The Influence of Women on Boards on Companies' ESG and Financial Performance in Canada

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ABSTRACT

The contemporary world requires active economic engagement of all members ofthe society so the participation of women, as half of society, seems necessary. In recent decades, the rate of gender differences in labor participation have been narrowing substantially and in developed countries especially, we observe on increasing numbers of women reaching top positions in different fields of work.

In this study, we analyze whether female on boards in public Canadian companies have any significant effect on ESG and financial performance in different businesses. Thus, the aim of the research is to examine the relationship between gender management diversity, ESG score, and firm financial performance in public Canadian companies. For collecting the data, we considered the list of companies from Canadian public companies. We selected our companies based on their gender diversity which have both genders in the top managers. The total panel data is composed of 398 Canadian public companies in 2019.

The result of our study indicates there is a positive significant correlation between ESG score and Female on Boards. The financial part also illustrates a statistically significant relationship between women on boards and firm financial performance. Thus, we accept H_1 which women on boards in publicly listed firms in Canada are associated positively with firm financial performance and ESG score.

Keywords: ESG, ROA, women on boards, financial performance

ÖZ

Çağdaş dünya, toplumun tüm üyelerinin aktif ekonomik katılımını gerektirmektedir, bu nedenle kadınların, toplumun yarısı olarak katılımı gerekli görünmektedir. Son yıllarda, işgücüne katılımdaki cinsiyet farklılıklarının oranı önemli ölçüde daralmaktadır ve özellikle gelişmiş ülkelerde, farklı çalışma alanlarında üst sıralara ulaşan kadınların sayısının arttığını gözlemliyoruz.

Bu çalışmada, Kanadalı kamu şirketlerindeki kurullarda çalışan kadınların ESG ve farklı işletmelerdeki finansal performans üzerinde önemli bir etkisi olup olmadığını analiz ediyoruz. Bu nedenle, araştırmanın amacı Kanadalı kamu şirketlerinde cinsiyet yönetimi çeşitliliği, ESG puanı ve firma finansal performansı arasındaki ilişkiyi incelemektir. Veri toplamak için Kanada kamu şirketlerinden şirketlerin listesini inceledik. Şirketlerimizi, her iki cinsiyeti de üst yöneticilerde olan cinsiyet çeşitliliğine göre seçtik. Toplam panel verileri 2019 yılında 298 Kanadalı kamu şirketinden oluşuyor.

Çalışmamızın sonuçları ESG skoru ile Kuruldaki Kadın arasında pozitif anlamlı bir korelasyon olduğunu göstermektedir. Mali kısım aynı zamanda kurullardaki kadınlar ile firma finansal performansı arasında istatistiksel olarak anlamlı bir ilişkiyi göstermektedir. Bu nedenle, H_1, Kanada'da halka açık şirketlerdeki kurullarda bulunan kadınları firma finansal performansı ve ESG puanı ile olumlu bir şekilde ilişkilendirdiklerini kabul ediyoruz.

Anahtar Kelimeler: ESG, ROA, kadın kurullarında, finansal performans

DEDICATION

I would like to express my gratitude towards my beloved family; I am forever indebted for their understanding, endless patience and encouragement when it was most required during the study period.

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LIST OF ABBREVIATIONS

ESGP	Environmental Social Governance Performance
GDP	Gross Domestic Product
G7	Group of Seven
LFS	Labor Force Survey
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary List square
PPP	Purchasing Power Parity
ROA	Return On Assets
SRI	Socially Responsible Investment

Chapter 1

INTRODUCTION

The contemporary world requires active economic engagement of all members of the society so the participation of women, as half of society, seems necessary. In recent decades, the rate of gender differences in labor participation have been narrowing substantially and in developed countries particularly, we observe growing numbers of women being promoted to top positions in various jobs. Despite all stereotypes, which shape our expectations that a man is a better fit for a given job, and despite biological limitations such as pregnancy and cultural barriers, research shows an increase in the number of working women in the last decades.

Despite forming more than half of the world's population, women's contribution to economic activities, development and well-being is less than the expected which in turn leads to serious macroeconomic consequences (Elborgh-Woytek & Newiak, 2013). According to Corporate Women Directors International in 2010, women's population in top positions in the world is still limited, that is, they only represent around 12% of the company directors in Europe, 9.9% in USA and 6.5% in Asia, less than 4 percent in North Africa and Middle East (Casteuble & Lepetit, 2019). Some developed countries such as Norway and Sweden have taken some measures to raise the women's role in the top management by introducing regulations that ensure equal opportunities for both men and women in the top positions such as boards of directors. In this regard, Smith (2005) reported that in Norway government passed a law requiring large firms in Norway to have at least 40 % of the boards of managers to be female. After the implementation of this law in Norway, an increasing number of countries have put in place the same regulation to reduce the gender gap (Casteuble and Lepetit, 2019). Apart from these regulations in place, there are a number of compelling reasons that companies should select and nominate more women in their corporate boards (Burk, 1994). Several studies have reported that women in board directors have usually higher degrees in education and higher international experiences than their male partners (Burgess & Tharenou, 2002; Singh et al., 2008). As a result, having more women in the boards of directors can enhance the abilities and skills of the board members and can bring varied experiences and backgrounds into the board. This in turn can contribute to the creativity and better decision making by the board members. Moreover, having higher number of women in the board can also diversify the types of decisions made by the board and add new sensitivities to board deliberations. Further, stockholders and female employees may have a more favorable attitude towards women boards of directors (Burk, 1994). In this regard, Egly (2007) found that companies which have more female workers in the top management positions have better financial performance which confirmed the studies carried out on large U.S. companies in the 1990s.

Canada with a 37.60 million population is located in the northern part of North America with ten states and three territories which extend all the way from the Atlantic to the Arctic Ocean with an area of 3.85 million square miles, making it the second-largest country in the world. Canada with GDP $1.8 trillion (2017) (International Monetary Fund, 2017) and 2.1%-5year compound annual growth is an 8^{Th} freest economy in the 2019 Index (Economic Freedom, Index 2019).

Since the 1960s, the federal government of Canada has taken measures to ensure equal opportunities for qualified citizen particularly disadvantaged and unpowered ones such as minorities and women following the Public Service Commission *Employment Equity Act*. Accordingly, seven provinces started implementing employment equity policies that has been applied to all public servants, hence leading to equal distribution of leadership position of men and women in the public sectors. In this regard, a survey study by the Labor Force (2015) indicated that women represent around 55 percent of legislators and senior government managers and officials in Canada. This shows more than twice as much improvement since 1987, when women represented only 17.2 percent of the top public sector positions. The results of the study further revealed that women workforce in the senior management positions has also risen significantly from 11.3 percent in 1987 to 26 percent in 2015, a double increase (Statistics Canada, 2017).

The definition of performance given by the business dictionary says that it represents an: "*accomplishment of a given task measured against preset standards of accuracy, completeness, cost, and speed*". In other words, it is about doing the work as well as about the results achieved and the impact they have. Otherwise performance refers to "*output results and their outcomes obtained from processes, products, and services that permit evaluation and comparison relative to goals, standards, past results, and other organizations. Performance can be expressed in non-financial and financial terms*" (Maria, 2011).

Financial term of performance is defined as the way financial activity is performed, that is, how the financial objectives are or will be achieved. It is the process of assessing the financial outcome of a company's activities. This is an index used to measure the general financial performance of a firm during a certain time period in comparison to other similar firms or industries in aggregation (Yahaya, 2015).

The idea of ESG (Environment, Social, and Corporate Governance performance) initially appeared in a report by the United Nations Principle of Responsible Investment. The ESG scores is a good indication for investors to decide whether to invest in a certain industry or firm. According to the Financial Times Lexicon, ESG is a commonly-accepted concept for sustainability in a firm or company that investors refer to upon measuring the corporate behavior and the future financial performance of the corporations. According to Robeco, an asset management firm, *ESG employs various social, political and environmental factors to assess the sustainability issues in different countries.* By gathering information on these three criteria, the firm can combine them with the investment process to make better decisions for buying equities or bonds (Youmatter, 2019).

Eventually, ESG is an indication of investments that ensures financial health and returns as well as positive long-term impact for business performance. ESG also identifies potential dangers and opportunities for investors by analyzing the financial performance of a firm in the past which can ensure the better financial performance of a company in the future (Youmatter, 2019). Moreover, ESG score takes into account attributes that are comparable, measurable, operational, definable, trackable and of significant importance (Kocmanova & Simberova, 2014). All together, these attributes make a valuable and beneficial indicator of financial performance.

Environmental criteria, as the name suggest, take into account a company's performance in dealing with the environment. Social criteria consider a firm's social relationships with other people in the community such as employees, suppliers, customers. Governance, on the other hand, is concerned with issues such as a firm's leadership, administrative salaries, financial performances, internal controls, and shareholder rights (Investopedia, 2019).

1.1 Aim of the study

In this study, we will analyze whether female on boards in public Canadian companies have any significant effect on ESG and financial performance in different businesses. Thus, the aim of the research is to investigate the relationship between gender management diversity, ESG score, and firm financial performance in public Canadian companies.

For financial part, we will report ROA (Return on Assets) of the companies with women at the top management who influence making decisions in companies. The study looks at environmental, social, and governance performance in the ESG model in companies which have female on their boards of directors.

After keeping these observed factors constant, this study will analyze whether the proportion of women among boards of directors can influence significantly the firm performance and ESG score or not. The data will be secondary data which has been extracted from the Thomson Reuters Eikon database.

1.2 Outline of the study

This thesis includes five sections. The first section is the introduction, where the general information about the topic and some background are provided. In addition it defines the terms and scope of the subject.

In the second chapter, the existing literature on the topic is reviewed. Moreover the gaps in the literature are introduced by comparing and contrasting the extant research. The second chapter specifically reviews a linear versus non-linear correlation between women in management and firm performance.

In the methodology section, the hypotheses of the study are introduced. Then, the method of the research is described and the variables of the study used in the regression analysis and the dataset employed in the study are defined. Further, the empirical part of the study is introduced which will discuss and analyze the correlation between women on as directors and firm ESG and financial performance.

In the fifth section, the answers to the main questions of the study are provided. In addition, study limitations, managerial implications and recommendations for further research are discussed.

Chapter 2

LITERATURE REVIEW

2.1 Defining ESG Performance

The political practices, social, and environmental performance of public have been an essential aspect for the public policy makers and investors. That is, these practices are believed to contribute to higher financial (Garcia et al., 2017). In this regard, a study by Gillan et al, (2010) found that more than half of the top 50 institutional money managers all over the world took ESG factors into account upon investment decision-making.

It should be mentioned here that ESG is not only a limiting factor but also a construct that takes three different dimensions of environment, society and governance into account when the sustainability of a firm is to be measured (IFM, 2011). ESG is also another dimension to be considered when we talk of socially responsible investment (SRI). The available studies on ESG have described the terms in multiple ways. Porter and Kramer (2006) viewed the construct as strategic needs while some consider it as social responsible investment (SIF, 2007). Moreover, the construct has also been defined as behavior (CFA Institute, 2008), issues (IFM, 2011), small measures (Bloomberg, 2009), sustainability (Steward & Brimble, 2009), and business social accountability (Harmon et al, 2009).

2.2 Board of Directors

Board of directors have a particular place in the success of any company (García-Sanchez et al., 2018) as they have to make important decisions in a firm and are responsible for improving strategic operations such as ensuring the implementation of strategic goals, governing and creating an effective company culture, making important financial decisions as well as ensuring corporate sustainability practices (Nadeem et al., 2017; Birindelli et al., 2018).

2.3 Defining Financial Performance

Performance is defined as the achievement of a firm or organization over a specific time period (Bastian, 2006) or the outcome of a personal or organizational plan (Azhar, 2008). Moreover, for some it is the measure activity of an entity which is usually a measure of success in business situations reveals (Alam, 2015).

On the other hand, firm financial performance is seen as the profit attainment orgain of a firm's policies and operations over time. In this regard, Ozer (2012) points out that measuring the financial gain of a firm over an extended period of time from its primary assets to revenue generation is a general measure of a firm's overall financial health (Ozer, 2012).

Profitability is a measurement of profit generation of a business by considering factors of production such as work, management and investment. Further, Profitability analysis is a measurement of profit by considering the relationship between revenues and expenses by taking the amount of investment into account. Thus, return on assets (ROA) is a valuable indicator of a firm profitability (Crane, National Crop Insurance Services, Inc.). ROA, then, is a measurement of a firm's profitability by excluding all expenses and taxes from the assets. This measure is also an indication of a firm's managerial performance which indicates how much a firm has earned from the amount of investment made to the assets of a firm. That is, this measure is an index of net earnings per unit of the asset or the amount of assets that can be converted into earnings. Therefore, the higher ROA shows better managerial performance and more efficient utilization of the assets of the firm. In this regard, ROA is calculated through the formula below (Dufer, 2010): ROA = Net Profit after Tax / Total Asset.

2.4 Gender Diversity in Canada

According to Canada's nominal gross domestic product (GDP), Canada is considered as the 11th wealthiest country in the world and the 20th largest GDP per capita based on purchasing power parity (PPP). This makes Canada one of the economically strong countries in the world placing it as an influential member of the Organization for Economic Co-operation and Development (OECD) and Group of Seven (G7). Moreover, in Canada, both private and public sectors perform well alongside each other, that is the ownership ratio of public to private sector is 60 to 40 percent; this makes Canada one of the freest economies in the world.

Since 2013 the unemployment rate has risen to 7.0 percent due to the global recession experienced in the country (Economy watch, 2010). However, the job opportunities, mainly full-time job positions, have grown up to 219,000 between 2018-2019 (Bdc, 2019).

Canada has always been known for its employment equity and human rights legislation as well as progressive policy making, however, recently due to the diversity policies of the country, it has shifted its attention away from compliance-based policies to more business- related policies. Due to its diverse management and leadership, there is a stiff completion which in turn has led to strength and prosperity of the country. It should be mentioned that this diversity in the workplace and leadership have led to the prosperity of both public and private sectors in various domains namely, better financial and organizational performance; stronger ties between domestic and global markets; higher employment rate from international and national labor pools; higher creativity and innovation; and improved social life. Such diversity in leadership has also contributed to motivated and inspired young generations (Diversity leads in Canada, 2012).

For fair treatment of employees, the provinces and territories have put in place employee practices laws and regulations all across the country. In this regard, the government of Canada has bypassed the following employment requirements:

- Minimum wages
- Annual holidays and other leaves of absence
- Public holidays
- Daily workload and work hours including work hours, overtime and

emergency requirements (Government of Canada, n.d.).

All the strength points we mentioned above make the country a proper case for study in women leadership issue. A strong and free economy in both private and public sectors, many jobs opportunities, strong employment equity, powerful human rights legislation, and tradition of progressive policy making, break the barriers and provide better and easier way in which women as leaders are defined, developed and supported.

A large body of research has been conducted on top management teams and manager effects. Some of the studies have found that having gender-distributed workforce in the higher management and administration systems of any country has a positive impact on their respective organization's performance such as post-IPO stock price performance, return on investment, and gross margin performance. However, some other studies have reported different findings in this regard. For example, Wolfers' (2006) study on S&P 1,500 firms between over 12 years showed no significant difference in long-term stock returns between companies being managed by female or male leaders. Similarly, some other studies have also reported that female participation in management did not guarantee higher productivity or performance (Richard, Barnett, Dwyer, & Chadwick, 2004). Therefore, the relationship between women employment in top management and firm performance should be dealt with care (Dezso & Ross, 2008). In this regard, Joecks et al. (2013) argued that differences reported between gender and firm performance can be related to the type of data collected from various countries or can be linked with different performance measures and estimation methods used in such countries. Joecks et al. (2013) found that studies examining the correlation between gender diversity and firm performance have mostly reported nonlinear and U-curve relationships.

2.5 Previous Studies Related to Financial Performance and Female Participation

In this part, we will investigate the issue by some previous researches and will discuss why the results of the studies are not a certain answer for this subject.

A study by Dezso and Ross (2012) investigated whether the employment of women in top management had any positive impact on firm performance. Following a theoretical model, the two researchers attempted to explore how women workforce in top administrative positions prepare the ground for a firm's better performance. Using 15-year data between 1992-2006 from large public U.S. corporations, the study reported a positive performance of firms with higher female managers. however, the study revealed that this relationship manifested itself in the form of innovation as part of the firms' strategy.

Campbell and Vera's (2008) study is an exemplary study on board diversity and firm financial performance. The study looked at how gender diversity in the board affected the values of firms in Spain which is characterized as a civil law country with large family ownership where investors receive low legal protection from the government and ownership is structured pyramidically with boards of directors dependent on managerial system. Spain is one of the countries which experienced a low female participation in its various management positions even up to recent years. however, the government have put in place legislative changes and corporate governance reforms to address this issue. These measures have been welcomed by Spanish investors and shareholders as they have also come to appreciate the value of female workforce in higher organization positions as directors or leaders.

The aim of Shukeri et al. (2012) study was to find out how board characteristics affect firm performance. In the study, six boards of directors' characteristics (including gender diversity) were analyzed. The firm's financial performance was measured as Return on Assets (ROA) and 300 Malaysian public companies from various sectors were randomly selected. The findings of the study found no meaningful link between gender diversity and firm performance.

Further, Marinova, Plantenga, and Remery (2016) examined the impact of gender diversity on firm performance among 186 listed firms in Netherlands and Denmark during 2007. Around forty percent of the firms studied had at least one female in their managerial board representing around 6% of the board members. The study results revealed no relationships between board gender diversity and firm performance.

The main objective of Rupawaththa and Gunasekara (2016) study was to investigate the connection between female workforce participation in director board and its effects on the financial performance of firms in Sri Lanka as a developing economy. The study reported positive signs of female participation in firm's financial performance and hence their empowerment in the context of the study. This finding has some implications for other countries which is recruitment of more female force in the managerial boards of the companies and firms which in turn can lead to enhanced profitability. The study also employed categorical variable in order to find out the link between female participation as chairperson or deputy chairperson and the firm's financial performances. The results of the study showed that companies with female chairperson or deputy chairperson on its board had higher returns on assets under pooled OLS method while some inconsistent findings were reported in fixed effects method.

In another study, Noland, Moran, and Kotschwar (2016) surveyed a group of around 22,000 firms from around 90 countries and found that higher participation of women in corporate leadership positions is likely to improve the performance of the firms. The researchers concluded that such a correlation can be either due to the payoff to nondiscrimination or firm's added diversity due to the presence of women. The results further indicated that higher participation of women in higher organizations' positions also contributed to higher math scores by girls in that society, less discrimination towards female executives, the availability of paternal leave. Although the study found no link between gender distribution in the workplace and firm performance, nevertheless it concluded that the policies that support women participation in the higher job positions can pay off the society in significant ways.

Furthermore, Catalyst (2007) investigated the relationship between female workforce in the firm boards and their companies' financial performance in 520 companies in the United States. The researcher divided the companies into four groups each including 130 companies representing average percentage of female workforce in the companies' boards between years 2001 and 2003. The study compared the companies with the highest number of women in their board with the ones with the lowest number of women workforce. The findings of the study revealed some differences between financial performance measures and the women workforce, that is, companies with more women workforce in their boards have better financial performance.

2.6 Previous Studies Related to ESG Performance

Hambrick et al. (1996) found that having diverse executive management can have some disadvantages such as conflicts of opinions, time-consuming decision making and a lot of opinions and critical questions. Thus, in a competitive market having a diverse workforce which brings about the aforementioned disadvantages is not a positive strategy. Thus, having a diverse workforce does not always guarantee higher or better performance.

In another study conducted by Banahan and Hassan (2018), the link between board gender diversity and environmental and social management issues were investigated. The study compared ESG performance of 500 S&P firms with gender-diverse boards (3 or 4 women) with those of less or non-diverse boards (less than 3 women in their boards). The results of the study demonstrated that firms with gender-diverse boards performed better in their environmental and social risk management measures, that is to say, the companies with diversified boards displayed higher measures of ESG performance.

Velte (2016) examined the impact of female workforce in firm boards on ESG performance by comparing companies registered in the Prime Standard of the Frankfurt and Vienna Stock Exchange in two countries in Europe, Germany and Austria between years 2010-2014. By employing a correlation and regression analysis to find a likely relationship between gender role and ESG performance in the two nations, the study found that there was a positive relationship between the participation of female executives in the management board and ESG performance, measured by the Asset Four database by Thomson Reuters.

In another study conducted by Brindelli et al (2018) in the banking industry, the researchers concluded direct relationships between gender-diverse boards and the firms' ESG performance. The study involved around 110 registered banks in Europe and America between the years 2011–2016 by employing fixed effects panel regression models. The empirical findings of the study suggested an inverted U-shape relationship between female workforce in the banks' boards and their ESG performance.

Di Miceli & Donaggio (2019) bear out that gender-diverse business leadership is positively connected to ESG performance and ESG is associated with enhanced company performance—including financial performance. In this regard, measuring the impact of women in the workforce in leadership on ESG is one of the requirements of establishing a comprehensive business case for greater gender balance at the top. The empirical findings from the Public Sector Opinion discussed earlier revealed that higher female leadership may impact the broader implications of company decisions. That is, such a workforce can make more balanced decisions by taking into considerations various aspects of the companies' business such as interests of all stakeholders which can in turn lead to strong, long-term relationships and business sustainability. This can also translate into higher firm value in the long run.

Thus, it should be stated here that we should be careful when interpreting the findings of the previous studies. That is, although some studies have found that female managers contribute to better teamwork and creativity, we should be weary of the fact that "female management style" does not always lead to success at top management levels as position's symbolic and real role should always be considered in different contexts. That is, in some contexts, women may be seen as less authoritarian to be considered as leaders which can be related to male leaders (Oakley, 2000). We should also be cognizant of the fact that top positions are traditionally and in reality dominated by men and that some studies have reported that men tend to be more favored in roles which have traditionally been occupied mainly by men and that women are not suitable for such positions or roles (Eagly and Johnson, 1990). Moreover, in some sectors recruitment of women is not positively evaluated (Lee and James, 2007). Therefore, various roles necessitate various policies or decisions and hence may be favored by a certain gender type in different situations or contexts.

Chapter 3

METHODOLOGY, HYPOTHESIS, AND DATA

In this chapter first the methodology of the research will be discussed and then the research hypotheses will be stated. Further, the procedure for collecting the research data and data analysis will be elaborated on. Finally, the statistical analyses conducted to investigate the impact of gender-diversity on firms' financial performance in Canadian companies will be described in details.

3.1 Methodology

Research tradition has identified three types of methods that can be adopted to collect and analyze data for any particular study: quantitative, qualitative, and mixed-method (Venkatesh et al., 2013). In this study, we employed quantitative method and non-experimental design.

Quantitative approach is a tradition of research that has an objective and impartial view toward studying phenomena by measuring and quantifying the research traits or variables. This approach uses deductive reasoning to build knowledge through explaining the cause or effect relationship between research variables (Carr, 1994).

It should be noted here that non-experimental research forms a substantial proportion of quantitative research by describing the life phenomena and ensuring effective communication between and among various fields of study or disciplines (Johnson, 2001). That is, in non-experimental study design, variables are measured or quantified as they naturally occur without manipulating an independent variable. Non-experimental methods consist of correlation studies (Qi-Yi et al., 2013).

In this study, the statistical model of firm ESG performance can be displayed as follows:

$ESG = a_0 + a_1$ Women on $Board_i + a_2$ $Company_i Size + e_i$

And the statistical model of financial performance as:

$ROA_i = a_0 + a_1$ Women on $Board_i + a_2$ $Company_i$ $Size + e_i$

Where, Board refers to the female boards, Size represents the size of company, and e is the error terms.

H_1 = Women on boards in publicly listed firms in Canada are associated positively with firm financial performance

H_0 = Women on boards in publicly listed firms in Canada are not associated with firm financial performance

H_1 = Women on boards in publicly listed firms in Canada are associated positively with firm ESG score

H_0 = Women on boards in publicly listed firms in Canada are not associated with firm ESG score

The hypotheses for the study put forward to answer the research question are to measure the validity of the argument presented about the positive impact of women in top management on firm financial performance and ESG score. The hypotheses are formulated which are presented as alternative hypothesis and null hypotheses.

The alternative hypothesis (H_1) posits that women in top management team enhance the financial performance of the firm when firm specific characteristics are controlled while the null hypothesis (H_0) states that the presence of women in the top management does not impact the financial performance of the firm when the firm specific characteristics are controlled.

The alternative hypothesis on the other hand expresses that having women in the top management can influence the ESG score in a positive manner when the other specific intervening factors of the firm are considered as constant while the null-hypothesis states that women in the top management does not impact the ESG score if all the other intervening variables are controlled.

If we reject the null hypothesis, then it can be concluded that the presence of women as top managers of a firm improves and enhances its financial performance and the ESG score. Therefore, there is a positive correlation existing between women as top managers and a firm financial performance and the ESG score. On the other hand, by rejecting the null hypothesis, we can conclude that women in the top management and a firm's financial performance or ESG score are negatively interrelated. Further, if the null hypothesis is accepted, then we can conclude that there exists no correlation between the presence of women workforce in top management and a firm's financial performance or ESG score. However, the non-rejection of null hypothesis would mean a non-linear correlation between women workforce in top management and a firm's financial performance or ESG score.

3.2 Variables

3.2.1 Independent Variables

Woman representation in top management is measured by the percentage of women on the board which in our study is presented as an independent variable in both models concerning ESG and firm financial performance.

3.2.2 Dependent Variables

In the financial part Return on Assets (ROA) is a dependent variable which is mainly addressed in financial literature for measuring financial performance (Dowell et al., 2000; Jalbert et al., 2013). That is to say, as the ROA increases, the companies' earning on less investment also goes up. In other word, ROA is an indication of efficient and effective management of a particular firm's assets without considering the size of the firm and thus is measured as net profit after paying the tax (Kotiranta et al, 2007; Smith et al, 2006). The ESG model, the ESG score is our dependent variable.

3.2.3 Control Variable

Number of full time employees is the control variable in our study as a proxy for firm size.

The variables of the study are defined as follows:

Table 1: Variable Definition

Variables	Definitions
ROA	Net Profit after Tax/Total Asset
Full-Time Employees	Represents the proportion of full-time staff or personnel to part timers from the beginning of the fiscal year.
ESG Score	Is an index of a firm's sustainability by considering environmental, social and governance factors usually performed by the companies themselves.
Percentage of Female on Board	The proportion of female on the board to the number of the board numbers
Year	Cross-section according to the last update 2019

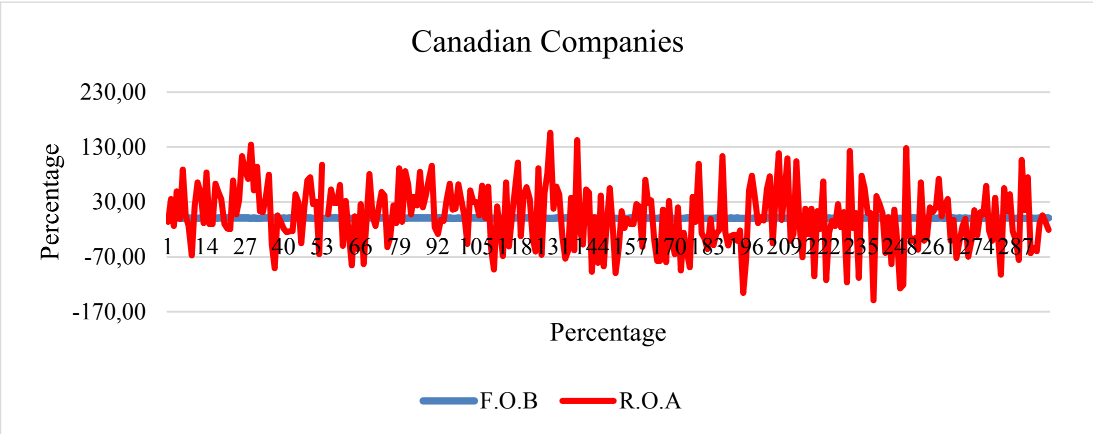

Figure 1: The relationship between female on boards as an independent variable with ROA as a dependent variable

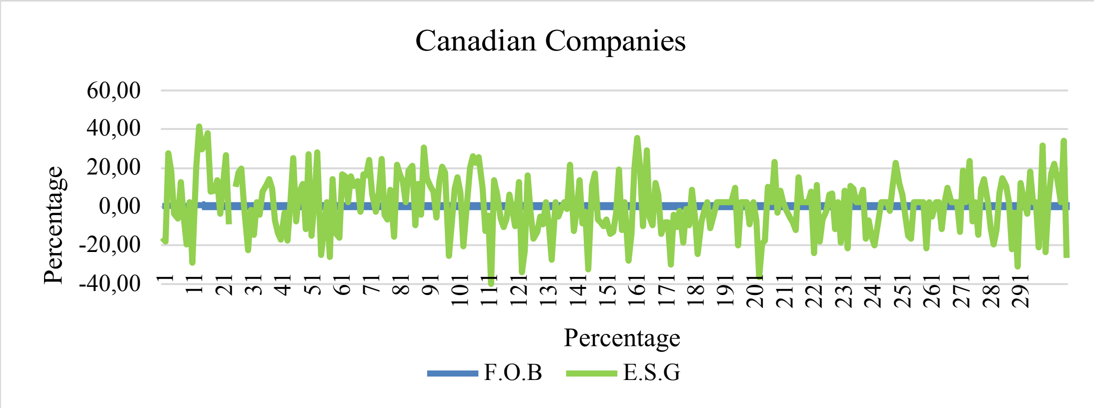

Figure 2: The relationship between female on boards as an independent variable with ESG as a dependent variable

3.3 Data

The data collection in this study involved considering the list of companies from Canadian public companies. We selected our companies based on their gender diversity which have both genders in the top managers. The total panel data is composed of 298 Canadian public companies in 2019.

We collected the data from Thomson Reuters Eikon which is a product for financial professionals. Thomson Reuters Eikon offers a comprehensive view of the international financial arena by bringing news and information in the real time from all around the world and provides access to the global Thomson Reuters trading community. This in turn affords instant decision making through one's desktop computer due to the integrated price discovery and trading options available across all asset classes (Thomas Reuters Eikon Excel Participate guide, n.d.).

3.4 Hypotheses

Women presence in corporate boards have been increasingly demanded from various regulatory bodies (European Commission 2012), stakeholders (Ellis and Keys 2003), the media (The Independent, 2013), business establishments and firms (Catalyst 2011), and generally states (Campaign, 2020). Despite ethical and economic benefits of the presence of women in board directorships, the firms only consider appointing more women in these positions when the economic benefits are expected. This has been the main reason behind the bulk of research related to the impact of the female workforce contributions to economic well-being of societies. The main findings of these studies were the impact of female workforce on board efficiency and more unique resources to the firms, hence higher firm value. According to Hillman and Dalziel (2003), the firm board of directors nowadays serves two important functions, namely, controlling and providing access to the resources. Thus, if more women are placed in these positions leads to an enhancement of these functions, then appointing more women to the board of directors means higher firm value, that is, by appointing more women to these positions the power of board monitoring is enhanced as they bring various skills and experiences to the board (Terjesen et al., 2009; Bilimoria, 2000). Further, the women workforce in these positions can also accelerate decision making and improve leadership style (Rosener, 1990). In addition, the presence of more women in these roles increases board freedom (Carter et al., 2003); and lead to better behavior in the boards (Clarke, 2005). In this regard, boards with female directors has found to improve attendance records (Adams & Ferreira, 2009), and impact board controlling tasks positively (Huse et al., 2009). Besides, some studies have reported that presence of more women on the board can ensure better handling of the resource dependency of the firm since they bring to their roles various innovative ideas and creativity (Huse et al., 2009); they are more responsible and empathetic (Hafsi and Turgut, 2013; Bear et al., 2010); they can better understand the business ethics (McCabe et al., 2006); the women also constitute around half of every society's human capital in the labor and product markets (Bilimoria and Wheeler, 2000; Mattis, 2000). Moreover, women can also provide training and mentoring for other women in the firm (Bilimoria, 2000); and can also enhance the public image of the firm (Bilimoria, 2006; Daily and Dalton, 2003). These characteristics have extensively been recognized by the regulatory bodies, researchers and practitioners, and thus they represent the impact of female workforce in the boards of firms (European Commission, 2012; Catalyst, 2011). Thus, we assume that having gender-diverse board in firms enhances performance and we put forward three arguments in this regard:

The first one is that gender-balanced boards are better equipped to deal with risks and is one of the requirements for effective leadership (OMFIF, 2018). Moreover, we believe that men and women have different views towards risk and finance, thus, a gender-balanced workforce on the board could improve better decision-making. Moreover, such a diversified workforce can also improve environmental and social risk monitoring as they can better focus on various issues.

The next argument in favor of gender diverse boards is the identification of the important characteristics of the stakeholders for a firm. That is, women are better in understanding the needs and interests of the consumers and consumers as they constitute 70 percent of consumers in certain industries (Colby, 2017). As a result, gender-diverse boards can better see the consumer purchasing choices and hence ensure better decision-making and accountability towards their customers especially in industries where the consumer preferences matter and are taken into account seriously. In this regard, we can talk of certain issues such as corporate social responsibility and environmental stewardship which have been found to impact consumer behavior positively (Bhattacharya et al., 2013). Thus, gender-balanced workforce can better address these trends and enhance ESG performance of a firm.

The third argument is the positive connection between women presence on the board roles and board attendance and effectiveness. In this regard, Aura S. T. et al. (2016) reported that gender diverse boards in the banking sectors increases director attendance and their effectiveness in handing crises in their sectors. Further, the study found that female directors were found to have less attendance-related problems than their male-counterparts. The study also reported that there was a correlation between higher numbers of female directors and male attendance and better firm performance in general. Although the study did not directly investigate the effect of attendance on ESG, the regular attendance can help the board of directors to assess risk issues as they attend regularly in the meetings and thus can discuss the advantages and disadvantages of particular issues such as ESG challenges.

3.5 Multicollinearity

In multiple regression analysis, the first step to be carried out is to examine a set of data to see whether there is an existing multicollinearity. In this regard, Mansfield and Helms (2015) warned researchers and statisticians of any discipline of study against the adverse effect of multicollinearity and of the possible errors that can be committed upon detecting any linear dependencies. In what follows, we will describe multicollinearity as a statistical problem which has been used in our data processing. Multicollinearity is a statistical explanation that is used in cases where a number of explanatory variables correlate with each other. That is, in regression model, when there is multicollinearity, it becomes very difficult to examine the effect of independent variables on dependent variables. Thus, to detect multicollinearity, the variance inflation factor (VIF) should be measured for each independent variable. However, it should be mentioned here that when the values of ten or more VIF are taken into account, problems can arise (Anderson et al., 2009).

3.6 Correlation

In this study we employed correlation between variables. The reason for the use of correlation is usually to predict the relation of two or more groups as a single group (Rudestam& Newton, 2014). Moreover, the correlational design can also detect the degree of relationships between variables (Field, 2013). Further, we employed pearson's correlation coefficient (r) in the study to interpret the value of dependent variable. This coefficient (r) is usually used to examine the linearity and strength connecting different quantitative variables, that is, when r equals 1, it means that a total positive correlation exists between the variables in a study. This can also mean that there is either a negative or positive relationships between the variables. For example, when r is – 1, it means a total negative correlation between the two variables, that is, when one variable increases in size or amount the other decreases at the same time (Green & Salkind, 2016; Yang et al., 2016).

3.7 Regression

In this study, we also ran an ordinary least square analysis on our panel data. Sainani, (2013) suggests employing linear regression when all the variables are normally distributed while some other such as Hazard and Gogtay (2016) maintain that linear regression should be employed to detect the connection between the independent and dependent variables when we are required to make decisions. To have a comprehensive and reliable analysis, in this study we combined non-experimental design with the advanced correlational technique and linear regression due to the specific characteristics of the study hypotheses.

It should be stated here that the results of the data analysis may either reject or support our hypotheses. That is, if we obtain a significant correlation between our study variables we can conclude that the presence of women in the top management of a firm is positively related to the financial performance and the ESG score of the firm and if the correlation is insignificant the reverse can be true: the presence of women in the top management had no effect on the financial performance and the ESG score of the firm.

Chapter 4

EMPIRICAL RESULTS

As mentioned in the previous chapters the objective is to examine the influence of women on the board on financial performance and ESG practices in public Canadian companies.

For the first step, as shown in Table 2, variance inflation test was run (VIF), and it illustrates, for our two parts, the multicollinearity between all the variables are less than 10. Thus, there is no sign of multicollinearity among the variables. In the analysis that is run, the variables which we investigated are far lower than the VIF limit of 10. According to Craney & Surles (2002) values higher than 10 represent existence of correlation between the independent variables.

Table 2: Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	ESG score	.961	1.041
	Full-Time employees	.961	1.041
	ROA	1.000	1.000

a. Dependent Variable: Female on Boards

Table 3 illustrates the correlation matrix between ROA and independent factors and ESG and independent variables. For the financial model, ROA as a dependent variable and independent factors are demonstrated. It can be seen that the correlation between ROA and Female on Board is significant and positive ($r = 0.164$, $p \leq 0.05$). The correlation among ROA and Full-Time employees is insignificant and positive ($r = 0.0804$, $p > 0.05$). On the other hand, the correlation between Female on Board and Full-Time Employees while both of them are independent in our study is significant and positive ($r = 0.263$, $p \leq 0.05$). Positive and significant correlation between ROA and Female on Board means that the percentage of ROA increases, we have higher number of women on board. Our study is in line with studies of researchers like Erhardt & Shrader (2003) who find a positive and significant correlation between the percentage of female directors in large U.S. firms and financial measures of performance (ROA). Thus, the correlation between the independent variables and dependent variable that could support our study hypothesis is uncovered.

According to Table 3 for ESG model, the findings uncover a positive and significant relationship in the correlation matrix table. There is a positive significant relationship between ESG score as a dependent variable and Female on Board as an independent variable ($r = 0.345$, $p \leq 0.05$) and Full-Time Employees with ($r = 0.197$, $p \leq 0.05$). Both Full-Time Employees and Female on Board are independent variables in our study which the correlation between them is significant and positive as well ($r = 0.263$, $p \leq 0.05$). The result shows the higher ESG score are reached by higher percentage of female on the board.

Table 3: Pearson Correlation Matrix Analysis

	Female on Boards	ESG score	Full-Time employees	ROA
Female on Boards	1			
ESG score	.345**	1		
Full-Time employees	.263**	.197**	1	
ROA	.164**	.011	.014	1

**. Correlation is significant at the 0.05 level (2-tailed).

For the last step, linear regression analysis was employed to investigate the proposed hypotheses. The results of independents variables that have been chosen are estimated by Panel Least Square and are presented in Table 4. For the financial part, as we can see, total ROA is statistically significant at the 5 percent significant level, and when Number of Female on Boards increases 1 percent, the percentage of ROA will increase 0.172%. So our result confirms H1 which women on boards in publicly listed firms is associated positively with firm financial performance. The value of R-squared for our regression in this part is 0.028, which means that our independent variables can explain the dependent variable (percentage of ladies on board) by 2.8%.

Table 4: Linear Regression Analysis for ROA Model

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-20.636	6.680		-3.089	.002
	Female on Boards	.827	.287	.172	2.885	.004
	Full-Time employees	-6.900E-5	.000	-.031	-.518	.605

a. Dependent Variable: ROA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.166[a]	.028	.021	55.73594

a. Predictors: (Constant), Full-Time employees, Female on Boards

Table 5: The results of linear regression for ESG performance show that the ESG score and Female on Boards are statistically significant at the 5 percent significant level, and when number of Female on Boards increases 1 percent, the percent of ESG Score will increase 0.315%. R-squared for this part poses 13.1% of changes in ESG score (dependent variable) can be explained by our independent variables. We accept H_1 of our hypothesis that Women on Boards in publicly listed firms are associated positively with firm ESG score. Our study is in line with Velte (2016) which shows the coefficient of gender is positive and significant. Thus, the presence of women in the management board has a positive impact on ESGP. Control variable is significant as well ($p<0.05$).

Table 5: Linear Regression Analysis for ESG Model

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	38.007	1.681		22.608	.000
	Female on Boards	.404	.072	.315	5.603	.000
	Full-Time employees	6.823E-5	.000	.114	2.034	.043

a. Dependent Variable: ESG score

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.363[a]	.131	.126	14.02785

a. Predictors: (Constant), Full-Time employees, Female on Boards

According to the results, the null hypothesis is rejected and alternative hypothesis H_1 for both parts of this research is acceptable, then it can be concluded that the presence of women on boards of a firm improves and enhances its financial performance and ESG score. Therefore, there is a positive correlation existing between women on boards and a firm financial performance and ESG score.

Chapter 5

CONCLUSION AND IMPLICATIONS

5.1 Conclusion

This study attempted to explore the influence of gender-diversity, particularly, the presence of female in top management and firm financial performance and ESG score. In this regard, we found that women participation in the boards influence the performance of the firm overall. However, we should state here that the extant studies on the topic of this thesis have reported contradictory findings. Moreover, although the number of women in boards and top management is increasing, the number is still very low in some countries. As a result, a number of countries suchas Sweden and Norway have put in place certain regulations to diversify gender composition in the top management and board positions. Thus, if further studies find more convincing evidence of the effect of gender-diversity on firm performance, we can put forward a more persuasive argument for including more women on boards.

In this study, Canada is chosen as research case study because the country has always been known for its Employment Equity and Human Rights legislation as well as progressive policy making. It should be mentioned that this diversity in the workplace and leadership have led to the prosperity of both public and private sectors in various domains namely, better financial and organizational performance; stronger ties between domestic and global markets; higher employment rate from international and national labor pools; higher creativity and innovation; and improved social life. Such diversity in leadership has also contributed to motivate and inspired young generations. All the strength points we mentioned in our study make the country a proper case for study in women leadership issue. A strong and free economy in both private and public sectors, many jobs opportunities, strong employment equity, powerful human rights legislation, and tradition of progressive policy making, break the barriers and provide better and easier way in which women as leaders are defined, developed and supported.

The data were gathered from Thomas Reuters Eikon for 298 large public Canadian companies in 2019. We assume that there is a positive and statistically significant relationship between female on boards of directors, financial performance and ESG score. The result of linear regression indicates there is a positive significant correlation between ESG score and Female on Boards, and when the number of Female on Boards increases 1 percent, the ESG Score will increase 0.315%. The financial part also illustrates a statistically significant at the 5 percent significant level, and when female on boards of directors increases 1 percent, ROA will increase 0.172%.

5.2 Limitations

The research question shows a challenge because it is difficult to measure. Firm financial and ESG performance can be assessed with multiple indicators. In this study, we just chose some of the factors so they could be limitations which have affect the results of our investigation.

As in this study was mentioned before, the research is based on cross sectional data which is in 2019 available data related to the topic. We tried to cover the problem by choosing a large sample size to provide accuracy but it might still allow bias to affect the results. Our point of view for selecting cross sectional data was that it captures a specific point in time so it can provide a clear focus and validity. But cross sectional studies have their own disadvantages which mentioning them as a limitation seemed to be logic.

For the case study, we studied and analyzed women in top management in Canadian Companies. Thus the results could not be generalized to firms in other countries with different rules and rights for women especially developing countries with many barriers and gap between genders.

5.3 Managerial Implications

According to what we investigate, creating a diverse workplace has a positive effect on financial and ESG performance, so we highly recommend to managers hiring more women in their teams for enhancing their outputs. Regardless of whether there is a utilitarian purpose for adding more women in business leadership, building business institutions that are inherently fair and inclusive have better reflect all company stakeholders and society as a whole.

There is still lack of awareness concerned to gender diversity and its benefits for companies so a regular gender-related awareness program seems necessary which explains the importance and advantages of the subject to the leaders of companies.

5.4 Future Research

The results of this study showed that more female participation in the boards of directors is positively related to firm financial and ESG performance. Thus, we suggest that future studies examine the role of women in top management and firm boards in the firm financial performance of the countries where women rights are an issue. In this research, we particularly focused on the Canadian context; thus, we suggest that researchers investigate the issue in other countries so that we can contribute to a more gender-diverse and equal distribution of both male and female in various jobs and positions. In this regard, comparative studies between developed and developing countries can shed better light on the role of women in top positions of firms in these countries.

Further, in this study we only focused on the role of women in top management and boards; thus, the role of women in other positions and roles can be another area of research and future studies may opt to take into account various other characteristics and features of women in different positions such as educational level and age and the possible impact of such features on firm financial or ESG performance. .

Marriage creates some barriers for women. Thus, adding some variables such as marital status and evaluating the variable effect on financial performance and ESG might be a good idea. In addition, Years of job experience, salaries or wages range, rewards or bonuses, workforce structure are other variables which could play significant roles related to the topic as well.

The vast majority of the studies including our study use quantitative data for their investigations which is effective but we suggest research based on interviews or survey questioners to yield complete picture of the situation related to ESG performance.

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