

# **SRI LANKA ECONOMIC JOURNAL**

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# WOMEN DIRECTORS AND THEIR IMPACT ON FINANCIAL PERFORMANCE OF FIRMS IN SRI LANKA

*Naduni Senavirathna<sup>1</sup>  
Ruwan Jayathilaka<sup>2</sup>*

## **Abstract**

*Many studies and ongoing debates address the impact of women directors on financial performance of firms in developed economies. On the contrary, lack of knowledge and gaps in literature prevail with regards to this discussion which focus the developing economies. This is a case study based in Sri Lanka which investigates the impact of women directors on the financial performance. Further, this study extends the existing literature on gender diversified boards by providing new evidence on the impact of women directors on financial performance of listed companies in Sri Lanka. Data analysis is based on panel regression techniques which covers all the listed firms totalling 281 during the seven year period 2012-2018. Moreover, to review the impact caused by women directors, a dependent variable which determines financial performance of firm was used in this study. The study found out that women directors have a positive and significant impact on firm financial performance. Furthermore, leverage and firm age have a negative impact on firm financial performance. The study findings provide guidance to Sri Lankan policy makers and regulators to implement gender inclusive policies and also to introduce quota legislative strategies enabling equal opportunities regardless of gender-based disparities. Sri Lanka is making strong efforts to return to normalcy reviving its economic growth and business sector affected by Easter bombings in 2019 as well as the global pandemic coronavirus COVID-19 in 2020. Therefore, the findings of this paper will be useful to understand the role of women directors on the financial performance of firms.*

**Keywords:** Women directors, Financial performance, Listed firms

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<sup>1</sup> Department of Business Management, SLIIT Business School, Sri Lanka Institute of Information Technology, New Kandy Road, Malabe, Sri Lanka.

Email: [nanusenavirathna@gmail.com](mailto:nanusenavirathna@gmail.com)

<sup>2</sup> Head - Department of Information Management, SLIIT Business School, Sri Lanka Institute of Information Technology, New Kandy Road, Malabe, Sri Lanka.

Email: [ruwan.j@slit.lk](mailto:ruwan.j@slit.lk)

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## 1. Introduction

Board gender composition has become a major concern creating much interest within corporate governance. The impact of gender diversity on the effectiveness of corporate boards has been an ongoing debate during recent years after considering women's contribution in the top management (Fredericks & Gondhalekar, 2014). When large scale businesses started in the pre and post eras of industrial revolution, men were considered to be empowered with the highest priority in playing dominant roles. These include taking charge of organisational controls and leading the corporate boards. However, with the existing changes in stereotypes that prevailed in the past, the concern for women empowerment has increased in today's world. As a result, many rigorous studies have been conducted by researchers on women directors' impact on firm financial performance. In an attempt to address this question, many scholars in recent years have studied the effect of women directors on firm performance. However, the empirical evidence is inconclusive in the existing literature where most studies focus on firms in the United States of America (USA) and a few other developed economies". Liu, Wei, and Xie (2014, p.170) revealed of abundant literature and empirical evidence available regarding this research topic, based on studies conducted on firms of developed nations.

Moreover, the high-profile failures, financial crises and scandals in companies such as Enron, Lehman Brothers and WorldCom in recent past had also caused to increase the concern for board gender composition. Researches were also conducted in order to investigate if the crisis would have occurred -if-Lehman brothers were Lehman sisters. A number of debates and discussions were also held with regards to this incident. This paved the way for famous individuals to voice up their opinion as well. The managing director of International Monetary Fund (IMF) stated: "What if Lehman Brothers had been Lehman Sisters?" (Lagarde, 2018). This statement implies that the male domination in the banking industry had led to the collapse of Lehman Brothers, which many economists had failed to identify beforehand; further, the women on boards of the banking industry create greater stability. This raised an important question as to whether women can also bring about a positive impact on corporations other than the banking industry in the USA and other regions of the world. Consequently, as per Liu et al. (2014), empirical evidence with regards to this research topic have been gathered using firms in the USA and other developed nations.

Many countries in the Europe strictly consider the gender composition of corporate boards. Countries such as Norway, Spain, Italy, France, Iceland, the Netherlands and Belgium are required to adopt regulations in the form of legislative quotas. Failure to fulfil such requirements on quotas can be penalised. In other words, these mandatory laws aimed at increasing the participation of women directors in listed companies. In contrast, countries such as Australia, the United Kingdom (UK) and Germany are some of the well-known capital market regulators which have approved the disclosure requirements (Renee B. Adams &

Feirreira, 2009; Rose, 2007). A global overview on the gender quota legislation for women directors is depicted in Figure 1.

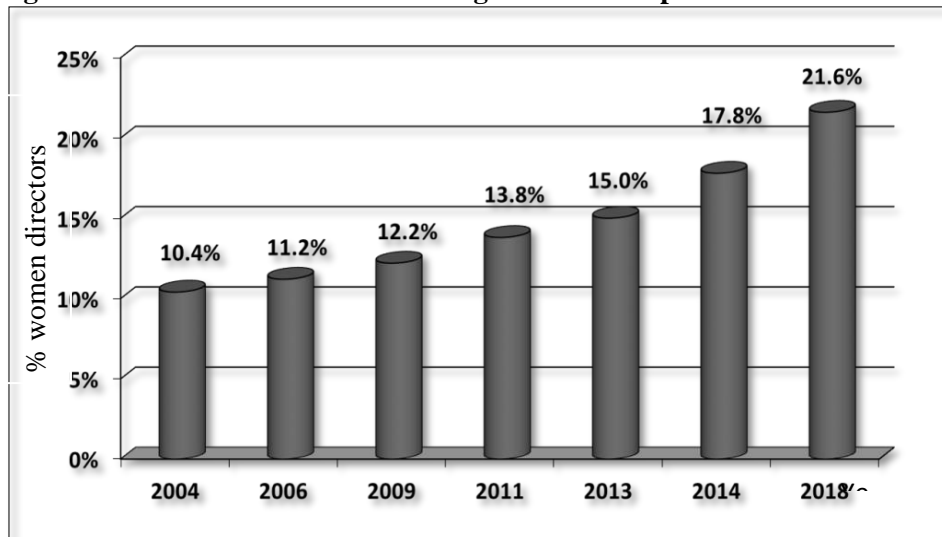
Quotas have been implemented through different methods across the globe. In most countries, the quotas for women directors are imposed on listed companies while in some, quotas are implemented on state owned companies, municipal and provincial councils. However, in a few countries, quotas are yet in the process of being proposed (CWDI, 2018b). This indicates that gender quotas can be established in a number of ways rather than the uniform method of implementation.



Source: Adopted by CWDI (2018b).

Main aim of implementing such gender quotas is to break the glass ceiling and provide an equal chance for both the males and females, in reaching the top positions of companies.

**Figure 2: Women directors of fortune global 200 companies from 2004-2018**



Source: Adopted by CWDI (2018a).

In 2018, the Globewomen Research and Education Institute conducted a research on the presence of women directors in the Fortune global 200 companies. The Fortune Global list is a ranking of the top international companies around the world. The percentage of women directors on corporate boards of Fortune Global 200 companies have increased from holding 10.4% in the year 2004 while representing 26 countries to holding 21.6% in 2018; thus, a percentage increase in all director positions among the 200 largest companies in the world, throughout the 15-year period can be observed (CWDI, 2018a). Figure 2 represents the gradual increase in percentage over the years. Results also reveal that the top three countries with the highest percentage of women on board are also those with legislative gender quotas imposed for public listed companies. These top three countries are namely, France (43%), Italy (35%) and Germany (33%). The implementation of quotas as a method to promote gender diversity in these countries has led to the increase in the presence of women directors.

A developing economy such as Sri Lanka needs more women directors participating in corporate boards to create this impact mentioned above. Especially, if such a setting can spur more female employment opportunities and contribute to the overall benefit of the economy. Sri Lankan economy needs to grow at a reasonably high pace and to meet the changing demands of various sectors. Hence, the presence of a competent, skilled labour force in well diversified corporate boards is essential. Considering this as the research issue, this study investigated the impact in a Sri Lankan context, with special reference to the listed companies in the Colombo Stock Exchange (CSE). This study has expanded the observation by taking a seven-year period during 2012-2018 into consideration and employed secondary data from the company annual reports



available in the CSE website. Through this research, the presence of women directors in the sample population of 281 listed companies in the CSE and their impact on financial performance of these firms can be identified. By tracking the presence of female directors in this study, the extent to which women are empowered in the corporate environment in Sri Lanka and the impact female directors has on the financial performance of the firm, their ability to drive the performance of businesses can be identified. This study will be important to women of Sri Lanka who are serving on corporate boards. In addition, findings of the study will be useful to the policy makers such as the UN Women, who is keen in ensuring women's rights and also involved in the process of devising and implementing gender inclusive policies.

### **1.1 Objective**

The objective of this study is to investigate the impact of the female presence in director board on firm financial performance. This research differs from the existing studies, and hence, contributes to the literature in four ways. Firstly, company directors are influential individuals who can affect the lives of the employees and even the consumers, especially if it is a more consumer-based industry. This study creates a business case for increased women representation in corporate boards; this is constructed based on the notion that women directors have the ability to bring in different perspectives and experiences to the board and thus, increase the quality of decisions decision making. In addition, such a scenario can help to drive the performance of the firm. Women directors are can serve as role models, as an inspiration to the female employees of an organisation to look upon. Such a backdrop motivates female employees to climb up the corporate ladder amidst all visible and invisible barriers, breaking as the glass ceiling they usually encounter. In countries such as the USA, women directors frequently guide senior women in the company and at times promote increased participation of women.

Secondly, a developing economy such as Sri Lanka which aims to progress to the status of a developed economy needs more women directors in the corporate board to create the impact of increased performance mentioned above; especially if such a scenario can attract more female employment, it can contribute to the overall benefit of the economy. Productive existence of a competent, skilled labour force and well diversified corporate boards are essential for continued economic growth. Tracking the presence of female directors in this study helps understand the extent to which women reach the top tier and attain power in the corporate environment in Sri Lanka. Through investigating the impact female directors have on the financial performance of the firm, their ability to drive the performance of businesses can be observed.

Finally, this study will be important to women of Sri Lanka and the corporate boards. It will also be of immense use to the policy makers such as the UN Women in ensuring women's rights, involved in the process of implementing gender inclusive policies. Finally, the findings will be useful, particularly to the firms directed by women in an effort to recuperate their business in the aftermath

of setbacks in Sri Lanka- 2019 Easter bombings in 2019 and the global pandemic coronavirus COVID-19 attack in early 2020.

The remaining parts of this paper are organised as follows. Section 2 is discusses the literature review with underlying theories, significance of this study and its contribution to research gaps, while Section 3 presents data and methodology. Section 4 assesses the results and discussion. Section 5 presents the concluding remarks, policy implications and recommendations.

## **2. Literature review**

### **2.1 Board gender diversity and firm performance**

The main role of the board of directors (BOD) is corporate governance, to perform on behalf of the shareholders with the perspective of increasing wealth. The BOD are accountable to provide supervision, advices and direct the management. Via the powers vested to them, the BOD influence the managers to gain a higher shareholder value (Ruuska, 2017). According to Vu, Phan, and Le (2018, p.514), there are key functions of BOD such as: “(1) determining objectives and firm strategies; (2) taking financial and operational decisions; (3) assessing firm performance; (4) and building the relationship with managers.” In order to avoid the agency conflict, it is important that members of the board hold the number of shares as stipulated. However, the ownership should not allow for shares in excess, as it may cause to increase self-interest rather than the firm’s overall interest- thus, result in divergence rather than convergence.

However, firms should have a broader understanding of their board diversity in terms of age, education, gender, ethnicity and background etc. This may influence firm performance as BOD are involved in making firm’s strategic decisions; they also hold the responsibility of monitoring and controlling the firms with the perspective of increasing shareholder wealth. Some studies indicate that the gender diversity may relate to the firm performance (Mogbogu, 2016), whereas in some, it is revealed that there may not be a link between the gender diversity and firm performance. Some researchers argue that the unique, innovative, qualitative and creative ideas or the decisions are generated through a balanced board consisting both the men and women (Pasaribu, 2017; Priya & Nimalathan, 2014; Vu et al., 2018; Wellalage & Locke, 2013). Effective results can be generated with more gender diverse boards by making better decisions and overcoming possible threats.

In real world scenarios, ample evidences indicate that the female directors may bring in the talent, expertise, connections and experiences into the firm. In addition, some developed countries have imposed quotas to do justice to the increment of presence of women in the board. The presence of women directors may lead to increase the firm performance (Pasaribu, 2017).

Results of a study conducted by Nowell and Tinkler (1994) depict that women are more important than men when making cooperative decisions. Firm performance can have indicators such as: Return on Assets (ROA), Return on Equity (ROE), Return on Investment (ROI) and Market Value (MV) (Lamers, 2016). A study conducted based on small listed firms in the UK generated limited

evidence that there is a strong relationship between board gender diversity and firm performance. The researchers used Ordinary Least Square (OLS) and Arellano-Bond methods to generate final results (Pasaribu, 2017). A similar study conducted in China, indicates positive results and a significant relationship between women on board and firm performance with the application of Fixed Effects (FE) model. Arellano-Bond and lagged board methods were used by Liu et al. (2014) while Chen, Leung, and Evans (2018) used OLS method.

Certain studies have used panel regression models, cross section random effects and FE methods and generated positive and significant results (Gallucci, D'Amato, & Santulli, 2015; Priya & Nimalathasan, 2014; Rupawaththa & Gunasekara, 2016); in addition, some studies employed the Tobit and Endogenous Regression models to investigate the relationship of women directors and firm performance (Mogbogu, 2016). However, literature provides evidence of employing different methods for analysis of results. In this study, more concern has been on statistical techniques such as FE, Pearson correlation and lagged variables method to analyse the results.

## **2.2 Empirical evidences from developed and developing countries**

Women's participation in the labour force has always been a factor under consideration for the overall productivity of an economy. Millions of women had joined the labour force in Europe during the past few decades. Despite their active participation, an important observation made was the low representation of women on board (Christiansen, Lin, Pereira, Topalova, & Turk, 2016). As a result, quotas were imposed for women on corporate boards to reduce the gender-based disparities at the top positions of the corporate management. Women directors can bring in relatively more heterogeneity in terms of the values held, levels of decision-making and risk taking. Therefore, researchers of various countries have studied the significance of women directors and their impact on the financial performances of firms (Priya & Nimalathasan, 2014). Thus, it is evident that gender diversity in the corporate boards can be a determinant of improved financial performance. Hence, the following sub sections provide empirical evidence relating to the impact of women directors on firm financial performance.

## **2.3 Empirical evidence from European countries**

Green and Homroy (2018) conducted a study on female directors, board committees and their impact on firm performance by taking into account Euro Top 100 firms as samples from 11 western European countries: these include Belgium, Denmark, France, Germany, Italy, Netherlands, Norway, Spain, Sweden, Switzerland and United Kingdom. Results proved that there exists a direct relationship between increased representation of female directors on boards and the profitability of these firms. Another important finding of the study considers the number of Chief Executive Officers (CEOs) with daughters, anticipating that such settings have considerable effects on the board gender

diversity. Thus, this type of a perception leading to the potential effects on diversified boards was created as a result of male preferences and behaviour.

According to Loh (2018), Spain is one of the countries with the highest quota for women on board with approx. 40%. Results generated from findings depict that the presence of women directors alone does not have any impact on the value of the firm. Nevertheless, the diversity of boards has a favourable impact on the firm's value which implies that a balance between both, the male and female directors on board, is significant for the firm's successful financial performance (Campbell & Mínguez-Vera, 2007). Denmark is one of world's most developed countries as per the United Nations Development Programme (UNDP). However, research findings of Rose (2007) observed the effect of female board representation on financial performance of Danish firms. Findings revealed that there was no significant impact from women directors on firms' overall performance measured using the Tobin's Q. This can be identified as an important finding emphasising that not all women directors in developed economies can bring about this change; in addition, this evidence proves the notion of having a large number of female directors in developed countries to enhance the financial performance as wrong.

In contrast, the results of a study by Chen et al. (2018) show that, the positive impact on financial performance due to women directors is limited for the firms where innovation and creativity play a vital role. According to evidence, firms with a higher percentage of women directors tend to invest more on innovation. Such firms incur high expenditure in Research and Development (R&D) which implies that female directors are more inclined towards productivity and thus, enhance the overall performance of firms.

Further, the evidence of a study conducted taking into account 40 listed firms in France shows that a significant relationship exists between board gender diversity and firm performance (Ahmadi, Nakaa, & Bouri, 2018). By using ROA and ROE as proxies for evaluating the firm performance, regression results indicate a fair contrast between the financial performances of firms at least without a single female director, with that of firms which comprise of more women directors in its boards.

#### **2.4 Empirical evidence from the United States of America**

A well renowned study conducted by a catalyst, Mattis (2000), revealed that the firms need to reflect their diversified labour force in their corporate boards as well the customer base. If this factor is denied, then probable consequences are arbitrage and ethnic minorities. Boards need to ensure that they do not discriminate against any specific group. Mattis (2000) also emphasised that since more women in the USA are participating in the labour force, joining politics and also holding managerial positions, women to be also a part of the corporate boards of the Fortune 500 companies is a matter that cannot be disregarded. Conyon and He (2017) conducted a quantile regression analysis on the relationship between the firm performance and the boardroom gender diversity. The regression results indicate that the impact of women directors in low performing firms is

insignificant than those in high performing firms. However, the presence of women on boards, whether high performing or low, tend to have a positive impact on the financial performance of the firm. Further, the percentage of women directors is positively correlated with the accounting-based tools which are used to measure the firm performance (Conyon & He, 2017). Another study using a panel of both the established and new economy firms in the USA contributed new evidence, with regards to female CEOs and their impact on financial performance of the firms they serve for, in comparison to that of the male CEOs (Khan & Vieito, 2013). The results show that female CEOs were able to boost the financial performance of these firms, such firms tend to be more risk averse while the risk-taking levels of firms with male CEOs are comparatively high.

### **2.5 Empirical evidence from countries in the Asian Pacific region**

Even though many scholars have studied the impact of the female directors on firm performance, a plethora of studies have focussed on the companies of USA and other developed economies in the western region (Liu et al., 2014). Therefore, there are gaps in empirical evidence with regard to existing literature which focus on Asian countries and developing economies. In an attempt to address this shortage, this study has also investigated the effect of board gender diversity on firm performance in China's listed companies. Accordingly, the study found a significant positive effect which originate from executive women directors' executive effect rather than independent women directors' monitoring effect.

According to evidence of Dieleman, Ibrahim, and Khor (2016), Asia Pacific region is lagging far behind global economies such as the USA and countries in the EU, in terms of female representation on director board. Compared to 26% in UK, 21% in EU, and 19% in US, Asia Pacific has a mere 10% female representation on board. Moreover, the study results revealed that companies with at least 10% female board members delivered a ROE of 14%, while 12% of ROE is delivered by companies with fewer or no female directors on board. Low, Roberts, and Whiting (2015) studied the association between board gender diversity and firm performance using a sample of Asian firms from South Korea, Malaysia, Hong Kong and Singapore. The study observed that increasing the number of female directors on boards have a significant positive effect on ROE; it further emphasised that adding the first female director to the board has the most beneficial effect on firm financial performance.

Conversely, Darmadi (2008) found that both the accounting and market performance measured using ROA and Tobin's Q have a significant negative association with gender diversity based on the firms listed in Indonesia. M. K. Julizaerma and Zulkarnain Mohamad Sori (2012) investigated the relationship between the gender diversity on director board and firm performance and observed similar results based on companies listed in Bursa, Malaysia. However, another Malaysian study conducted by Marimuthu (2009) revealed that there is no significant gender effect caused by the BOD on ROA and ROE. This shows

that in Asian countries too, certain studies have revealed that there is no impact on financial performance of firms caused by gender diversified boards.

Moreover, Wang and Clift (2009) conducted a study to examine the association between the board diversity represented by female representation and firm performance, based on top 500 Australian companies. Accordingly, there is a propensity of having more female directors in larger firms and that gender and racial diversity have no significant influence on firm performance measured by ROA and ROE.

### **2.6 Empirical evidence from Sri Lanka**

Sri Lanka is a developing country, yet with a male dominated society and culture with less representation of females in social groups. Most Sri Lankan women give priority to their family and tend to be distance from employment. When such issues arise, surrounding becomes unfavourable for the female directors to represent themselves on boards. Due to less attention on this matter as a developing country, there seems to be vague and unjustified evidence of prior literature (Rupawaththa & Gunasekara, 2016). Most of the countries have recognised the presence of women directors as an advantage and allow to enhance engagement in hiring females for higher positions of their companies (IFC, 2018). On the contrary, it is reasonable to assume that local companies in Sri Lanka are not fully concerned about the real impact of board gender diversity due to lack of evidence and knowledge.

According to literature, Wellalage and Locke (2013) discovered the demographic diversity by using measurements such as gender, ethnicity, age, education and occupation of board members in listed companies of Sri Lanka. Furthermore, the study contributes to the literature by finding the impact of the demographic diversity on the firm financial performance during the period of 2006-2010. Further, the study suggested to introduce new board diversity orientation programmes by pointing that it “creates a two-way socialisation process, i.e., bias is reduced and minority perspectives can influence organisational norms and values” (Wellalage & Locke, 2013, p.132). The analysis has also found out that Sri Lankan boardrooms are not diversified adequately in terms of gender, race, educational qualifications and achievements. Further, the diversity of the boardroom in terms of gender, education and occupation cause to lessen firm financial performance, whereas the diversity of board ethnicity and firm age enable financial performance to rise.

Certain studies were carried out by providing evidence on different sectors listed in the CSE. Priya and Nimalathasan (2014) contributed to the existing literature, by investigating a selected number of listed hotels and restaurants representing the Hotel industry of Sri Lanka. Contribution of the Hotel industry is of significance to the local economy. As such, it is important to have proof on the BOD's characteristics and their impact on financial performance. However, these researchers discovered that there is a significant correlation of ROA and ROE with the number of women directors and inside directors during the period of 2008 to 2012.

Lekamge and Manawaduge (2018) conducted a study on a total of 41 listed local banks and finance companies in Sri Lanka. The investigation revealed that when an average of one female director is represented on a board, the average female directors consisted 13% of employees in banks and finance companies. Although the study does not pay concern about the financial performance in relation to the female directors, it is important to have proof in favour of female representation in the boardroom in the Banking and Finance sector.

In the recent literature too, studies have directly examined women directors' representation on the boardroom and their effects on the financial performance. Rupawaththa and Gunasekara (2016) based their study in the 30 companies listed in the CSE during the period 2011-2015. It revealed results that there is a significant positive relationship between boardroom gender diversity and firm financial performance with regards to both the pooled OLS and the FE model.

The existing literature from the Sri Lankan context is considerably inadequate to examine the matter of women's representation on boardrooms and their impact on firm financial performance for cross comparison with other developing countries. Hence, contributing to literature in a Sri Lankan context is essential.

Table 1 provides the summary of literature and a brief overview on how prior studies were conducted. A clear comparison between the countries, the year of study, number of observations and findings are indicated as well.

**Table 1: Summary of literature**

<b>Author(s) and Year</b>	<b>Country</b>	<b>Performance measure</b>	<b>Sample of the Study</b>	<b>Impact</b>
<i>European countries</i>				
Smith, Smith, and Verner (2006)	Denmark	4 performance measures	2005 firms 1993 to 2001	Positive
Reguera Alvarado, Laffarga Briones, and Fuentes Ruiz (2011)	Spain	4 performance measures	146 listed firms from 2005 to 2007	No impact
Schwizer, Soana, and Cucinelli (2012)	Italy	Price to book value	246 firms 2006 to 2009	No impact
Gonzalez and Smith (2012)	France and Spain	ROA, ROE and MV	Unbalanced firms 2004 to 2010	Positive impact in France
Khan and Vieito (2013)	Portugal	ROA	11,315 observations of executive	Positive

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Author(s) and Year	Country	Performance measure	Sample of the Study	Impact
			compensation 1992 to 2004	
Rose (2017)	Denmark	Tobin's Q	Sample of listed Danish firms from 1998 to 2001	Negative
<i>USA</i>				
Erhardt, Werbel, and Shrader (2003)	USA	ROA and ROI	127 firms 1993 to 1998	Positive
Renée B. Adams and Ferreira (2009)	USA	Tobin's Q	1,500 firms 1996 to 2003	Negative
Carter, D'Souza, Simkins, and Simpson (2010)	USA	Tobin's Q and ROA	S&P 500 firms 1998 to 2002	No impact
Horváth and Spirollari (2012)	USA	Price to book ratio and leverage ratio	307 companies 1990 to 1994 in the USA	Positive
Patel, Guedes, and Pearce (2017)	USA	ROA	3,022 publicly traded firms from 2005 to 2013	Negative
<i>Asian Pacific region</i>				
Darmadi (2011)	Indonesia	Tobin's Q & ROA	169 firms in 2007	Negative
Yasser (2012)	Pakistan	EVA	100 firms from 2008 to 2010	No impact
Mohamad Khudzari Julizaerma and Zulkarnain Mohamad Sori (2012)	Malaysia	ROA	954 firms from 2008 to 2009	Positive
Liu et al. (2014)	China	ROS and ROA	1,000 listed firms 1999 to 2007	Positive
Taghizadeh and Saremi (2013)	Malaysia	ROA and ROE	150 firms in 2008	Positive
Salehnezhad and Abbasi (2013)	Iran	Tobin's Q	76 firms from 2009 to 2012	No impact
<i>Sri Lanka</i>				
Salehnezhad and Abbasi (2013)	Sri Lanka	Tobin's Q	88 firms from 2006 to 2010	Negative



Author(s) and Year	Country	Performance measure	Sample of the Study	Impact
Priya and Nimalathasan (2014)	Sri Lanka	ROA and ROE	Listed hotels and restaurants from 2008 to 2012	Positive
Rupawaththa and Gunasekara (2016)	Sri Lanka	Regression model, cross section random effect and FE	30 companies from 2011 to 2015	Positive
Lekamge and Manawaduge (2018)	Sri Lanka	Market capitalisation and leverage	100 top listed companies in 2017	Positive

Source: Authors' compilation.

### 3. Data and methodology

#### 3.1 Data

This study embraces companies listed in the CSE over the seven year period 2012-2018 for the panel data analysis. Initial sample of this study contains data of total listed firms in the CSE. As at 2018, CSE reported 297 public listed companies representing 20 business sectors. Moreover, with unobservable and unavailable data, the final data set consists of unbalanced panel data of 1,865 firm-year observations of over 281 listed companies.

Table 2 illustrates the variables identified and used by similar studies in the existing literature to measure the impact of women directors on firm financial performance.

**Table 2: Common variables used in literature**

Variable	Research papers
Women on board	Wellalage and Locke (2013), Campbell and Mínguez-Vera (2007), Liu et al. (2014), Rupawaththa and Gunasekara (2016), Priya and Nimalathasan (2014)
ROA	Campbell and Mínguez-Vera (2007), Liu et al. (2014), Priya and Nimalathasan (2014)
ROS	Wellalage and Locke (2013), Liu et al. (2014), Campbell and Mínguez-Vera (2007)
ROE	Priya and Nimalathasan (2014)
Leverage	Wellalage and Locke (2013), Campbell and Mínguez-Vera (2007), Liu et al. (2014)
Firm size	Wellalage and Locke (2013), Campbell and Mínguez-Vera (2007), Rupawaththa and Gunasekara (2016)
Independent board directors	Liu et al. (2014)

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Variable	Research papers
Firm age	Wellalage and Locke (2013), Liu et al. (2014), Rupawaththa and Gunasekara (2016)
Board size	Wellalage and Locke (2013), Rupawaththa and Gunasekara (2016), Liu et al. (2014)
CEO duality	Liu et al. (2014), Priya and Nimalathasan (2014)

Source: Authors' compilation based on the literature review.

By considering past studies, the key independent variable employed in this study is board gender diversity and the dependent variable is firm performance. In addition, this study used control variables as in many past studies and grouped these into two categories which are board characteristics and firm characteristics. The board characteristics consist of chairperson, independent board directors, board size and CEO duality while the firm characteristics consist of leverage and firm age. Table 3 shows the variables used in this study.

Financial variables were obtained by using financial data which were included in financial statements attached to annual reports of each individual company in each year. In addition to data other than board characteristics and firm characteristics except firm age were collected from the annual reports. Firm age was compiled from company profiles of the CSE website. Subsequently, with missing firm-year observations 16 companies had to be excluded from the study. Data of 281 listed companies were coded in STATA (statistical software) data editor for further analysis.

**Table 3: Definitions of variables**

Variable type	Variable	Measurement	Given variable name
Independent variable	Board gender diversity	Percentage of female directors on board.	%_Women
Dependent variable	ROA ratio	Ratio of net profit to the total assets of the company during the same period under consideration. ROA can be calculated as: $ROA = (\text{Profit after taxation} / \text{Total assets})$	ROA
Control variables	Woman chairperson	Dummy variable indicating as "1" if the board chair is a woman and "0" otherwise.	Woman_Chair
	Independent directors	Total number of male and female independent directors.	%_Independent

Variable type	Variable	Measurement	Given variable name
(Board characteristics)	Board size	Natural log of the total number of directors in the board regardless of the gender.	Ln_Boardsize
	CEO duality	Dummy variable indicating as “1” if both the CEO and chairperson of the company is the same, if not “0”.	Duality
Control variables	Firm Age	Natural log of the number of years since the company is quoted in the CSE.	Ln_FirmAge
(Firm characteristics)	Leverage	Ratio of total debt to the total assets of the company during the same period under consideration. Leverage can be calculated as: Leverage = (Total liabilities / Total assets)	Leverage

Source: Authors' compilation.

### 3.2 Firm financial performance measures

The dependent variable of this study is firm's financial performance. Tobin's Q and ROA were used in many studies as the proxy to measure financial performance. This study employed ROA as the primary measure of financial performance consistent with the existing literature. ROA is the ratio of net profit to the total assets of the company in the same period under consideration, usually the period ending 12 months. In order to test the robustness of the results, by referring to the literature, analysis used other standard measures of performance which are ROE and ROS. ROE is a ratio of net profit to the shareholders equity whereas ROS is a ratio of net profit to the sales of the company.

### 3.3 Board gender diversity measure

The key independent variable of this study is board gender diversity. Many studies have used percent of women directors on corporate board as the proxy for the board gender diversity (Renée B. Adams & Ferreira, 2009; Rupawaththa & Gunasekara, 2016). Therefore, this study also considered the percentage of women directors on board.

### 3.4 Measures of control variables

This study uses control variables including percentage of independent board directors; woman chairperson which is a dummy variable to measure if the

chairperson is a woman, natural log of the board size, duality which is a dummy variable to measure CEO duality, leverage and the natural log of the firm age. These five controlled variables were categorised into two groups named as board characteristic and firm characteristics.

#### **4. Methodology**

A panel data set has been effective in this study for analysis of data. Panel data analysis is the most competent statistical method, widely used in econometrics (Maddala, 2001). Combining time-series and cross-sectional data in a specific way, panel data consist of observations on the same variables from the same cross-sectional sample from two or more different time periods (Studenmund, 2016). In comparison to the simple cross-sectional data, panel data can provide a more accurate analysis effectively controlling unobservable and consistent heterogeneity and omitting variable biases (Campbell & Mínguez-Vera, 2007). In order to verify multicollinearity and serial correlation, VIF test and Wooldridge test were carried out, respectively.

This study used panel regression techniques to analyse data and generate results. The two main panel estimation methods that are commonly used in literature are pooled OLS and panel regression with FE. Accordingly, this study employed panel regression with FE to estimate the main regression model which is also used by Liu et al. (2014) in order to investigate the impact of women directors on firm financial performance.

##### **4.1 Panel regression with Fixed Effects**

There are two main approaches to estimate panel data equations, which are FE model and random effects (RE) model (Studenmund, 2016). Hausman test was undertaken in order to select between the FE and RE, which are widely used panel regression techniques in econometrics. The test obtained a significant p value indicating that the null hypothesis which states that the random RE model is suitable was rejected. In the FE model, an adequate amount of dummy variables are included to allow each cross-sectional entity and time period both, to achieve a different intercept (Studenmund, 2016). In order to control economy-wide yearly fluctuations, FE model helps to avoid the constantly omitted variable bias and yearly FE due to unobservable heterogeneity. Therefore, this study used panel regression with FE to estimate the main regression model and thereby this approach is referred to as the FE method. Regression results were obtained via STATA statistical software.

##### **4.2 Regression model**

The following regression model was used in this study to investigate the impact of women directors in board on firm financial performance.

$$\begin{aligned}
 \text{Firm\_Finanacial\_Performan}\epsilon_{it} &= \gamma \text{Board\_Gender\_Diversity}_{it} \\
 &+ \beta_1 \text{Board\_Chair}_{it} + \\
 &\beta_2 \text{Firm\_Chair}_{it} + \alpha_i + \pi_t + \epsilon_{it}
 \end{aligned}$$

where  $i$  denotes company and  $t$  denotes time (years). ROA is the proxy to measure the financial performance whereas *Board\_Gender\_Diversity* is measured by the percentage of women directors on board, in consistence with existing literature. Board characteristics and firm characteristics are used as control variables. *Board\_Chair* (Board Characteristics) consists of *Woman\_Chair*, % Independent, *Ln\_Boardsize*, and *Duality*. *Firm\_Char* (Firm Characteristics) consists of *Leverage* and *Firm\_age*. Coefficient for selected board characteristics is represented by  $\beta_1$  whereas  $\beta_2$  denotes the coefficient of the firm characteristics;  $\alpha$  is the unknown intercept for each entity and  $\pi_t$  is the individual impact of  $t$ , and these are not measurable variables;  $\epsilon_{it}$  indicates the error term.

#### 4.3 Robustness check

Further to explanations in the sub section 3.2.1, this study used ROA as the primary measure of financial performance. However, to test the robustness of results, by referring the literature, other standard measures of performance has been used in the analysis: ROE is calculated by net profits divided by total equity whereas by net profit divided by net sales.

According to the Duru, Iyengar, and Zampelli (2016) complications in estimating the regression results using the FE method arise, since current levels of the explanatory variables may depend on past levels of firm performance (dynamic endogeneity). Therefore, as an alternative, Arellano and Bover (1995) developed the System Generalised Method of Moments (System GMM) method. Thus, the System GMM panel estimator is used to estimate regression results to obtain robust estimates. Applying the GMM method, instrumental variables can be constructed for potential endogenous variables. First-differencing, removes the potential unobservable heterogeneity bias.

#### 5. Results and discussion

Table 4 depicts the descriptive statistics of the total variables used in this study conducted with 1,865 firm–year observations. Approximation of ROA has a mean value of 5%, which is close to the values obtained by Nazar (2014) for Sri Lanka (0.062). The mean percentage of women in the director board is remarkably low 0.08, which is similar to that obtained by Wellalage and Locke (2013) carried out in the Sri Lankan context. Approximately, 29% of women directors are independent whereas 22% of them are executive directors and the remaining hold non-executive directorships. Averagely, 4% of Sri Lankan listed companies have a female director as the chairperson and the average independent directors of the

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director board is reported as 39%. These two values are similar to those obtained by Liu et al. (2014) for China listed firms for the period of 1999 to 2011.

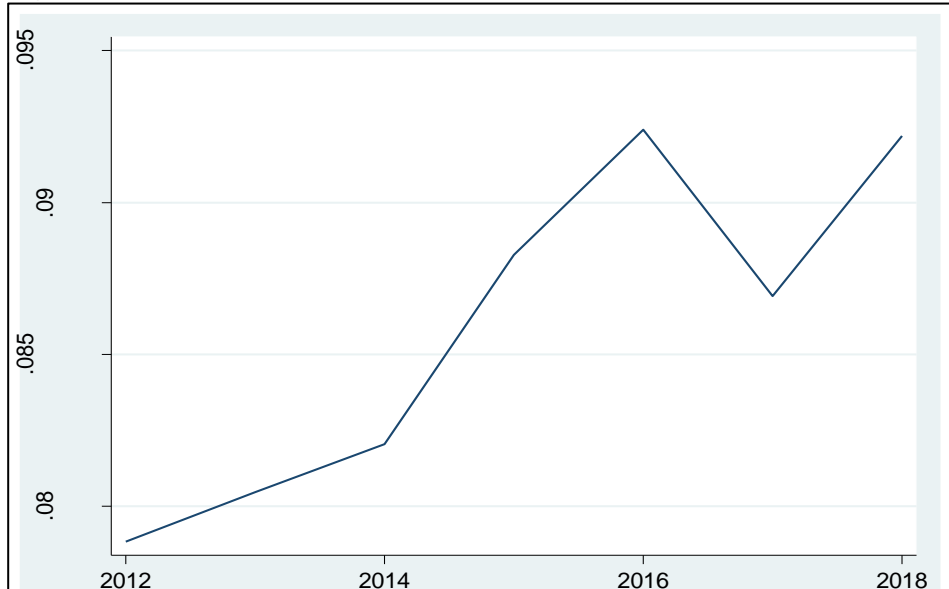
The average board size equals to 8.02 and is reliable with the study conducted for Sri Lanka using the 116 listed firms for the year 2013 by Nazar (2014). The maximum number of directors in the board is reported as 18 while the minimum is 2. Listed companies in Sri Lanka accounts for 13% of CEO duality, which implies that 13% of the firms have their CEO and chairperson positions combined. The average leverage ratio signals that the CSE listed companies have an average 46% of debt relative to their assets, similar to that obtained for China listed firms by Liu et al. (2014).

**Table 4: Descriptive statistics of panel regression model**

Variable	Obs.	Mean	SD	Min	Max
<i>Performance measure</i>					
ROA (net income/assets)	1,865	5.2%	0.15	-2.18	2.52
<i>Board gender diversity</i>					
%_Women	1,865	8.4%	0.11	0	0.75
<i>Control variables</i>					
<i>Board characteristics</i>					
Woman_Chair	1,865	4.0%	0.19	0	1
%_Independent	1,864	38.8%	0.14	0	2.08
Ln_BoardSize	1,865	2.04	0.30	0.69	4.50
Duality	1,865	13.2%	0.33	0	1
<i>Firm characteristics</i>					
Leverage	1,865	45.6%	0.40	0	6.68
Ln_FirmAge	1,795	2.78	1.02	-0.69	4.28

Source: Authors' compilation.

The descriptive statistics were calculated on a yearly basis for the independent, dependent and control variables in this research, for the purpose of detail understanding regarding the variables. Increment in hiring women directors to the firms is illustrated graphically in Figure 3.

**Figure 3: Increment of women directors over the years**

Source: Authors' illustration.

### 5.1 Results of the panel regression

This study employs FE method to estimate the effects of board gender diversity on firm financial performance. Other than the primary dependent variable which is ROA, as the robustness check, ROS and ROE are used as dependent variables for other measures of financial performance. Table 5 depicts the findings of the main regression model. The standard error of each coefficient is shown in parentheses and all standard errors are rectified for heteroskedasticity.

Table 5 depicts the results of ROA, ROS and ROE as dependent variables reported in columns (1) and (2), (3) and (4), and (5) and (6), respectively. FE results are presented in columns (1), (3) and (5). Results of Arellano-Bond method are presented in columns (2), (4) and (6) as an alternative method of testing regression. The Arellano-Bond model is dynamic, where lag of one period in a dependent variable is added and as a consequence, the number of observations have decreased.

**Table 5: Regression results**

Variables	ROA		ROS		ROE	
	FE (1)	Arellano Bond (2)	FE (3)	Arellano Bond (4)	FE (5)	Arellano Bond (6)
%_Women	0.13* (0.07)	0.13 (0.11)	-0.23 (0.48)	-1.60** (0.80)	-0.07 (0.25)	0.04 (0.41)
Woman_Chair	-0.04 (0.03)	-0.01 (0.05)	-0.11 (0.21)	0.86** (0.38)	-0.18 (0.11)	-0.06 (0.20)
%_Independent	-0.02 (0.04)	-0.02 (0.05)	-0.13 (0.26)	-0.06 (0.38)	-0.03 (0.14)	-0.10 (0.19)
Ln_Boardsize	-0.02 (0.01)	-0.03 (0.03)	0.02 (0.12)	-0.03 (0.19)	-0.06 (0.06)	-0.02 (0.10)
Duality	0.04 (0.03)	0.09* (0.05)	0.04 (0.20)	-0.19 (0.36)	0.15 (0.11)	0.34* (0.18)
Leverage	-0.02* (0.01)	0.08*** (0.02)	-0.37*** (0.09)	-0.12 (0.14)	-0.20*** (0.05)	-0.26*** (0.07)
Ln_FirmAge	-0.02** (0.01)	-0.06*** (0.02)	-0.08 (0.07)	0.07 (0.14)	0.04 (0.03)	0.00 (0.07)
Obs	1865	1306	1865	1306	1865	1306

Source: Authors' calculations.

Note: \*\*\* Significance at 1% level, \*\* Significance at 5% level, \* Significance at 10% level.

The percentage of women directors in the FE regression analysis is positively associated with ROA as the coefficient is 0.13. This means that 1% rise in the percentage of women directors will increase ROA by 0.13%. This value is similar to that obtained by Liu et al. (2014) for China listed firms during 1999-2011. Additionally, this finding is consistent with studies conducted in Sri Lanka by Rupawaththa and Gunasekara (2016) and Wellalage and Locke (2013). However, the significant level is 10%, which may be influenced by the small number of women directors in the boardroom, with the overall board size controlled in this study. According to a previous study conducted by Wang and Clift (2009), no strong relationship exists between gender diversity on the board and financial performance; hence, it is assumed that this is due to a few female directors in the sample. On the contrary, with the Arellano-Bond method, presence of female directors in the board is negatively associated with ROS, where 1% rise in the percentage of women directors will decrease ROS by 1.60%.

With regard to control variables, when a woman is the board chairperson, it will influence the ROS to increase 0.86% based on Arellano-Bond method. This finding is consistent with the study conducted by Liu et al. (2014) for China listed firms and also by Rupawaththa and Gunasekara (2016) and Priya and Nimalathan (2014) conducted in Sri Lankan context. Neither the independent directors nor the board size seems to have a statistically significant impact on



firm financial performance. This finding is reliable Chair-CEO duality which seems to have a positive impact on ROA and ROE using Arellano-Bond method. If the CEO duality exists, ROA will increase by 0.09% and the ROE too, by 0.34% is consistent with the findings of Wellalage and Locke (2013) carried out for the listed firms in Sri Lanka. Overall, leverage has a significant negative impact on firm performance, except for ROA using Arellano-Bond method is consistent with the results of Liu et al. (2014), Nazar (2014) and Low et al. (2015). Firm age has no impact on ROS and ROE when FE and Arellano-Bond methods are applied. However, firm age reported a statistically significant negative impact on ROA applying both the FE and Arellano-Bond methods. Thus, in line with studies conducted in the international arena such as Liu et al. (2014) and Dieleman et al. (2016), this study supports the debate that the negative impact of firm age on ROA is also obvious in the Sri Lankan context.

## **6. Conclusion**

This study investigated the impact of women directors on firm financial performance in the Sri Lankan context. Board gender diversity is the central argument of this study, thus, considered as an important determinant for the financial performance of firms. The objective of this research was to measure the impact of the proportion of women directors on the board on firm financial performance. This study considered the total sample population of listed companies in the CSE over the seven years during 2012-2018, opposed to similar studies with a sample of selected companies; hence, provides a comprehensive overview on aspects pertaining to board gender diversity in Sri Lanka.

Empirical evidence reveals as to how the percentage of women directors on board positively impacts on firm financial performance which is measured by ROA. This study contributed with new evidence to the existing literature, research gaps and devise initiatives to overcome issues in gender diversity in the Sri Lankan context. It helps obtain the holistic picture about the women representation on corporate boards as a value driver and how such a setting influences the industrial development in Sri Lanka.

Sri Lanka is a developing economy with no strict or mandatory gender quotas imposed. Therefore, the significance of the presence of women on board is to date a topic that lacks awareness, where attention and research studies are also limited to date in Sri Lanka. Many Sri Lankan women are yet confined to family roles and encounter invisible barriers which tend to prevent them from entering the workforce, specially climbing up the corporate ladder. By way of tracking presence of women in director boards, this research provides new insights to the extent women have been empowered in Sri Lanka's corporate environment.

### **6.1 Policy implications**

In developing economies such as Sri Lanka, the effectiveness of corporate boards caused as a result of gender diversity to date is a new area of research. A well-diversified labour force and corporate boards can help Sri Lankan economy for

constant high growth as well as its various sectors. Tracing the presence of female directors via this study, the extent to which boards are dominated by men, whether women have attained equal opportunity to lead though power delegated in the corporate environment of Sri Lanka can be identified. Unlike firms in many developed economies, Sri Lankan listed firms have no compulsory gender quotas to comply and implement when determining its board gender composition.

Various policy approaches attribute that gaps in gender diversity persist. Different countries worldwide have adopted diverse methods to express their concern for gender-based disparities at workplaces. Australia has made significant changes in gender diversity for the last nine years, which resulted in doubling the number of women directors since 2011. It has implemented a new standard, making it mandatory for companies to establish a diversity policy. Hong Kong's code of corporate governance also includes requirements for board gender diversity. This is also associated with the Gender Mainstreaming Checklist of the Hong Kong government. In the event of non-compliance for a balanced board composition with a gender diversity policy in place, corporates are required to provide valid reasons. This is also similar to the "If Not, Why Not" policy adopted by Australia. In addition, many Europe countries are rigid on the gender composition of corporate boards, such as Norway, Spain, Italy, France, Iceland, the Netherlands and Belgium. These have adopted regulations in the form of legislative quotas, where failure to do so can be penalised.

The findings of this study will be specific and essential for all developing economies such as Sri Lanka. It will be important for the practitioners who have the ability to influence the female composition in corporate boards of Sri Lanka and for policy makers such as UN, as organisations that ensure rights of women and implementing gender inclusive policies. Moreover, the results can assist institutions such as the International Finance Corporation (IFC) of the World Bank to increase representation of women directors in corporate boards of the firms in Sri Lanka. This study encourages women participation in senior positions and corporate boards, thereby reducing the gender based discrimination in such positions. Results prove that women directors are also capable to drive the financial performance and increase the profitability of various sectors in Sri Lanka; in terms of gender equality, such women deserve the right to be a part of company's corporate board in the overall corporate sector. Therefore, a strategic focus on gender diversity in the process of policy making and gender equality related sustainable development is vital.

### **6.2 Limitations and recommendations**

The study entails certain limitations. Firstly, data availability restricts the analysis to the listed companies in Sri Lanka. Consequently, the sample size makes it difficult to observe a statistically significant effect caused due to gender diversity. Generally, listed companies play a large role with its capacity to boost economic growth, by contributing to the growth of the financial institutions, creating employment opportunities and developing infrastructure facilities. However, there are other forms of business organisations as well such as sole

proprietorships, partnerships and corporates in which many Sri Lankan women serve in the top management. Therefore, this study disregard the impact of full representation of women directors in different forms of organisations operating in Sri Lanka. Apart from being directors, contribution of women who at various levels contribute to the success of the firms cannot be identified using this study. In addition, a large number of women lead, control and serve in institutions such as companies that are owned, private, limited liability and overseas, and non-profit organisations and entrepreneurs. However, scope of this study is limited to the listed companies in Sri Lanka.

Secondly, this study is such that the presence of women directors is compared using proxies that measure financial performance, a one best option amongst others. The study also fails to consider such measures that evaluate the firm value addition created by women directors in a qualitative aspect.

Thirdly, scope of the study was limited to the listed companies of the CSE in Sri Lanka. Other forms of business organisations such as sole proprietorship, partnership and corporates in which a large number of women hold senior positions are omitted. The findings may vary and be sensitive based on the sample composition (e.g. if the entire sample of women directors in Sri Lanka) used in this study. In addition, a comparative analysis can also be conducted between different forms of business organisations in Sri Lanka to identify as to which form of organisation women perform better and the relevant influential factors.

Benchmarks can also be carried out between other countries as well as regional counterparts. A similar comprehensive comparison can support to measure the productivity levels and intellectual performance of women directors in Sri Lanka against other countries.

Studies can be broadened by employing other financial proxies such as profitability ratios, liquidity ratios, Tobin's Q etc. Success of firms can also be evaluated using other important aspects of a firm's performance beyond financial. A classic example is how the presence female directors influence the innovation of an organisation and inspiring both, the individual employee and team for effectiveness. Future studies can be based by designing the research using a mix of qualitative and quantitative components for more comprehensive insights.

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