Sri Lankan Journal of Banking and Finance

An endeavor to share knowledge

Volume: 4 Issue: 02 December: 2021

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

Pathirana A P P V[1], Buddhika H J R[2]

Department of Finance, Faculty of Commerce and Management Studies, University of Kelaniya, Sri Lanka[1,2]

pramodipathirana96@gmail.com[1], buddhikar@kln.ac.lk[2]

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.

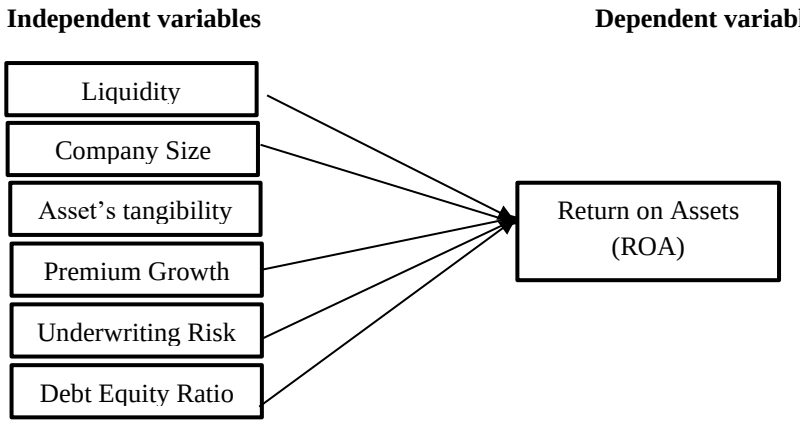

Figure 1- Conceptual Framework

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.

REFERENCE

Adams , M., & Buckle , M., 2003. The determinants of operational performance in Burmuda insurance market. *Journal of applied financial economics*, 13, 133-143.

AIA insurance Sri Lanka. (n.d.). Retrieved from https://www.aialife.com.lk/en/search.html?Searchexecutor=%2Fen%2Fsearch&type=123&keyword=annual+report

Akotey, J. O., & Sackey, F., 2013. The financial performance of life insurance companies in Ghana. *The* Journal of Risk Finance, 14, 286-302.

Allianz Life insurance. (n.d.). Retrieved from https://www.allianz.lk/financials/

Arpico Insurance. (n.d.). Retrieved from https://www.arpicoinsurance.com/

Ayele, A. G., 2012. Factors Affecting Profitability of Insurance Companies in Ethiopia. 1-11.

Batool, A., & Sahi , A., 2019. Determinants of Financial Performance of Insurance Companies of United States of America (USA) and United Kingdom(UK) during Global Financial Crisis (2007–2016). *International Journal of Accounting Research*, 1-9.

Brigham, E. F., & Houston, J. F., 2004. Fundamentals of Financial Management.

Bruca, A. M., & Batrinca, G., 2014. The Determinants of Financial Performance in the Romanian Insurance Market. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 4 , 299-308.

Cekrezi, A., 2015. Determinants of financial performance of the insurance companies: a case of albania. *International journal of economics, commerce and management*, 3, 1-10.

Ceylinco Life insurance. (n.d.). Retrieved from https://www.ceylincolife.com/?S=annual+report

Chittaranjan, A., 2020. Sample Size and its Importance in Research. *Indian journal of psychological medicine*, 42, 102-103.

Cudiamat, A., & Siy, S. J., 2017. Determinants of Profitability in Life Insurance Companies: Evidence from the Philippines financial institutions. *Journal of Economics and Business Studies*, 165-175.

Daare, W. J., 2016. Determinants of Non-Life Insurance Companies Profitability: An Empirical Study in India. *International Journal of Innovative Research and Advanced Studies*, 3, 6-11.

Derbali, A., 2017. Determinants of performance of Tunisia insurance companies: case of life insurance . *Int. J. Productivity and Quality Management*, 6(1), 90-96.

Deyganto, O. K., & Alemu, A. A., 2019. Factors Affecting Financial Performance of Insurance Companies located in Hawassa City Administration, Ethiopia. *Universal Journal of Accounting and Finance*, 7(1), 1-10.

Eviews 11 User's Guide 2., 2019. IHS Global Inc.

HNB Asuurance. (n.d.). Retrieved from https://www.hnbassurance.com/financial-reports

Hussain, I., 2015. Macro economy and profitability of insurance companies: a post crisis scenario in Pakistan. 243-263.

Insurance Information Institute., 2019. Retrieved from https://www.iii.org/sites/default/files/docs/pdf/insurance_factbook_2019.pdf.

Insurance Regulatory Commission of Sri Lanka., 2018. Retrieved from https://ircsl.gov.lk/index.php.

Islam, N., & Akter, A., 2018. Factors influencing the insurance companies' profitability in Bangladesh. *Journal of Jessore University of Science and Technology*, 3, 58-62.

Janashakthi life insurance. (n.d.). Retrieved from https://www.janashakthi.com/about/#financial-performance

Kaya, E. O., 2015. The Effects of Firm-Specific Factors on the Profitability of Non-Life Insurance Companies in Turkey. *International Journal of Financial Studies*, 3(4), 510-529.

Liyanagamage, D. C., 2018. Efficiency, Stability and Optimum Level of Bank Competition for Sustainable Development - A Study of Sri Lankan Banking Sector. *OIDA International Journal of Sustainable Development*, 10, 69-80.

Malik, h., 2011. Determinants of insurance companies profitability: an analysis of insurance sector of pakistan.

Mogro, S. C., & Barrezueta, N. B., 2019. Determinants of profitability of life and non-life insurance companies: evidence from Ecuador. *International Journal of Emerging Markets*, 14, 831-872.

Nazishishtiaq, & Siddiqui, D. A., 2018. Factors Affecting Financial Performance of Life Insurance Sector in Pakistan investigate the factors that affect the financial performance of life insurance sector in Pakistan. 4(2), 178-199.

Panayiotis, P., Athanasoglou, Matthaios, Delis, Christos, & Staikoura., 2006. Determinants of Bank Profitability in the South Eastern European Region. *Journal of financial decision making*, 1-17.

Rahman, S. U., 2018. Determinants of Profitability in Life and Non-Life Insurance Sector of Pakistan: An Endogenous and Exogenous Evaluation. *Journal of Independent Studies & Research: Management & Social Sciences & Economics*, 16(2), 97-105.

Softlogic Life Insurance. (n.d.). Retrieved from https://softlogiclife. lk/financials/

Sri lanka insurance. (n.d.). Retrieved from https://www.srilankainsurance.com/ en/about-us/annual-reports

Union Assurance. (n.d.). Retrieved from https://unionassurance.com/financial-reports/

Willy, A., & Ondigi, A., 2016. Factors affecting profitability of insurance firms: case of firms listed on Nairobi securities exchange. *Journal of Economics, Commerce and Management, United Kingdom.* 6(9), 286-298.

Yapa, P. W., & Ukwatte, S., 2015. The New Public Financial Management (NPFM) and Accrual Accounting in Sri Lanka. *The Public Sector Accounting, Accountability and Auditing in Emerging Economies*,15 ,*7-50.*

Zainudin, ,. R., & Leong, E. S., 2017. Firm-specific internal determinants of profitability performance: an exploratory study of selected life insurance firms in Asia. *Journal of asia business studies*, 12, 533-550.

Zulfikar, R., 2018. Estimation model and selection method of panel data regression an overview of common effect, fixed effect, and random effect model.