

**THE EFFECT OF FEMALE TOP MANAGERS ON THE PERFORMANCE OF
FIRMS IN KENYA**

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DECLARATION

I declare that this research proposal is my original work. It has been presented only to the
University of Nairobi for consideration.

Signed: 

Date: 16th Nov 2021

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Date: 25th Nov. 2021

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DEDICATION

I dedicate this paper to my son, Elyon Bundi, and to my future children, especially if they will be girls. I hope that this paper will show them that to be female is not to be less.

LIST OF ABBREVIATIONS

CEO – Chief Executive Officer

ROA – Return on Assets

ROE – Returns of Equity

2SLS – Two Stage Least Squares

IV2SLS – Instrumental Variable Two Stage Least Squares

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ABSTRACT

The gender equality agenda and its accompanying benefits in the governance of corporates has been and continues to be a focus of many a debate around the world. Many corporate jobs and leadership positions have historically been held by men. Even though much has been done, the underrepresentation of women is still a glaring issue worldwide. On the issue of gender diversity of top managers and its impact on performance, the limited studies done have yielded inconclusive results, hence this study sought to establish the impact of female top managers on firms' performance in Kenya using the World Bank's Enterprise Survey 2018. By using the IV2SLS model and controlling for both selection bias and endogeneity issues, the results established that female top managers influenced firms' performance positively and it was statistically significant at 1%, 5% and 10% levels of significance, by increasing firm's performance by 1.65 percent point. The findings are consistent with literature implying that having female in top management is likely to bring onboard inimitable leadership skills such as mentorship especially towards female employees. The study recommends that, firms in Kenya should aim at increasing the number of women in top management positions intentionally by making direct appointment of women in the top management. The intervention should be coupled with government legislative such as, coming up with laws that sets a minimum quota for women on top management positions in firms in Kenya, and additionally by legislating laws that requires disclosure gender diversity of firms' top management teams.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

An organization's capacity to anticipate and respond fittingly to pressures and opportunities is one of the key ways through which it can remain viable and competitive. How the top management interprets and acts on strategic issues in part determines how effective the organization's responses are to these issues (Kilduff, Angelmar, & Mehra, 2000).

The top executive team of any firm, and especially its top manager, bears the responsibility of making decisions and setting the firm in a strategic direction that fulfils the objectives of the firm (Fama, 1980). The team's action and decisions can potentially be influenced by the demographic characteristics of the top executive management. The Upper Echelons Theory posits that top executives view and make decisions based on subjective lenses based on their background characteristics (Hambrick & Mason, 1984). These decisions and consequent actions will ultimately influence the performance of the firm.

When there is female representation in top management, what often results is an improvement of the performance of managerial tasks. This is because, when behavior associated with females and the benefits from the social and informational diversity they bring is brought to bear (Abdelzaher & Abdelzaher, 2019), the firm's strategy focuses on innovation, and this leads to better firm performance. Females in middle management are also motivated and the behavior displayed by managers all around the firm is enriched (Dezso & Ross, 2012). These benefits are only enjoyed when women have been included

in the firm, not as tokens, or mere representations of their kind, but as skillful and competent workers (Kanter, 1977).

1.1.1 Top Management Gender Diversity

In recent decades, awareness of the underrepresentation of females in top management has been growing. Since the issue was brought to light, it is undeniable that steps have been taken to improve the situation.

Across the globe, nations have made and effected policies that have aided the move towards achieving gender equality. For instance, South Africa formulated the Gender Policy Framework in 2000 purposed to ensure that achieving gender equality was at the center of the nation's transformation process. Gambia also formulated a National Policy for the Advancement of Gambian Women (1999 – 2009) which provides for a gender and women empowerment orientation with a rights-based approach. In Kenya, the new promulgated 2010 Constitution pushed the agenda of improving gender parity in public corporations further by providing that no more than two thirds of all public appointments shall be held by one gender (Wachudi & Mboya, 2012).

Many studies have shown that improving diversity improves the culture of different organizations, and it also leads to preferable business outcomes. It contributes to a firm's bottom line by increasing innovation and better decision-making (Dezso & Ross, 2012). Based on this information, corporations globally have introduced changes in their corporate governance guidelines to include women as part of their structures of governance.

Recently, the field of strategy has emphasized the role of a top executive team as opposed to that of a sole individual leader. (Michalisin, Karau, & Tangpong, 2004) note that large corporations, especially, will unlikely have executive duties as the select duty of one

person. However, boards and management teams will many times be subject to the decision of the CEO or the board chair – the appointed leader of the leadership team, who sometimes has the right to enforce their will on the rest of the leadership team. Should the top manager resort to making an executive decision above the rest of the leadership team, there is a likelihood that the decision made will be influenced by their personal characteristics and own subjective lenses about the issue at hand (Hambrick & Mason, 1984).

Past research has shown that the market is not hostile to top female leadership (Abdelzaher & Abdelzaher, 2019). This could be because a gender-diverse leadership better understands the market because its diversity matches the customers' diversity. Complementary knowledge, different skill sets and different experiences – found only in diverse leadership teams – leads to rich information provided to management. The quality of a firm's external network is also upgraded by the presence of a diverse leadership. There is access to diverse external resources which greatly aid in the prosperity of a firm. Smith and Verner (2006) posit that the presence of women in top leadership sends positive signals to product, labor and financial markets, thereby elevating the firm's image.

1.1.2 Firm Performance

Measuring performance aids a firm in assessing whether its strategies have yielded results. This can be difficult to do when the basis of performance is multifaceted or if it keeps changing. Since performance itself is multi-faceted, executives are required to analyze the different angles of performance because of the intricacies of managing today's organizations. (Behn, 2003) posits that, while they are not an end in themselves, performance measurements are valuable tools which aid the achievement of managerial purposes.

(Kaplan, 2001) noted that performance measurement is used to learn, control, evaluate, motivate, celebrate, promote and improve various firm processes. No single measure of performance can adequately capture all these managerial purposes hence the adoption of the Balanced Scorecard. The Balanced Scorecard measures organizational performance in a balanced way by viewing the firm's vision and strategy from four perspectives: the financial perspective, the customer's perspective, learning and growth, and internal business processes. If a firm is to grow and survive in the long run, there needs to be a balance in the four perspectives of performance. It is partly based on the Agency Theory which shows that the board has a wide range of responsibilities to the shareholders in ensuring that the firm is prosperous, thriving, and remains a going concern.

A number of studies have measured firm performance using the firm's Return on Assets (ROA), which measures how profitable a firm is as relates to the total assets it holds. (Cherotich & Obwogi, 2018), (Ibrahim, Ouma, & Koshal, 2019), (Kithinji, 2017) and (Wachudi & Mboya, 2012) are examples of such studies. ROA indicates how well a firm utilizes its assets in terms of profitability.

1.2 Research Problem

Pushing the agenda of gender equality in the governance of corporates has been and continues to be a focus of many a debate around the world. Many corporate jobs and leadership positions have historically been held by men over the years.

Even though much has been done, the underrepresentation of women is still a glaring issue worldwide. In its Women in the Boardroom's 6th edition, Deloitte reported that across the globe, women hold 16.9% of board seats, 5.3% and 4.4% of board chair roles and CEO

positions respectively, and 12.7% of CFO positions. Kenya was one of the countries studied in this report.

In Kenya specifically, according to World Bank's Enterprise Surveys 2018, only 15% of firms have a female top manager. It is opined that in Kenya, one of the reasons that men dominate corporate leadership positions is that the people who appoint are men. Women have consequently not received fair chances to be fairly represented in top leadership positions within Kenya's corporates (Kithinji, 2017).

Although a lot of research across many countries in the world has been directed towards the question of gender diversity of top managers and its impact on the performance of firms, the results have been inconclusive (Pletzer, Nikolova, Kedzior, & Voelpel, 2015).

In Kenya, the number of studies directed towards showing the effect of female leadership in firms are embarrassingly few. Moreover, the ones conducted have not yielded consistent results. For instance, (Wachudi & Mboya, 2012) determined that the relationship between the gender diversity of top managers and firm performance is insignificant, whereas (Ibrahim, Ouma, & Koshal, 2019) found the relationship to be significant, owing to the fact that women directors are less inclined to conflicts of interests compared to their male-counterparts, and this minimizes aggression at the workplace and enhances better working relationships among all stakeholders in the firm.

Gender parity has slowly been increasing over the years. Recently, however, the (GLOBAL GENDER GAP REPORT, 2021) showed that the gender gap has widened. It was at 99.5 years but it has now increased by a whole generation and is at 135.6 years. Gender parity will be delayed for one more generation of women. This increase is as a result of the COVID-19 pandemic. This is a curious observation. It may point to the notion that women

are not yet fully trusted to lead firms, especially during tumultuous economic times. As gender parity is increasing in areas like education, the begging question is, can the equally educated woman also be considered as an equal and able addition in corporate leadership?

1.3 Research Question

Do firms that have female top managers in Kenya perform well?

1.4 Objectives of the Study

1.4.1 General Objective

This study's general objective is to find out the effect of a female top manager on the performance of firms in Kenya.

1.4.2 Specific Objectives

- I. To investigate the effect of a female top manager on the performance of firms in Kenya.
- II. To suggest strategic policy recommendations which will influence gender diversity in top management.

1.5 Justification of the Study

It is in the interest of every firm to figure out how they can improve their performance, financial or otherwise, and ensure that they remain a going concern. Even though there is an abundance of research around the world on the effects of a diverse top leadership on the outcomes of organizations, the effects of a gender diverse leadership on firm performance remains unclear (Tacheva, 2007). Varied studies that have been carried out yield inconclusive results.

In Kenya, specifically, there is a shortage in literature on the influence of gender diversity in top management on firm performance in Kenya, and especially during rough economic

times as were witnessed during the world pandemic caused by COVID-19 in 2020. This study intends to add to the existing literature by carefully examining the impact of a female top manager on the performance of firms in Kenya.

The conclusions of this paper will offer insights on the impact of a female top manager on a firm's performance. If the impact is positive, then this paper will have served to nudge firms in Kenya forward in terms of accepting and appointing more and more women as their top managers. It will also give grounds for relevant policy makers and decision makers in firms in Kenya to assess their current performance and reevaluate their strategy especially as far as their top management goes towards building firms and firm cultures that will ensure sustainability, continuance, longevity, increased trust among the stakeholders and increased financial performance in the future, especially should uncertain economic times such as arose during the 2020 world pandemic arise ever again.

Upcoming research papers may also use these discoveries as empirical material for related research endeavors.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter will consider literature on women in top leadership and their impact on firm performance. The first segment considers several theories which are applicable to this study. The following segment evaluates empirical works from different academics on the subject. Finally, last section will identify the gap revealed from the reviewed empirical studies.

2.2 Theoretical Review

2.2.1 The Agency Theory

An agency relationship is a contractual agreement whereby either one person or a number of people (the principal(s)) give a certain extent of authority to another person (an agent) who acts in their stead (Jensen & Meckling, 1976). This theory was first presented by Alchian and Demsetz in 1972. It seeks to explain the relationship between a principal(s), for example shareholders, and their corresponding agent(s), the company's management, and attempt to resolve the complexities that result from this relationship.

To acquire capital inexpensively, firms rely on many stockholders contributing small amounts to a large venture. These stockholders can also be referred to as shareholders. If every shareholder were to take part in every decision affecting the firm, issues such as enormous bureaucratic costs would arise. Additionally, many of the shareholders would unburden themselves of the expectation to be well-informed on matters to be decided upon seeing as, should an unforeseen bad decision lead to losses, these losses will be carried by all the stockholders hence lessening their sting (Alchian & Demsetz, 1972).

Such issues gave reason to the rise of agency relationships, where, for better governing of the company's businesses and affairs, the authority to make decisions is transferred to a smaller group of qualified individuals, which is the management of the company (Alchian & Demsetz, 1972). This management is subject to and monitored by the top manager or the firm's CEO who has the responsibility to ensure that the management acts responsibly and in the best interest of the principals.

2.2.2 Tokenism Status Theory

Tokenism is a concept that originated with Rosabeth Moss Kanter in 1977. A token, in sociological works, is a term used to refer to minorities who are accepted into a group based on their dissimilarity from the other group members. Sometimes, they are even admitted into the group only to provide proof that the group is not discriminatory, and not because of their competence or the value they add to the group (Zimmer, 1988). (Wachudi & Mboya, 2012) pointed out that sometimes, gender diversity is increased. However, instead of being added to the team because of their competence and skill, female directors are appointed as tokens. This may inadvertently affect the performance of the firm negatively. The theory proposes that, to increase female equality at the workplace, more women should be hired in organizations that are highly skewed in favor of men, because there is strength in numbers. The effect of the subgroup will be more obviously felt if their numbers are increased.

In her study of a large corporation, (Kanter, 1977) observed that the female employees at every level engaged in "typically female" work behavior, and other workers in the organization used this as evidence that women are generally not fit for jobs that are conventionally male. (Kanter, 1977) held that the experiences of women at work is more

linked with the intrinsic structural constraints within the positions that they occupy rather than their inherent “femaleness”. One of the ways in which she explains this is, even though sometimes women are in management and in the same positions that men occupy that have command and prospects for growth, they will often be few in a sea of male colleagues, and will suffer the negative effects of tokenism, which inevitable arises in greatly skewed groups (Kanter, 1977).

(Kanter, 1977) describes highly skewed groups as those in which one type of worker dominates over the other in a ratio of 85:15 or more. In organizations where this ratio represents men and women, men being the dominant workers, the minority women will likely be treated as tokens, merely as representations of their kind, instead of being treated as individuals who bring unique value to the organization. Using interviews and observation of women in the corporate world, (Kanter, 1977) identified some of the consequences of being tokens.

Due to their obvious distinction from the dominant group, women become very visible and subject to penetrating scrutiny. This means that their mistakes are glaring and that causes incredible pressure to perform. This obvious attention presents hurdles in their efforts to further their careers. Moreover, they are painfully aware that their actions are not just consequences to themselves, but will also have figurative consequences (Wachudi & Mboya, 2012), for instance, the inclination to employ female employees in the future. Dominants also tend to overemphasize the dissimilarities between themselves and tokens, who react by either endeavoring to be considered an “insider”, which is incredibly difficult, or accepting the “outsider” status, which is easier. The outsider also has to work very hard to show their professional worth or receive any acknowledgement for their achievements.

Lastly, there is the issue of assimilation. Dominants tend to distort the mannerisms, behaviors and basically the individualities of tokens and force them to fit labels. The tokens can either fight this assimilation, which is tremendously difficult, or accept some form of it, which is usually easier. (Kanter, 1977) found that most corporate women accepted some form of labeling, and fit themselves into one of four generally fronted female “roles”: the pet, the seductress, the mother or the iron lady. Coincidentally and unfortunately, each of these “roles” restricted the women in their careers.

It is obvious, then, that tokenism is damaging to women and their career advancement opportunities, especially those in management positions. These consequences can be psychologically burdensome to women, as they try to manage these unfulfilling social relationships (Zimmer, 1988). Tokenism also inhibits women’s ability to express themselves, causes feeling of inadequacy and hinders their capabilities and success in their jobs.

Even though Tokenism was crafted in a way that allowed for observation and investigation of groups that are minority within a bigger team, it has brought obvious benefits in the study of jobs that are traditionally male but which have now included women, who now find themselves as minority groups because the current work setups are highly skewed. (Kanter, 1977) proposed that, in setups where conduct appears to be linked to the sex of the actors, these behaviors can be instead be understood better as situational behaviors which would be observed in any person who finds themselves in a token position.

2.2.3 Upper Echelons Theory

Advanced by Hambrick and Mason in 1984, this theory posits that the personal characteristics of the decision-makers to some extent predict their tactical leanings. Its

proposition is, to understand the actions and performance of a firm, one must first understand the dispositions and biases of its decision makers – the top executive team. This is because top executives view situations from subjective lenses and make decisions based on this view (Hambrick & Mason, 1984). The biases include contextual characteristics such as education, experience, socioeconomic backgrounds, financial status, age and other group characteristics.

When confronted with a situation, the top management views the situation based on their individualized understanding, and act according to convictions based on these personalized views (Hambrick, 2007). These actions ultimately influence the performance of the firm, either to improve it or to reduce it. As proponents of this theory, (Hambrick & Mason, 1984) argued that demographic characteristics and individualized experiences influence the way top decision makers see opportunities, and that it is impossible to separate the strategic choices of the decision-makers and the decision makers themselves.

The Upper Echelons Theory has been fruitful in describing, and even to some degree predicting, the association between the top executives' team characteristics and performance even though it has not been quite successful at explaining or controlling that relationship.

2.3 Empirical Studies

Using panel data from 39 firms listed at the NSE between 2004 and 2014, (Mwengei, 2016) investigated the effect of the top management team's diversity on firm performance. The study focused on four characteristics of a board as the independent and controlled variables: gender, independence and financial expertise of the directors and the board size. Firm performance was measured by the firms' ROA and ROE. Using multiple linear regression,

the outcome displayed that, gender diversity (the presence of women directors), board independence (outside independent directors), board size (the number of members on a board) and financial expertise (directors who were experts in the financial field) had a significant positive relationship with the firm's financial performance. This partly agrees with Agency Theory, which makes the case that a larger board is more able to exercise discipline and control over the firm CEO (Fama, 1980).

These results agree to a large extent with a study done by (Cherotich & Obwogi, 2018) in Kenya in 2018. Using multiple linear regression, the study considered the effect of the size of a board, CEO duality (where the CEO is also the board chair), board gender composition and board independence on the financial performance of 55 firms listed at the NSE between 2010 and 2017. Financial performance was measured using the firms' ROA. The study found that in firms where there is CEO duality, the financial performance of the firm is negatively affected. The study also found that increasing the board size has a negative, though insignificant, effect on the financial performance of the firm. However, the relationship between board gender diversity and board independence and the firm's financial performance was significantly positive.

A similar study was done by (Kithinji, 2017) in 2017 in Kenya. The population of the study included the 64 firms that were listed at the NSE by end of 2016. The aim of the study was to find out whether top management gender diversity has an effect on firms listed at the NSE as at 2016. Firm performance was measured by the firms' ROA, and alongside gender, which was estimated using the percentage of women on the executive board, other control variables used were independence of the director and the size of the firm. Using relevant data collected between the years 2012 and 2016 from questionnaires, reports from

respective companies' annual reports, websites and reports the Capital Markets Authority (CMA), and analyzing both descriptive and inferential statistics, the study found that gender diversity on boards did not affect firm financial performance. Director independence and size of the firm were also positively related to the performance of the firm.

In the insurance sector, (Ibrahim, Ouma, & Koshal, 2019) did a study in Kenya in 2019. The study was carried out on 55 insurance and reinsurance firms accredited by the Kenya insurance industry regulator, Insurance Regularity Authority (IRA), in 2017 and 2018. The objective of the study was to examine whether the financial performance of insurance firms in Kenya, measured using the firms' ROA and ROE, was affected by gender diversity. Using both descriptive and inferential statistics, regression analysis was performed and the results showed that firms with a higher number of women directors performed significantly better financially compare to firms with less women as directors.

(Ibrahim, Ouma, & Koshal, 2019) found that female directors were more transparent and they give more complete corporate disclosure than male directors. Additionally, female directors were found to be less inclined to conflicts of interest compared to their male counterparts. Minimized conflicts of interests amongst the board members leads to less aggression within the firm, minimizes hurried and consequently costly business decisions, and it facilitates good working relationships amongst all stakeholders in the firms (Ibrahim, Ouma, & Koshal, 2019).

In 2012, using step-wise regression, (Wachudi & Mboya, 2012) did a study to investigate the effect of board gender diversity on the financial performance of commercial banks in Kenya between 1998 and 2009. The paper considered a population of 32 commercial banks

listed in the Central Bank of Kenya's Banking Supervision Report of 2009. Board diversity was measured by the presence and the proportion of women directors and the banks' financial performance was measured by the bank's ROA. The findings of this study were that, only one member of a typical board comprising 8 people was a woman. It also suggested that both the presence and proportion of women directors had a negative relationship with banks' financial performance, though this relationship was not statistically significant. The conclusion of this study was that board gender diversity had no significant effect on the financial performance on banks in Kenya.

In agreement with (Kanter, 1977), the study suggested that, because the boards of commercial banks are male-dominated, it may be that the women are too few to have much influence of the strategies of the banks. However, it was notable that the business community was not punishing banks that had women sitting on their boards. (Wachudi & Mboya, 2012) also suggested that these findings may be explained by the glass ceiling phenomenon in many of the banks in Kenya, where women are only promoted to a certain level but not beyond. In future, it would be interesting to see if the number of women on boards has significantly increased and how that increase has affected the financial performance of banks.

(Sagire, 2017) explored how business firms in Kenya are impacted by social and demographic factors. Data on 23160 firms was collected from the MSME 2016 survey carried out by the Kenya National Bureau of Statistics in 2016. The social and demographic factors included age of the firm, the gender and education level of the firm owner, and the ownership structures of the firm. Firm performance was measured by the average monthly revenues of the firms. Using descriptive statistics and applying the Ordinary Least Squares

technique, the study found that age and level of education have a positive relationship with firm performance. Cooperatives, partnerships and both public limited and private companies performed better than businesses owned by families did. Lastly, the study found that male-operated firms performed better than female-operated ones.

In Egypt, 114 non-financial publicly listed Egyptian firms were used as a sample in (Abdelzaher & Abdelzaher, 2019) to determine the relationship between women on boards and firm performance, post the Arab Spring. The aim of the study was to investigate whether there were any effects, both indirect and direct, of women on boards on firm value and performance in the context of a developing market. The study controlled for the industry the firm belonged to, the size of the board, the board independence, and dual-chairmanship. Firm performance was measured by their ROE and Tobin's Q. From analysis done using the Ordinary Least Squares multiple regression, the findings of this study were that there was a significant and positive relationship between firm value (ROE) and the percentage of women on boards. (Abdelzaher & Abdelzaher, 2019) also deemed that post the Arab Spring, the market did not seem to be predisposed against women on boards.

To make sense of the low representation of females in decision-making bodies, find the reasons for this underrepresentation, and come up with ways to increase the number of women on West African companies' boards, (Ouedraogo, 2018) studied Burkina Faso's market. The study done was qualitative and inductive in nature, focusing on the direct first-hand experiences of people connected to the objectives of the study. Interviews on women on the boards of both public and private firms were done, and the women accounted for their social background, the sizes of the boards they were members of and their particular

experiences being members of said boards. The women also accounted for the particular methods they used to access upper management. Women who wanted to be members of boards but could not were also interviewed, and in some cases, where the women who were members of boards were not accessible, the presidents of those boards were interviewed on the few numbers of women on their boards, and on the complete absence of women as board presidents. The interview was done on 8 female board members and 2 male board presidents.

The findings of (Ouedraogo, 2018) were that personal and socio-cultural issues, and organizational cultures are some of the central reasons for the low representation of women on the boards of West African companies, with social-cultural issues playing the most central role. Even though slowly improving, traditions and issues raised by religion still constrain the role of women in the Burkinabe society.

In a study done in 2020 of 301 listed firms at the Vietnamese stock markets between 2007 and 2015, (Vo, Nguyen, & Le, 2020) investigated the value added by women CEOs in Vietnamese firms, and examined whether the gender of corporate leaders has any effect on the risk and performance of firms. Firm performance was measured by ROA, ROE and Tobin's Q. Using the Ordinary Least Squares and Two-Stage Least Squares regression analysis, the findings held that firms led by female CEOs have a greater profitability compared with those led by male CEOs. These firms are also less subject to idiosyncratic and systematic risks, and they experience less unpredictability in their returns on assets. These results suggest that firms benefit from women's unique experiences, perspectives and management styles. Women, being more collaborative and averse to risk than their

male counterparts, lead to firms that evade negative NPV projects and are more open to receiving useful advice from the board or other stakeholders.

(Amin & Islam, 2014) studied 86 private firms in developing countries to estimate the proportion of women in top management, and the relationship of this proportion with factors such as gender inequality in education, the country's income level, the size of the firm and political freedom. Data was collected from the World Bank Enterprise Surveys and Ordinary Least Squares regression analysis employed. The findings show that the percentage of top women managers was low, at 19 percent, seemingly due to inequalities in education level. There were also observably, in comparatively large firms, a lack of women managers. When the country's income level and gender inequality in education was controlled, there was a significant negative relationship between the size of the firm and female top managers. As for democracy, religion and legal origin, the results indicated that their effects are statistically weak when gender inequalities in education levels is controlled for. Also, worth noting was that the higher a country's income levels and the higher the gender equality in education, the bigger the size of the firm.

In 2015, (Pletzer, Nikolova, Kedzior, & Voelpel, 2015) conducted a meta-analysis on 3097 using data from 20 studies that were published in peer-reviewed journals. The aim of the meta-analysis was to investigate the contentious relationship between the representation of females on corporate boards and the financial performance of firms. The studies focused on both developing countries and developed countries. The findings revealed that boards comprised of eight members on average, and that female representation was low in all studies, at an average of 14 percent. They also showed that, except other factors are brought into play, the simple representation of women on corporate boards is not related to the

financial performance of firms. The relationship observed was consistently small and insignificant (Pletzer, Nikolova, Kedzior, & Voelpel, 2015).

2.4 Literature Review Summary and Knowledge Gaps

The presence and diversity of top leadership diversity is a noteworthy ongoing discussion both in developed and developing countries. Theories have been formulated to attempt a gaining of insight into the need for and composition of top management teams and how their particular characteristics affect the performance of firms. The Agency Theory explains the need for agency relationships and how top management governs over a firm's affairs and operations in order to safeguard the interests of the principals that they represent. The theory holds that top management diversity, in gender and otherwise, improves the capacity of the leadership to monitor management.

The Tokenism Status Theory demonstrates that, to see the true effect of a minority group in a firm context, their number should be numerically improved, and they should be appointed based on competence and not as symbols or representations of their kind. We ought to concern ourselves with the personalized experience they bring as competent females and how their monitoring style is different from that of men.

The Upper Echelons Theory argues that one cannot separate the strategic choices and actions of a firm from the dispositions, biases and individualized experiences of its top decision-makers. This shows that the leadership style in a firm is heavily reliant on the personal characteristics of top manager.

The empirical literature establishes that, more often than not, a gender diverse leadership is beneficial to the performance of a firm. The literature also shows that the issue of the presence and proportion of females in leadership, and their effects on firm performance,

whether direct or indirect, is still contentious. Some such as (Cherotich & Obwogi, 2018), (Mwengei, 2016), (Ibrahim, Ouma, & Koshal, 2019) and (Abdelzaher & Abdelzaher, 2019) show that the relationship between the two is positive while others such as (Wachudi & Mboya, 2012) find them negatively related. (Vo, Nguyen, & Le, 2020) and (Sagire, 2017) stand on opposite sides with (Vo, Nguyen, & Le, 2020) showing that firms that are led by female CEOs perform better than those that are led by male CEOs, while (Sagire, 2017) finds that male-operated businesses perform better than female-operated ones. Others such as (Cherotich & Obwogi, 2018), (Ibrahim, Ouma, & Koshal, 2019) and (Mwengei, 2016) find the relationship, whether positive or negative, significant, while others such as (Wachudi & Mboya, 2012) find it insignificant.

To the researcher's best knowledge, literature shows that empirical studies remain inconclusive both locally and world-wide. There is therefore a need to reexamine the subject under a new scenario, that is, whether in the Kenyan set-up in particular, the gender of the top manager has a positive impact on the performance of a firm, and thereby add to the body of knowledge on the subject in the Kenyan context.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This section explains the methodology of research for this paper. It outlines its theoretical framework, shows the specification of its model, defines its variables, shows the types of data used and the sources of that data, and finally, it shows the techniques of data analysis that were employed to arrive at objective, valid and verifiable outcomes for the study.

3.2 Theoretical Framework

The two-step Heckman sample selection correction model was adopted due to suspected bias in the selected sample. To be included in the sample that is to be analyzed, financial firms were picked on a non-random basis, if their top manager was found to be female. The rule of sample selection was as follows:

Observations are only available on:

$$P_i \text{ if } P_{fi} > 0 \dots\dots\dots 1$$

There are no observations on:

$$P_i \text{ if } P_{fi} \leq 0 \dots\dots\dots 2$$

Where:

P_i represents financial firms and P_{fi} represents the top manager's gender.

$P_{fi} > 0$ implies that the top manager is female.

$P_{fi} \leq 0$ implies that the top manager is not female.

When a sample is selected in a non-random manner in order to evaluate behavior relationships, a bias is likely to arise (Heckman, 1979). This causes a loss of efficiency and

unreliable outcomes from such evaluations. To take care of the problem of bias, this study will employ the Heckman two-step sample selection model.

The Probit model is used for the first step. Here, the probability of a firm to have a female top manager is evaluated for the entire sample:

$$P (E = 1|X_i) = F (X_iY_i) \dots\dots\dots 3$$

Where;

P is the Probability

E is an indicator for whether a firm has a female top manager (E=1 if a firm has a female top manager, else, 0)

X_i are the explanatory variables, and

Y_i are the exogenous parameters.

F is cumulative distribution function (CDF) which is normally distributed (each firm's predictor of performance).

The inverse Mills ratio, λ_i is then calculated. It estimates the variables which gave rise to specification error and caused "omitted variables" bias when they were excluded during the non-random selection of the sample, consequently sorting out the bias. The IMR is the covariance between the decision to have a female top manager and the performance of the firm relative to the variation in the decision to have a female top manager.

When the coefficient of IMR is positive, then there is "positive selection", meaning that there are unobserved variables that both increase the probability of selection and a higher than average score on the dependent variable because the β estimates will be upward-biased. When the IMR coefficient is negative, then there is the probability of a lower than average score on the dependent variable because the β estimates will be down-ward biased.

Its value will be added as a variable in the second stage and it will act as a regressor. It is calculated as follows:

$$\lambda_i = \frac{F(X_i Y_i)}{1-F(X_i Y_i)} \dots\dots\dots 4$$

F represents CDF, and λ_i = the Inverse Mills Ratio (IMR). It is associated with individual firms.

For stage two, the firm performance equation is specified. This is done by converting the individual probabilities in stage one to independent variables, which corrects for the bias that occurred due to the pre-selection of firms. As mentioned earlier, the IMR (λ_i) is also added as a regressor in this second equation. It will act as the factor which will control for the characteristics that are unobserved, representing the effect they have on the decision to have a female top manager. Its coefficient explains the extent to which it affects firm performance. In the case where $S_i = 1$, with the assumption that μ , dist N (0, σ^2), then:

$$P^* = X_i \beta + \mu \dots\dots\dots 5$$

Otherwise,

$$P^* = 0 \text{ if } S_i = 0 \dots\dots\dots 6$$

Where;

P^* = firm performance. It is not observed if a firm does not have a female top manager;

X_i = Factors influencing firm performance (Characteristics of the firm which include: firm age, firm age², firm size, foreign-ownership, top manager experience and innovation).

This model assumes that the error terms have a normal distribution. The error term simply accounts for the lack of goodness of fit, that is, when there is a difference between the expected value of Y in the model and the actual observed values of Y during an empirical test. If there is a factor Z that affects Y but is unobserved, then it is included in the error term.

The conditional expectation for firms that have female top managers can thus be expressed as:

$$E (P_i | X_i , P_{fi} > 0) = X_i \beta + E(\mu | X_i, P_{fi} > 0) \dots \dots \dots 7$$

3.3 Specification of the Model

There are variables identified in this study that would explain firm performance levels at firm level. These variables include; firm age, firm size, foreign ownership, top manager experience and innovation. The definition of firm performance in this study is the firm’s growth of sales.

$$Firm\ Performance = f(\text{firm age, firm age}^2, \text{firm size, foreign ownership, top manager experience, innovation, IMR}) \dots \dots \dots 8$$

$$Firm\ Performance = \alpha + \beta_1 \text{firm age} + \beta_2 \text{firm age}^2 + \beta_3 \text{firm size} + \beta_4 \text{foreign ownership} + \beta_5 \text{top manager experience} + \beta_6 \text{innovation} + \beta_7 \text{IMR} + \mu \dots \dots \dots 9$$

There is a likelihood that omitted variable bias, caused by unobserved heterogeneity, might occur because the sample used in this study was selected in a non-random manner. This leads to individual observations having variations, causing endogeneity – the correlation between the explanatory variable and the error term – which is suspected to be present in this model. The study therefore employs the Two-Stage Least Squares regression method

to estimate the model because it controls for endogeneity caused by unobserved heterogeneity and yields robust results.

3.4 Definition of Variables and their Measurements

Table 1: Variable definition and measurement

Variable	Description	Measurement	Priori Expectation
Firm Performance	Endogenous in nature. It is defined as the firm's growth of sales.	Derived by firm's growth of sales between the current year and the past 3 year	
Female Top Manager	It describes the gender of the firm's top manager	Firm with female top manager =1, Else = 0	Indeterminate (+ or -)
Firm Age	The sum of years that the firm has been in existence, given by: = 2018 – the year firm was formed	This is a continuous variable measure. It is measured in years	Positive (+ or -)
Firm Age ²	This is the square of the sum of years that the firm has existed	It is given by the square of "Firm Age". It helps to counter the effects of linearity	Positive (+ or -)
Firm Size	The total sum of the workers who work full time within the firm	It is coded as Small, Medium and Large, where: Small: ≤ 50 workers Medium: Between 50 and 100 workers Large ≥ 100 workers	Indeterminate (+ or -) for Small and Medium firms Positive (+) for Large firms
Foreign Ownership	The status of the firm's ownership	Firm with percentage of Foreign ownership =1, Else = 0	Positive (+)
Top Manager Experience	The total sum of years the top	It is coded as 1, 2 and 3, where: 1 = < 10 years	Positive (+)

Variable	Description	Measurement	Priori Expectation
	manager has worked in this sector	2 = 10 > years < 20 3 = > 20 years	
Innovation	It is the enhancement of the business process by introducing a significant improved product in the past 3 years	Firm with Innovation =1, Else = 0	Positive (+ or -)
Number of female employees	It is used as this study's Instrumental Variable (influencing the probability of having a female top manager)	It is measured by counting the total number of female full-time workers in the firm	

3.5 Types of Data and their Sources

This study makes use of secondary data collected from the World Bank's Enterprise Survey, 2018. It was gathered from a sample of firms in Kenya. The study gives particular focus to firms whose top manager is female. It considers the available information on the characteristics of individual firms such as the gender of the top manager, the year of incorporation, the size of the firm, whether the firm is foreign-owned, and innovation by the firm in the past three years. The firm is the basic unit of study.

3.6 Estimation Method

As shown above, the preferred approach by this study is to employ the Two-Stage Least Squares Regression method in estimating the specified model. Some studies done in the past such as Reguera-Alvaredo et al., (2015) and Adams & Ferreira (2009) noted that the endogeneity problem is one of the sources of inconsistency in estimating link between

female top manager and firm performance. For example, well performing firms may advocate for gender diversity because they have enough resources, hence having female top managers compared to the other firms not performing well. Hence, female top managers may lead to high performance, while at the same time female top managers signal high firm performance.

Given such scenario, estimating OLS may lead to biased results, hence the need for instrument(s) that correlate with female top managers but not with firm performance. As noted by Baum (2006), for an instrument to be considered valid, it must satisfy the condition of, first not correlating with the error term and secondly being correlated with the endogenous variable, in this case female top managers. Based on this, the selected instrument for this study is, the proportion of full-time female employees. The variable was chosen based on literature (Marinova et al., 2016), and basically, the variable is justified based on the aspect that, firms with larger proportion of females have high probability of having a female in top management, but it does not necessarily imply that the presence of female employees will lead to high firm performance.

3.7 Diagnostic Tests

3.7.1 Multicollinearity test

Multicollinearity is a problem that occurs when the explanatory variables in a regression equation are closely correlated. In most econometric regressions, variables usually tend to be collinear but the degree and extent of collinearity are what matters.

To test for multicollinearity problem, this study will use the Variance Inflation Factor (VIF). VIF values of greater than 10 would indicate a serious presence of multicollinearity between variables.

3.7.2 Heteroscedasticity test

Heteroscedasticity relates to a phenomenon where the error term exhibits non-constant variance. Heteroscedasticity is a problem because it can lead to biased standard errors. This study will apply the Breusch Pagan Lagrange Multiplier (BPLM) test to check the error term's variance.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF RESULTS

4.1 Introduction

In this chapter, the analysis, results and discussion are presented. The order of presentation starts with summary statistics, diagnostic tests, followed by results from empirical investigations and the accompanying interpretations of the statistics emanating therefrom. In each case, inferences are drawn and comparisons are made with findings from studies of similar nature done elsewhere.

4.2 Descriptive Statistics

Table 1 presents the summary of the variation and distribution of data used for estimation. The table presents the mean¹, standard deviation², the minimum and maximum values of the data used.

¹ This is the average of the variables

² Measures dispersion from the average and it captures the degree of variation

Table 2: Descriptive Statistics (N=989)

Variable	Mean	SD	Min	Max
Firm Performance	4.15e+08	1.34e+10	-1.70e+10	4.21e+11
Female Top Mangers	0.1538	0.3610	0	1
Firm Age	22.3074	18.3616	0	124
Firm Age Squared	834.4267	1439.2564	0	15376
Firm Size				
Small	0.7149	0.4517	0	1
Medium	0.1163	0.3207	0	1
Large	0.1689	0.3748	0	1
Top Manager Experience				
Below 10 years	0.4176	0.4934	0	1
Between 10 to 20 years	0.3155	0.4649	0	1
Above 20 years	0.2669	0.4426	0	1
Firm Innovation	0.4702	0.4994	0	1
Firm Foreign Ownership	0.1476	0.3549	0	1

The results in table 2 indicates that, on average the firms had sales of KES 4.15e+08, with the maximum growth in sales being KES 4.21e+11, while the minimum growth was a decrease in sales by KES 1.70e+10. The results indicated that most of the firms have been in existence for an average of 22 years with a disparity of 18 years, and the oldest firm has been in existence for 124 years.

On average, 15.38% of the firms reported to have female employees in the top management positions, which shows that, firms in Kenya are still yet to enhance gender diversity. This is a common issue globally, as it is reported that females are represented by 3% to 12% in the senior management positions (Ganguli et al., 2014). It is even more severe in Sub-Saharan Africa and Latin America as only 3.85% of women make it to management in senior positions (Jackson, 2009).

Regarding the size of the firms, 71.49% of the firms had less than 50 workers (small), 11.63% having between 50 to 100 workers (medium), while 16.89% of the firms had over 100 workers (large). The firms had a disparity of 45.17%, 32.07% and 37.48% for small, medium and large firms respectively.

On examining the level of experience of the top managers of the firms, 41.75% of the firm's reported to having managers with experience below 10 years, 31.55% of the firms had top managers with experience ranging from 10 years to 20 years, while 26.69% of the firm's top managers had experience above 20 years. Consequently, their standard deviation was at 49.34%, 46.49% and 44.26% respectively.

On whether the firms enhanced business process by introducing improved product (innovation), 47.02% of the firms agreed to have innovations. Finally, 14.76% of the firms reported to have percentages of the firm ownership being foreigners. The inference is that, most of the sampled firms are locally owned.

4.3 Diagnostic tests

4.3.1 Multicollinearity test

Test for multicollinearity³ was done using the Variance Inflation Factor (VIF). Under this test, the mean VIF value, which is less than 8.0, indicates the absence of multicollinearity, while mean VIF value greater than 8.0 indicates the presence of multicollinearity. Conventionally, a VIF with a value of 1 is considered not to be correlated; values ranging between 1 to 5 are considered to be moderately correlated while those that are greater than

³ Multicollinearity occurs when the independent variables in the model are correlated and this may cause the predicted results to be spurious estimations

5 are considered to be highly correlated (Miles, 2014). The outcomes of the VIF test are shown in Table 3:

Table 3: VIF Multicollinearity Test

Variable	VIF	1/VIF
Age	8.45	0.118413
Age Squared	7.54	0.132565
Top Manager Experience	1.32	0.757006
Firm Size	1.15	0.868015
Female Top Mangers	1.06	0.946756
Firm Foreign Ownership	1.04	0.960037
Firm Innovation	1.02	0.980744
Mean VIF	3.08	

From the results in table 3, the VIF index for the estimated results reveals that the predictor variables were all moderately correlated, all the variables remain within the margin of moderate correlation. Furthermore, the mean VIF was 3.08 which is below the threshold of 8.0, hence multicollinearity was not detected in the study.

4.3.2 Heteroscedasticity Test

Using the Bresuch-Pagan test, presence of heteroscedasticity⁴ under the null hypothesis of homoscedasticity was examined. According to the test, if the p-value is less than 0.05, the null hypothesis is rejected. Otherwise, we fail to reject it. In the case where heteroscedasticity exists, then robust standard errors are used to correct for the problem.

Upon carrying out the test, the results are shown in table 4:

⁴ A situation where the dependent variable's variability appears to be unequal across the range values of independent variables

Table 4: Heteroscedasticity Test (Breusch-Pagan Test)

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity
Ho: Constant variance
Variables: Fitted values of Firm Performance
chi2(1) = 3261.57
Prob > chi2 = 0.0000

The results indicate that test statistics is less than 0.05, therefore we reject the null hypothesis, implying that heteroscedasticity is a problem in the residuals. To address the problem, robust standard errors were used when estimating the model.

Having carried out the diagnostic tests, we proceeded to estimate the model.

4.4 Model Estimation Results

Table 5: IV2SLS model of the effect of a female top manager on the performance of firms in Kenya

	2SLS Model
	Firm Performance
Female Top Mangers	1.650*** (0.0867)
Firm Age	0.0450*** (0.000779)
Firm Age Squared	-0.000523*** (0.00000909)
Firm Size	
Medium	2.126*** (0.0114)

Large	2.256 ^{***} (0.00870)
Firm Foreign Ownership	0.508 ^{***} (0.0111)
Top Manager Experience	
Between 10 and 20 Years	0.0152 (0.0156)
Above 20 Years	0.511 ^{***} (0.0123)
Firm Innovation	0.870 ^{***} (0.00766)
Constant	14.40 ^{***} (0.0126)

Standard errors in parentheses * $p < 0.05$, ** $p < 0.01$, * $p < 0.001$**

In order to estimate the impact of female top managers on the performance of firms, the Heckman two-step model was estimated in order to address the issue of sample selection bias of female top managers for the firms. The first stage involved estimating the Probit model of female top manager's equation and generating the inverse mills ratio, which was used in the second equation in order to sort out the bias brought about by the non-random selection of the sample. The two steps were implemented using the Heckman approach/command. The outcomes of the first stage Heckman model are shown in **Appendix I.**

The first part of the Heckman results indicates the outcome equation while the second part shows the selection equation where we included the gender of top manager being female (assumed to determine firm performance). The Heckman selection model -- two-step estimates (see Appendix I) indicated that the coefficient of the Inverse Mills ratio, reported

as mills, was insignificant with t -value = 0.27, which implied that selection bias was not a significant issue in our analysis. Hence, the researcher proceeded to estimate the IV2SLS model, while controlling for endogeneity issues.

The first stage of the 2SLS model results shown in Appendix II, confirms that the instrumental variable used in the study (female employees) to be a good predictor for female top managers in the firm, since it was positive and statistically significant at 10% level of significance. This confirms our intuition that having many female employees is likely to influence having females in the top management, which is in line with (Dezso & Ross, 2012). Upon identifying the fitness of the instrumental variable, we used it to estimate the 2SLS model and the outcomes are presented in Table 5.

From the results in Table 5, the main independent variable which is female top managers, was found to be statistically significant and positively influenced firm's performance by a 1.65 percent point. This means that, firms that have women in top management positions have a better performance than those firms without a female in top management position. These results agree with previous studies like Wu et al. (2017) and Moreno-Gómez et al. (2018), which both established that gender diversity played a role in enhancing firm performance. This can be explained by the fact that, having women in top management is likely to bring onboard inimitable leadership skills such as mentorship especially towards female employees, and additionally it boosts confidence amongst juniors because of their comprehensive skills in leadership (Wu et al., 2017). Consequently, in line with Hafsi & Turgut (2013), the positive influence of female top managers on the performance of a firm can be credited to their nature of superior monitoring skills, their ethical capabilities and risk aversive nature of their leadership style.

On the control variables, firm age has a positive and significant effect on firm performance, but performance tends to diminish beyond a certain point. The results indicated that, firm age increased firm performance by 0.045 percent point. The firm age squared was negative which tends to support the convex relationship between firm age and performance. Young firms have high performance, but past a certain age of the firm, the direction of the relationship changes. We calculated the maximum age at which the firms experience a rise in performance, before starting to experience diminishing features by $0.0450 / -0.000523 * 2$, giving as -43.02. This implies that the firms will experience a rise in performance, up to the average age of 43 years before they begin to experience a fall in performance. This is explained by the fact that young firms are likely to experience growth faster because they create new job opportunities, innovate new work procedures, use new technology and additionally offer training to their employees, which is not the particularly the case with older firms, who may already be set in their ways. As the saying goes, it is difficult to teach an old dog new tricks. Our findings agree with Coad et al. (2013), who, upon analyzing manufacturing firms in Spain for a period of 18 years, depicted that firm performance improved with age. They attributed this to stable growth of productivity rates, bigger size, increased profits, in addition to superior equity ratios.

Firm size played an important role in enhancing firm's performance. Firms with workers between 50 and 100, and firms with over 100 workers increased firm's performance by 2.126 percent points and 0.511 percent points respectively as compared to firms with less than 50 workers. The results are in line with Serrasqueiro et al. (2008); and Onder (2003), which can be explained on the basis that firms with many workers have adopted new ways to deal with risks and uncertainties hence better performance. Consequently, large firms also

have the ability to negotiate with suppliers and competitors, in addition to their ability to acquire new technology, and gaining control over the market.

Firms having percentage of foreign ownership increased firm's performance by 0.508 percent points as compared with firms which did not have percentage of foreign ownership.

The outcomes confirm the findings of studies by Bentivogli and Mirenda's (2017) and Akolaa (2018) on the analysis of the European and African circumstances respectively.

The intuition is that, foreign acquisition of domestic firms leads to the transfer of greater technical and managerial skills to the acquired firms, hence better performance.

Based on our findings, the top manager's experience played an important positive role in increasing the performance of firms. Having experience of between of between 10 and 20 years, and experience above 20 years improved firm's performance by 0.0152 percent points and 0.511 percent points respectively as compared to firms with managers experience with less than 10 years This is in line with Bialowas and Sitthipongpanich (2014) who established that experienced top managers positively impact the decision-making processes, leading to an enhanced performance.

Finally, firms with innovation were found to increase firms' performance by 0.870 percent point. The intuition behind is that high innovation has the potential attracting both local and foreign investors and this consequently improves performance. The results support Srholec (2009) who found similar results.

CHAPTER FIVE

CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, the conclusion, policy recommendations and areas for further research. It also shows how the objectives of the study as specified have been achieved.

5.2 Summary and Conclusion

The study set out to establish the effect of female top managers on the performance of firms in Kenya. We tested the hypothesis using data from World Bank's Enterprise Survey 2018. The analysis first began by estimating the Heckman Two step model in order to address the issue of sample selection bias of female top managers for the firms. By carrying out the Heckman selection model - two-step estimation, the results indicated coefficient of inverse Mills ratio, as 2.7629 with a t-value of 0.27, which was statistically insignificant. This implied that selection bias was not a significant issue in our analysis, hence the researcher proceeded to estimating the IV2SLS model controlling for endogeneity.

The first stage of the 2SLS model results confirmed that the instrumental variable used in the study (total number of full-time female employees) to be a good predictor for female top managers in the firm, since it was positive and statistically significant at 10% significance level. Therefore, the researcher proceeded to estimate the second stage using the instrument.

The subsequent results of the model established that female top managers influenced firms' performance positively and it was statistically significant at 1%, 5% and 10% levels of significance. Specifically, an additional female in top management increased firms' performance by a 1.65 percent point. The findings are consistent with literature implying that having a female in top management is likely to bring onboard inimitable leadership skills such as mentorship especially towards other female employees. Additionally, the positive influence of female top managers on firms' performance can be attributed to by their nature of superior monitoring skills, their ethical capabilities and the risk averse nature in their leadership.

All the control variables, including firm age, firm size, firm ownership status, top manager's experience and firm innovation were found to positively and significantly influence firms' performance in Kenya.

The conclusion of this study adds to existing body of literature by addressing the self-selection bias issues using the Heckman two-step models and additionally controlling for endogeneity issues using the IV2SLS model, which may have brought about inconsistent results in the previous studies, due to using inappropriate estimation methods. Hence, the study draws solemn policy recommendations.

5.3 Policy Recommendations

Considering the boost in the firms' performance, which tags along employing or appointing females to top management positions, the study recommends that, firms in Kenya should aim at increasing the number of females in positions in top management intentionally as they stand to gain massively in terms of performance. This can be realized by, first,

increasing the number of female employees in the firm, which can give them the opportunity to rise to top positions. Secondly, by making direct appointments of skilled and competent women in positions of top management within the firm.

The government can facilitate this by legislating laws that require disclosure of gender diversity not only in public corporations but also in firms' top managements. This will greatly aid the journey towards the attainment of gender parity in Kenya, maybe more quickly than other countries, and Kenya will stand a chance to gain economically from these consequently highly performing firms.

5.4 Areas for further studies

Despite the serious results and policy recommendations, the study is not free from limitation, hence the areas for further studies. The study used only one measure of firm performance. The study therefore recommends further studies to use other measures of firm performance such as growth of employees, and levels of investments, which the study did not analyze due to time limitations.

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APPENDICES

Appendix I: Heckman Two Step Model Results

Heckman selection model -- two-step estimates (regression model with sample selection)		Number of obs = 989	Selected = 561	Nonselected = 428		
		Wald chi2(8) = 153.55				
		Prob > chi2 = 0.0000				
In_Firm_Per	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
In_Firm_Per						
Age	.0253949	.0393972	0.64	0.519	-.0518222	.1026121
Age_Squared	-.0003119	.0002989	-1.04	0.297	-.0008978	.000274
Firm_Size						
Medium	1.775508	.3808907	4.66	0.000	1.028976	2.52204
Large	2.735016	1.124379	2.43	0.015	.5312723	4.938759
Foreign_Own	.246588	1.555456	0.16	0.874	-2.802049	3.295225
Man_Experience						
10 > years < 20	.1987203	.2859634	0.69	0.487	-.3617578	.7591983
> 20 years	.4964571	.9720661	0.51	0.610	-1.408757	2.401672
Innovation	.5197465	.3319451	1.57	0.117	-.1308539	1.170347
_cons	12.93228	6.196127	2.09	0.037	.7880954	25.07647
select						
Age	-.0059081	.0063668	-0.93	0.353	-.0183867	.0065705
Age_Squared	.0000372	.0000763	0.49	0.626	-.0001125	.0001868
Firm_Size						
Medium	.0309188	.1303188	0.24	0.812	-.2245014	.2863391
Large	.1814553	.1160603	1.56	0.118	-.0460188	.4089294
Foreign_Own	-.2427353	.1153285	-2.10	0.035	-.468775	-.0166957
Man_Experience						
10 > years < 20	.0252075	.0977792	0.26	0.797	-.1664362	.2168513
> 20 years	-.145231	.1132277	-1.28	0.200	-.3671532	.0766912
Innovation	-.0439571	.0810984	-0.54	0.588	-.2029072	.1149929
Man_Gender	.0311672	.087088	0.36	0.720	-.1395222	.2018567
_cons	.3201782	.0986146	3.25	0.001	.1268971	.5134593
/mills						
lambda	2.7629	10.29777	0.27	0.788	-17.42035	22.94615
rho						
0.98293						
sigma						
2.8108762						

Appendix II: Results of First Stage 2SLS Regression

Source	SS	df	MS	Number of obs	=	555
				F(7, 547)	=	4.57
Model	4.09019325	7	.584313322	Prob > F	=	0.0001
Residual	69.9566536	547	.127891506	R-squared	=	0.0552
				Adj R-squared	=	0.0431
Total	74.0468468	554	.133658568	Root MSE	=	.35762

Man_Gender	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
Female_Employees	.0003243	.0001616	2.01	0.045	6.99e-06	.0006417
Age	.004894	.002403	2.04	0.042	.0001737	.0096143
Age_Squared	-.0000605	.0000296	-2.04	0.041	-.0001185	-2.36e-06
Firm_Size	-.0519264	.0211606	-2.45	0.014	-.0934925	-.0103604
Foreign_Own	-.044801	.0425343	-1.05	0.293	-.1283515	.0387496
Man_Experience	-.0767024	.0212232	-3.61	0.000	-.1183914	-.0350134
Innovation	.0670648	.0307256	2.18	0.029	.0067103	.1274193
_cons	.1571393	.0369565	4.25	0.000	.0845452	.2297333