Does Board Structure in Commercial Banks Impact their Performance?

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Abstract

This study aims to determine the Impact of Board Structure on the Performance of listed Commercial Banks on the Colombo Stock Exchange. This study examines the relationship between Board Structure and Corporate Financial Performance of listed commercial banks using a sample of 12 banks listed on the Colombo Stock Exchange, based on data from 2015 to 2019. Descriptive, correlation and regression analyses were performed to achieve the study objectives. This study uses the company's performance based on the following financial performance measures: return on assets (ROA) and return on equity (ROE) and board structure consisting of board size, female board members, non-executive directors, and frequency of board meetings. Bank capital is used as the control variable in this study. The study's findings suggest that the frequency of board meetings and non-executive directors have a negative and substantial influence on ROE, while the frequency of board meetings has a significant and negative impact on ROA. Additionally, bank capital has a positive and significant impact on ROA. However, the board size, female board members, and bank capital have no significant impact on ROE while board size, non-executive directors, and female board members have no significant impact on ROA of CSE-listed commercial banks. This study contributes to the literature on corporate governance and firm performance by providing the framework that affects the relationship between board structure and firm performance in the context of listed commercial banks. The findings of the study are important for policymakers, investors, regulators, and other bankers of the country. Commercial banks listed in Colombo Stock Exchange would put more attention on the structure and quality of the board to improve their performance. Concerning the study's scope, the present study only included CSE-listed commercial banks. Thus, additional research is needed to study the entire Sri Lankan banking system and 20 business sectors. Further, this study only looked at accounting-based measures such as ROA and ROE. Tobin's Q, for example, can be employed as a dependent variable. Future studies should be done by including cross-border analysis of developing and developed countries.

Keywords: *Bank Capital, Board Size, Female Board Members, Frequency of Board Meetings, Non-Executive Directors ROA, ROE*

Introduction

Corporate Governance (CG) is the system of rules, practices and processes that are managed and controlled by a company (Wilathgamuwa, 2018). It has been an important area of academic research in industrialized and developing countries around the world. Most research studies started, as the importance of corporate governance grows day by day. Numerous empirical and theoretical studies show that the CG mechanism is important for the profitability and growth of companies (Nazar, 2012). CG has received worldwide attention due to the financial crisis in recent decades due to the failure of established international companies, such as Enron, WorldCom and Lehman Brothers. The reason for this is the poor CG structure. Even Sri Lanka has such business failures due to poor corporate structures such as Pramuka Bank, Seylan Bank, Credit Card company, Golden Key, etc. (Wilathgamuwa, 2018).

The board of directors plays a key role in the CG mechanism and supports the effectiveness of the corporate governance structure. Agency problems can arise due to the separation of ownership and control. The board of directors are the party that leads to the alleviation of the agency problem within the company. In addition, the business environment changes rapidly from day by day. In a dynamic environment, the board becomes the most important instrument for the smooth functioning of companies (Fauzi and Locke, 2012). Suganya & Kengatharan (2017) noted that the structure of the board of directors is the key aspect and central point in the area of CG. Strategic level decisions are made by the company's board of directors. A change in the structure of the board of directors can lead to a change in the overall behavior of companies. The reason for this is the directors, who mainly influence the operating processes of the companies. Various factors affect the effectiveness of the board, they are the composition, quality, size, and diversity of the management board, the duality of the CEO, personal responsibility and culture of the management board.

Alqatan, Chbib and Hussainey (2019) concluded that the board of directors is the representative of the shareholders. It is the highest management group of a company that can be appointed by the shareholders. As the company's business grows, the need for professionals increases due to management requirements. The researcher found that the independence board is seen as a "good board" within the board structure and improves the performance of the firms. In recent years, most countries have paid close attention to the importance of the board structure to reduce the sharp drop in stock prices (Suganya and Kengatharan, 2017). Other than that Georgantopoulos (2017) found that a bank's board structure can play an important role in ensuring transparency and good quality of accounting information.

The banking sector in Sri Lanka has a very special and vital role to play in the achievement of the continuous economic growth of Sri Lanka. The banking sector in Sri Lanka, which comprises Licensed Commercial Banks and Licensed Specialized Banks, dominates the financial system and accounts for the highest share of the total assets in the financial system. Banks play a critical role within the Sri Lankan financial system, as they engage in the provision of liquidity to the entire economy while transforming the risk characteristics of assets. And also banks are engaging in providing payment services, thereby facilitating all entities to carry out their financial transactions (Wilathgamuwa, 2018).

The banks play a vital role in the process of financial intermediation of an economy. Since it deals with the funds of the nation, it is essential to be managed appropriately. For instance, interest rates prevailing within money and capital markets can impact the gross domestic product of a country through the aggregate investment factor. In a country like Sri Lanka with such a highly volatile environment and political inducements, the compliance of a good governance structure is also crucial. Some past incidents that happened in Sri Lanka provide the necessity of having good governance practices. Other than that, the governance in banks is particularly acute in the financial service and banking sector. Governance in the bank is a more complex issue than in the other sectors (Pathan, Haq and Gray, 2013). The board structure is one of the key components in the concept of CG and the board controls institutional directions and its overall policies and procedures. Financial stability and continuity are mostly based on the strength and quality of the board. It affects the survival of the organizations, and also it significantly affects the firm performance. According to Senthuran & Velnampy, (2015) mentioned that the board of directors stands at the heart of many systems. Furthermore, the global financial environment is highly turbulent. So it may lead to arise some financial crisis within the industry like in 2008. In 2008 Sub-Prime

mortgage market Crisis has happened within the US country. It has been spread over the rest of countries around the world. As a result, was a worldwide credit crunch. It has been affected on the Sri Lankan financial market, and it has influenced the drying up of liquidity in the financial market. Adams & Mehran, (2012) found that board failure financial firms are a major cause of the financial crises and have to launch an action plan to improve the board level. So the effective board of the bank is a tool that can be used to face the banking crisis. The financial stability and continuity of an institution are very much dependent on the strength and quality of the board, its independence from management, and its degree of involvement in the institution's affairs. The board determines how the institution will conduct its business in the long term. In general, the board establishes or approves and monitors the policies by which management will operate (Senthuran & Velnampy, 2015).

There are lot of international and Sri Lankan corporations which were collapsed because of the poor governance structure (Wilathgamuwa, 2018). When considering past incidence that happened in Sri Lanka, most of the failed organizations are banks such as Seylan Bank, Pramuka Bank, Development Bank etc. In 2002 Pramuka Bank has collapsed in which portfolio consisted of 80 percent non-performing loans, and it was followed by the crash of Golden Key in 2008. The fall of the Ceylinco group, causing a financial crisis as many depositors tried to withdraw funds from Seylan Bank. As a result, it presented a potential danger to the stability of the financial system in Sri Lanka and also most of the investors have lost their money, and it blemishes the trust of investors in the finance sector. It affects not only the banking and financial sectors but also the entire economy of the country. So corporate governance is imperative and essential with the collapses and eminent failures (Sivaraja *et al.*, 2010). Some reasons stated for those corporate failures are lack of vigilant mistake functions by the board of directors, the board surrendering control to corporate managers who pursue their interest and the board being negligent in its accountability to stakeholders (Nazar, 2012). The board structure is highly affected to the firm performance. So in recent decades, most companies tend to maintain their board structures in effective manner by applying code of best practices.

After these issues many researchers have done their research studies regarding the impact of board structure on firm performance for different sectors. According to the international context Bonn, Yoshikawa, & Phan, (2004); Jackling & Johl, (2009); Badayi, (2015); Gafoor, Mariappan & Thyagarajan, (2018) ; Kutum, (2015) and Sri Lankan context Nadeeshamala & Kumari (2021), Suganya & Kengatharan, (2017); Hewathenna et al., (2015); Edirisinghe, (2019); Adams & Mehran, (2012); Nazar & Jameel, (2018) the numerous studies have been done regarding the impact of board structure on firm performance for listed companies in CSE, Financial, Non-Financial, Private Education Hotel and Travel, Diversified Holding and Manufacturing sectors. By analyzing the previous findings, here the researcher found that there is an empirical research gap. In the foreign countries, most of the scholars have done their studies for the banking sector (Georgantopoulos, 2017; Alagathurai & Nimalathashan, 2013; Arosa, Iturralde, & Maseda, 2013; Babic, Nikolic and Simic, (2020). But in Sri Lanka, researchers have not paid their high attention regarding the banking sector in Sri Lanka. Because there are limited number of research studies have done for the banking sector. Thereby, main research intention to find the impact of board structure on firm performance for Commercial Banks in Colombo Stock Exchange (CSE). Purpose of this study is to achieve 8 sub objectives. The first objective is to find out the relationship between board size and ROA. The second objective is to find the relationship between board size and ROE. Third objective is to find out the

relationship between the proportion of female members and ROA. The fourth objective is to find out the relationship between the proportion of female members and ROE. The fifth objective is to find out the relationship between the non-executive directors and ROA. The sixth objective is to find out the relationship between the non-executive directors and ROE. The seventh objective is to find out the relationship between the frequency of meetings and ROA. The last objective is to find out the relationship between the frequency of meetings and ROE. Today, the financial environment is highly turbulent. Therefore, this study will be useful for all bankers to become financial leaders in the financial markets.

Literature Review

Theoretical Perspective

This study is carried out under for theories such as agency theory, stewardship theory, resource dependency theory and stakeholder theory. These are commonly used to find the relationship between board structure and firm performance.

Agency Theory

The board of directors are appointed by shareholders to manage the business and the directors have to act on behalf of them. There is no association between the shareholders and managers of the company and at that time managers worked according to their own interests, this leads to conflict of interest. With correspond to that situation, independent directors on the board can reduce this risk by monitoring and managing the section of the mangers (Alqatan, Chbib and Hussainey, 2019). According to Arosa, Iturralde and Maseda, (2013) implies that adequate monitoring mechanism should need to protect shareholders from managers' self-interest. So high proportion of outside directors favorable to the organizations to monitor the actions of managers. Other than that, agency relation defined as a contract between owners and managers. According to these contract owners delegate their decision-making power to managers of the firm. As a result, separation of ownership and management is created, and it leads to a conflict of interest and agency problem. Both parties try to maximize their own benefits. The researcher suggested that the behavior of the directors is the best way to reduce the agency problem within the company. Further the researcher recommended that the separation of the role of chairman and CEO lead to reduce the conflict of interest (Dissanayake and Dissanayake, 2019).

Stakeholder Theory

Another important theory is the stakeholder theory. This theory described that the directors of the firm are highly focused on interest of the stakeholders rather than shareholders of the company (Alqatan, Chbib and Hussainey, 2019). There are various stakeholders in the external environment. Their interests are also different from each other. Some of them help the organization and rest of them hurt the organization. So board of directors should act on their interest (Suganya and Kengatharan, 2017). This theory supposes that the role of the board is to act on interest of the groups who are vital to the survival and success of the corporations (Erik Meyer, 2013).

Resource Dependency Theory

Suganya and Kengatharan (2017) have defined that board of the directors are not the members of the board but also, they are also a capital of a firm. Directors bring resources to the firms like information, skills, knowledge and also, they access to important elements and to authorities. It will lead to maximize the value of the firm. So, the firms should attract

external directors with knowledge in different areas. According to this resource dependency theory Anis *et al.*, (2017) described that the board is an essential association among the organization and external resources that is required to increase the performance and presentation. The role of the resource dependency theory is to provide valuable external resources to the enterprises. So the large and well diversified board leads to give valuable link to external resources to the organizations (Erik Meyer, 2013). Resource dependency theory describes how external resources affect organizational behavior. Organization and Resources are linked by the Board of directors. Different types of directors provide different benefits to the firms and more diverse board provides more valuable resources to the organization (Abeysirigunawardana, 2018)

Stewardship Theory

In agency theory, managers consider as opportunistic shirker. But in the stewardship theory managers are the essential persons to do a good job within the organization. In this theory managers consider as steward (Suganya and Kengatharan, 2017). According to this theory, it argued that greater proportion of inside directors within the board work to increase the income of the stockholders. Furthermore, theory argued that the fact that the board consist of non-executive directors adversely effects to the operations of the business (Anis *et al.*, 2017). According to Erik Meyer, (2013) mentioned that the stewardship theory postulates that the role of the board of directors is to protect the performance of the shareholders, not to control the management more closely from the owners, but to enable the management to take autonomous executive action. Executive directors offer a strategic advantage as they are privileged because of their in-depth knowledge, technical expertise, and access to operational information. Under this concept, manager considered as trustworthy individuals and good steward of organizational resources. Higher firm performance will be linked to the majority of executive directors. They maximize shareholders' value. Because executive directors have a better knowledge than non-executive directors regarding the business and that knowledge leads to get better decisions regarding the organization (Yasser, Mamun and Rodrigs, 2017).

Empirical Studies

More often referred to as a systematic review of the literature, it examines previous empirical studies to answer a specific research question. The empirical studies we review are generally randomized controlled studies.

Board Size and Firm Performance

According to Gafoor, Mariappan and Thyagarajan, (2018) the result was that, there is a significant positive relationship between board size and firm performance when board size is between 6 and 9 of banks in India. The result of the regression analysis test was that the incremental board size helped to increase the firm performance. With the increase of the board size, it leads to increase the role of the board in monitoring and advising the management on various issues. Other than that, the findings suggested a large board of directors brings more competence to the bank in decision-making. Further it found that the optimum board size in Indian banks were 6- 9. Board size is positively significant when board size in between this level. When the board size is above 9, board size become insignificant. If the board size of the Indian banks goes beyond the optimum level, it will lead to increase the cost of the banks. Jadah, Murugiah and Adzis, (2016) carried out a study to examine the relationship between board characteristics and bank performance by

considering panel data of 24 banks for period 2005-2014 in Iraq. These results support that the board with large size improves better firm performance. Furthermore, large board size improves the advisory and effective monitoring of the management as compared to the small size. Thus, Iraq banks, which have a large number of board directors, have the advantage of more efficiency and accountability of their operations. According Somathilake, (2005) & Hewathenna, Haleem and Jamaldeen, (2015) found that there is a negative and significant relationship between board size and firm performance. It may be recommended to increase the number of directors to increase the expenses related to the directors. Therefore, it is proposed to reduce the size of the board of directors in order to increase the performance of the company. Similarly, in research conducted among all the listed companies and financial companies in CSE by Nazar, (2012) & Balagobei and Anandasayann, (2014), it was found out that there was a negative and significant relationship between board size and firm performance. Therefore, the hypotheses can be formulated as follows;

H1$_a$: There is a relationship between board size and ROA

H1$_b$: There is a relationship between board size and ROE

Proportion of Female Members and Firm Performance

Razali *et al.*, (2019) & Dissanayake and Dissanayake, (2019) found that women on board show a significant positive impact on firm performance. More women on board may have better corporate performance, as claimed by women are good in terms of understanding the market needs and bringing creativity and quality solutions in decision-making. This study examined 100 Malaysia private companies from the year 2011-2013.further it described that the average woman sitting on board is around 40.42%. In this sample the number woman sit on the corporate board private education companies is range of 1 to 5 people. Pathan, Haq and Gray, (2013) found that there is a positive association between female board members and performance of the bank in United States. Kilic & Merve, (2015) also found that there is a positive and significant relationship between female board members and firm performance. Women in the board can bring fresh solutions to the critical issues by using their positive thinking and also actively participate in monitoring and controlling managers by asking more questions and bringing different perspectives to the boardroom. As well as huge number of female directors that means more than one woman that may lead to board performance and contribute better bank performance.it will lead to improve the decision-making and increase the earning value of the organization. Female directors are considered as hard-working directors within the board. They have a better communication capability in problem-solving. Abeysirigunawardana, (2018) done her research for European Banks to find the impact of board structure on bank performance. According to this research found that gender diversity decreases bank performance, and it has a U shape relationship with bank performances. Further he found that, there is a U-shape relationship and appointing a female director above 34% increases the bank performance. The abilities and skills of female directors bring to the board is undervalued. According to the descriptive statistics the proportion of female directors' ranges from 0% to 53%, with an average of 18%. Other that, Yasser et al., (2017) & Anis *et al.*, (2017) found there is a negative significant relationship between female board members and firm performance. The women on the board negatively impact the performance because female directors are more risk deniers than male directors. As well as high cost associate with them as a result of higher absenteeism rate and turnover rate. Therefore, the hypotheses can be formulated as follows;

H2$_a$: There is a relationship between proportion of female board members and ROA

H2$_b$: There is a relationship between proportion of female board members and ROE

Non-Executive Directors and Firm Performance

Erik Meyer, (2013) found that non-executive directors had a significant positive effect on firm performance of listed South African companies and also Jadah, Murugiah and Adzis, (2016) also found that there is a positive relationship between non-executive directors and bank performance. Iraq's banks were selected to carry out the research study. Sample was 24 banks in Iraq. Moreover, the study suggested that non-executive directors are positively correlated with the bank performance of commercial banks in Iraq. That means non - executives of the bank imply to increase its performance. But Arosa, Iturralde and Maseda, (2013) found a different answer regarding the impact of non-executive directors on firm performance. The result was a negative impact of non-executive directors on firm performance in SME. The majority of non-executive directors may cause poor performance of the organization. Executive directors perform their duties better than non-executive directors. Furthermore, the researcher concluded that non-executive directors are quick to respond in times of crisis, but because of that lack of knowledge regarding the organization, they are more likely to mistakes. Suganya and Kengatharan, (2017) also said that there is a negative and significant relationship between non-executive directors and firm performance. This study was done for listed financial companies in CSE. Here they said that the outsiders are costs to the organizations. Because of providing fees, travel expenses, stocks and stock-options. Georgantopoulos (2017) done his research to find the impact of board structure on bank performance for the Greek banking industry. The result was an inverted U shape relationship between non-executive directors and bank performance. When proportion of non-executive directors carefully increased in the Greek bank, adding some additional value up to some certain point. But after that point the increases of non-executives will lead to damage to the value of the Greek Banks. Therefore, the hypotheses can be formulated as follows;

H3$_a$: There is a relationship between non-executive directors and ROA

H3$_b$: There is a relationship between non-executive directors and ROE

Frequency of Board Meeting and Firm Performance

Kutum (2015) carried out the study to find the impact of board characteristics on firm performance for Palestine companies. The number of board meetings ranged from a minimum of 1 to a maximum of 13 with an approximation of 5.79. As same as Jackling and Johl (2009) said that no any significant relationship between board meeting and firm performance of the organizations. This study was done for the top listed companies in India. Sample firm held between 4 and 15 meetings in the financial year. Arosa, Iturralde and Maseda, (2013) also found the same result for impact of frequency of board meeting on firm performance. According to the study should hold a mean of 5.12 meetings in a year. Gafoor, Mariappan and Thyagarajan, (2018) found the different answer regarding the frequency of board meeting and firm performance. He found that there is a positive relationship between the number of board meetings and firm performance.it indicates that conducting a larger number of board meetings effects the better performance of the banks. This study was conducted relating to banks in India. On average 12 board meeting are conducted in a year. Furthermore, the researcher concluded that the effectiveness of the board meeting highly depends on the number of decisions taken by the board. Therefore, the hypotheses can be formulated as follows;

H4$_a$: There is a relationship between frequency of board meeting and ROA

H4$_b$: There is a relationship between frequency of board meeting and ROE

Research design

The study is anchored by the philosophy of positivism, which is based on a quantitative method that is deemed to be effective in achieving the study's objectives.

Population, Sample and Data Collection

This study is carried out to find the impact of board structure and firm performance of commercial banks listed in CSE. The Colombo Stock Exchange (CSE) has 290 companies representing 20 business sectors as at 30th June 2019. The population of the study was listed commercial banks in CSE and there are 14 commercial banks in CSE. The size of the population is very small. Because of that, the sample has been derived as it is. Therefore, out of 14 banks, 2 commercial banks have been eliminated due to lack of data from 2015 to 2019. As a conclusion,12 commercial banks were considered as the sample of the study based on five years' data. This study was highly based on secondary data and those were absorbed from annual report of particular banks published on CSE website.

Data Analysis Methods

The collected data will be used to develop the constructs of the study and spreadsheet application (M.S. Excel) is used for the basic extraction of information. The data analyzing is done by using a statistical package called Eviews. The data of this research are analyzed by three methods. The First method is Descriptive analysis. A set of brief descriptions that summarize the given data set, which can either be representation of the entire population or a sample is presented under descriptive statistics. The Second method is correlation analysis, and it measures the degree of relationship between the two or more variables. The last method is regression analysis. Regression analysis involves identifying the relationship between a dependent variable and one or more independent variables. There are a number of assumption tests under regression analysis. In this study also used various types of tests such as Normality test, Hausman test, Autocorrelations test and Multicollinearity test to check whether selected data set is meet the basic assumptions.

Conceptual Framework

Based on the theoretical and empirical review, a research model was formulated to find the impact of board structure on firm performance of listed commercial banks in CSE. A conceptual framework is presented below demonstrating the relationship between dependent, independent variables and control variables.
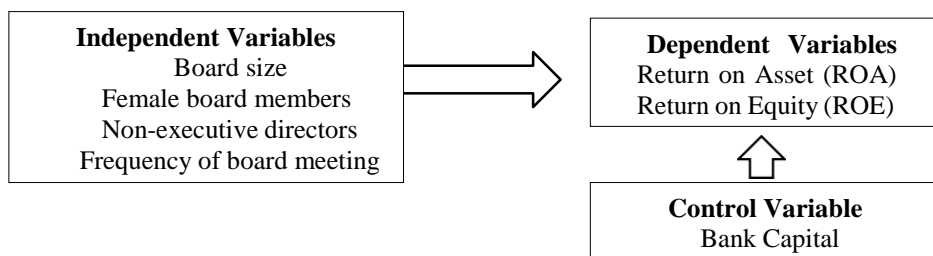

Figure I: Conceptual Framework (Source: Developed by authors)

Variables of the study

Dependent variables of the study are board size (BZ), female board members (FM), non-executive directors (NED) and frequency of board meeting (FBM). Return on asset (ROA) and return on equity (ROE) have been considered as dependent variables and the control variable of the study was bank capital (BC). Measurements and indicators relating to each of these variables have been listed below (Table I).

Table I. Measurements and Indicators

Variables	Indicators	Measurements
Board Size	Number of board members in the board	Number of inside and outside directors on board
Female Board members	Number of Female board members in the board	Number of female members / total board members
Non-Executive Directors	Number of non-executive directors in the board	Number of non-executive directors / total board of directors
Frequency of board meeting	Number of board meetings	Frequency of board meetings held throughout the financial year
ROA	Ratio of return to total assets	Earnings before Interest and Tax / Total Assets
ROE	Ratio of return to total equity	Earnings before Interest and Tax/Total Equity
Bank Capital	Total equity to Total Assets	Total Equity/Total Assets

Source: Developed by authors

The empirical models are given as following:

$$FP\ (ROA) = \beta_0 + \beta_1 BZ + \beta_2 FBM + \beta_3 NED + \beta_4 FOBM + \beta_4 BC + \epsilon \qquad (1)$$

$$FP\ (ROE) = \beta_0 + \beta_1 BZ + \beta_2 FBM + \beta_3 NED + \beta_4 FOBM + \beta_4 BC + \epsilon \qquad (2)$$

Data analysis

Before data analysis, we examined the data entry process and the management of missing data. This is the initial stage, referred to as a pre-analysis, and it entails screening and cleansing the data at three fundamental levels. All of these stages were carried out for each variable using the frequency analysis (Hair et al., 2010). A double check was performed to ensure a high level of precision during the data entry procedure. As a first check, all entries were validated individually, and as a second check, a descriptive analysis was undertaken and verified, including the frequency distribution, mean, and standard deviation. The frequency analysis test identified several mistakes in the data input process, which was corrected to ensure data entry correctness (Hair et al., 2010).

Table II: Descriptive statistics of the variables

Variables	N	Mean	SD	Minimum	Maximum	Skewness
Board Size (BZ)	60	10.650	1.603	5.000	14	-0.76
Female Board Members (FBM)	60	1.467	1.065	0.000	4	0.257
Non-Executive Directors (NED)	60	7.633	2.731	3.000	13	-0.093
Frequency of Board Meeting (FOBM)	60	13.917	2.714	5.000	21	-0.342
Return on Asset (ROA)	60	0.013	0.005	0.001	0.023	0.184
Return on Equity (ROE)	60	16.070	7.715	1.220	29.650	-0.21
Bank Capital (BC)	60	0.107	0.038	0.053	0.238	1.22

Source: Constructed by authors

According to the results presented in the table II, minimum number of board members were 5 and maximum was 14 members on the board. The average value of board size was 11 (10.650) members on the board with the standard deviation of 1.603. The average female board members on the board was one member with a range of 0 to 4 members. The standard deviation of FBM was 1. 065. The average non-executive directors on the board was 8 with the range of minimum was 3 and the maximum was 13. FOBM represents the number of board meetings per year. The sample banks held a mean of 13.9 meetings in a year. According to the results of descriptive statistic table, the minimum and maximum number of board meetings were 5 and 21 per year. Moreover, it represents a 2.714 standard deviation. Average ROA was reported as 1.3% which was ranged from 0.1% to 2.3%. Average ROE was reported that 16.070 for listed commercial banks in CSE which was ranged from 1.220 to 29.650. The average value of BC was 0.107 and standard deviation was 0.038. Relating to the above table the minimum and maximum values of the BC were 0.053 and 0.238 respectively.

All observations were assessed for skewness and kurtosis. Rigorous data cleaning steps were undertaken in light of recommendations stressing its importance (Hair et al., 2010). All observations fell within the acceptable range, i.e. within ± 2 standard deviations of the mean for skewness indices Results of present study were within this given range for the skewness scores.

Table III: Correlation analysis

	ROA	ROE	BZ	FBM	FOBM	NED	BC
ROA	1						
ROE	0.681**	1					
BZ	-0.123	0.015	1				
FBM	0.510**	0.216	-0.071	1			
FOBM	0.275*	0.161	-0.042	0.365**	1		
NED	0.183	0.102	0.601**	0.281	0.087	1	
BC	-0.067	-0.392**	0.153	-0.089	-0.058	0.296*	1

Note: **Correlation is significant at the 0.01 level; *correlation is significant at the 0.05 level
Source: Constructed by authors

The results of the correlation analysis are presented in the table III. As per the correlation results presented in the table III, BZ and NED were not significantly correlated with ROA and ROE (p>0.05). Further, FBM and FOBM were positively and significantly associated with ROA. Because the correlation values were positive and p values were less than the significant level of 0.05(5%) and 0.01(1%). But FBM and FOBM were not significantly correlated with ROE(p>0.05). Because, Moreover, BC was not significantly correlated with ROA of selected banks and C has a negative and significant relationship with ROE of listed commercial banks in CSE.

Regression Analysis

Regression analysis was used to investigate the strength of relationship between board structure and firm performance of listed commercial banks in CSE.

Table IV: Regression analysis for two models

Variable	ROA				ROE			
	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.
C	0.018	0.006	2.902	0.006	25.143	6.912	3.637	0.001
BZ	-0.000	0.001	-0.669	0.507	0.536	0.529	1.012	0.316
NED	-0.000	0.001	-0.453	0.652	-0.966	0.574	-1.683	0.099
FBM	0.001	0.001	1.567	0.124	-0.101	0.995	-0.102	0.919
FOBM	-0.004	0.000	-2.025	0.049	-0.560	0.244	-2.295	0.026
BC	0.036	0.022	1.681	0.100	5.082	24.348	0.208	0.835
R-squared	0.665				0.806			
Adjusted R-squared	0.542				0.734			
Prob(F-statistic)	0.000				0.000			
Durbin-Watson stat	1.949				1.479			

Source: Developed by authors

According to the regression results, FOBM and BC were significantly impact on ROA. The coefficient value between FOBM and ROA were -0.004. Therefore, FOBM was negatively and significantly impact on ROA. But NED, FBM and BZ were not significantly impact on ROA. As result presented in table IV, among the four variables of board structure, non-executive directors and frequency of board meeting have been identified as significant predictors with coefficient values of -0.966 ($p<0.1$) and -0.560 ($p<0.05$) respectively resulted on ROE. That means NED negatively significantly related with ROE and FOBM negatively significantly related with ROE of listed commercial banks in CSE. Other variables, board size (Coef = 0.536, $p>0.05$), female board members (Coef = -0.101, $p>0.05$) and bank capital (Coef =5.082, $p>0.05$) were not significantly related to ROE.

As results presented in above table, the adjusted R-Square which indicates the explanatory power of the independent variable is 0.542, which indicates the 54.16% variability of ROA can be explained by the board structure, as well as rest 45.84% ROA is decided by other factors. The Durbin-Watson value of the model is 1.948. According to that the basic model is free from autocorrelation problem since Durbin-Watson value between 1.5 and 2.5. The Durbin Watson value is less than 2. It indicates that the data set has a positive autocorrelation. The value Prob (F-statistic) was 0.000, and it was less than 0.05 significant level. So, the first model was significant. The adjusted r squared relating to second model

was reported as 0.734, which indicates the 73.45% variability of ROE can be explained by the board structure, as well as rest 26.55% ROE is decided by other factors. The Durbin-Watson value of the model is 1.479. It is less than 2. It indicates that the data set has a positive autocorrelation. Further, value Prob (F-statistic) was 0.000. It was less than 0.05 significant level and the second model was also significant. According to the findings of the research, three hypotheses were supported out of 8.

Discussion and conclusion

This study was conducted to find the impact of board structure on the firm performance of listed commercial banks in CSE. Data were gathered from the annual reports of 12 commercial banks which are listed in CSE for the period of 2015-2019. The main objective of this research study is to find the impact of board structure on firm performance for Listed Commercial Banks in CSE. The study was conducted under 8 sub-objectives.

The empirical result of board size provides a negative relationship with ROA but is not significant, and this result supports the previous finding by Al-Matari *et al.*, (2012); Senthuran & Velnampy, (2015) & Hewathenna, Haleem and Jamaldeen, (2015). Similarly, board size revealed a positive but not significant influence on ROE of listed commercial banks in CSE. The findings support Senthuran & Velnampy, (2015) & Razali *et al.*, (2019) that also found no significant relationship between these two variables.

Another objective is to find the relationship between the proportion of female board members and ROA. According to the above findings, the relationship between the proportion of female board members and ROA was positive but not significant. This result supports the previous findings by Chandani, Mabood and Mahmood, (2018) ;Thi Cam Tu, (2017);Suganya & Kengatharan, (2017);Dissanayake & Dissanayake, (2019). The proportion of female board members and ROE have a negative relationship, but it was not significant. Dissanayake & Dissanayake, (2019) also found the same result regarding the FBM and ROE.

The finding on non-executive directors revealed a negative but not significant influence on ROA of listed banks. So, the objective is to find out the relationship between non-executive directors and ROA was achieved. Several studies in line with this finding (Senthuran & Velnampy, 2015; Al-Matari *et al.*, 2012; Hasan & Butt, 2009). The empirical result of non-executive directors provides a negative significant relationship with ROE of listed commercial banks in CSE. Taghizadeh & Saremi, (2013) also found that the similar result. The meaning of this finding is that the majority of non-executive directors may cause poor performance. Because they have a greater chance of making mistakes as a result of that lack of knowledge regarding the organization. So in my study also the higher proportion of non-executive directors lead to generate poor performance for listed commercial banks in CSE. By analyzing the result of regression model, the relationship between frequency of board meetings and ROA, frequency of board meetings and ROE are significant and negative. This result supports the previous finding by Kutum, (2015); My Hanh *et al.*, (2018) & Akpan, (2015). According to their findings, increasing the number of board meetings will lead to a decrease in the performance of the firms. They revealed that more meetings are costly to the organizations. That mean it will lead to high energy cost, managerial time, administrative support, meeting's fees and travel expenses. It will lead to poor firm performance of the organizations.

When it comes to the performance of listed commercial banks, board structure plays of a prominent role by more than 50% to the performance of the commercial banks. The directors of the commercial banks should reside on restrictions of the board by considering the current board. If commercial banks do not maintain board structure as for the standard as mentioned in the code of best practices, it will also impact on fluctuating the share prices in CSE. Because the effective board structure will lead to maintain the financial stability of the banks. Research findings can be useful not only for commercial banks but also for other bankers in making their decisions. Other bankers can determine their board structures if they are performing well. They also can restructure their director board by considering the results of the study. Furthermore, investors can make their own investment decisions by looking at these research findings. From the stakeholders' point of view, investors should consider on the board structure before investing on commercial banks listed in CSE. Because through this research it proves that board structure has a significant impact on the performance of banks. Normally public people concede on interest rates before they invest in banks. But through this study, previous scholars have mentioned that board structure can impact on the success or failure of the firms and also resides directly on the interest rate. Therefore, the public should be keen on the board structure before they are investing.

When concerned with the scope of the study, first limitation is this study only considered listed commercial banks in CSE. The banking sector in Sri Lanka comprises Licensed Commercial Banks and Licensed Specialized banks. Therefore, additional investigation is required to examine for whole banking sector in Sri Lanka and additional investigation is required to examine companies representing in 20 business sectors. It will lead to more accurate research findings. Another limitation is that this study considers only five years of data. It would be more effective to consider data from more than five years. Third limitation is that the study was limited to accounting-based measures such as ROA and ROE. So, market-based performance measures such as Tobin's Q can be used as a dependent variable to find more accurate results. In addition, cross-border analysis between emerging economies and developed countries can also be an essential dimension for future research. This study has been taken four variables to measure the board structure of listed commercial banks. Such as board size, female board members, frequency of board meetings and non-executive directors. But there are many other variables available to measure the board structure. So future studies must consider taking into account some other variables like meetings attendance and remuneration, managerial behavior, board members remuneration, educational qualifications experience of the board members etc.

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