debt and equity financing by taking consideration of a company's particular circumstances and in the best interest of all shareholders.

According to static trade off theory, a firm reaches the optimal level of debt which maximizes the wealth of its shareholders via a trade-off between tax benefit due to debt use and cost of bankruptcy. However, due to the existence of agency conflicts, firms do not adjust their leverage immediately to the optimal level due to several reasons such as debt covenants (Devos, Rahman & Tsang, 2017), investment opportunities (Elsas, Flannery & Garfinkel, 2014), corporate governance (e.g., Chang, Chou, & Huang, 2014), credit ratings (Huang & Shen, 2015), and macroeconomic conditions (Cook & Tang, 2010). Chang et al. (2014) and Liao, Mukherjee and Wang, (2015) provide evidence on an association between corporate governance and dynamic capital structure, suggesting that the firms with strong corporate governance face lower costs of adjustment and will adjust more quickly towards their target. Speed of adjustment (SOA) defines as the percentage of the deviation from target (optimal) leverage that the firms tend to remove each period. Therefore, estimation of SOA investigates the existence of target leverage and adjustments toward target leverage. On the other hand, corporate governance is the structure by which corporations are controlled and directed and used to monitor managers' and directors' behaviour for the purpose of mitigating agency risks. Thus, it is worthwhile to study the relationship between corporate governance and speed with which firms converge to their target leverage.

Banerjee, Heshmati and Wihlborg (2004) stated that firms usually adjust their leverage partially to the target leverage at least due to presence of adjustment costs. According to Chang et al. (2014), adjustment costs are directly related to the severity of conflicts between managers and shareholders. Therefore,

firms' SOA toward its optimal capital structure depends on the effectiveness in the firms' corporate governance systems (Zheka, 2010).

However, the studies on corporate governance and SOA are dominated by developed economies particularly in the USA and emerging markets are still at a nascent stage due to the limited focus on this research area. A few studies have provided empirical evidence for the research area in the developing market context (Buvanendra et al., 2017; Supra, Narender, Jadiyappa, & Girish, 2016). The study conducted by Buvanendra et al. (2017) is the sole research directed towards the determination of the effect of corporate governance on the SOA in Sri Lankan context. The present study differs from the study by Buvanendra et al. (2017) which examines the financial transparency attribute as a vital dimension in corporate governance mechanisms together with the previously tested governance attributes relating to the ownership structure and board effectiveness. Further, a study by Chang et al. (2014) examines the effect of governance on SOA in terms of shareholder rights. Thus, the extant literature relating to the governance and SOA were limited with selected few attributes of governance information. Moreover, Ashbaugh-Skaife, Collins and LaFond (2006) and Fernando, Li and Hou (2019) find that the importance of incorporating comprehensive governance attributes to avoid the issue of drawing inferences based on one attribute and resulting omitted variable problem. Therefore, as highlighted in the Standard & Poor's framework (2002), financial transparency and disclosures is one of the major areas that a governance framework should focus. Previous studies have shown the financial transparency indicators as a critical aspect because it reduces information asymmetry and residual agency costs (e.g., Aggarwal & Kyaw, 2009, Ashbaugh-Skaife et al., 2006). Thus, the purpose of the current study is to examine the corporate governance attributes comprehensively, covering board effectiveness; ownership structure; and financial transparency in determining the level of influence of corporate governance on SOA of manufacturing firms; and hotels and travelling firms listed in the Colombo Stock Exchange (CSE). Moreover, the study will be beneficial to the constituents such as corporate managers of the listed manufacturing firms and hotels and travelling firms in determining their optimal capital structure and to evaluate their position and strategies in relation to the current level of leverage. The reason for selecting two sectors for the study is, it is assumed that there are some inter-industry differences in the speed of capital structure adjustments of firms due to the unique nature of each industry's business and the capital structures.

The rest of the paper is organized in sections: Section 2 reviews the literature related to the study; Section 3 presents the methodology of the study and Section 4 provides the results and discussion and the section 5 provides conclusion and recommendation from the study.

2. LITERATURE REVIEW

2.1 Empirical studies on SOA and corporate governance

The studies related to dynamic capital structure construct on the assumption of existence of target leverage. The dynamic capital structure which recognizes target leverage emphasizes that firm's trade-off between benefits and costs of debt usage. According to Baxter (1967), Kraus and Litzenberger (1973) and DeAngelo and Masulis (1980), firms attempt to maintain an optimal capital structure through a trade-off between the benefits of debt and agency costs and bankruptcy costs. As per the static tradeoff theory, firms maximize its value when it reaches its optimal capital structure through a trade-off between interest tax shield and costs of additional borrowings, particularly the bankruptcy costs. Consequently, deviations from target leverage should be removed promptly. As Kraus and Litzenberger (1973) and Baxter (1967) stated, a taxable company should raise debt until present value of possible financial distress cost offsets the marginal value of the tax shield.

According to Jensen and Meckling (1976) debt agency cost arises due to conflicts of interest between shareholders and managers as well as between debt-holders and shareholders. Conflicts between managers and shareholders arise because managers cause the reduction of opportunities for shareholders to consume perquisites by holding the entire residual claim and not capturing entire gain from profit generating activities while bearing some costs (Harris & Raviv, 1990). Jensen (1986) argued that increasing the debt portion in the capital structure will minimize the problem by reducing cash flows available for managers as firms contractually bind to pay debt before managers.

Therefore, theories related to capital structure can be identified based on the consideration of existence of target leverage under each theory. Trade-off theory (Kraus & Litzenberger, 1973; Baxter, 1967), agency theory (Jensen & Meckling, 1976) and free cash flow theory (Jensen, 1986) recognize the existence of target leverage while pecking order theory (Myers & Majluf, 1984) do not assume the existence of target leverage.

Most of the studies demonstrate that firms attempt to establish an optimal leverage (Fama & French, 1998; Flannery & Rangan, 2006; Drobetz & Wanzenried, 2006). Furthermore, the literature has recently focused extensively on the SOA toward optimal capital structure by examining the process used in arriving at optimal leverage (Flannery & Rangan, 2006; Lemmon, Roberts & Zender, 2008). According to Flannery and Hankins (2007), the SOA toward optimal leverage depends on factors such as adjustment costs and benefits and costs of non-adherence to the target leverage. Therefore, in reality firms may not fully adjust their leverage to the target

leverage while implying the importance of studying financing decisions in a dynamic framework.

According to Fama and French (2002) the optimal leverage ratio is not observable but can be estimated using firm specific determinants such as firm size, growth opportunities and non-debt tax shield. Accordingly, studies done by researchers such as Jensen (1986), Jensen and Meckling (1976), Buvanendra et al. (2017) provide empirical evidences on determinants of optimal capital structure such as profitability, firm size, growth opportunities, tangibility, non-debt tax shield.

On the other hand, corporate governance can be narrowly defined as the relationship between managers, directors and shareholders. Sanvicente (2013) states that corporate governance mainly concerns the strategies which could improve the firm's performance and minimize cost arising from agency conflicts. The presence of agency conflicts between managers and shareholders not only causing to deflect corporate policy choices, but also lowers the firms' corporate performance. Accordingly, self-interested managers do not make capital structure decisions that maximize shareholders' wealth. Therefore, firms' leverage and SOA toward optimal capital structure are influenced by not only firm specific characteristics, but also by conflicts between managers and shareholders.

Lately, some researchers extend their studies on dynamic capital structure theory by incorporating aspects of corporate governance as corporate governance is an important determinant which significantly affect on deviation between observed and target leverage. Furthermore, quality of corporate governance is helpful in determining speed with which firms converge to their target leverage. Liao et al. (2013) validate the claim by reporting that corporate governance affects the adjustment speed other than firm specific characteristics.

Accordingly, studies done by researchers such as Buvanendra et al. (2017); Liao et al. (2015); Morellec, Nikolov and SchCurhoff (2012), Fosberg (2004) provide empirical evidences for impact of corporate governance (board size, board independence, CEO-Chairman duality, percentage of management compensation, institutional ownership) on capital structure dynamics. However, as the financial disclosure and audit intensity have not been used in previous studies under the corporate governance, there are no studies which directly discuss the impact of said variables on SOA toward optimal capital structure. According to Bushman, Piotroski and Smith (2004) financial disclosure is a useful aspect for outside directors as it helps in valuing securities and monitoring managers' decisions, thus reducing agency conflicts. Accordingly, the study has been used financial disclosures and audit intensity as determinants of SOA.

2.2 Hypotheses Development

Based on the extant literature on capital structure dynamics, the hypotheses are proposed the possible corporate governance determinants of SOA.

Financial disclosure and speed of adjustment

Financial disclosure is a useful aspect for outside directors as it helps in valuing securities and monitoring managers' decisions (Bushman et al., 2004), thus reducing agency conflicts. Therefore, proper financial disclosures enhance the confidence of fund providers, thus, leads to a higher adjustment speed. Thus, it is hypothesized that proper financial disclosures lead to higher adjustment speed. Accordingly, the hypothesis 1 of the study is;

H1: Financial disclosure has a significant effect on SOA toward optimal leverage.

Audit intensity and speed of adjustment

Audit intensity used to measure the credibility in financial disclosures. Thus, increased audit intensity provides fund providers with increased confidence by providing measures on accuracy in financial disclosures. Accordingly, it is hypothesized that increased audit intensity leads to higher adjustment speed. Thus, the hypothesis 2 of the study is;

H2: Audit intensity has a significant effect on SOA toward optimal leverage.

Board size

Board size has been identified in recent studies as a significant indicator which effects on optimum financing decisions with positive correlation (Buvanendra et al., 2017) while some of the studies identified a negative relationship (Liao et al., 2013) as larger boards may increase agency problems and reduce the speed of taking important decisions. Accordingly, it is hypothesized that larger boards have a negative relationship with speed of capital structure adjustments. Thus, the hypothesis 3 of the study is;

H3: Board size significantly effect on SOA toward the optimal leverage.

Board independence and speed of adjustment

Higher proportion of non-executive directors makes it easier for a company to obtain debt as the market believes that with a higher number of non-executive directors, the company is being monitored effectively. Furthermore, an independent board leads to lower agency cost, thus, provides increased opportunities to raise funds through debt financing. Therefore, it is

hypothesized that a higher representation of non-executive directors on board leads to higher adjustment speed. Thus, the hypothesis 4 of the study is;

H4: Board independence significantly effect on SOA toward optimal leverage.

CEO-duality and speed of adjustment

CEO-duality discourages a board's independent decision making as proven by most of related studies (e.g., Buvanendra et al., 2017). Furthermore, few studies stated that CEO-duality reduces issues related to separation of ownership and control, thus, provide a direct relationship with leverage (Fosberg, 2004). The study hypothesized that if the CEO and the Chairman is the same person, it leads to lower adjustment speed towards optimal capital structure. Accordingly, the hypothesis 5 of the study is;

H5: CEO duality significantly effect of on SOA toward optimal leverage.

Director compensation and speed of adjustment

Most of the studies state that incentive-oriented compensation is helpful in minimizing problems related to agency conflicts (Hall & Liebman, 2000), thus it facilitates timely convergence of optimum capital structure (Buvanendra et al., 2017). Thus, it is hypothesized that a higher the directors' compensation, higher the adjustment speed. Accordingly, the hypothesis 6 of the study is;

H6: Director compensation significantly effect on SOA toward optimal leverage.

Institutional ownership and speed of adjustment

Institutional investors' substantial ownership in a company's stake promotes effective monitoring over managers' decisions (Liao, et al., 2015). Accordingly, increased institutional ownership reduces the agency conflicts and helps to increase leverage at an advantageous cost. Therefore, it is hypothesized that a higher the percent of institutional ownership, higher the adjustment speed. Thus, the hypothesis 7 of the study is;

H7: Institutional ownership significantly effect on SOA toward optimal leverage.

3. METHODOLOGY

3.1 Sample data and data collection

The research has been conducted in two stages using secondary data contained in the published annual reports of selected listed firms from the hotel & travelling sector and the manufacturing sector.[1] Initially, the listed companies in manufacturing and hotel & travelling industries as classified by the CSE was considered for the study from 2010 to 2019. As at the end of 2019, there were 38 listed companies from each sector. Subsequently, the sample was selected from those sectors based on availability of data and the highest market capitalization, thus 20 companies from each industry have been used for this study.

3.2 The empirical model

Based on the above hypotheses, the analysis follows two stages to examine the impact of corporate governance on SOA. Accordingly, in the first stage, firm specific characteristics (independent variables) are used to determine the optimal leverage (dependent variable). In the second stage, the lag value of the leverage deviation (i.e., the optimal leverage minus actual leverage) together with the governance attributes are used to derive SOA towards the optimal capital structure. After the model estimation in the second stage, the sign of the governance attributes and the significant level are used to examine the impact of corporate governance attributes on SOA toward optimal capital structure.

The equation (1) used to estimate typical target leverage.

Determining optimal capital structure

$$L*_{it} = f(X_{it}) \rightarrow (1)$$

The study specifies the target leverage ($Lev*_{it}$) as a function of the exogenous firm-specific factors represented by X_{it}. Both book and market value of leverage ratios are used in this study[2] as separate models. As shown in Equation (1), the target leverage ratio varies across firms and time. Following the literature (Fama & French, 2002; Hovakimian, Hovakimian, & Tehranian, 2001; and Titman & Wessels, 1988), this study considers the most commonly used determinants of the target leverage (Profitability (PROF); Growth Opportunities (GO); Firm Size (FS); Tangibility (TAND); Non-debt Tax

[1] The industry classification at the CSE has changed since 2020 and adopted GICS. Thus, the manufacturing and hotel & travel sectors are no longer available in these categories.

[2] Book leverage = long-term debt plus short-term debt/book value of total assets; Market leverage = long-term debt plus short-term debt/market value of total assets.

Shield (NDTS). Next, the fitted values from Equation (1) known as the target leverage (Lev^*_{it}) apply to the second step in the following model (Equation (2)).

Determining the impact of corporate governance on SOA

$$L_{it} - L_{it-1} = \delta_{it}(L *_{it} - L_{it-1}) \rightarrow \quad (2)$$

$$it = \alpha_0 + (\partial_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 DUAL_{it} + \beta_4 DC_{it} + \beta_5 IO_{it} + \beta_6 FD_{it} + \beta_7 AI_{it} + \varepsilon_{it} \quad \rightarrow \quad (3)$$

$$L_{it} - L_{it-1} = \alpha_0 + (\partial_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 DUAL_{it} + \beta_4 DC_{it} + \beta_5 IO_{it} + \beta_6 FD_{it} + \beta_7 AI_{it})(Dist_{it}) + \varepsilon_{it} \quad \rightarrow \quad (4)$$

Where; $L_{it} - L_{it-1}$ is the leverage deviation. Thus, the Equation (2) regresses the leverage change (i.e., Lev_{it} -Lev_{it-1}) on the leverage deviation (i.e., Lev^*_{it} - Lev_{it-1}). In the equation, Lev_{it} denotes the year-end leverage for the i^{th} firm, and $Levi_{t-1}$ is the lagged leverage of the i^{th} firm. δ in Equation (2) represents the SOA, which measures how fast firms adjust their current leverage towards the target leverage. δ is expected to be between zero and one due to transaction cost (Hovakimian et al., 2001). While the leverage adjustment speed δ_{it} in Eq. (3) is constant for all firms, study allows corporate governance (Board size; Board independence; CEO-duality; Director compensation; Institutional ownership; Financial disclosures; audit intensity) to increase the firm's level of adjustment toward it target ratio. Thus, substituting equation (3) back to equation (2) yields the equation for a partial adjustment model with heterogeneity in the leverage SOA equation (4). The all the measurement scale of variables is listed in the appendix (Table A1).

3.3 Data analysis techniques

The study has been conducted using descriptive statistics, correlation analysis, panel regression and generalized method of moments (GMM). At the first stage, by following the existing literature (For example, Fernando, Li and Hou, 2021), the study estimates the target leverage by using panel regression and estimates both book and market target leverage. Thereupon, the determined optimal leverage has been used to determine the SOA along with the corporate governance on the capital structure dynamics using system GMM. System GMM method is applied due to the advantages of its in short panel with independent variables that are not strictly exogenous meaning that independent variables are correlated with past and possibly current realizations of error and controls for fixed effects, heteroscedasticity and autocorrelation within individuals (Buvanendra et al., 2017; Flannery & Hankins, 2013; Liao et al., 2015). The study has used Fisher-type unit root test based on augmented

Dickey-Fuller test to perform unit root test as the study contains unbalanced panels (See the Appendix: Table A2).[3]

4. RESULT AND DISCUSSION

4.1 Descriptive statistics

The table 1 presents summary statistics of firm leverage (including book and market values), the firm specific variables used to determine the target leverage and the corporate governance variables used to determine the SOA towards optimal leverage. First, the mean and median values of the hotel and travelling sector in terms of book leverage are 0.229 and 0.133 respectively. The corresponding values for the manufacturing sector are 0.424 and 0.435, which implies a higher book leverage in the manufacturing sector compared to the hotel and travelling sector. In line with the book leverage, the market leverage of the manufacturing sector also supports a higher leverage with mean and median values of 0.336 and 0.346, in contrast to the hotel and travelling sector which possesses corresponding values of 0.242 and 0.158. Furthermore, maximum, minimum and standard deviation values of the hotel and travelling sector are 0.924, 0.001, 0227 in terms of book leverage and 0.872, 0.001, 0.247 in terms of market leverage. The corresponding values for the manufacturing sector are 0.815, 0.032, 0.144 in terms of book leverage and 0.758, 0.008, 0.183 in terms of market leverage. Last, the market leverage of both sectors is higher than the book leverage.

Furthermore, the determinant variables of speed of adjustment present significant differences among manufacturing firms and hotel and travelling firms. For instance, the mean and median of the board size variable for hotel and travelling firms are 8.423 and 9.000 whereas manufacturing firms report 7.870 and 8.000 for mean and median, providing evidence for larger board size in hotel and travelling firms. Next, the board independence variable of both sectors possesses almost similar values. Accordingly, the mean and median for hotel and travelling firms are 0.706 and 0.714 whereas manufacturing firms report 0.724 and 0.714 for mean and median respectively. The CEO-Chairman duality is a dummy variable, taking a value of 1 if a firm's CEO and Chairman are the same person; and 0 otherwise. The mean value for hotel and travelling firms and manufacturing firms are 0.073, 0.056 whereas the median is 0.000 for both sectors. The directors' compensation of hotel and travelling firms

[3] As per the results of unit root test, book leverage, profitability, firm size and tangibility variables are stationary at level while market leverage, growth opportunities and non-debt tax shield are stationary at first difference in hotel and travelling sector. Moreover, market leverage and profitability variables of the manufacturing sector are stationary at level whereas book leverage, firm size, growth opportunities, tangibility and non-debt tax shield variables are stationary at first difference.

possess mean and median values of 0.105 and 0.009 while manufacturing firms possess mean and median values of 0.099 and 0.075, respectively. The hotel and travelling sector have a higher institutional ownership provided with mean and median of 0.838 and 0.897 in contrast to the manufacturing sector which has 0.786 and 0.852 of mean and median values respectively. Financial disclosure and audit intensity variables are dummy variables which has been used as proxies for financial transparency. The related mean and median values of financial disclosure for hotel and travelling firms are 0.687 and 1.000 whereas 0.333, 0.000 values are related to manufacturing firms. This result implies a higher adherence by hotel and travelling firms, in undertaking appropriate financial disclosure requirements. In line with the financial transparency, audit intensity also shows a higher value in the hotel and travelling sector with a mean and a median of 0.933 and 1.000. The corresponding values for the manufacturing sector are 0.898 and 1.000, respectively. The correlation analysis results are presented in appendix (Table A5) and ensures no multicollinearity issues among the variables.

Table 1 Descriptive statistics

	Mean		Median		Max.		Min.		Std. Dev.	
	H&T	M	H&T	M	H&T	M	H&T	M	H&T	M
BLEV	0.229	0.424	0.133	0.435	0.924	0.815	0.001	0.032	0.227	0.144
MLEV	0.242	0.336	0.158	0.346	0.872	0.758	0.001	0.008	0.247	0.183
PROF	0.067	0.151	0.063	0.122	0.194	0.659	-0.01	-0.08	0.049	0.121
FS	9.682	9.561	9.659	9.661	10.54	10.51	8.997	8.717	0.323	0.432
GO	1.199	1.813	0.898	1.277	4.893	7.931	0.001	0.602	0.853	1.363
TANG	0.437	0.306	0.494	0.304	0.964	0.820	0.000	0.002	0.349	0.191
NDTS	0.017	0.023	0.011	0.017	0.089	0.095	0.000	0.001	0.018	0.019
BS	8.423	7.870	9.000	8.000	12.00	14.00	5.000	4.000	1.812	1.849
BI	0.706	0.724	0.714	0.714	1.000	0.900	0.300	0.400	0.205	0.118
DUAL	0.073	0.056	0.000	0.000	1.000	1.000	0.000	0.000	0.262	0.231
DC	0.105	0.099	0.009	0.075	0.736	0.551	0.000	0.000	0.202	0.096
IO	0.838	0.786	0.897	0.852	0.987	0.992	0.030	0.231	0.167	0.194
FD	0.687	0.333	1.000	0.000	1.000	1.000	0.000	0.000	0.465	0.473
AI	0.933	0.898	1.000	1.000	1.000	1.000	0.000	0.000	0.252	0.303

Note: (Profitability (PROF); Growth Opportunities (GO); Firm Size (FS); Tangibility (TAND); Non-debt Tax Shield (NDTS); Board Size (BS); Board independence (BI); CEO-Duality (DUAL); Percent of directors' compensation (DC); Institutional Ownership (IO); Financial Disclosure (FD); Audit Intensity (AI).

Source: Author Constructed

4.2 Analysis on hotel and travelling sector

The study has been conducted the Hausman test at the inception of the study to determine the most appropriate model between the fixed effect the random effect model for the purpose of determining the optimal capital structure of hotel and travelling sector in terms of both book leverage and market leverage. According to the test results, fixed effect model has been used in the book leverage model while random effect model (See the Appendix: Table A3) used in market leverage model and the use of random effect model is further supported by the Breusch-Pagan LM test as the test has been able to reject the null hypothesis. Then the Breusch-Pagan / Cook-Weisberg test has been used to test the homoscedasticity. As per the results of Breusch-Pagan / Cook-Weisberg test, heteroscedasticity exists in the model, thus the robust standard errors have been interpreted in the study instead of standard errors.

Table 2: Determination of optimal capital structure of hotel and travelling sector

	Book Leverage			Market Leverage		
	Coeff	t-stat.	Prob	Coeff	t-stat	Prob
Profitability	-0.286	-1.70	0.106	-0.356	-1.74	**0.083**
Firm Size	0.410	2.19	**0.042**	-0.058	-1.91	**0.059**
Growth Opportunities	0.059	1.75	**0.097**	-0.058	-1.08	0.282
Tangibility	0.290	1.96	**0.064**	0.039	1.21	0.227
Non-Debt Tax Shield	-0.772	-0.66	0.517	-4.295	-1.60	0.112
Constant	-3.843	-2.11	0.049	0.595	1.99	0.048
R-Squared	0.012			0.074		
F	10.440			2.470		
Probability	0.000			0.035		

Source: Author Constructed

As per table 2, there is a significant effect from firm size on leverage (book leverage) at a 5% significant level whereas growth opportunities and tangibility possess statistically significant impact with book leverage at a 10% significant level. In the market leverage model, only profitability and firm size is statistically significant at 10% significance level and none of the other firm specific variables are significant with the market leverage. The F-statistics of the regression result and respective p-value evidence that the overall model of both models is significant. Both models have been used for the purpose of predicting optimal leverage to arrive at the ultimate objective of determining the impact of corporate governance on speed of adjustment towards optimal capital structure. Then in the second stage, impact of corporate governance on capital structure dynamics has been determined using system GMM.

Table 3: The effect of corporate governance on leverage SOA in the Hotel & Travelling sector

	Book Leverage			Market Leverage		
	Coeff	t-stat.	Prob	Coeff	t-stat	Prob
Distance*Board Size	-0.017	-3.18	**0.002**	0.028	2.25	**0.027**
Distance*Board Independence	0.138	6.44	**0.000**	0.341	1.52	0.131
Distance*CEO-Chairman Duality	-0.023	-0.90	0.370	0.284	1.49	0.139
Distance*Percentage of Directors' Compensation	0.043	3.40	**0.001**	-0.058	-0.29	0.769
Distance*Institutional Ownership	0.109	1.39	0.168	0.393	1.15	0.254
Distance*Financial Disclosure	-0.031	-3.77	**0.000**	-0.006	-0.07	0.944
Distance*Audit Intensity	-0.032	-1.61	0.109	-0.799	-2.74	**0.007**
Wald Prob.	0.000			0.008		
AR (2)	0.321			0.761		

Note: Distance = Target leverage- Current leverage)
Source: Author Constructed

As per the results of table 3, board size, board independence, directors' compensation and financial disclosure have significant impact on speed of adjustment (book leverage) at 1% significance level. However, CEO-Chairman duality, institutional ownership and audit intensity are insignificant. Furthermore, the market leverage model shows a significant influence of board size and audit intensity on speed of adjustment at 5% and 1% significant levels respectively. However, board independence, CEO-duality, director compensation and financial disclosure variables do not significantly influence the speed of adjustment towards optimal leverage. Overall, both models are significant at 1% significance level as evidenced by Wald test and the Arellano-Bond test for second order (AR2) serial correlation provide evidence for absence of second order serial correlation.

4.3 Analysis on manufacturing sector

Random effect model has been used to determine the optimal capital structure with a 5% significance level in terms of book and market leverage given the results of the Hausman test (See the appendix: Table A4) and the use of random effect model is further supported by the Breusch-Pagan LM test as the test has been able to reject the null hypothesis. Then the homoscedasticity has been tested using Breusch-Pagan/ Cook-Weisberg test. The test has not been able to reject the null hypothesis of homoscedasticity; thus, the model is free of heteroskedasticity.

Table 4: Determination of optimal capital structure of manufacturing sector

	Book Leverage			Market Leverage		
	Coeff	t-stat.	Prob	Coeff	t-stat	Prob
Profitability	-0.349	-5.86	**0.000**	-0.183	-1.58	0.113
Firm Size	0.720	8.73	**0.000**	0.192	1.14	0.256
Growth Opportunities	0.003	0.31	0.757	-0.038	-1.56	0.118
Tangibility	-0.209	-2.52	**0.013**	-0.223	-1.32	0.188
Non-Debt Tax Shield	2.020	2.13	**0.035**	4.163	2.13	**0.033**
Constant	-0.029	-5.41	**0.000**	0.325	8.68	0.000
R-Squared	0.433			0.007		
F	23.140			8.780		
Probability	0.000			0.118		

Source: Author Constructed

As per the regression output, profitability and firm size have significant impacts on book leverage in the manufacturing sector at 1% significance level and tangibility and non-debt tax ratio have a significant impact at 5% significance while growth opportunities have no impact on the book leverage. Furthermore, all firm specific variables in the market leverage model have no significant impact on market leverage other than non-debt tax shield which is significant at 5%. In contrast to the book leverage model, the market leverage model has been unable to reject the null hypothesis of the Wald test. However, both models have been used to predict the optimal leverage to which has been used in the main model to determine the impact of corporate governance on speed of adjustment towards optimal capital structure.

Table 5: The effect of corporate governance on leverage SOA in manufacturing sector

	Book Leverage			Market Leverage		
	Coeff	t-stat.	Prob	Coeff	t-stat	Prob
Distance*Board Size	0.010	1.90	**0.060**	0.008	1.42	0.157
Distance*Board Independence	-0.298	-3.08	**0.003**	-0.031	-0.46	0.645
Distance*CEO-Duality	-0.514	-0.41	0.683	0.129	2.42	**0.017**
Distance*Percentage of Directors' Compensation	-0.087	-0.97	0.337	-0.380	-2.27	**0.025**
Distance*Institutional Ownership	0.106	2.17	**0.032**	-0.073	-2.07	**0.040**
Distance*Financial Disclosure	0.055	1.63	0.107	-0.046	-1.26	0.209
Distance*Audit Intensity	0.069	1.76	**0.081**	0.079	2.06	**0.042**
Wald Prob.	0.018			0.000		
AR (2)	0.842			0.615		

Note: Distance (Target leverage- Current leverage)
Source: Author Constructed

According to the results generated through GMM estimation (Table 5), board independence and institutional ownership have significant influence on speed of adjustment (in terms of book leverage) at 1% and 5% significant levels, respectively. Moreover, the board size and audit intensity possess significant relationships with SOA at a 10% significance level. In terms of market leverage, CEO-Duality, directors' compensation, institutional ownership and audit intensity possess significant influence on speed of adjustment at 5% significance level, whereas board size, board independence and financial disclosure are insignificant in determining speed of adjustment. According to the Wald test, the overall model is significant at 5% and 1% significance in book leverage model and market leverage model respectively. Moreover, the Arellano-Bond test for second order (AR2) serial correlation provides evidence for the absence of second order serial correlation for both models.

4.4 Discussion

As per the results, board size in hotel and travelling sector possess a significant negative relationship with SOA (in terms of book leverage) in line with the study of Liao et al. (2013), thus larger boards increase agency problems and lower the SOA in hotel and travelling sector in terms of book leverage. In contrast with the book leverage model, the market leverage model of the hotel and travelling sector provides evidence for a significant positive relationship between board size and SOA, thus providing ambiguous results. The reason for the contradicted relationships in the same industry could be the higher impact of non-controllable factors on market leverage than the book leverage (Drobetz & Wanzenried, 2006). Moreover, the positive association identified in the book leverage model of the manufacturing sector supports the findings of Buvanendra et al. (2017).

The book leverage shows a positive impact of board independence on SOA whereas the market leverage model of hotel and travelling sector is insignificant with board independence. These results are in line with the findings and facts provided by Liao et al. (2013). Accordingly, higher representation of non-executive directors in the hotel and travelling sector speeds up the capital structure rebalancing process and encourages adjustments towards optimal leverage along with a reduced agency cost.

Nevertheless, the board independence of the manufacturing sector is significant and negatively associated with SOA toward optimal leverage (book leverage) as proposed by Buvanendra et al. (2017). However, Buvanendra et al. (2017) shows an insignificant relationship in contrast to this study which provides evidence for a significant association. Furthermore, the negative association in the manufacturing sector is further supported by the insignificant yet negative relationship provided by the market leverage model.

CEO-duality shows a significant impact with SOA in the manufacturing sector (in terms of market leverage). Moreover, both sectors provide ambiguous results for book leverage and market leverage models. Accordingly, the negative association between CEO-Duality and SOA as provided by book leverage models of both sectors is consistent with the findings of Buvanendra et al. (2017). It indicates that CEO-duality creates conflict of interest as the same person serves in both positions. Furthermore, the result supported CEO-Chairman separation. The market leverage models of both sectors show a positive impact of CEO-Chairman duality on SOA, indicating that CEO-Chairman duality reduces problems related to separation of ownership and control, thus persuading capital structure rebalancing (Liao et al., 2013; Fosberg, 2004). Moreover, the contradicting results in both sectors could be because of the impact of market imperfections on leverage (Drobetz and Wanzenried, 2006).

Directors' compensation of the hotel and travelling sector indicates a statistically significant positive relationship (in terms of book leverage) in line with the results of Buvanendra et al. (2017). Accordingly, it indicates that incentive-oriented compensation helps to minimize the agency problems (Hall and Liebman, 2000), and thus facilitates timely convergence of optimal capital structure. However, the market leverage model shows an insignificant negative relationship as opposed to the book leverage model of the hotel and travelling sector (Liao et al., 2013; Morellec et al., 2012). Directors' compensation in the manufacturing sector shows a negative relationship with SOA in line with the findings of Liao et al. (2013) and Morellec et al. (2012). Moreover, directors' compensation of the manufacturing sector (in terms of market leverage) significantly influences SOA towards optimal capital structure. Thus, it can conclude that increased management compensation in the manufacturing sector leads to incur greater agency cost, thus discouraging capital structure adjustments.

According to the results of the study, institutional ownership possesses an insignificant positive relationship with the SOA toward optimal leverage (both book leverage and market leverage) in the hotel and travelling sector. Furthermore, institutional ownership of the manufacturing sector has a significant and positive impact on SOA in terms of book leverage. Accordingly, a positive relationship reflects in the hotel and travelling sector and the book leverage model of the manufacturing sector supports the findings of Liao et al. (2013). It indicates that institutional investors' substantial ownership promotes effective monitoring over managers' decisions, thus reducing the agency conflicts and helps to adjust leverage at an advantageous cost. In contrast with the other three models, the market leverage model of the manufacturing sector shows a significant negative relationship between institutional ownership and SOA. However, it is not in line with the general

assumption of a positive relationship which states that the higher percentage of institutional ownership reduces agency costs and managerial opportunism, thus enhancing the confidence of lenders and resulting in favorable terms of borrowing by the company. The reason for the negative relationship could be the higher impact of non-controllable factors on market leverage than the book leverage (Drobetz & Wanzenried, 2006).

The study has developed a hypothesis on the relationship between financial disclosure and the SOA on the basis of a general assumption as previous studies have not considered financial transparency in determining the impact on SOA. Accordingly, the study has hypothesized that proper financial disclosure is useful in reducing agency conflicts, thus leading to higher adjustment speed. However, according to the results of the analysis, the financial disclosure variable of the hotel and travelling sector shows a negative association with the SOA. Furthermore, the negative association identified in the book leverage model is significant at 5% significance level in contrast with the hypothesis. However, the book leverage model of the manufacturing sector shows a significant positive relationship among the financial disclosure and the SOA. Thus, it indicates that proper financial disclosures can enhance the confidence of fund providers and provide useful insights to outside directors in monitoring managers' decisions (Bushman et al., 2004) which reduces agency conflicts, thus leading to a higher convergence speed towards optimal capital structure. In contrast to the book leverage model, the market leverage model of the manufacturing sector shows an insignificant negative association among financial disclosure and SOA. The reason for the contradicted results between the two models could be the higher impact of market imperfections on market leverage than the book leverage (Drobetz & Wanzenried, 2006).

Audit intensity also has not been used to measure the speed of adjustment toward optimal capital structure in previous studies. Therefore, the study has been hypothesized that increased audit intensity provides fund providers with increased confidence on accuracy of financial disclosures, thus leading to a higher adjustment speed. However, the audit intensity of the hotel and travelling sector possesses a negative relationship with the SOA. Furthermore, the negative association identified in the market leverage model is significant at 1% significance level in contrast with the hypothesis. Nevertheless, the audit intensity of the manufacturing sector shows a significant positive relationship with SOA (in terms of both models), consistent with the developed hypothesis. Accordingly, it indicates that increased audit intensity in the manufacturing sector increases the confidence of fund providers by providing measures on accuracy in financial disclosures, thus leading to a higher adjustment speed.

5. CONCLUSION AND RECOMMENDATIONS

The objective of the study was to examine the impact of corporate governance on speed of adjustment towards the optimal capital structure in hotel and travelling companies and manufacturing companies listed in CSE incorporating data of recent ten years (2010-2019) as a sample. Previous studies have focused only on the governance factors based on board effectiveness; ownership structure. Thus, this study examines the effect of financial transparency as one of the important dimensions of the corporate governance mechanism in searching the SOA towards the optimal leverage. Therefore, the current study examines the corporate governance attributes compressively, covering board effectiveness, ownership structure and financial transparency in determining the level of influence on speed of adjustment towards optimal capital structure. The analysis is based on secondary data published in annual reports of the listed manufacturing and hotel & travelling sectors firms over 10 years which were selected based on highest market capitalization. Accordingly, the sample consists of 20 companies from selected sectors. The study found that the hotel and travelling sector, board size; board independence; and percentage of director compensation have a significant impact on determining the SOA, while CEO-duality being insignificant. In the manufacturing sector, board size; board independence; director compensation; and CEO-duality show a significant influence on the speed of adjustment toward optimal capital structure in manufacturing firms. The ownership structure in terms of percentage of institutional ownership shows a significant impact on the manufacturing sector whereas it does not show a significant impact on the hotel and travelling sector in determining the SOA.

More importantly, the study focused the dimension of financial transparency on the SOA towards the optimal capital structure. Thus, the study revealed that both the transparency attributes (financial disclosure, audit intensity) significantly affect the hotel and travelling sector of the SOA negatively. However, both the variables possess significant positive relationships with the SOA toward optimal capital structure in the manufacturing sector.

Therefore, corporate managers of each sector should pay greater attention to significant governance attributes related to each sector and need to reform the existing policies with the implications of corporate governance and capital structure adjustments in a way which could obtain the benefits of maintaining an optimal leverage level. Moreover, top management of the companies should make prudent financing decisions, maintain proper administration procedures and management practices which facilitate the timely convergence towards optimal capital structure. Furthermore, fund providers need to consider the critical governance attributes identified in the study when making critical funding decisions.

Moreover, future researchers could enhance the study by incorporating non listed manufacturing and hotel & travelling firms or other sectors in CSE. Moreover, researchers could use ownership structure attributes and qualitative data such as the view of the corporate managers for examine the same issue in a qualitative approach. Thus, the future researchers could address this deficiency by incorporating more ownership structure variables.

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APPENDIX

Table A1: Variables and measurements

Variables	Proxy Measurement	Variable Definition
Dependent Variable (Stage 01)		
Firm's Leverage	Book Debt Ratio BV of total debt/ BV of total assets Market Debt Ratio BV of total debt/ (MV of equity + BV of total debt)	Use of debt by a firm for the purpose of funding financing needs such as purchase of inventory and other assets
Firm Specific Variables		
Profitability	Return on Assets (ROA) Operating income before depreciation/ Total assets)	Financial benefit realized from a business activity which measures the efficiency of that business activity.
Firm Size	Logarithm of total assets	Breadth of a company measured through a particular scale of measurement.
Growth Opportunities	Market-to-Book ratio (BV of debt + MV of equity)/ BV of assets	An organization's ability to expand their business in future through the use of strategies to generate larger profits, increase production, etc.
Tangibility	Fixed Assets / Total Assets	Physical and measurable assets possess by a firm which are used in a firm's operations and could be used as a collateral to obtain secured debt.
Non-debt tax shield	Depreciation / Total Assets	Tax benefits derive from depreciation expenses and investment tax credit as substitutes for the tax benefits from debt financing.
Corporate Governance Variables		
Board Size	Number of Board of Directors	Number of members in the board comprises of executive directors and non-executive directors including the chairman and CEO.
Board independence	No of non-executive directors / no of board of directors	The state in which all or a majority of directors do not have a significant material or pecuniary relationship with the company.
CEO-Duality	One, if the CEO and the Chairman of the board is the same person, otherwise zero.	The state where CEO and board chair positions in a company holds by separate individuals.
Percent of directors' compensation	Gross Remuneration of Directors / Total Staff Cost	Directors' remuneration including salaries, bonuses and other perquisites as a percentage of total staff costs.
Institutional Ownership	Fraction of stocks owned by institutional investors	The amount of a company's stock owned by large companies or

	Stocks owned by institutional investors/ Total stocks	organizations which invests money on behalf of other people.
Financial Disclosure	One, if the firm disclosed disclosures concerning research and development, capital expenditure, product and geographic segment data, subsidiary information and accounting methods, otherwise zero.	Timely release of accurate information of a company that may influence decisions of investors.
Audit Intensity	One, if the firm has been audited by one of big 3 audit firms in Sri Lanka (PWC, E&Y, KPMG), otherwise zero	Evaluating the accuracy of financial reporting and disclosures using proper audit procedures.

Table A2: Summary of results from unit root test

	Hotel & Travelling Firms	Manufacturing Firms
Book Leverage	at level	at first difference
Market Leverage	at first difference	at level
Profitability	at level	at level
Firm Size	at level	at first difference
Growth Opportunities	at first difference	at first difference
Tangibility	at level	at first difference
Non-Debt Tax Shield	at first difference	at first difference

Table A3: Hausman Test: Analysis on hotel & travelling sector

	Hausman Test			
	Book Leverage		**Market Leverage**	
	Chi2	Prob	Chi2	Prob
Test Summary	18.49	**0.0024**	10.02	**0.0747**

Table A4: Hausman Test: Analysis on Manufacturing sector

	Hausman Test			
	Book Leverage		**Market Leverage**	
	Chi2	Prob	Chi2	Prob
Test Summary	4.87	**0.4325**	1.23	0.9418

Table A5: Correlation results for the selected governance variables for both sectors

	BS	BI	DUAL	DC	IO	FD	AI
Panel A: Hotel & Travelling Sector							
BS	1.000						
BI	-0.094	1.000					
Dual	-0.207	0.005	1.000				
DC	-0.243	-0.269	0.128	1.000			
IO	0.067	0.013	-0.215	-0.107	1.000		
FD	0.012	-0.233	0.139	-0.198	-0.255	1.000	
AI	-0.303	-0.173	-0.486	-0.084	0.327	-0.182	1.000
Panel A: Hotel & Travelling Sector							
BS	1.000						
BI	0.024	1.000					
Dual	-0.150	-0.029	1.000				
DC	0.132	-0.211	-0.076	1.000			
IO	0.157	0.138	-0.058	0.084	1.000		
FD	0.093	0.188	-0.173	-0.264	-0.001	1.000	
AI	-0.189	-0.177	-0.161	0.229	-0.267	-0.157	1.000

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