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Women on corporate boards and corporate performance: Systematic literature review and global empirical evidence

by

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Thesis for the degree of Doctor of Philosophy

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ABSTRACT

This thesis seeks to improve existing knowledge of the determinants and role of women on corporate boards (WOCBs) around the world. This is done by conducting the following three separate, but closely related studies: (i) a major systematic review of the existing theoretical and empirical literature on the determinants and role of women on corporate boards; (ii) analysis of the factors that influence the presence of WOCBs; and (iii) an investigation of the effect that WOCBs have on environmental performance.

The first study provides a comprehensive systematic literature review (SLR) of the existing research on WOCBs and corporate outcomes. The sample includes 634 mixed, qualitative, quantitative and theoretical studies conducted in over 100 countries from more than 10 disciplines (e.g., accounting, business and economics) from 1981 to 2019 and published in 270 top-ranked journals. The study shows that a large number of existing studies are descriptive and/or they draw on single rather than multi-theoretical perspectives. This study also finds that existing studies have focused on firm-level rather than country-level antecedents of WOCBs and lacked qualitative, mixed-methods and cross-cultural/country studies. It also outlines opportunities for future WOCBs research.

The second study examines how national culture (NC) and national governance quality (NGQ) affects the appointment of women on corporate boards and the moderating role of NGQ on the relationship between NC and the presence of female directors based on institutional and social role theories. Using data relating to 647 companies located in 78 countries from 2010 to 2017, the findings of this study suggest that the impact of NC on the appointment of WOCBs depends on each national cultural dimension and the extent to which female directors are present on the board. Furthermore, it shows that NGQ has a strong positive influence on the appointment of WOCBs, and although NGQ has a moderating effect on the NC–WOCBs nexus, this relationship depends on each national cultural dimension and the extent to which women directors are present on the board.

Following similar analysis, and based on neo-institutional theory, the third study tests how women directors affect environmental performance (ENVIP) and moderate the trade-off between ENVIP and financial performance, as well as whether NGQ and NC can explain the differences in the relationship between WOCBs and ENVIP among countries. Using data relating to 2,179 companies located in 48 countries from 2010 to 2017, this study finds that WOCBs have significant and positive impact on ENVIP, but they do not affect the trade-off between ENVIP and financial performance. It shows that the level of the moderating role of NC and NGQ in the link between WOCBs and ENVIP depends on each national cultural dimension and the extent to which female directors are present on the board.

Keywords: Corporate Governance**,** Women on Corporate Boards, Systematic Literature Review, Corporate Outcomes, National Culture, National Governance Quality, Corporate Environmental Performance, Corporate Financial Performance

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- British Accounting and Financial Association BAFA 2018 workshop (18th workshop AFEE) (Sheffield University Management School, Sheffield, UK)
- British Accounting and Financial Association BAFA 2018 workshop (AFEE workshop on writing quantitative research papers) (Southampton Business School, the University of Southampton, UK)

- Doctoral Research Conference 2018, the University of Southampton.
- European Academy of Management EURAM 2018 Doctoral Colliquium (Reykjavik, Iceland)

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ABBREVIATIONS

AT	Agency theory	NC	National culture
CFP	Corporate financial performance	NGQ	National governance quality
CMT	Critical mass theory	NIT	Neo-institutional theory
CSR	Corporate social responsibility	PDI	Power distance index
ENVIP	Environmental performance	RDT	Resource dependence theory
GST	Gender socialisation theory	SLR	Systematic literature review
HCT	Human capital theory	SRT	Social role theory
INDI	Individualism versus collectivism	ST	Stakeholder theory
INDU	Indulgence versus restraint	UA	Uncertainty avoidance
LT	Legitimacy theory	UEP	Upper echelons theory
LTO	Long-term orientation versus short-term orientation	WOCBs	Women on corporate boards
MAS	Masculinity versus femininity		

1. Chapter 1: Introduction

1.1 Research background and research motivation

According to Gillan (2006), the board of directors plays an important role in corporate governance because they bring various benefits to firms. For example, outside directors can solve agency problems between shareholders and managers of a company because they make investors (shareholders) feel confident in their investment by controlling a company and monitoring managers (Agrawal and Knoeber, 1996). Indeed, according to Aebi, Sabato and Schmid (2012), banks can increase their performance if their chief risk officer directly reports to a board of directors. Therefore, the collapse of Lehman Brothers bank in 2008 raised serious questions over the bank's board. "Where was Lehman's Board?" (Thorton, 2008). A great number of bank investors asked why the board of directors could not support Lehman Brothers bank in avoiding bankruptcy. One suggested reason was a lack of board diversity.

Investors raised the question of how to define board diversity. Many studies share distinctive perspectives on a diverse board. Particularly, diverse boards include various gender (male and female) and positions of executives (insiders and outsiders) (Coffey and Wang, 1998). Furthermore, in accordance with the broad view, a diverse board includes divergent age, gender, nationality, employee representation on boards, and board positions of Chief Executive Officer (CEO) and Chair (Randøy, Thomsen and Oxelheim, 2006).

A number of studies confirm that board diversity brings many benefits to firms (Randøy *et al.*, 2006). For example, Carter, Simkins and Simpson (2003) showed evidence on the positive influence of board diversity on corporate financial performance. Likewise, women directors increase corporate environmental performance (Elmagrhi, Ntim, Elamer and Zhang, 2019). Although there are evidence on benefits of corporate board diversity, it is a fact that many firms do not have diverse boards. Hence, corporate board diversity becomes one of the most topical corporate governance issues. Indeed, corporate board gender diversity has understandably attracted considerable interest from academics, governments, policy-makers, practitioners and supra-national bodies. In particular, they raise the questions and find the answers for how and why companies should appoint women directors. Generally, women and men differ in traditional, cultural and social backgrounds (Liao, Luo and Tang, 2015). Hence, many people (e.g., policy-makers, researchers and practitioners) raised a serious question of how women directors may contribute to corporate performance in different ways in comparison with their male counterparts (Bøhren and Strøm, 2010; Gabaldon, De Anca, Mateos De Cabo and Gimeno, 2016). As a result, they show different perspectives on the presence of female directors. For example, policy-makers and governments try to achieve gender equality. Therefore,

they impose gender quotas to boost women's participation in boards (Ballington and Binda, 2006; Ford and Rohini, 2011). Norway was first to introduce gender board quotas in 2003. This legislation required that Norwegian firms had to include at least 40% of WOCBs by 2008. Taking their cue from the Norwegian government, many European countries (Netherlands, France) also imposed regulations for gender quotas. However, some researchers investigated why each country needs to apply gender quotas for board of directors and differing gender quotas among countries because they believe that gender equality is not the primary reason to appoint female board members.

In the literature, social role theory explains the difference in social behaviour between males and females in conjunction with various situations such as risk-taking or decision-making (Eagly and Wood, 2011). In particular, women usually take less risk than men (Harris and Jenkins, 2006). Hence, many studies (Carter *et al.*, 2003; Kulich, Trojanowski, Ryan, Alexander Haslam and Renneboog, 2011) have applied various theories (e.g., agency and resource dependence theories) to explain the benefits of board gender diversity. However, it seems that fewer studies (Carrasco, Francoeur, Labelle, Laffarga and Ruiz-Barbadillo, 2015; Chizema, Kamuriwo and Shinozawa, 2015) have proposed a relevant framework (e.g. institutional theory, social role theory) to explain the difference in appointment of WOCBs among firms and countries. Similarly, a number of previous studies (Alnabsha, Abdou, Ntim and Elamer, 2018; Elmagrhi *et al.*, 2019) have used several economic- (agency and resource dependence) and socio- based (legitimacy and stakeholder) perspectives to explain the impact of women directors on corporate environmental performance but fewer (Haque and Ntim, 2020) have applied a broad theory (e.g., neo- institutional theory (NIT)), which can combine both perspectives, to illustrate this link. To sum up, it is a fact that limited studies, which can use a broad framework, provide a good explanation for the difference in presence or absence of female directors as well as the relationship between women directors and corporate environmental performance among firms and countries.

Empirically, it seems that women today are in more positions of power than in the past. For instance, Deloitte (2017) reported that women hold up to 15% of board seats, an increase of 3% on their last report two years previously. Similarly, academic research on women directors has been published recently. For example, academic search engine, Google Scholar reveals 212,000 results for 'women directors' from 2010 to 2020[i]. I find it difficult to know the trends of previous studies on women directors. Hence, a systematic literature review (SLR) needs to be carried out to provide a broad overview of women directors. It seems that most of existing SLRs only review quantitative studies (Post, Rahman and McQuillen, 2015; Jeong and Harrison, 2017) as well as the influence of female directors on one measure of corporate outcomes like corporate financial performance (CFP), corporate social responsibility (CSR) (Byron and Post, 2016; Hoobler, Masterson, Nkomo and

Michel, 2018). Furthermore, with the exception of a few studies (Terjesen, Sealy and Singh, 2009; Kagzi and Guha, 2018; Pucheta-Martínez, Bel-Oms and Olcina-Sempere, 2018) these SLRs have failed to review the various theoretical perspectives employed by studies that have examined different aspects of WOCBs. Additionally, fewer existing SLRs (Terjesen *et al.*, 2009; Kirsch, 2018) cover a large set of previous studies conducted over a long period of time. Consequently, the current thesis will address all limitations of previous SLRs.

Many extant studies have applied various factors such as government policies, board characteristics, and firm characteristics among other to explain the difference in presence of female directors among countries and firms (Grosvold, Rayton and Brammer, 2016; Saeed, Yousaf and Belghitar, 2016). However, only limited studies (Grosvold and Brammer, 2011; Chizema *et al.*, 2015) have used country-level factors like culture to explain this difference. Likewise, previous studies show various findings of the relationship between women directors and corporate environmental performance (ENVIP) in different countries such as positive relationship (Barako and Brown, 2008), negative relationship (Cucari, Esposito De Falco and Orlando, 2018), or no relationship (Prado-Lorenzo and Garcia-Sanchez, 2010). The difference in findings among previous studies can be explained by two reasons. The first reason is that maybe previous studies apply different measure of women directors, environmental performance or data analysis techniques. The second reason is that the influence of women directors on corporate environmental performance is indirect and moderated by country-level factors. The current thesis uses national culture (NC) and national governance quality (NGQ) to address limitations of previous studies due to several reasons. First, both NC and NGQ are country-level factors, which may affect the appointment of WOCBs, and moderate WOCBs-ENVIP nexus. Second, it seems that most of corporate governance studies ignore national governance mechanisms and their moderating influence on corporate governance (Filatotchev, Jackson and Nakajima, 2013). Indeed, Nguyen, Locke and Reddy (2015) also suggested that corporate governance studies should include NGQ. To sum up, the current thesis will use a global empirical evidence to identify the complex relationships among national culture, national governance quality, appointment of women on corporate boards, corporate environmental performance, and corporate financial performance.

1.2 Research objectives

It is noted that many companies try to restructure their corporate governance. Specifically, they select and recruit members to ensure that they have diverse boards. From the international perspective, this raises an issue on the economic rewards for good corporate governance practices and board diversity

in particular – how and why a diverse board affects corporate outcomes. Furthermore, the current thesis needs to know how companies can achieve their goal of diverse boards.

In the literature, a diverse board comprises divergent age, gender, nationality, employee representation on boards, board positions of CEO and Chair (Coffey and Wang, 1998; Randøy *et al.*, 2006). Although, currently the world accepts the third gender, only limited studies and reports disclose information on third gender, which also make boards become corporate board gender diversity. Hence, following the literature, in this thesis, corporate board gender diversity only includes male and female members. The current thesis only focuses on women on corporate boards. Sometimes, this thesis uses board gender diversity to replace women on corporate boards because currently people think of women directors when thinking of corporate board gender diversity.

The current thesis aims to support policy-makers, practitioners and academic researchers to take a broad view and relevant decisions about women directors. For example, policy-makers may decide to impose gender quotas or not while researchers carry out studies on female directors to address research gaps. Hence, the overall objective of this thesis is to provide an up-to-date and comprehensive SLR of the existing studies on WOCBs and corporate outcomes (e.g., CSR, firm performance, compensation), and empirical evidence of the impact of country-level factors, such as NC and NGQ, on the appointment of WOCBs and the complex relationships among female directors, corporate environmental performance, corporate financial performance, NC, and NGQ around the world. In order to achieve the overall objective, the current thesis uses three distinctive studies to address different specific objectives. More specifically, the first study reviews existing literature on WOCBs to extend current understanding of both the theoretical perspectives and empirical evidence on the multi-level antecedents of women directors and their influence on a wide range of corporate outcomes. The second study investigates the impact of country-level factors (such as NC, NGQ) on the appointment of WOCBs. The third study identifies the complex association among women directors, corporate environmental performance, corporate financial performance, NC, and NGQ. Particularly, the third study tests the impact of female directors on corporate environmental performance as well as trade-off between corporate environmental performance and corporate financial performance. It examines the moderating role of NC and NGQ in the WOCBs-ENVIP nexus.

1.3 Research methodology

Saunders, Lewis and Thornhill (2016) posit that a research philosophy can be defined as a framework through which the researchers collect and analyse data to explain an observable phenomenon. Based on a variety of beliefs and assumptions, a researcher will choose relevant philosophy and research

design. The current thesis is divided into three distinctive studies, consisting of one reviewed study and two empirical ones.

Generally, it seems that content analysis is a well-known technique for reviewing literature or conducting a SLR (Wilding, Wagner, Seuring and Gold, 2012; Leung, Law, Van Hoof and Buhalis, 2013; Xu, Chen, Jia, Brown, Gong and Xu, 2018). Hence, the current thesis has employed this technique for the first study, which is a SLR on women directors.

Positivism refers to work with an observable social reality, which can produce law-like generalisation (Saunders *et al.*, 2016). Thus, positivist researchers focus on observing and measuring a fact. Generally, they gather and analyse data to explain and/or predict a phenomenon. A deductive approach is useful in examining a theory whereas an inductive approach is suitable for developing theory (Saunders *et al.*, 2016). The second and third studies of the current thesis are based on some theories (e.g., neo-institutional, institutional, and social role theories) to investigate the impact of country-level factors on the appointment of women directors and the contributions of female board members on environmental performance amongst several countries. Therefore, the combination of positivism and deductive approach is best suited to highlight the overall objective of this thesis.

The research strategy reflects the specific framework within which the researchers address their research questions (Saunders *et al.*, 2016). In addition, Saunders *et al.* (2016) also list different strategies such as experiment, survey, archival documentary research and ethnography. After comparing a variety of research strategies, the current thesis combines experimental, archival and documentary data sampling methods to use due to their advantages. Specifically, archival documentary research strategy may aid researchers in saving money and time in terms of gathering data because its sources can be easily accessed online (Saunders *et al.*, 2016). Additionally, an experiment strategy supports researchers in investigating the relationship between explanatory variables and a dependent variable (Saunders *et al.*, 2016). Therefore, the current thesis collects data from annual reports and various databases to investigate the influence of country-level factors, national culture, and national governance quality in particular, on the appointment of WOCBs, the effect of female directors on corporate environmental performance and the ENVIP-CFP nexus, as well as the moderating role of national culture and national governance quality in the WOCBs-ENVIP nexus.

1.4 Conducted studies

This section reports a summary of the research objectives, research questions, data sample, the predicted findings and the expected contributions of each study.

1.4.1 First study

This study seeks to provide a broad overview of existing literature on WOCBs around the world. Specifically, it investigates how previous studies have applied theories to explain factors affecting the presence of female directors and the impact of women directors on corporate outcomes. In addition, it reviews which multi-level factors influence the appointment of women board members and how female board representation affects various corporate outcomes such as corporate social responsibility, firm performance, and compensation. Therefore, the first study endeavours to answer three criteria as follow:

- Which theories can explain factors affecting the appointment of women directors and the influence of female directors on corporate outcomes? How can these theories explain these factors?
- Which factors affect the appointment of women as board members?
- How do female directors affect corporate outcomes such as compensation, corporate social responsibility, and firm performance?

Data sample: The current study used various keywords and phrases, which link to WOCBs, to search for and gather the studies from different databases such as '*Business Source Premier*', '*Scopus*', '*Google Scholar'*, '*Web of Science'* and '*Emerald*'. This study also compared the samples of studies included in previous literature reviews on this subject (e.g., Terjesen *et al.*, 2009; Khlif and Achek, 2017; Kirsch, 2018) with the preliminary sample of studies to ensure that no key studies on the subject were overlooked. After reading full texts and excluding irrelevant studies, the final sample includes 634 mixed, qualitative, quantitative and theoretical studies conducted in over 100 countries from more than 10 disciplines (e.g., accounting, business, economics, ethics, finance, gender, governance and management) from 1981 to 2019 and published in 270 top-ranked journals.

Predicted findings: This study highlights what the past studies have done in terms of gathering knowledge of WOCBs. Most importantly, the results of this study are expected to support a gap in the past studies, providing suggestions and impetus for future research as well as for my second and third studies.

Contributions: The first study provides evidence of the research gap on WOCBs. Specifically, it highlights what the researchers have not attempted for theories, type of research, cross-cultural research, factors affecting the presence of female directors and the impact of women board members on corporate outcomes such as compensation, corporate social responsibility and firm performance. Therefore, future research can bridge these gaps in literature.

1.4.2 Second study

The primary research criterion of the second study is to find country-level factors affecting the appointment of women directors. Specifically, it tests the influence of national culture and national governance quality on the presence of female board members. Importantly, it also measures the moderating role of national governance quality in the NC-WOCBs nexus. Hence, this study has to answer two secondary questions, as follow:

- Can national culture or national governance quality influence the appointment of women on corporate boards?
- Does national governance quality moderate the relationship between national culture and the appointment of women on corporate boards?

Data sample: This study is a combination of manual and electronic data collection. Specifically, corporate governance information has been gathered from annual reports including corporate governance as much as possible**.** National cultural dimensions proposed by Hofstede have been collected from the website – https://www.hofstede-insights.com/product/compare-countries/. In addition, country's indicators such as inflation, national governance quality, and others have been gathered from the World Bank. Finally, due to the difference in corporate governance disclosure among countries, this study has an unbalanced sample. Hence, the final sample includes 647 companies located in 78 countries from 2010 to 2017.

Predicted findings: This study is expected to show empirical evidence of the impact of national cultural dimensions and national governance quality on the presence of female board members. Furthermore, the study is expected to find that quality of national governance does indeed moderate the influence of national cultural dimensions on the appointment of female directors.

Contributions: The theoretical contribution of this study is the use of social role and institutional theories to explain the presence or absence of female directors. This study focuses on using data to test the above-mentioned two theories. As a result, the findings from this study are likely to provide further statistical evidence to support these theories.

The methodological contribution in the quest to build knowledge is the use of a unique sample, which combines available worldwide datasets with manual data collection in both developing and developed countries. Furthermore, this study also addresses the problem of endogeneity.

Empirically, the results of the second study bridge the gap in the literature concerning the country-level factors affecting the emergence of women as board members. Most importantly, the findings impose NC, which are measured by Hofstede, as well as NGQ, which is measured by the World Bank, to explain the presence or the absence of female board members around the world. Additionally, the results can explain the relationship between NC and presence of female directors

under the moderation of NGQ. Consequently, the governments can find the most effective ways to boost board gender diversity.

1.4.3 Third study

The third study identifies the complex relationships among female directors, environmental performance, firm performance, national culture, and national governance quality. More specifically, it examines how women directors affect environmental performance as well as the trade-off between corporate environmental and financial performance. In addition, it investigates the moderating role of national culture and national governance quality in the link between female directors and corporate environmental performance. Therefore, this study has to address specific sub questions, which are as follows:

- Do female directors affect corporate environmental disclosure?
- Do women directors influence the trade-off between environmental disclosure and firm performance?
- Does national culture or national governance quality moderate the relationship between women board members and corporate environmental performance?

Data sample: National cultural dimensions proposed by Hofstede have been collected from the website – https://www.hofstede-insights.com/product/compare-countries/. In addition, country's indicators such as inflation, national governance quality, and among other have been gathered from the World Bank. Corporate governance, financial and environmental information have been collected from DataStream. Finally, due to the difference in environmental disclosure among countries, this study has unbalanced sample. Hence, finally, the sample includes 2,179 companies located in 48 countries from 2010 to 2017.

Predicted findings: This study is expected to show empirical evidence of the impact of women directors on corporate environmental performance as well as the trade-off between corporate environmental and financial performance. Furthermore, the study is expected to find that both national culture and national governance quality do indeed moderate the influence of female directors on corporate environmental performance.

Contributions: The theoretical contribution of this study is the use of a broad theory – neo-institutional theory in particular – to explain the corporate environmental performance. This study focuses on using data to test the above mentioned theory. As a result, the findings from this study are likely to provide further statistical evidence to support the mentioned theory.

The methodological contribution in the quest to build knowledge is the use of a unique sample, which combines available worldwide datasets in both developing and developed countries. Furthermore, this study also addresses the problem of endogeneity.

Empirically, the findings of the third study bridge the gap in the literature concerning the role of women board members in disclosing corporate environmental information. Furthermore, the results may support the role of female directors in trade-off between corporate environmental performance and corporate financial performance. Most importantly, the findings impose national culture dimensions which are measured by Hofstede, as well as quality of national governance, which is measured by the World Bank to moderate the influence of female board members on corporate environmental performance around the world. Consequently, the governments can find the effective ways to increase corporate environmental performance.

1.5 Thesis structure

The overall structure of this thesis has been divided into five chapters. This part provides an overview of the content of each chapter.

Chapter 1 has presented the introductory background and an overview of the topic of the current thesis. This chapter has also explained the research background in order to broaden useful knowledge for the readers, who refer to this thesis. It has explained the purpose and rationale of the current thesis and has presented the research questions and the main objectives of this research. It also describes the research methodology employed as well as the thesis structure.

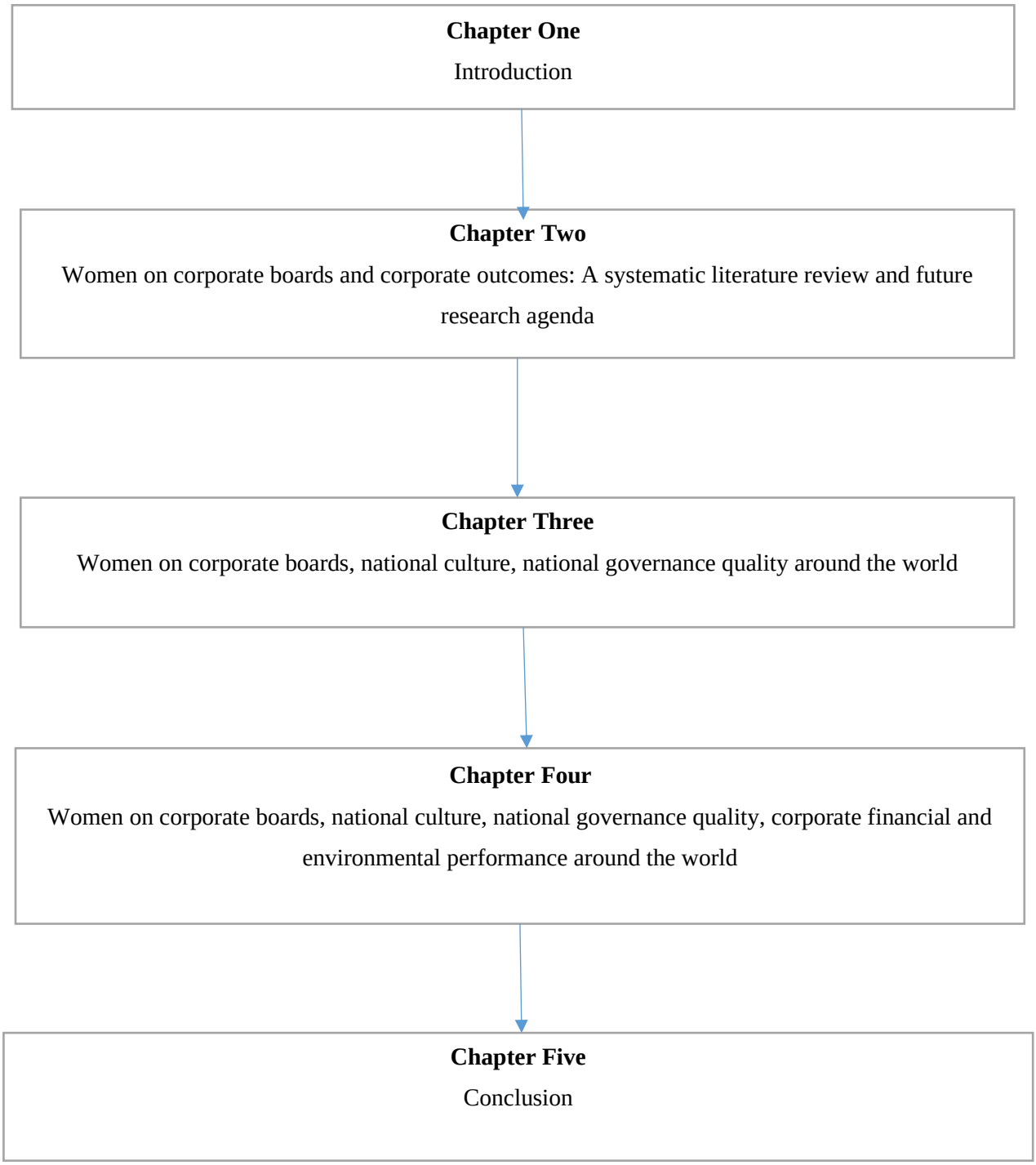
Chapter 2 is a systematic literature review study. This chapter reviews both theoretical and empirical perspectives on the trends of studies on women on corporate boards in terms of the antecedent of women directors as well as the influence of female directors on corporate outcomes. This chapter also provides suggestions for filling the knowledge gap among previous studies on female directors.

Chapter 3 is the first empirical study. This chapter provides evidence on how national culture and national governance quality affect the appointment of women directors. Importantly, it investigates the moderating role of national governance quality in the impact of national culture on the presence of female directors.

Chapter 4 is the second empirical study. This chapter identifies the impact of women directors on environmental performance as well as the moderating role of female directors in the trade-off between corporate environmental performance and corporate financial performance. Furthermore, it also examines how national culture and national governance quality moderate the link between women board members and corporate environmental performance.

Chapter 5 presents the final conclusion of the thesis. It addresses the possible thesis implications, thesis contributions and thesis limitations, and makes suggestions for future research.

Figure 1.1 Thesis structure



2. Chapter 2: Women on corporate boards and corporate outcomes: A systematic literature review and future research agenda

Abstract

This study provides an up-to-date and comprehensive systematic literature review (SLR) of the existing research on women on corporate boards (WOCBs) and corporate outcomes. The aim is to synthesise and extend current understanding of both the existing (i) theoretical (i.e. economic, psychological and social) perspectives and (Koenig, Eagly, Mitchell and Ristikari) empirical evidence on the (a) multi-level (i.e., individual-, social-, firm- and country-levels) antecedents of WOCBs and (b) the effects that WOCBs have on a wide range of corporate outcomes. The current study achieves this by adopting a three-step SLR approach to analyse/review one of the largest SLR datasets to be employed to date, consisting of 634 mixed, qualitative, quantitative and theoretical studies conducted in over 100 countries from more than 10 disciplines (e.g., accounting, business and economics) from 1981 to 2019 and published in 270 top-ranked journals. The findings of this study are as follows. First, a large number of existing studies are descriptive and/or they draw on single rather than multi-theoretical perspectives. Second, existing studies have focused on firm-level rather than country-level antecedents of WOCBs. Third, observable methodological limitations include the dearth of qualitative, mixed-methods and cross-cultural/country studies. Finally, this study outlines opportunities for future WOCBs research.

Keywords: Corporate Governance**,** Women on Corporate Boards, Systematic Literature Review, Corporate Outcomes

JEL Classification : G3, G30, G34, G38, J16

2.1 Introduction

2.1.1 Research background and motivation

Corporate board diversity in general, but corporate board gender diversity (e.g., the appointment of women on corporate boards) in particular, is one of the most topical corporate governance issues, which has understandably attracted considerable interest from academics, governments, policy-makers, practitioners and supra-national bodies (Bøhren and Staubo, 2016; Gabaldon *et al.*, 2016). One reason for the increased interest in WOCBs is that historically women have been, and continue to be, under-represented in senior corporate leadership roles, such as board of directors and executives (e.g., CEOs) (Adams, 2016). However, extensive insights from different agency, behavioural, economic, governance, psychological and social-based theories (e.g., Adams and Ferreira, 2009; Kirsch, 2018) suggest that boardroom homogeneity can lead to sub-optimal decision-making, which can impact negatively on corporate governance and performance. In fact, past global financial crises (e.g., 2007/2008) have often partly been attributed to poor corporate governance practices, arising from lack of diversity, independence and transparency in corporate boardrooms (e.g., Post and Byron, 2015; Jeong and Harrison, 2017). Consequently, worldwide, the past three decades have witnessed a considerable amount of mandatory (e.g., 40% women board membership quota in Norway) and voluntary (e.g., 25% women board membership target in the UK) positive reforms that seek to improve the level of representation of WOCBs (e.g., Hoobler, Masterson, Nkomo and Michel, 2018).

The early evidence from these affirmative reforms indicates that the appointment of female directors has steadily increased, particularly in countries that have introduced mandatory gender-based board membership quotas (Lee, Marshall, Rallis and Moscardi, 2015; Deloitte, 2017). For example, using data of 7000 companies in 44 countries, Deloitte (2017) showed that women hold up to 15% of board seats, an increase of 3% on their last report two years previously. Despite the observable improvement in the percentage of WOCBs, only 4% of important positions, such as CEO or board chair, for instance, are held by females (Deloitte, 2017). There are, however, a number of important questions that need to be addressed. For example and first, what is the effect of WOCBs on corporate decision-making and therefore, corporate outcomes? Second, are there any theoretical reasons that may explain the need to appoint WOCBs? This is important because if women are going to be appointed to corporate boards on a long-term sustainable basis, then, arguably there ought to be an overarching rationale or theoretical reason (e.g., economic, ethical, governance and social) for doing so. Third and finally, what set of individual-, social-, firm- and country-level factors may either

facilitate or impede the extent to which women are appointed to corporate boards around the world? Notably and whilst a steady stream of past studies has examined the antecedents and effects of WOCBs by employing a variety of theoretical perspectives, studies that have sought to provide comprehensive understanding by providing a systematic synthesis of this literature are rare (Terjesen *et al.*, 2009; Khlif and Achek, 2017; Kirsch, 2018).

2.1.2 Research objectives

The key objective of this study, therefore, is to contribute to the extant literature by addressing the above questions via an up-to-date and comprehensive systematic literature review (SLR) of the existing research on WOCBs and corporate outcomes. The aim is to synthesise and extend current understanding of both the existing (i) theoretical (i.e. economic, psychological and social) perspectives and (ii) empirical evidence on the (a) multi-level (i.e. individual-, social-, firm- and country-level) antecedents of WOCBs, and (b) the effects that WOCBs have on a wide range of corporate outcomes, such as corporate social responsibility (CSR), executive compensation and a diverse set of firm performance measures (e.g., earnings management, dividend policy and firm value). Specifically, the current study does this by addressing three central objectives. First, this study undertakes a cohesive review of the empirical archival literature relating to the antecedents of WOCBs, as well as the effects of WOCBs on corporate outcomes. Second, it analyses the theoretical, empirical and methodological strengths and weaknesses of previous studies. Finally, based on the first and second objectives above, this study identifies gaps within previous studies, and sets out an agenda for future WOCBs research.

2.1.3 The significance of this study

The significance of this review study is twofold: *First*, the percentage of WOCBs has significantly increased in recent years; so have the WOCBs-related studies. However, to the best of my knowledge, no review study has included such a broad theoretical and empirical review of recent studies on WOCBs as the current paper does. Hence, this study is timely in contributing to this knowledge gap. *Second*, the current review contributes to the existing knowledge on antecedents and impact of WOCBs by broadly mapping out *what* I know (empirical evidence) and *how* I know (theoretical and methodological approach) on the subject. Specifically, by combining the review of what and how I know about both the antecedents and the impact of WOCBs, this study achieves a broader picture or understanding of the enablers of and inhibitors to the emergence of WOCBs and their impact on corporate outcomes.

2.1.4 The structure of this study

The rest of this study is organised as follows: Section 2 reviews existing systematic literature on women on corporate boards and introduces the contributions of the current study. Section 3 describes the methodology adopted in the review process; Section 4 presents the review findings; Section 5 discusses the limitations of past studies and presents suggestions for future research; and Section 6 concludes.

2.2 Limitations of existing systematic literature reviews on women on corporate boards and the contributions of the current study

2.2.1 Existing systematic literature reviews on women on corporate boards

Although past studies examining the various aspects of WOCBs are generally limited, a few notable ones do exist (Adams and Ferreira, 2009; Adams, 2016; Gabaldon *et al.*, 2016). Of these, a small set has conducted SLRs (De Vita, Mari and Poggesi, 2014; Byron and Post, 2016; Hoobler *et al.*, 2018). For example, Terjesen *et al.* (2009) undertook an early review of studies that investigate how WOCBs affect corporate performance. In particular, they reviewed 400 publications in terms of theoretical perspectives, characteristics and the influence of WOCBs at the micro-, meso-, and macro-levels, and thereby provided an overview of WOCBs research until 2009. The findings indicated that WOCBs contributed to effective corporate governance through better use of their capital (e.g., individual interactions) and creating more inclusive and equitable business organisations, which can satisfy the needs of stakeholders (Terjesen *et al.*, 2009). In addition, De Vita *et al.* (2014) employed an in-depth analysis of 70 studies published from January 2000 to January 2012, and identified the main characteristics of women directors in developing countries, such as greater self-confidence. Furthermore, Gabaldon *et al.* (2016) examined the various factors that have influenced the emergence of women as board members through a supply and demand perspective of WOCBs. However, although they reviewed 32 relevant studies, they could not find the exact types of instrument that can remove the barriers that prevent women from becoming a member of the board of directors. Other studies have carried out meta-analysis research on the influence of WOCBs on corporate financial performance (CFP) (Post and Byron, 2015; Jeong and Harrison, 2017; Hoobler *et al.*, 2018). Specifically, using the findings from 140 empirical research studies from January 1989 to May 2014, Post and Byron (2015) found that women directors had no impact on market performance of firms covered by that period. By contrast, their findings showed that female directors had a strong positive influence on accounting measures of CFP, but only in countries with higher shareholder protection. Hoobler *et al.* (2018) conducted similar meta-analysis

research to that of Post and Byron (2015) using a sample of 78 studies, including 117,639 firms. They largely came to the same conclusion that female directors tend to have a positive effect on accounting-based performance measures (e.g., sales revenue, CFP, ROE, ROI, and ROC) and market-based performance (e.g., stock performance, market capitalisation, and Tobin's Q). In contrast to past meta-analysis studies (e.g., Post and Byron, 2015; Hoobler *et al.*, 2018), Jeong and Harrison (2017) used a sample of 146 primary studies from 33 countries between 1983 and 2014 and employed a meta-analysis approach to compare the impact of WOCBs on CFP within short- and long-term timeframes. Their findings indicated that female directors have a weak and positive influence on long-term financial performance (e.g., CFP, ROE, ROS, Tobin's Q, market-to-book ratio, and total shareholder returns), but a weak and negative impact on short-term stock-market performance (e.g., stock price, and cumulative abnormal returns).

Another set of SLR studies (e.g., Rao and Tilt, 2016a; Khlif and Achek, 2017; Pucheta-Martínez *et al.*, 2018) investigated the effects of WOCBs on not just CFP or firm value (FV), but other corporate outcomes, such as audit quality, CSR, and disclosure and earnings management/financial reporting quality, among others. For example, Byron and Post (2016) used a sample of 84 studies with 26,710 firms to show that the positive impact of women directors on CSR measured by CSR ratings, workforce diversity, environmental responsibility, philanthropy, and codes of ethics is higher in countries with stronger gender parity and shareholder protection. Notably, Rao and Tilt (2016a) concluded that they found a lack of studies investigating the relationship between WOCBs and CSR, although their sample was not clearly presented. They suggested that future researchers consider using qualitative methods. In addition, Khlif and Achek (2017) reviewed 64 published studies on gender in accounting research and their findings showed that WOCBs lead to more conservative financial reporting, higher levels of disclosure, higher audit fees, and less tax aggressiveness.

Finally, a few SLR studies on WOCBs were published in 2017 and 2018. For instance, Yang, Khoo-Lattimore and Arcodia (2017) reviewed 86 published studies to identify research gaps in the existing tourism literature on gender and risk. Their findings showed that existing tourism literature lacked investigation of gender and risk. Similarly, Kagzi and Guha (2018) synthesised the diverse literature on board demographic diversity, including gender from a large number of theoretical and empirical studies published in top management journals between 1989 and 2015. They summarised WOCBs studies based on three perspectives — business case perspective, ethical and moral perspective, and theoretical perspective. According to the business case and theoretical perspectives, women directors affect corporate outcomes differently while the ethical and moral perspective supports the presence of female board members (Kagzi and Guha, 2018). The weakness of Kagzi and Guha (2018) study

is that it fails to review some important theories (e.g., agency theory and human capital theory) and corporate outcomes (e.g., dividends and compensation). Meanwhile, Pucheta-Martínez *et al.* (2018) carried out the most up-to date literature review on influence of female board representation on financial reporting quality, CFP and CSR using a number of studies published from 1975 to 2017. Based on only agency and stakeholder theories, they found the advantages of WOCBs in terms of making financial or non-financial decisions (e.g., reducing agency costs). Pucheta-Martínez *et al.* (2018) also concluded that mandatory gender quotas in firms might have a negative or positive influence on corporate outcomes because of the moderating role of some external factors, such as corporate governance structure, financial scandals, financial crisis, and state intervention, among others. One of the broadest reviews was conducted by Kirsch (2018); the author reviewed 310 studies published before January 2017 to investigate both the antecedents of WOCBs and the effect of WOCBs on corporate outcomes. The findings indicated that macro-level (e.g., institutions and actors), meso-level (e.g., boards, firms and industries), and micro-level (e.g., appointment processes) factors have different impacts on the presence of WOCBs. Furthermore, Kirsch (2018) reported that WOCBs can adjust board behaviour and dynamics, which can influence corporate outcomes, but the effect is not strong. At the time of writing, Reddy and Jadhav (2019) review is the most recent. They review (i) the impact of external factors (e.g., firm and board size) on the presence of WOCBs, (ii) the relationship between WOCBs and CFP, and (iii) the influence of gender quota legislation on CFP.

2.2.2 Limitations of previous systematic literature reviews on women directors

Observably, the SLR studies discussed in the preceding paragraphs appear to suffer from a number of weaknesses. First, most of these SLR works reviewed studies that have examined the impact of women directors on only one measure of corporate outcome, such as CFP (Post and Byron, 2015; Jeong and Harrison, 2017), CSR (Byron and Post, 2016; Rao and Tilt, 2016a), or risk in tourism (Yang *et al.*, 2017). Arguably, this limits the degree of insights that they can offer in terms of multiplicity of corporate outcomes that WOCBs can impact on. Second, and with few exceptions (e.g., Terjesen *et al.*, 2009; Kagzi and Guha, 2018; Pucheta-Martínez *et al.*, 2018), the existing SLR literature has failed to review the various theoretical perspectives employed by studies that have examined different aspects of WOCBs. Similarly, existing SLRs have mostly reviewed quantitative-oriented studies to the neglect of their mixed and qualitative counterparts. These limitations also impair theoretical and methodological development, thereby preventing existing SLRs from providing complete insights into the antecedents and effects of WOCBs. Finally, with the exception

of Terjesen *et al.* (2009) and Kirsch (2018), the existing SLR studies often cover a small set of past studies conducted in a single discipline over a relatively short period of time.

2.2.3 The contributions of the current study

The current SLR, therefore, seeks to extend as well as make a number of new contributions to the extant literature by addressing the limitations of past SLRs on WOCBs in several ways. First and distinct from previous SLRs that tend to focus mostly on empirical studies, this review covers both extensive empirical and theoretical studies on WOCBs. Specifically, the current review contributes to the existing knowledge on antecedents and impact of WOCBs by broadly mapping out *why* (theories), *how* (methodological approaches) and *what* (empirical evidence) I know on the subject. In this case, I conduct an in-depth analysis of a wide range of theories (agency, behavioural, economic, ethical, governance, psychological and social) and methodologies (mixed, qualitative and quantitative methods) that have been used to explain the antecedents of WOCBs and their influence on corporate outcomes. Hence, by combining the review of *why*, *how* and *what* I know about both the antecedents and the impact of WOCBs, the current SLR arguably offers a broader understanding of the enablers and inhibitors of the emergence of WOCBs and their impact on corporate outcomes.

Second, this SLR departs from past reviews that focus on single corporate outcomes by presenting a significantly broad overview of a large number of factors affecting the appointment of WOCBs at multiple levels (i.e. individual-, social-, firm- and country-levels), as well as their influence on a wide range of corporate outcomes, such as compensation, earnings management, CSR, and CFP measures. Third, and unlike most of the existing SLRs that mainly focus on quantitatively executed studies, this SLR covers all types of studies conducted from different methodological angles, including mixed, qualitative and quantitative ones. Thus, by adopting an eclectic methodological approach to the review, the current SLR has the unique opportunity of encouraging methodology pluralism and, by extension, development. Finally and to the best of my knowledge, this SLR covers one of the largest SLR datasets to be employed in any WOCBs review, consisting of 634 mixed, qualitative, quantitative and theoretical studies conducted in over 100 countries from more than 10 disciplines (e.g., accounting, business, gender and governance) from 1981 to 2019 and published in 270 top-rated journals. Thus, by adopting a multi-disciplinary, multi-theory and multi-methodological approach, this SLR will be of significant interest and appeal to a large group of stakeholders from different backgrounds, such as academics, students, policy-makers and practitioners.

2.3 Methodology

Following the SLR steps outlined in Tranfield, Denyer and Smart (2003) and adopted by several authors of SLRs, such as Christoffersen (2013) and López-Duarte, Vidal-Suárez and González-Díaz (2016), this study carried out a three-step approach in sampling, reviewing, and analysing the studies.

The first step was to ascertain the various sources/databases from which the current study identified and sampled the studies on WOCBs. The main criteria were the source's/database's reputation in terms of size (i.e. coverage of various social sciences research and global reach of publications) and publication quality (e.g., peer-reviewed studies). Consequently, the current study used '*Business Source Premier*', '*Scopus*', '*Google Scholar'*, '*Web of Science'* and '*Emerald*' to search and sample the studies to be reviewed. Apart from their extensive coverage and publication quality, the author's institution also had access to these specific databases, thereby removing any access barriers.

The second step involved using various keywords and phrases to search for and gather the studies for inclusion in the review. The keywords/phrases included "women", "female", "gender", "board characteristic*", "board composition", "board gender diversity", "board of director*", "board structure", "corporate governance", "female director*", "female manager*", "women entrepreneur*", "women leader*", "women on board*", "self-employed women", and "women in top management team*". I also compared the samples of studies included in previous literature reviews on this subject (e.g., Terjesen *et al.*, 2009; Khlif and Achek, 2017; Kirsch, 2018) with the preliminary sample of studies to ensure that no key studies on the subject were overlooked. From the studies identified through the keywords/phrases search and comparison with previous studies, this study focused on those that have examined the antecedents of WOCBs and their effects on corporate outcomes, such as compensation, corporate social responsibility, and firm performance.

Therefore, this study excluded studies that investigated other themes, such as the influence of WOCBs on board decisions (e.g., Mathisen, Ogaard and Marnburg, 2013; Palvia, Vähämaa and Vähämaa, 2015) and board networks (e.g., Bellucci, Borisov and Zazzaro, 2010), among others. Similarly, it also excluded studies which used gender as a moderator variable (e.g., Jia and Zhang, 2011; D. Kolev, Hughes-Morgan and Rehbein, 2019), a control variable (e.g., Elnahas and Kim, 2017; Markóczy, Sun and Zhu, 2019), and as part of the main variables (e.g., Ararat, Aksu and Tansel Cetin, 2015). Likewise, it also excluded studies publishing in journal with low impact factor (less than 0.5) (except SSRN). In other words, this study reviewed studies which have published in top-ranked journals. Applying these criteria resulted in the final sample, consisting of 634 mixed, qualitative, quantitative and theoretical studies conducted in over 100 countries from more than 10

disciplines (e.g., accounting, business, economics, ethics, finance, gender, governance and management) from 1981 to 2019 and published in 270 top-ranked journals. Table 2.1 outlines the number of studies screened and excluded before arriving at the final sample. Additionally, Figure 2.1 and Table 2.2 show the number of studies included in this SLR by year of publication and by discipline, respectively.

The third step was the analysis of the sampled studies which were fully read/reviewed, analysed, coded, and categorised by myself. For each individual study, the following information was analysed: (a) the descriptive information (i.e. year of publication, the main discipline in which the study investigates WOCBs, and geographical scope of the studies); (b) the type of research approach used by the study (i.e. qualitative, quantitative, or mixed approach) and whether the study is a single-country or a cross-country study; and (c) the theoretical and empirical arguments for/against WOCBs and the effects WOCBs have on various corporate outcomes (i.e. compensation, CSR, and firm performance).

Table 2.1: Overview of sample of studies election process

Studies inclusion/exclusion stage	**Total**	**Number of studies**
Total number of studies found in the initial search	50,300	
Studies after removing duplicates	15,911	
Studies excluded after reading titles: − *Books* − *Dissertations and Theses* − *Non-English research (French, Portuguese, Russian and Spanish, etc.)* − *Non-corporate governance research*	14,992	 327 875 523 13,267
Studies whose abstracts needed to be read	919	
Studies excluded after reading abstract	131	
Studies whose full text needed to be read	788	
Studies excluded for the following reasons: − *Working papers and non-peer reviewed studies* − *Reviewed studies* − *Full texts were not available* − *Gender is not a main variable* − *Corporate outcomes differ from this review*	154	 24 13 39 27 51
Total sample of studies included in this review	**634**	

Figure 2.1: Number of studies by year of publication

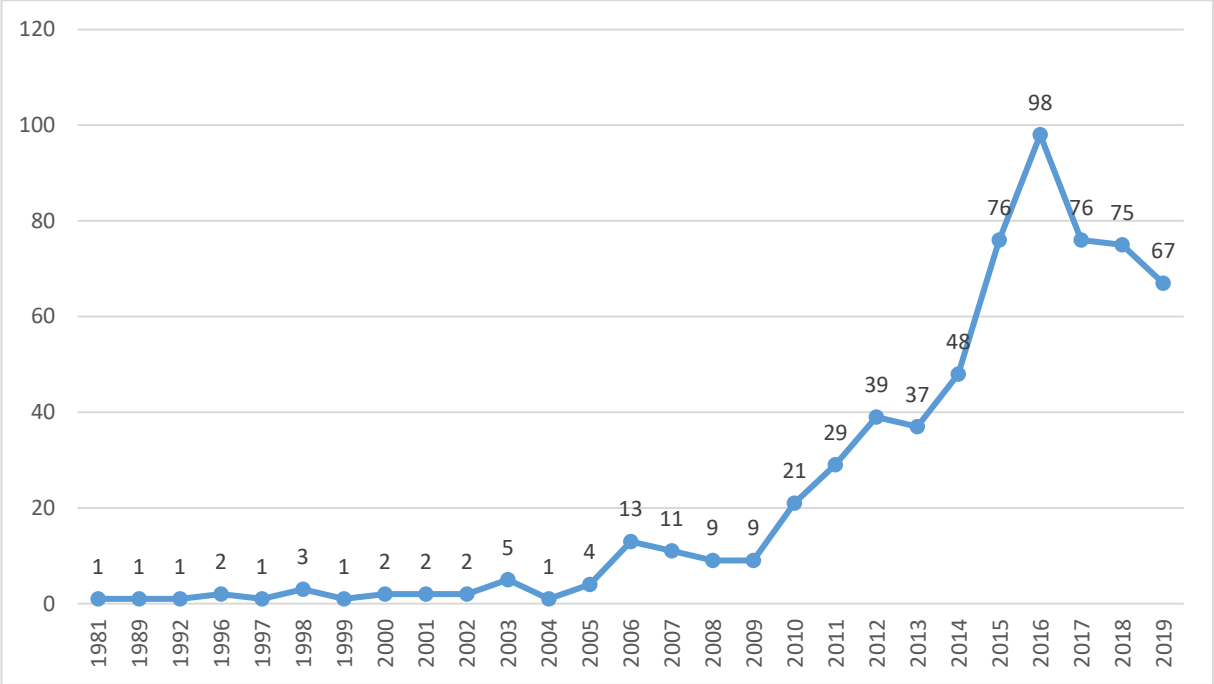
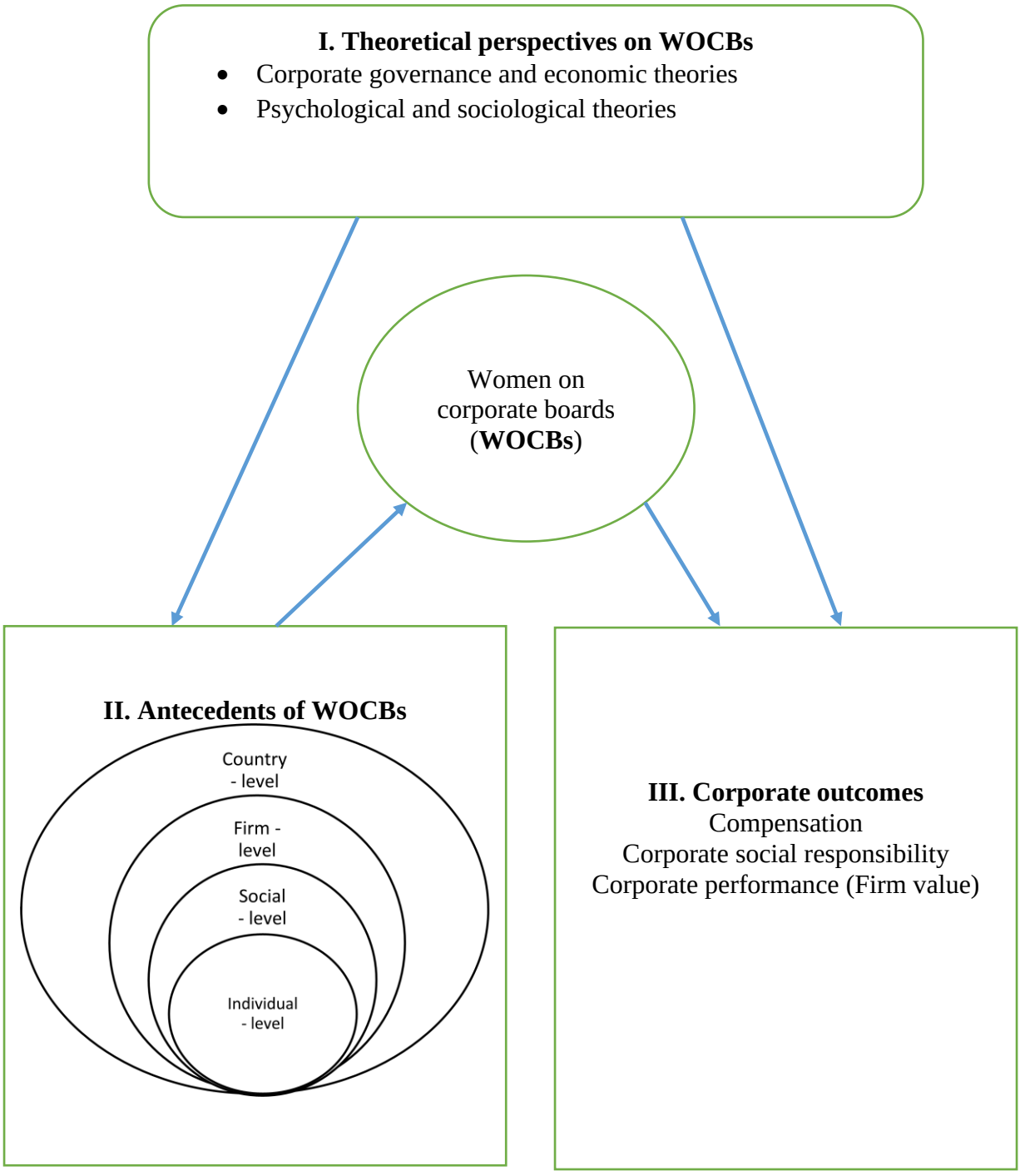


Table 2.2: Number of studies by discipline

Discipline	Number of studies
Business, business ethics and CSR	130
Accounting, auditing and finance	127
Leadership and management	124
Others	70
Corporate governance	69
Economics	69
Gender	25
Administrative, sociology, and other social sciences	20
Total	**634**

The current study developed a three-point thematic analytic framework to guide the thematic analysis of the sampled studies and gain a good understanding of the theoretical and empirical arguments for/against WOCBs and the effects WOCBs have on various corporate outcomes. Figure 2.2 presents this framework.

Figure 2.2: Framework for understanding women on corporate boards



(i) *Theoretical perspectives on WOCBs*: Part I of this framework focuses on how studies adopt or adapt various theories to explain the appointment of female directors and the influence of WOCBs on corporate outcomes. The current study categorises these theories into country- and firm-level perspectives and social- and individual-level perspectives. In particular, economic and corporate governance theories show country- and firm-level perspectives. Furthermore, sociological and psychological theories primarily explain the differences between male and female behaviour, and the influence that these differences have on whether a female person is appointed as a director or not. Thus, these theories explain the social- and individual-level perspectives of WOCBs and the influence of WOCBs on corporate outcomes.

(i) *Antecedents of WOCBs*: Part II of the framework focuses on the antecedents of WOCBs. Based on institutional theory, Kirsch (2018) reviewed the micro-, meso- and macro-level factors affecting the representation of females on corporate boards. This study extends the antecedents of WOCBs into four levels; namely, country-, firm-, social-, and individual-levels.

(ii) *Effects of WOCBs on corporate outcomes*: Part III of this framework reviews and analyses the sampled studies to gain an understanding of the current empirical evidence on the influence of WOCBs on corporate outcomes, such as compensation, CSR, and firm performance.

2.4 Systematic literature review findings

2.4.1 Characteristics of reviewed studies

First, and as Figure 2.1 shows, the SLR results suggest that overall, there has been a significant increase in studies that address different types of issues relating to WOCBs published between 2010 and 2019, compared to those published between 1981 and 2009. Interestingly, the number of published studies on WOCBs increased rapidly after the 2007/2008 financial crisis. This perhaps reflects the general rising interest among researchers investigating the potential role of WOCBs in improving corporate governance mechanisms. Indeed, it was perceived that poor governance and independence practices arising out of lack of gender diversity in corporate boardrooms was partly the cause of the 2007/2008 global financial crisis. For example – and as will be discussed further – women are known to have better soft (i.e. benevolent, caring, ethical, friendly and trustworthy) and hard skills (i.e. conservative, independent, objective and risk-averse) than men, which can arguably help them to make better decisions compared to men in corporate boardrooms (Adams and

Kirchmaier, 2016; Zalata, Ntim, Aboud and Gyapong, 2019). Second, and as Table 2.2 shows, the distribution of the sampled studies by discipline indicates that most studies were published in three main disciplines: (i) *business, business ethics and CSR* (130 studies), (ii) *accounting, auditing, and finance* (127 studies), and (iii) *leadership and management* (124 studies), followed closely by (iv) *corporate governance* (69 studies) and (v) *economics* (69 studies) disciplines.

Third, and as Table 2.3 shows, about half (50%, 328/634) of the reviewed studies focus on or include the investigation of the impact of WOCBs on firm performance. In addition, more than one fifth of studies (139) investigate the antecedents of WOCBs. Similarly, 137 studies examine the relationship between BGD and CSR. Given the rise in interest in gender equality, and particularly the gender pay gap, it is surprising that relatively few studies (62/634, only about 10%) are concerned with the influence of WOCBs on executive compensation.

Table 2.3 Number of studies by themes

	Antecedents of WOCBs	**WOCBs and compensation**	**WOCBs and CSR**	**WOCBs and firm performance**
Antecedents of WOCBs	119	3	1	16
WOCBs and compensation	3	52	0	7
WOCBs and CSR	1	0	131	5
WOCBs and FP/FV	16	7	5	300
Total	**139**	**62**	**137**	**328**

Fourth, Table 2.4 shows that a greater number of studies employ data from a single country (539, about 85%). Further, most of the studies are conducted in developed countries, such as the US (172 studies), the UK (42 studies), Spain (33 studies) and Australia (32 studies), along with the big developing countries like China (41 studies), Malaysia (20 studies), and India (13 studies) to the neglect of the larger number of smaller developing countries. This reveals a number of observable issues. For instance, these results indicate that cross-culture studies on WOCBs in terms of both quantity (95/634 studies, about 15% only) and quality are lacking, as reflected in the review/analysis of the 95 studies. In terms of quality, for example, the few cross-country studies reviewed do not have a representative sample (see Grosvold *et al.*, 2016).

Table 2.4 Number of studies by geographical scope

Country	Total	No of studies	Country	Total	No of studies
Single country studies	**539**				
Developed countries	***386***				
Asia and Pacific	*52*		*Europe*	*153*	
Australia		32	Bulgaria		1
Israel		2	Croatia		1
Japan		4	Czech		1
Korea		3	Denmark		6
Kuwait		1	Finland		1
Oman		1	France		16
New Zealand		3	German		10
Saudi Arabia		1	Greece		1
Singapore		1	Netherlands		1
Taiwan		3	Italy		15
United Arab Emirates		1	Lithuania		1
North America	*181*		Norway		7
Canada		9	Poland		1
US		172	Portugal		3
			Romania		5
			Spain		33
			Sweden		7
			Switzerland		1
			UK		42
Developing countries	***153***				
Africa	*34*		*Asia and Pacific*	*116*	
Cameroon		1	Bangladesh		3
Egypt		4	China and Hong Kong		41
Ghana		3	India		13
Kenya		5	Indonesia		4
Malawi		1	Iran		1
Mauritius		1	Iraq		1
Morocco		2	Jordan		8
Nigeria		7	Malaysia		20
Senegal		1	Pakistan		8
South Africa		6	Philippine		1
Tanzania		1	Sri Lanka		4
Tunisia		2	Thailand		1
Europe	*2*		Turkey		7
Russia		2	Vietnam		4
Latin America	*1*				
Argentina		1			
Cross-countries studies	**95**				
Total	**634**				

Note: The categorisation of countries into "developed" and "developing" countries is based on the World Economic Situation and Prospects Report (2018). Developed countries are considered as high-income economies. Developing countries are defined as low-income, lower middle-income and upper-middle-income economies. Available at: https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/WESP2018_Full_Web-1.pdf, accessed on 19/12/2018.

Finally, and in terms of research approaches adopted by these studies, a large majority of studies (603/634, about 95%) use quantitative methods (see Table 2.5). These studies collect data directly from existing surveys, questionnaires, and actual databases, such as DataStream, Compustat, Osiris, and ExecuComp. Only 27 (about 4%) studies adopt the qualitative research approach using in-depth and semi-structured interviews, and observations (Ahl and Nelson, 2015; Doldor, Sealy and Vinnicombe, 2016), while four (about 0.6%) studies adopt mixed-methods (Roomi, 2013; Bullough, Renko and Abdelzaher, 2017; Mahmood, Kouser, Ali, Ahmad and Salman, 2018).

Table 2.5 Number of studies by type of research approach and by using number of theories

	No direct theory	One theory	Two theories	Three & more theories	Total
Mixed	2	2	0	0	**4**
Qualitative	12	11	3	1	**27**
Quantitative	282	163	92	66	**603**
Total	**296**	**176**	**95**	**67**	**634**

2.4.2 Theoretical perspectives on women on corporate boards

Several studies have applied different types of theories in their empirical studies. Thus, this SLR has identified more than 20 different theories that have been used to inform studies on WOCBs (see Table 2.6). The current study has categorised these studies into the two main perspectives: (i) the *country- and firm-level* perspectives, which comprise of the *economic and corporate governance* theories; and (ii) the *social- and individual-level* views, which consist of *sociological and psychological* theories. Table 2.6 summarises the theoretical perspectives and their predictions of WOCBs, and the effect of WOCBs on a number of corporate outcomes.

Notably, some studies only list and explain theories which do not directly relate to the research questions or the hypotheses that they purport to investigate. For example, Guillet, Kucukusta and Xiao (2012) claimed to have used agency theory to test the relationship between various factors, including the emergence of WOCBs and executive compensation. However, they do not explicitly show how agency theory can be applied to explain the association between gender and executive compensation (Bugeja, Matolcsy and Spiropoulos, 2012).

Table 2.6 Theoretical perspectives and their predictions of the determinants of WOCBs, and the effect of WOCBs on corporate outcomes

Theoretical Perspectives	**No of Papers**	**Determinants of WOCBs**	**WOCBs and corporate outcomes**		
			Compensation	*CSR*	*firm performance*
Economic and corporate governance theories					
Agency theory	150	+	No direct link	+	+/-
Resource dependence theory	97	+	NA	+	+
Stakeholder theory	45	NA	NA	+	NA
Institutional theory	24	+/-	NA	+	NA
Critical mass theory	23	NA	NA	+	+
Upper echelon theory	27	+	+	NA	+
Human capital theory	20	+	NA	NA	+
Legitimacy theory	18	NA	NA	+	NA
Contingency theory	4	NA	NA	NA	+/-
Tournament and behavioural theories	2	NA	-/+	NA	NA
Sociology and psychology theories					
Social gender role theory (combined with gender role theory)	3	+/-	NA	+	NA
Social identity theory	21	+/-	NA	NA	-
Socialisation and gender socialisation theories	7	NA	NA	+	NA
Liberal feminism theory and social feminism theory	11	NA	NA	NA	No difference
Social psychological theory (combined with cognitive development and gender schema theories)	8	NA	NA	NA	+/-
Occupational sex segregation, managerial power, male evaluation bias theories	4	NA	Women deal with gender pay gap	NA	NA
Suggested theories					
Queen bee theory		-	NA	NA	NA
Glass ceiling theory		-	NA	NA	NA

(NA: not application, +: positive, -: negative)

Similarly, some studies (e.g., Fielden and Hunt, 2011; Holgersson, 2013; Chizema *et al.*, 2015; Zhang and Qu, 2016; Ward and Forker, 2017) use one theory, whilst others (e.g., Bear, Rahman and Post, 2010; Ntim and Soobaroyen, 2013a) incorporate two or more theoretical perspectives (see Table 5). Furthermore, as indicated in Table 6, several theories, such as agency and resource dependence theories, can explain both the (i) appointment of women directors to corporate boards and (ii) impact of female board members on corporate outcomes, such as compensation, CSR, and firm performance. However, some theories are only related to one theme; for instance, legitimacy theory can largely be applied to explain the relationship between WOCBs and CSR. Next, this study presents the review results for the different theoretical perspectives below.

2.4.2.1 Economic and corporate governance theories

Most studies (150/634) use *agency theory (AT)* as their main theoretical perspective. It is a fact that AT is one of important theories in corporate governance studies, which can explain the important impact of directors on corporate performance (Nicholson and Kiel, 2007). Hence, although AT does not have any assumptions about women directors and corporate outcomes, many researchers apply this theory to investigate the relationship between female directors and corporate outcomes maybe because of following previous research on applying important theories in corporate governance studies. AT describes the conflicts between shareholders (the principals) and the managers (the agents). According to AT, women are better at advising and monitoring managers (Bear *et al.*, 2010; Cumming, Leung and Rui, 2015) by increasing board independence (de Cabo, Gimeno and Nieto, 2012; Farag and Mallin, 2016a). Therefore, improving WOCBs can reduce agency costs (Farag and Mallin, 2016a). However, a major limitation of AT is that it does not appear to provide any explanation for the existence of the gender pay gap among corporate executives (Bugeja *et al.*, 2012).

In the main, the agency theoretical framework is centred on two opposing views of the relationship between gender-diverse board and CFP. On the one hand, WOCBs can help improve CFP through their ability to better monitor executives and thereby minimise agency costs (Reguera-Alvarado, Fuentes and Laffarga, 2017). On the other hand, other studies (Carter, D'Souza, Simkins and Simpson, 2010; Chapple and Humphrey, 2014) show that AT does not directly support the view that WOCBs can necessarily have a positive effect on corporate outcomes. Thus, WOCBs may have a positive, negative or even no effect on CFP (Labelle, Francoeur and Lakhal, 2015; Marinova, Plantenga and Remery, 2016). Surprisingly, and despite the existence of other theories, many studies only follow the AT to explain the need for the existence of board gender diversity, particularly in explaining the impact of WOCBs on corporate outcomes (e.g., Kulich *et al.*, 2011; Guillet *et al.*,

2012; Hafsi and Turgut, 2013; Lucas-Perez, Minguez-Vera, Baixauli-Soler, Martin-Ugedo and Sanchez-Marin, 2015).

The current reviewed study shows that the second most commonly used theoretical perspective is the *resource dependence theory (RDT).* Specifically, RDT suggests that firms should appoint more women as directors because WOCBs can offer firms a number of benefits, such as greater connection with the external environment (e.g., women customers) (Bear *et al.*, 2010; Hussain, Rigoni and Orij, 2018; Liao, Lin and Zhang, 2018). For example, the inclusion of WOCBs can help provide critical resources to firms, such as wise counsel, that are more likely to help in improving CFP (Bear *et al.*, 2010; Hussain *et al.*, 2018; Liao *et al.*, 2018). In addition, several studies (e.g., Ali, Ng and Kulik, 2014; Isidro and Sobral, 2015) show that the presence of female directors can improve confidence in firms' claims of compliance with gender equality-related policies, which can in turn enhance these firms' ability to attract bright talents in the future.

RDT also suggests that WOCBs can improve firms' decision-making abilities due to the difference in men and women directors' skills and perspectives (Carter *et al.*, 2010; Ali *et al.*, 2014; Post *et al.*, 2015). For example, Kim and Starks (2016) showed that female directors are better at certain skills compared to their male counterparts. They found that, while the odds of possessing financial, merger and acquisition (M&A), and operations/technology expertise decrease when a director is a woman, women directors were more likely (than men directors) to possess risk management, regulatory/legal/compliance, political/government, human resources, sustainability and/or corporate governance skills (Kim and Starks, 2016). As a result, a number of studies (97/634) have applied RDT to explain the positive influence of WOCBs on CSR (e.g., Post *et al.*, 2015; Ben-Amar, Chang and McIlkenny, 2017) and firm performance (e.g., Carter *et al.*, 2010; Kakabadse, Figueira, Nicolopoulou, Hong Yang, Kakabadse and Özbilgin, 2015). Surprisingly, the current study did not identify any studies that adopt RDT to explain or hypothesise the link between WOCBs and executive compensation.

The third theory that this reviewed study shows to have been adopted in explaining issues related to WOCBs is *stakeholder theory* (ST) (37/568). Many scholars (Prado-Lorenzo and Garcia-Sanchez, 2010) have adopted the ST in their analyses and argued that firms' emphasis on exclusively meeting shareholders' interests (as proposed by economic theories) leads to very short-sighted decisions and short-term firm successes. To achieve long-term success and survival, the needs of other interest groups/stakeholders have to be taken into account (Collier, 2008; Prado-Lorenzo and Garcia-Sanchez, 2010). Therefore, the ST suggests that the board of directors has to balance the requirements of shareholders and other stakeholders (Collier, 2008; Harjoto, Laksmana and Lee, 2015). For

example, by voluntarily disclosing greenhouse gas emissions in the "Carbon Disclosure Project" report, a board of directors will be balancing financial and non-financial targets with its limited resources to control the possible ensuing conflict among stakeholders (Liao *et al.*, 2015). Indeed, firms also need to meet the interests of multiple stakeholders, such as employees and creditors (Chakrabarty and Bass, 2014). Under the stakeholder framework, female board representation is strongly related to CSR (Liao *et al.*, 2015; Liao *et al.*, 2018) because existing evidence indicates that women tend to focus on solving social issues more than men do (Hussain et al., 2018). This review reveals that the findings of many studies (e.g., Harjoto *et al.*, 2015; Liao *et al.*, 2015) support this theory. Interestingly, this review has also found that ST has not directly been used to explain the influence of WOCBs on CFP. Finally, it also appears that the ST has not been used to explain the appointment of WOCBs and their influence on compensation.

Fourth, *upper echelons theory* (Stephen and Raul) states that board composition plays an important role in predicting decision-making strategy (Post *et al.*, 2015; Perryman, Fernando and Tripathy, 2016; Graham, Belliveau and Hotchkiss, 2017). This is because boards' decisions reflect the experiences and knowledge of the people who make up the board (Post and Byron, 2015; Farag and Mallin, 2016a). Based on UET, Graham *et al.* (2017) suggested that firms should recruit female directors because WOCBs can help in making more balanced and better decisions. For example, existing evidence suggests that WOCBs are associated with increased firm performance (Hsu, Lai and Yen, 2019). Furthermore, several studies (e.g., Marquis and Lee, 2013) have applied UET to explain the association between WOCBs and CSR, although its ability to explain this link appears limited.

Fifth, *institutional theory (IT)* indicates that firms set rules, norms and procedures for their employees to follow (Carrasco *et al.*, 2015; Grosvold *et al.*, 2016). Thus, the institutional perspective suggests that the differences in firms' rules, norms, procedures, environments and requirements can explain the differences in their appointment of women directors. For example, the extent to which women are appointed to corporate boards may depend on a specific corporate strategic action (e.g., affirmative/positive action) (Doldor *et al.*, 2016; Saeed *et al.*, 2016), the diversity of institutional environments, including the nature of industry or business activities (Grosvold and Brammer, 2011), and family ownership (Saeed *et al.*, 2016). Consequently, IT has been applied widely to differences in corporate approaches to number practices, such as CSR, compensation and governance, by exploiting differences in institutional culture, including norms, rules and environments (Prado-Lorenzo and Garcia-Sanchez, 2010). For instance, IT has been used to explain the connection between female directors and CSR/disclosure. Nevertheless, the results show that a relatively limited

number of studies have used IT to explain the association of WOCBs with firm performance and compensation, and thus future applications of IT will be appropriate.

Critical mass theory (CMT) indicates that when a sub-group of people reaches a certain critical mass in terms of size, then that is when that sub-group may be able to affect the decisions of the group as a whole (Torchia, Calabrò and Huse, 2011). Based on the work of Kanter (1977), WOCBs can be divided into four common groups; these are uniform groups (0% women), skewed groups (up to 20% women), tilted groups (20-40% women), and balanced groups (40-60% women). Broadly speaking, the 'critical mass' of women directors can be measured based on the number (at least three female board members) (Torchia *et al.*, 2011) or the percentage (30% of WOCBs) (Joecks, Pull and Vetter, 2013). More specifically, some studies (e.g., Kristie, 2011; Liu, Wei and Xie, 2014) have suggested that under *CMT*, having (i) one, (ii) two and (iii) three female directors can be considered as a (a) token, (b) presence and (c) voice, respectively. This implies that under the *CMT* perspective, WOCBs can have a positive impact on firm performance, and firm innovation in particular only if there is a sufficient number of women on boards such that they can have real influence on board decisions (Torchia *et al.*, 2011). Similarly, a firm will have better CSR disclosures if its board is composed of three or more women (Jia and Zhang, 2013). Interestingly, although some studies (Ben-Amar *et al.*, 2017) empirically support this theory, they do not explicitly use *CMT* to design and explain their findings. Overall and despite its apparent usefulness the current reviewed study finds that, surprisingly, *CMT* is rarely adopted by prior studies to design and explain the determinants of WOCBs and their impact on corporate outcomes.

Human capital theory (HCT), which became well-known in 1964 (Terjesen *et al.*, 2009), relates to a person's education, skills and experience (Carter *et al.*, 2010). Each individual has 'unique' human capital. Thus, HCT indicates that firms should increase BGD because of the diverse and unique human capital that each board member can bring, and this increases when they are drawn from diverse backgrounds (Isidro and Sobral, 2015; Farag and Mallin, 2016b). Furthermore, more diverse boards may increase firm value owing to their diverse and unique capital (Isidro and Sobral, 2015; Farag and Mallin, 2016b). Using the HCT, it was found that UK female directors have more international experience and higher qualifications (e.g., MBA) than their male counterparts (Singh, Terjesen and Vinnicombe, 2008). By contrast, in the US, both female and male directors were found to have equal levels of education (Peterson and Philpot, 2007). Notably, though, HCT is limited in a number of ways. For example, overall, HCT has rarely been applied in past studies, and the findings of the few studies concerned also do not significantly support the view that the unique capital of

female directors compared to that of their male counterparts is beneficial to a firm's performance. Similarly, HCT is limited in explaining the connection between BGD and CSR.

Legitimacy theory (LT) suggests that a company becomes legitimate if its activities/operations are appropriate for the value system of the society in which it operates (Ntim, 2016). In this case, Ntim (2016) combined the legitimacy frameworks of Ashforth and Gibbs (1990) and Suchman (1995) to develop and interpret the findings of the relationship between corporate governance including women directors, corporate health accounting and firm value in Sub-Saharan African in terms of HIV/AIDS disclosures. The legitimacy framework proposes three types of legitimacy — pragmatic, moral, and cognitive (Suchman, 1995). In addition, literature reports two legitimacy-seeking strategies; these are substantive and symbolic management types (Ashforth and Gibbs, 1990). Ntim (2016) suggested that corporate health accounting disclosures can improve corporate legitimacy, such as pragmatic and moral legitimacies, and managerial monitoring can be clearly viewed as a characteristic of well-governed companies. Similarly, Liao *et al.* (2015) showed that female directors are more concerned with environmental issues than their male counterparts are and firms may try to legitimise their activities by bringing in more female directors who may push for the provision of more CSR information to the larger society. To sum up, it seems that LT can sufficiently explain the often positive impact of female board members on CSR and/or disclosure that have been reported by past studies.

Contingency theory suggests that there is no best way to organise a company. Thus, under the contingency perspective, BGD has different impacts on firms' performance, which is contingent on the context/situation. For example, Carter *et al.* (2010) carried out empirical research in the US to show that gender-diverse boards may have positive, negative or no influence on CFP under different circumstances at different times. In addition, it is possible that the contingency framework can provide explanations for past studies that failed to find a significant relationship between female directors and firm performance (McGuinness, Lam and Vieito, 2015).

The *tournament theory* illustrates that the difference in remuneration between board members is related to managerial responsibilities and productivity (Vieito, 2012). Particularly, CEOs usually receive a higher salary than other managers because they have greater responsibility to increase CFP. However, *behavioural theory* suggests the opposite perspective (Vieito, 2012); specifically, it indicates that performance is improved with other executives collaborate and work better with the CEOs when the pay gap between them is smaller. Surprisingly, few studies have employed these two theories of compensation policy to explain the gender pay gap although Vieito (2012) provides rare empirical evidence that supports both theories.

2.4.2.2 Sociological and psychological theories

Social role theory (SRT) illustrates the traditional gender roles (Chizema *et al.*, 2015; Lemoine, Aggarwal and Steed, 2016b); that is, what society expects women and men to become. Therefore, SRT can be used to explain the presence or absence of WOCBs. In particular, SRT suggests that the main reason why firms do not have women directors is the influence of the "think manager think male" stereotype (Koenig *et al.*, 2011; Lemoine *et al.*, 2016b). Conversely, Chizema *et al.* (2015) suggested that women are expected to hold traditional roles, such as caring and raising children, whilst men are expected to be leaders and managers, such as directors. This stereotype explains the low number of female directors. Generally, SRT is combined with others, such as *gender role theory* (Cumming *et al.*, 2015) and *gender socialisation theory* (Bennedsen, Kongsted and Nielsen) (Boulouta, 2013) to create a strong framework against which to test the contribution of WOCBs to firms.

Social identity theory suggests that people can classify themselves with others by demography such as age, gender, and education, among others (Kaczmarek, Kimino and Pye, 2012). This theory may explain the absence or the presence of WOCBs because individuals prefer working with people who share the same demographic background (Kaczmarek *et al.*, 2012). Interestingly, under the social identity framework, women directors have impacted on firms' performance because their behaviours are different in comparison with their male counterparts such as being absent at board meetings, where they can raise their voice to contribute to firms (Ali *et al.*, 2014) or avoiding risk-taking, a behaviour that can bring more financial returns to firms (Chen, Crossland and Huang, 2016b).

Both *socialisation* and *gender socialisation theories* explain the different characteristics between women and men (Cumming *et al.*, 2015; Ben-Amar *et al.*, 2017). These theories suggest a positive impact of female directors on CSR because, compared to males, females are less likely to damage the environment, and are more concerned about ethical issues (Cumming *et al.*, 2015; Ben-Amar *et al.*, 2017).

Both *liberal* and *social feminism theories* are two main theoretical approaches used to compare the performance of male- and female-owned firms (Robb and Watson, 2012; Berenguer, Giráldez and Cardone-Riportella, 2016). The liberal feminist theory predicts no difference in company performance between male- and female-owned companies, while the social feminism theory suggests that the firms owned by women would underperform in comparison with those owned by men (Berenguer *et al.*, 2016). By contrast, Robb and Watson (2012) applied these two theories to explain that both female- and male-owned businesses perform equally well.

Social psychological theory predicts that the appointment of WOCBs may have a positive or a negative effect on CFP (Carter *et al.*, 2010; Isidro and Sobral, 2015). On one hand, it is time-consuming to make decisions due to emotional conflicts between board diversity members (Carter *et al.*, 2010; Isidro and Sobral, 2015). Therefore, a diverse board may decrease firm performance. On the other hand, female directors bring various valuable ideas to the board to create better firm performance (Carter *et al.*, 2010; Isidro and Sobral, 2015). In this vein, Gyapong, Monem and Hu (2016) combined *cognitive development theory*, which states that children recognise their gender when they are young, and *gender schema theory*, which explains the process by which differences in how children process information leads to difference in behaviour of mature, to support the social psychological perspective.

Various theories have been applied to explain the gender pay gap. First, o*ccupational sex segregation theory* concludes that women usually work for human resource or marketing departments, which are typically low-paying (Cardoso and Winter-Ebmer, 2010; Kulich *et al.*, 2011). Therefore, WOCBs may not necessarily decrease the gender pay gap between male and female employees. Furthermore, according to the *managerial power theory*, male directors tend to offer good job opportunities to their male colleagues, while the emergence of women as board members is not strong enough to support female workers to work efficiently and secure higher salaries (Abendroth, Melzer, Kalev and Tomaskovic-Devey, 2017). In addition, the *male evaluation bias theory* predicts that men who work for top management teams usually underestimate the contributions of female workers (Abendroth *et al.*, 2017).

2.4.3 Antecedents of women on corporate boards

There is a long record of a lack of WOCBs in both developed – such as the UK – and developing countries (Singh, Vinnicombe and Johnson, 2001). This is because women have to deal with various barriers, such as lack of experience and networks in connection with the pathways to becoming board members (Oakley, 2000; Singh and Vinnicombe, 2004). However, the status of women has changed for the better following the 2007/2008 global economic crisis (Sun, Zhu and Ye, 2015). This is mainly because of increasing social pressure and regulations that support emergence of WOCBs (McHugh and Perrault, 2018). Thus, the proportion of board seats held by women in 49 countries increased steadily over the years (Deloitte, 2017). However, evidence suggests that female directors usually have shorter tenure than their male counterparts (Becker-Blease, Elkinawy, Hoag and Stater, 2016). Consequently, the literature shows a range of individual - , social -, firm - and country- level factors that can explain or predict the presence or the absence of WOCBs. Most of the existing studies

in the field focus on testing a single-level factor (e.g., Martin, Warren-Smith, Scott and Roper, 2008), while fewer studies show evidence of a comprehensive and multi-level explanation for WOCBs (e.g., McGowan, Cooper, Durkin and O'Kane, 2015).

2.4.3.1 Individual-level factors

First, women can emerge as board members due to their human capital characteristics such as age (Hodigere and Bilimoria, 2015), education (Ashraf, 2009; Cetindamar, Gupta, Karadeniz and Egrican, 2012; Fernandez-Mateo and Fernandez, 2016; Brush, Ali, Kelley and Greene, 2017), networking (Nekhili and Gatfaoui, 2013; Hodigere and Bilimoria, 2015), and experience (Fitzsimmons, Callan and Paulsen, 2014; Elsaid, 2015). Second, family circumstances like having a partner (Ashraf, 2009) or children (Thébaud, 2016) have an impact on the emergence of WOCBs. Third, women's personal circumstances, such as family stress (Welsh, Kaciak and Thongpapanl, 2016), work-life balance practice (Kalysh, Kulik and Perera, 2016), lack of experience (Oakley, 2000), flexible work schedule and income (Woodhams, Xian and Lupton, 2015) can affect their chances of securing board appointments. For example, Indian migrant women find it difficult to become directors in Australia because their behaviour needs to balance between Australian and Indian cultures (Azmat and Yuka, 2016). Finally, Nekhili and Gatfaoui (2013) tried to examine the influence of foreign nationality of female directors on their appointment on corporate boards; however, they found no significant results.

2.4.3.2 Social- level factors

The appointment of WOCBs depends on various social-level factors. The first is existing social processes — for example, politics — that support the representation of women in boards of directors (Seierstad, Warner-Søderholm, Torchia and Huse, 2017). Social actors who may use their position in society to appoint WOCBs include head-hunters (Doldor *et al.*, 2016), board chairmen (Holgersson, 2013; Brunzell and Liljeblom, 2014) and CEOs (Dasgupta, Ha, Jonnalagadda, Schmeiser and Youngerman, 2018). Consistent with the social perspective, for example, Dasgupta *et al.* (2018) offered evidence that a CEO who has a daughter is more likely to appoint more WOCBs, and Lemoine *et al.* (2016b) found that women emerge as leaders if they are in high extrovert groups and the groups consist of more men than women.

In addition, social support is another social-level factor, which can bring more opportunities for women to emerge as directors. Generally, social support may come from family (Bianco, Ciavarella and Signoretti, 2015; Bullough *et al.*, 2017), friends (McGowan *et al.*, 2015), business agencies and

other social networks (Fielden and Hunt, 2011). Importantly, some studies suggest that women need to be offered different types of social support, such as education systems or training programmes to provide them with good enough knowledge and sufficient social networks that are essential for a directorship position (Fielden and Hunt, 2011; McGowan *et al.*, 2015).

Furthermore, other social-level factors, such as family size, income level, and family-related obligations may motivate women to seek a directorship position, hence increasing their likelihood of being appointed as directors because of the need to have a job with higher income to support their families (Cetindamar *et al.*, 2012; Saridakis, Marlow and Storey, 2014). Finally, Fernandez-Mateo and Fernandez (2016) investigated gender inequality in recruiting a top management team's members. Specifically, they investigated the relationship between job availability and competition among candidates and women directors' recruitment, and the results are not significant. Interestingly, in comparison with men, women get more opportunities to become board members if they are interested in playing golf, which is traditionally considered a men's game (Agarwal, Qian, Reeb and Sing, 2016).

2.4.3.3 Firm-level factors

A great number of studies show evidence of the relationship between board characteristics, such as age, size, independence and various characteristics of sub-committees on the emergence of female directors (e.g., Kang, Cheng and Gray, 2007; Strobl, Rama and Mishra, 2016). However, these studies show different findings although they use the same board characteristics. For instance, some authors (e.g., de Cabo *et al.*, 2012; Strøm, D'Espallier and Mersland, 2014) found that a larger board size affects WOCBs whereas others (e.g., Farag and Mallin, 2016a) showed no significant relationship between number of directors and women on boards. Interestingly, evidence indicates that the presence of female members on the board increases the chances of more women being appointed board members or members of top management teams (e.g., Gupta and Raman, 2014; Tinsley, Wade, Main and O'Reilly, 2017; Gould, Kulik and Sardeshmukh, 2018).

Firm characteristics have a significant influence on the appointment of female directors (see Strøm *et al.*, 2014; Saeed *et al.*, 2016; Gregorič, Oxelheim, Randøy and Thomsen, 2017). For example, a larger firm is more likely to hire more female directors (Saeed *et al.*, 2016; Gregorič *et al.*, 2017). Unsurprisingly, younger firms prefer adding more WOCBs (Strøm *et al.*, 2014). Furthermore, firms with fewer bank loans recruit more women directors (Mínguez-Vera and Martin, 2011), possibly because women are less liable to take risks (Bear *et al.*, 2010; Hussain *et al.*, 2018; Liao *et al.*, 2018).

In addition, firm performance is also associated with the emergence of women as board members (Nguyen and Faff, 2006; Iren, 2016).

A number of studies present interesting results on the relationship between firm ownership and the representation of women directors (see Kang *et al.*, 2007). For instance, women have no more opportunities than men do to work as directors for a firm with higher state ownership (Farag and Mallin, 2016a). However, Nekhili and Gatfaoui (2013) offered evidence that indicates that the presence of women directors has a strong relationship with family ownership.

Several studies investigate the impact of industry and location of firms on WOCBs (e.g., Hyland and Marcellino, 2002; Hillman, Shropshire and Cannella Jr, 2007; Du, 2016). Specifically, a firm has less representation of WOCBs if it is located in special places such as near Confucianism centres or in places that experience high sex discrimination (see Du, 2016; Gao, Lin and Ma, 2016). Indeed, firms with headquarters located in capital cities of a country appoint more women directors than those located in other cities do (Gregorič *et al.*, 2017).

Many other firm-level factors can explain the appointment of WOCBs, such as a shareholder proposal for WOCBs (Marquardt and Wiedman, 2016) and equal employment opportunity regulations (Graham *et al.*, 2017). Furthermore, Graham *et al.* (2017) found that the presence of an HR executive on the top management team is associated with the appointment of women directors. In addition, Bernardi, Bean and Weippert (2005) recommended that requiring photographs of each board member in annual reports increases the likelihood of a more gender-diverse board of directors.

2.4.3.4 Country-level factors

Grosvold and Brammer (2011) investigated how five national institutional systems — as the national economic systems, national business systems, national legal systems, governance systems, and national cultural systems — affect the presence of female directors. National cultural systems can be measured by religion (Chizema *et al.*, 2015; Grosvold *et al.*, 2016), language (Santacreu-Vasut, Shenkar and Shoham, 2014) and cultural dimensions (Grosvold, 2011; Bullough, Kroeck, Newburry, Kundu and Lowe, 2012; Carrasco *et al.*, 2015). Indeed, some studies use Hofstede's cultural dimensions (Carrasco *et al.*, 2015), whereas others employ the measure of the GLOBE's project (Bullough *et al.*, 2012). In addition, Azmat and Yuka (2016) also conducted research to find the impact of Indian culture and religion on the emergence of female directors, while Toh and Leonardelli (2012) used culture's 'tightness' (i.e. the strength of a culture's norms and social sanctions), which is measured by six items, to explain the appointment of WOCBs.

Furthermore, the government plays an important role in the status of WOCBs through key government policies on maternity leave, paternity leave, parental leave, childcare services (Shilton, McGregor and Tremaine, 1996; Iannotta, Gatti and Huse, 2016), and gender quotas or gender targets, among others (Wang and Kelan, 2013; O'brien and Rickne, 2016; Sojo, Wood, Wood and Wheeler, 2016; Valls Martínez and Cruz Rambaud, 2019). Importantly, Chizema *et al.* (2015) showed that the representation of women in parliament has a significant positive impact on WOCBs. However, Terjesen and Singh (2008) found that the level of WOCBs tends to be lower in countries with a longer tradition of female political representation. Interestingly, Ahl and Nelson (2015) drew comparisons of the different impact of policies on the female board representation in Sweden and the US.

A number of studies define the effect of certain social-economic factors — namely GDP per capita, GDP growth, unemployment rate, marriage rate, divorce rate, self-employment rate, house price, education rate, number of stoppage at work, and fertility rate — on the appointment of women directors (Estrin and Mickiewicz, 2011; Saridakis *et al.*, 2014; Strøm *et al.*, 2014; Grosvold *et al.*, 2016). For instance, the education rate of women has a positive influence on the emergence of women as directors (Grosvold *et al.*, 2016). However, these social-economic factors have more influence on male directors than on their female counterparts in the short term (Saridakis *et al.*, 2014). Furthermore, other studies (e.g., Estrin and Mickiewicz, 2011; Bullough *et al.*, 2012) show that society-wide institutions, which include the business environment, government size, economy, societal development, political freedom, physical and technological infrastructure, and restricted freedom of movement, influence the presence of female executive directors. In addition, there is a significant relationship between gender discrimination (measured by the Gender Inequality Index, the Human Development Index, and violence against women) and female board members (Estrin and Mickiewicz, 2011; Strøm *et al.*, 2014). Indeed, countries with less gender inequality tend to have more companies with at least three women directors (Fernandez-Feijoo, Romero and Ruiz-Blanco, 2014).

2.4.4 The association between women on corporate boards and corporate outcomes

2.4.4.1 Women on corporate boards and compensation

Generally, working for a company, employees expect to be compensated in various ways. For example, employees can receive monthly salary and bonus payments (Cardoso and Winter-Ebmer, 2010; Hensvik, 2014). Likewise, companies give annual salary, equity grants, bonus, and commission income among others to their directors (Dreher, Lee and Clerkin, 2011; Bugeja *et al.*,

2012; Goh and Gupta, 2016). This section of the review presents a discussion of the empirical literature on the association between WOCBs and various types of compensation.

Executive compensation

It appears that women directors have a positive influence on both executive compensation (Adams and Ferreira, 2009; Lucas-Perez *et al.*, 2015) and CEO pay (Baixauli-Soler, Lucas-Perez, Martin-Ugedo, Minguez-Vera and Sanchez-Marin, 2016; Benkraiem, Hamrouni, Lakhal and Toumi, 2017). By contrast, many studies also empirically show no relationship between WOCBs and CEO compensation (e.g., Jobome, 2006; Strobl *et al.*, 2016) or executive compensation (e.g., Lam, McGuinness and Vieito, 2013). Interestingly, Bugeja, Matolcsy and Spiropoulos (2016) offered differing evidence on the relationship between top management diversity and CEO pay after using a sample of 105 observations from 2002 to 2009. They suggest that WOCBs have no relationship with CEO compensation, whereas female compensation committee members are negatively associated with CEO remuneration. Fewer studies (e.g., García-Meca, 2016; Usman, Zhang, Wang, Sun and Makki, 2018) report a negative effect of WOCBs on executive compensation. Interestingly, WOCBs improve pay-for-performance sensitivity; however, they do not enhance actual executive compensation (Sarhan, Ntim and Al-Najjar, 2019).

Executive pay gap

Limited studies (e.g., Vieito, 2012; Francis, Hasan, John and Sharma, 2013) have examined the pay gap between board members, CEO and Vice Presidents (VPs) in particular. Specifically, Francis *et al.* (2013) showed that CEOs, on average, enjoy higher incomes than VPs although both CEOs and VPs benefit from good luck and are protected from bad luck. However, they did not find significant evidence relating to the relationship between WOCBs and gender pay gap between CEO and VPs. By contrast, after gathering data from 1,500 public companies in the US, Vieito (2012) found that female CEOs decrease the remuneration disparity between CEOs and VPs, while male CEOs lead to an increase in this disparity.

Gender pay gap

A number of studies offer evidence on the gender pay gap between directors or employees (e.g., Dreher *et al.*, 2011; Cole and Mehran, 2016; Goh and Gupta, 2016; Abendroth *et al.*, 2017; Song, Lee, Toth, Singh and Young, 2018; Schneider, Iseke and Pull, 2019). For instance, the compensation of female directors in Australia is 80.7% of that of their male counterparts (Yanadori, Gould and Kulik, 2016). Several studies explain the relationship between gender pay gap and female's risk

aversion (e.g., Carter, Franco and Gine, 2017; Wang, Markóczy, Sun and Peng, 2018). Surprisingly, Geiler and Renneboog (2015) found that women CEOs do not tolerate gender compensation disparity, while those in other positions — namely chief financial officers, non-executive directors and executive directors — usually deal better with pay disparities. Similarly, the evidence in China shows that WOCBs are not underpaid by comparison with their counterparts (Chen and Keefe, 2018). Furthermore, after collecting data from 1,678 unique firms in the US, Hill, Upadhyay and Beekun (2015) reported evidence that female CEOs received higher salaries than their male counterparts did. In addition, some studies find gender pay disparity between women and men employees (e.g., Hensvik, 2014; Abendroth *et al.*, 2017).

It seems that fewer studies provide evidence on the relationship between WOCBs and gender pay disparity. On one hand, some studies indicate that female directors decrease the gender remuneration disparity among executive directors (e.g., Cardoso and Winter-Ebmer, 2010; Perryman *et al.*, 2016; Abraham, 2017; Carter *et al.*, 2017) and between employees (Cardoso and Winter-Ebmer, 2010; Hensvik, 2014; Becker-Blease *et al.*, 2016). Similarly, Abendroth *et al.* (2017) mentioned that the impact of women directors on the gender pay gap is effective in jobs with low qualifications, whereas female directors have no influence on gender pay disparity in jobs with high qualifications. On the other hand, using a subsample of female and male CEOs, Bugeja *et al.* (2012) found that female CEOs have no relationship with the gender pay gap in CEO compensation because they tend to not deal with the gender gap disparity.

2.4.4.2 Women on corporate boards and corporate social responsibility

Corporate social responsibility of firms can be performed by various firm behaviours, such as donations (Pyo and Lee, 2013), tax (Lanis and Richardson, 2012), disclosure (Hughey and Sulkowski, 2012), corporate fraud (Rodgers, Söderbom and Guiral, 2015), and CSR ratings (McGuinness, Vieito and Wang, 2017), among others. This section presents a review of studies relating to the effect of WOCBs on various measures of CSR. Generally, numerous empirical studies are based on existing CSR databases in several countries such as the US (Zhang, Zhu and Ding, 2013), China (McGuinness *et al.*, 2017), and emerging economies (Yasser, Al Mamun and Ahmed, 2017), whereas fewer researchers adopt a manual data collection of CSR measures (Rao, Tilt and Lester, 2012; Ntim, Soobaroyen and Broad, 2017).

Most studies find a positive relationship between WOCBs and CSR. In particular, female directors are related to less corporate fraud (Capezio and Mavisakalyan, 2016; Lenard, Yu, York and Wu, 2017; Wahid, 2018), less aggressive tax avoidance activities (Lanis and Richardson, 2012; Francis,

Hasan, Qiang and Meng, 2014), fewer financial restatements (Abbott, Parker and Presley, 2012; Pucheta-Martínez, Bel-Oms and Olcina-Sempere, 2016a), and more donations (Wang and Coffey, 1992; Jia and Zhang, 2013). In addition, WOCBs have been found to show greater responsibility towards the environment, for example, by reducing carbon emissions (Haque, 2017), managing water resources more effectively (Alonso-Almeida, 2012), and avoiding being convicted of environmental offences (Tauringana, Radicic, Kirkpatrick and Konadu, 2017). Furthermore, female board members require firms to provide more information on risk (Saggar and Singh, 2017), security markets (Cai, Keasey and Short, 2006; Gul, Srinidhi and Ng, 2011), corporate governance (Elmagrhi, Ntim and Wang, 2016; Ntim, 2016), the environment (Rupley, Brown and Marshall, 2012; Liao *et al.*, 2015; Hollindale, Kent, Routledge and Chapple, 2019) and CSR (Elmagrhi *et al.*, 2016; Nekhili, Nagati, Chtioui and Nekhili, 2017).

A few studies, however, show evidence of no relationship between female board representation and disclosure (e.g., Sartawi, Hindawi, Bsoul and Ali, 2014; Rahman and Ismail, 2016; Manita, Bruna, Dang and Houanti, 2018), donations (Coffey and Wang, 1998), and CSR ratings and performance (Zaichkowsky, 2014; Sanan, 2016). More importantly, it appears that the presence of WOCBs in Islamic countries such as Pakistan and Jordan is associated with a decrease in firms' voluntary disclosure (Majeed, Aziz and Saleem, 2015; Ghabayen, Mohamad and Ahmad, 2016). Interestingly, the US female executive directors in the past were not willing to donate to local communities (Siciliano, 1996). The difference in the influence of WOCBs on CSR could be explained by the moderating effect of government ownership and politicians on corporate boards (Rahman, Jamil and Ismail, 2019).

2.4.4.3 Women on corporate boards and corporate performance

Firm strategy, behaviours and reputation have a strong relationship with firm performance (e.g., Dechow, 1994; Artz, Norman, Hatfield and Cardinal, 2010; Kreiser and Davis, 2010; Siegel and Simons, 2010; Lee and Jungbae Roh, 2012). Therefore, in order to review the relationship between WOCBs and firm performance, the current study also included studies on the relationship between WOCBs on innovation, research and development (R&D), mergers and acquisitions (M&A), reputation, CFP, accounting quality/earnings management, dividend policy, risk-taking, and stock markets.

Researchers investigating the association between WOCBs and firm performance appear to follow two main approaches. The first approach is to compare the performance of firms that are mainly

managed by men and firms that are primarily managed by women. The second approach is to directly test the impact of WOCBs on firm performance.

First of all, some studies find no difference in profit margin, employment growth, sales, service quality, and return on portfolio between male and female directors (e.g., Atkinson, Baird and Frye, 2003; Chirwa, 2008; Bardasi, Sabarwal and Terrell, 2011; Ellwood and Garcia-Lacalle, 2015; Lee, Paik and Uygur, 2016; Ali and Shabir, 2017). Fewer studies show that WOCBs usually engage less in risk-taking, earnings management and M&A (e.g., Iqbal, O and Baek, 2006; Yordanova and Alexandrova-Boshnakova, 2011; Huang and Kisgen, 2013; Farag and Mallin, 2016b; Belot and Serve, 2018). In this vein Gottschalk and Niefert (2013) found that, in the context of Germany, female-founded firms sell a small number of products, and have slower employment growth and lower return on sales because of their less professional experience compared with male-founded firms. However, women executives generate better firm performance than their male counterparts do when they work in the hospitality industry (Marco, 2012; Alonso-Almeida, 2013) or family business (Bjuggren, Nordström and Palmberg, 2018).

A great number of studies only focus on the second trend of researching the relationship between female directors and firm performance. This relationship is inconclusive because of mixed findings such as positive, negative, non-linear or no relationship. Next, this study reviews and provides a summary of how WOCBs is related to corporate performance.

Earnings management can be measured by cumulative abnormal returns, accruals, forecast accuracy, average returns, and accounting conservatism (e.g., Hagendorff and Keasey, 2012; Gul, Hutchinson and Lai, 2013; Arun, Almahrog and Ali Aribi, 2015; Boussaid, Hamza and Sougné, 2015; Elghuweel, Ntim, Opong and Avison, 2017; Zalata, Ntim, Choudhry, Hassanein and Elzahar, 2019). Many studies illustrate that WOCBs improve firm's earnings quality (Srinidhi, Gul and Tsui, 2011), reduce discretionary accruals (Barua, Davidson, Rama and Thiruvadi, 2010; Vähämaa, 2014; Kim, Jeong, Kang and Lee, 2017), are associated with higher earnings forecast accuracy (Gul *et al.*, 2013), follow accounting conservatism, and hence improve accruals and earnings quality (Boussaid *et al.*, 2015; Panzer and Müller, 2015). In this vein, after finding a non-linear effect of WOCBs on earnings quality, Strydom, Au Yong and Rankin (2017) suggested that a board should have a critical mass of female directors. Similarly, Fan, Jiang, Zhang and Zhou, (2019) showed evidence of an inverted U-shaped relation between WOCBs and bank earnings management. Specially, if a bank recruits three or more women directors, its earnings management decreases (Fan et al., 2019). Conversely, several studies show evidence of a negative or no relationship between WOCBs and earnings management (e.g., Sun, Liu and Lan, 2011; Hagendorff and Keasey, 2012; Elghuweel *et al.*, 2017; Zalata,

Tauringana and Tingbani, 2018). Interestingly, the contribution of female directors to earnings management depends on their business expertise and positions in audit committees (Gull, Nekhili, Nagati and Chtioui, 2018; Zalata *et al.*, 2018). Indeed, Kyaw, Olugbode and Petracci (2015) concluded that women directors in countries with higher gender equality do not pay attention to earnings management.

As regards to *dividend policy*, most studies reveal that firms pay larger dividends or higher cash dividends if they appoint females as directors (e.g., Jurkus, Park and Woodard, 2011; Al-Dhamari, Ku Ismail and Al-Gamrh, 2016; Al-Rahahleh, 2017; Chen, Leung and Goergen, 2017). However, several studies (e.g., Hamzah and Zulkafli, 2014; Elmagrhi, Ntim, Crossley, Malagila, Fosu and Vu, 2017; Saeed and Sameer, 2017) find a negative or no impact of WOCBs on dividend policy. More importantly, the difference in the impact of female directors on dividend pay-out may be explained by the position of the female (Pucheta-Martinez and Bel-Oms, 2016) or the ownership structure (Gyapong, Ahmed, Ntim and Nadeem, 2019; Ye, Deng, Liu, Szewczyk and Chen, 2019). Particularly, the percentage of female directors has a positive relationship with dividend pay-out, whereas institutional women board members are negatively related to dividend policy. In addition, independent and executive women directors do not affect dividend pay-out (Pucheta-Martinez and Bel-Oms, 2016). Furthermore, WOCBs decrease dividend payments if the ownership concentration increases (Gyapong *et al.*, 2019).

Interestingly, female directors are willing to invest money in *R&D and innovation* (e.g., Miller and Triana, 2009; Torchia *et al.*, 2011; Torchia, Calabrò, Gabaldon and Kanadli, 2018). More specifically, Galia and Zenou (2012) showed that gender-diverse boards have higher marketing innovation and lower production innovation.

There is plenty of evidence which indicates that women are less likely to be involved in *risk-taking* (Bao, Fainshmidt, Nair and Vracheva, 2014; Khaw, Liao, Tripe and Wongchoti, 2016; Dong, Girardone and Kuo, 2017). Specifically, gender-diverse boards prefer using shareholder's equity than applying for bank loans (Alves, Couto and Francisco, 2015; Faccio, Marchica and Mura, 2016). Furthermore, Fauzi, Basyith and Ho (2017) revealed that female CEOs with higher academic qualification, strong business background, international qualification, younger age, and longer tenure avoid taking risks. In addition, Rossi, Cebula and Barth (2017) found that women directors in family firms use less debt while those in non-family businesses prefer financial leverage to improve the firm's performance. By contrast, several researchers provide evidence of no connection between a gender-diverse board and risk-taking in developed countries (e.g., Berger, Kick and Schaeck, 2014; Darrat, Gray, Park and Wu, 2016; Sila, Gonzalez and Hagendorff, 2016).

Women directors can improve firm profitability because they are better at increasing *sales* (Arzubiaga, Iturralde, Maseda and Kotlar, 2017) and reducing *cost* (Chakrabarty and Bass, 2014; Gitundu, Kisaka, Kiprop and Kibet, 2016; Ramly, Chan, Mustapha and Sapiei, 2017). Specifically, they concentrate on exporting their products (Marques, 2015; Berenguer *et al.*, 2016) except when working in family firms (Ramón-Llorens, García-Meca and Duréndez, 2017).

It seems that researchers only focus on investigating the relationship between female directors and *M&A* in developed countries such as the UK or the US (Dowling and Aribi, 2013). Existing literature on the effect of WOCBs on M&A shows that gender-diverse boards are positively associated with acquisition bids, size of bid premiums, and level of acquisitiveness (Dowling and Aribi, 2013; Levi, Li and Zhang, 2014). By contrast, Chen *et al.* (2016b) showed the different views on the negative influence of female directors on the number and size of acquisitions.

Although fewer studies test the impact of gender-diverse boards on *IPO success* and *stocks*, they provide different results with positive, negative or no relationship (e.g., Kaur and Singh, 2015; Quintana-García and Benavides-Velasco, 2016; Kubíček, Strouhal and Štamfestová, 2017). Interestingly, women directors without family associations may reduce IPO under-pricing (McGuinness, 2016). Furthermore, WOCBs has a significant influence on higher stock liquidity (Ahmed and Ali, 2017) and lower stock value (Dobbin and Jiwook, 2011). More importantly, there is no evidence for an association between female board members and return of portfolio and volatility of stock return (Chapple and Humphrey, 2014; Nazir, Zulfiqar, Saeed and Habib, 2016).

Several studies investigate the effect of WOCBs on *corporate reputation* and find different results (e.g., Brammer, Millington and Pavelin, 2009; Bear *et al.*, 2010; de Anca and Gabaldon, 2014). For instance, gender-diverse boards do not affect firm's reputation (Miller and Triana, 2009). CSR and firm's sector provide the context wherein this SLR can observe the link between female board representation and firm reputation (Brammer *et al.*, 2009; Bear *et al.*, 2010). Particularly, Brammer *et al.* (2009) mentioned that female board members bring a good reputation to firms in the consumer service sector, reduce the reputation of producer services firms, and have no impact on a firm's reputation in other industries.

A number of studies find empirical evidence on the relationship between WOCBs and *corporate financial performance (CFP)*. The findings on this relationship are inconclusive due to mixed results (Adams, de Haan, Terjesen, & van Ees, 2015). Many studies find mixed impacts of WOCBs on CFP because they use different measures of WOCBs (Farag and Mallin, 2017; Gordini and Rancati, 2017) and CFP (Haslam, Ryan, Kulich, Trojanowski and Atkins, 2010; Solakoglu, 2013; Muravyev, 2017).

Furthermore, a few studies provide evidence for the U-shaped relationship between women board members and CFP (Pathan and Faff, 2013; Gröschl and Arcot, 2014; Wu, Yao and Muhammad, 2017). Indeed, several studies mention that the relationship between WOCBs and CFP has changed (from negative to positive) since more than 30% of directors who are appointed are women (e.g., Joecks *et al.*, 2013; Arena, Cirillo, Mussolino, Pulcinelli, Saggese and Sarto, 2015; Elmagrhi, Ntim, Malagila, Fosu and Tunyi, 2018; Wiley and Monllor-Tormos, 2018).

Only a limited number of studies show that the association between gender-diverse board and *CFP* is indirect. Specifically, this association is moderated by innovation (Dezsö and Ross, 2012) and CSR (Rose, Munch-Madsen and Funch, 2013; E-Vahdati, Zulkifli and Zakaria, 2018; Sial, Zheng, Cherian, Gulzar, Thu, Khan and Khuong, 2018). Furthermore, the association between gender-diverse board and CFP differs between countries, sectors, or competition environment (e.g., Labelle *et al.*, 2015; Amore and Garofalo, 2016). For instance, Amore and Garofalo (2016) concluded that female directors increase bank financial performance in terms of low competition, but decrease CFP of banks if competition rises. Similarly, the connection between female board members and CFP is negative in countries that apply a regulation approach of gender requirements, but is positive in countries imposing a voluntary approach of gender requirements (Labelle *et al.*, 2015). It appears that WOCBs have a negative impact on CFP in developing countries (e.g., Ujunwa, 2012; Zhang and Qu, 2016). However, WOCBs is positively associated with CFP in developed countries (e.g., Carter *et al.*, 2003; Lyngsie and Foss, 2017) except those with gender quotas or women working in family businesses (e.g., Bøhren and Strøm, 2010; Ahern and Dittmar, 2012; D'Amato, 2017).

Most current studies report a positive relationship between a gender-diverse board and CFP/FV (e.g., García-Meca, García-Sánchez and Martínez-Ferrero, 2015; Sun *et al.*, 2015; Pucheta-Martínez, Bel-Oms and Olcina-Sempere, 2016b; Reguera-Alvarado *et al.*, 2017). Certainly, independent women directors have a positive impact on CFP (Haldar, Shah and Nageswara Rao, 2015; Sanan, 2016). Interestingly, female executive directors have a stronger impact on CFP compared with independent female directors (Liu *et al.*, 2014).

2.5 Discussion and suggestions for future research

2.5.1 Methodological and contextual gaps

There are several reasons for the lack of studies in developing nations and in cross-country contexts. First, most studies prefer collecting data from one country because they can avoid differences in accounting, cultural, economic, legal and political systems around the world (Radebaugh, Gray and

Black, 2006). Second, many studies find it difficult to access data in developing countries due to fewer English annual reports and lack of corporate governance information such as board meetings, board profiles, or board compensation. However, the number of companies publishing their annual reports in English is increasing, with more corporate governance information becoming available. Therefore, while WOCBs studies in developing countries are still very limited, they are increasing in number because it is now becoming easier to access data from these countries. Consequently, the academic community should expect to see more cross-country studies (e.g., Ntim, 2016; Farag and Mallin, 2017) and those conducted in developing countries' contexts (e.g., Mahadeo, Soobaroyen and Hanuman, 2012).

The current review found a weakness in the methodological approach adopted in the past studies. First, not many studies employ interviews and/or observations and/or survey as data collection methods although these methods can generate very rich (qualitative or quantitative) data. Specifically, holding interviews with WOCBs would help researchers to understand their behaviours, experiences, contributions and requirements, among other factors. For instance, after interviewing 60 WOCBs, Fielden and Hunt (2011) explained how female directors can access social support. Second, a limited number of studies employ the qualitative and mixed-methods research approaches although they are equally effective for data analysis. Particularly, using the interpretation of interviews to explain and support the findings of statistics may increase the quality of studies. For example, the research may provide better explanation of the impact of WOCBs on CFP after observing their activities during board meetings. However, it costs time and/or money, and challenges to find and get supports from interviewees and/or respondents when using interviews and/or observations and/or survey as data collection methods. Therefore, future research should compare data collection methods and find relevant methods to achieve their research objects. In addition, future research should find good solutions to solve challenges in order to use interviews and/or observations and/or survey as data collection methods (Kakabadse *et al.*, 2015). This review also suggests increases in researchers who will apply both mixed-methods and qualitative research in the future, following previous studies (Roomi, 2013; Fitzsimmons *et al.*, 2014; Mahmood *et al.*, 2018).

2.5.2 Theoretical gaps

As previously noted, the majority of academic literature on female board representation has not applied a theoretical framework, or has used theories that are not related to (or do not appropriately fit with) their research hypothesis or question. Theories provide basic concepts and direct researchers

to raise important questions. Importantly, studies with a theoretical framework usually conduct top-quality research (Neuman, 2014). Thus, future researchers would be advised to clearly identify and apply theoretical frameworks, which are connected with the research hypothesis or question in order to improve the quality of their research.

With regard to studies using theories, fewer of them show a link between their findings and the theoretical framework applied to their research. For example, the findings on a positive relationship between female directors and abnormal returns support stakeholder theory (Francoeur, Labelle and Sinclair-Desgagné, 2008). Similarly, Ntim and Soobaroyen (2013a) concluded that there is no connection between WOCBs and black economic empowerment disclosure, which is in line with the predictions of agency, legitimacy, stakeholder, and resource dependence perspectives. Researchers may improve the quality of their studies if they make contributions to theoretical perspectives by adding comments on applied theories. Therefore, this study suggests connecting the relationship between empirical results and adopted or existing theoretical frameworks, for example, as demonstrated by Ntim and Soobaroyen (2013a) and Ntim (2015).

Ellemers, Rink, Derks and Ryan (2012) found that both 'glass cliff' and 'queen bee' phenomena negatively influence future career opportunities of women. However, limited studies (see Dezső, Ross and Uribe, 2016) could apply these two theories to determine the appointment of WOCBs. Specifically, in the context of the US, Dezső *et al.* (2016) evinced that a woman on the top management team decreases the chance of another woman being appointed to the same position. Hence, future research should apply glass cliff and queen bee theories to identify factors that can explain the presence or absence of WOCBs, following Dezső *et al.* (2016).

Generally, each individual theoretical perspective has limitations. For instance, Ntim and Soobaroyen (2013a) showed clear limitations of agency, resource dependence, legitimacy and stakeholder perspectives in explaining the relationship between corporate governance and CSR disclosure. Several studies (e.g., Francoeur *et al.*, 2008; Gottschalk and Niefert, 2013; Ntim and Soobaroyen, 2013a) apply various theories to provide broad perspectives on WOCBs. Therefore, future research may adopt multi-theoretical frameworks. Specifically, each study can incorporate two or more perspectives relating to both economic and corporate governance theories, and sociological and psychological theories.

2.5.3 Antecedents of female board members

According to the Deloitte (2017) report the absence or presence of female directors differs among countries. The differences can be explained by country-level factors such as national institutional systems, language, culture, religion, government policies, and social-economic factors, among others (Grosvold and Brammer, 2011; Bullough *et al.*, 2012; Carrasco *et al.*, 2015; Chizema *et al.*, 2015). It appears that fewer studies investigate the impact of national cultural dimensions and government policies on the emergence of females as board members. Therefore, future research may consider investigating the relationship between national cultural dimensions, government policies and antecedents of female directors. Specifically, future studies can measure the national cultural dimension based on Hofstede's project, GLOBE's project, or the project of Trompenaars and Hampden-Turner.

2.5.4 The influence of women board members on corporate outcomes

With regard to compensation, a number of studies show evidence of a gender pay gap between board members (Geiler and Renneboog, 2015; Yanadori *et al.*, 2016). Surprisingly, though, fewer can illustrate the impact of women directors on the pay gap between male and female board members (Perryman *et al.*, 2016; Abendroth *et al.*, 2017). Thus, future research may focus on determining the relationship between WOCBs and gender pay gap. More interestingly, future research could compare the gender pay gap on corporate boards between countries.

Although a number of studies have investigated the link between WOCBs and CSR, fewer studies test the impact of female directors on environmental performance (Elmagrhi *et al.*, 2019) because the others only used environmental disclosure as a part of the CSR measure. Thus, future research may focus on determining the relationship between WOCBs and environmental performance.

Many studies use various measures of firm performance. Marketing has a positive relationship with firm performance (Brodie, Winklhofer, Coviello and Johnston, 2007; Morgan, Vorhies and Mason, 2009). However, this SLR finds that limited studies consider marketing as a type of firm performance. Therefore, future research should test the impact of female directors on marketing.

The relationship between WOCBs and corporate outcomes is inconclusive, with studies reporting mixed findings, including positive, negative, or no relationship. A few studies have explained the different impact of female directors on corporate outcomes. It seems that the impact of WOCBs on corporate outcomes differs markedly between countries because country- level factors may moderate this impact. Therefore, future research should investigate the influence of country-level factors, such

as national cultural dimensions, government policies and religion among others on the relationship between WOCBs and corporate outcomes.

2.6 Conclusion

The main purpose of this SLR has been to review the most up-to-date research on WOCBs in order to identify what I know and do not know about WOCBs around the world. The current SLR reviewed both theoretical and empirical studies relating to the appointment of WOCBs and their contributions to corporate outcomes. This SLR analysed 634 studies in 270 scholarly journals in different disciplines, such as *accounting, auditing and finance; corporate governance; business, business ethics and CSR; economics; gender; leadership and management;* and *administrative, social sciences and sociology*, among others from 1981 to 2019.

This SLR contributes to the topic of WOCBs in several ways. Summarising theoretical frameworks relating to country-, firm-, social-, and individual-level views of the antecedents of WOCBs and their influence on corporate outcomes, the current SLR finds that females make more contributions to corporate outcomes although they are faced with some (gender-based) challenges in terms of becoming board members. In addition, analysing empirical research, this SLR classifies factors affecting the absence or presence of women directors into four levels and reveals that country-, firm-, social- and individual-level factors have different impacts on the antecedents of WOCBs. Furthermore, it is extremely difficult to explain or predict the influence of WOCBs on corporate outcomes, such as compensation, CSR, and firm performance although most recent studies show positive impacts. Finally, this SLR recommends examining the effect of national culture dimensions on the appointment of female directors in corporate boards and the relationship between WOCBs and corporate outcomes. This is because it found many limitations among previous studies, such as a lack of qualitative and mixed-methods studies, cross-cultural research, application of multi-theoretical perspectives, and research on compensation.

Although the current thesis tries to cover many studies to provide multiple perspectives on the antecedent and corporate outcomes of WOCBs, it cannot avoid limitations. First, this SLR excludes a significant number of studies (13,267), which are 'Non-corporate governance research'. Therefore, future research should raise a question on WOCBs in the non-corporate governance context. Second, the current study may have missed some important information on women directors from 'non-English' studies. Similarly, this study also lacks information which may have been provided from working papers and unavailable full texts. Therefore, future research should try to access as many studies, which are non-English studies, working papers, as possible.

3. Chapter 3: Women on corporate boards, national culture and national governance quality around the world

Abstract

The proportion of women on corporate boards (WOCBs) differs among countries. Drawing on institutional and social role theories, this paper investigates whether national governance quality (NGQ) and national culture (NC) can explain the differences in the appointment of female directors among countries that this study observes. The analysis includes 647 firms in 78 countries from 2010 to 2017. National cultural dimensions are based on the project of Hofstede. The current study uses the national governance quality proposed by the World Bank. The study conducts multivariate analyses by using ordinary least squares regressions with the Clustered Standard Errors technique. For the robustness test, this study divides the sample into two subsamples (developing and developed countries), use alternative measures of WOCBs (e.g., 'critical mass' of women directors, number of female directors) and national culture (e.g., dimensions conducted by GLOBE's project), as well as advance data analysis techniques, such as a two-stage least square (2SLS) and generalised methods of moments (GMM). The findings show that the impact of NC on the appointment of WOCBs depends on each national cultural dimension and the level of the appointment of female directors. Furthermore, the results show that NGQ has a strong positive influence on the appointment of WOCBs and a significant moderating role in the relationship between NC and the presence of women directors. Indeed, the level of this moderating role also depends on each national cultural dimension and the extent to which women are present on corporate boards. The results support institutional and social role theories in terms of explaining the difference in appointment of WOCBs among countries. Surprisingly, this study found that many countries have changed slightly from the traditional view to a non-traditional view of social role.

Keywords: Culture, Cross -country, Governance Quality, Institutional Theory, Social Role Theory, Women on Corporate Boards

3.1 Introduction

Corporate governance plays an important role in the sustainable growth of a company. It means that the importance of corporate governance has increased steadily. The board of directors is a key mechanism of corporate governance (Mallin, 2013). Under the pressure of increasing importance of corporate governance, government policies, stakeholders and media, many companies try to increase board gender diversity (Farag and Mallin, 2016a). For example, many countries such as Norway and France have imposed laws (i.e. gender quotas or corporate governance codes) to boost the presence of female directors. Furthermore, women are appointed as board member when firms are performing poorly (Ryan, Haslam, Hersby and Bongiorno, 2011). In other words, after a financial crisis, many firms think of appointing more women directors. Therefore, the presence or absence of WOCBs becomes an attractive conversation around the world.

The world continues to witness the difference in the appointment of WOCBs among countries. For instance, about 20 years ago, Singh *et al.* (2001) found that the US Fortune 500 companies and the UK FTSE 100 companies have similar proportions of female executive directors (2% female inside directors), while board gender diversity in the US is higher than it is in the UK. Today, women account for 14% of directors on US boards, while the account for 20% in the UK (Deloitte, 2017). The report of Deloitte (2017) show that women CEOs in the US and the UK are 4% and 4.8%, respectively, while the percentage of chairwomen in the US is higher than it is in the UK. In addition, Şener and Karaye (2014) found no evidence to support the difference in appointment of WOCBs between developing countries – Turkey and Nigeria in particular. However, they conclude that Nigerian firms prefer to appoint women as independent directors in comparison with Turkish companies.

Theoretically, many theories such as agency theory and resource dependence theory can explain the benefits of board gender diversity (see Carter *et al.*, 2003). However, it seems that fewer theories (e.g., institutional theory, social role theory) provide a framework for explaining the difference in appointment of WOCBs among firms and countries (see Carrasco *et al.*, 2015; Chizema *et al.*, 2015). It is a fact that there is a lack of studies combining various theories to create good perspectives on the reasons for the difference in presence or absence of female directors among firms or countries.

Empirically, the difference in presence of female directors among countries could be explained by various factors like government policies, culture, economy, board characteristics and firm characteristics, among others (see Grosvold *et al.*, 2016; Saeed *et al.*, 2016). However, a limited number of studies evince the relationship between country-level factors, culture in particular, and the appointment of WOCBs. Grosvold and Brammer (2011) were the first authors to investigate the impact of national cultural system on female board representation. Specifically, they used dimensions

of national culture proposed by the Global Leadership and Organizational Behaviour Effectiveness (GLOBE) project (House, Hanges, Javidan, Dorfman and Gupta, 2004) and divided countries into 10 geographic cultural clusters, following Gupta, Hanges and Dorfman (2002). After using a panel data sample of 38 countries from 2001 and 2007, Grosvold and Brammer (2011) found a significant relationship between geographic cultural clusters and the presence of WOCBs. However, they could not conclude the connection between each measure of NC on female board representation. It seems that Carrasco *et al.* (2015) carried out better empirical research than Grosvold and Brammer (2011) did in terms of providing direct comments on the relationship between each measure of NC and the presence of women directors. Specifically, using a cross-sectional data sample of 7032 boards from 32 countries during 2010, Carrasco *et al.* (2015) showed that countries with a high value of power distance index and masculinity tend to bring fewer opportunities to WOCBs. According to Baltagi (2013), panel data are better than cross-sectional and time-series data in terms of identifying and measuring the effect of variables or constructing and investigating complicated behavioural models. Therefore, Carrasco *et al.* (2015) could improve the quality of their study by using panel data. Using a panel data sample of 45 countries from 2007 to 2013, Chizema *et al.* (2015) showed evidence for the negative relationship between masculinity, which is a measure of NC, and presence of women directors. However, they only used one measure of NC and this measure was not the main independent variable. Therefore, this means that the study of Chizema *et al.* (2015) did not focus on defining the relationship between NC and the appointment of WOCBs. Furthermore, national governance quality should be involved in corporate governance research (Nguyen *et al.*, 2015). However, it seems that most of the research ignores national governance mechanisms and their moderating impact on corporate governance (Filatotchev *et al.*, 2013), indicating a lack of studies investigating the impact of national governance quality on the appointment of female directors. As a result, these limitations motivate me to think of testing the relationships among the appointment of women on corporate boards, national culture and national governance quality around the world.

Using a sample of 647 firms in 78 countries from 2010 to 2017, this study conducts empirical research with twofold purposes to solve some limitations of previous studies (e.g., not defining the link between national governance quality and the appointment of WOCBs). First, the current study investigates how national culture relates to the appointment of women directors. Second, and importantly, it identifies the role of national governance quality in explaining the presence or absence of female board members and moderating the association between NC and presence of WOCBs.

The current study makes some contributions to the discourse. *In theory*, this study combines institutional theory and social role theory to explain the complex association between NGQ, NC and the appointment of female directors. In addition, this study contributes to growing literature on board gender diversity around the world. Specifically, national governance quality only has a significant

and positive link with female board representation in developing countries, but plays an important moderating role on the relationship between some measures of national culture and women directors. Importantly, the level of this moderating role depends on type of national cultural measures and level of female board representation. Furthermore, some measures of national culture such as individualism versus collectivism or masculinity versus femininity can explain the absence or level of appointment of WOCBs. *In practice*, this study suggests some policies to boost gender equality on corporate boards such as imposing regulations on board gender diversity or increasing national governance quality in developing countries in particular.

The structure of this study is organised as follows. Section 2 reviews two main theoretical frameworks explaining the impact of national culture and national governance quality on the presence of WOCBs. Section 3 outlines alternative conceptions of national cultural dimensions and NGQ, and develops hypotheses in connection with how NC and NGQ affect the determinants of WOCBs. This study highlights the methodology in Section 4, reports the findings in Section 5 and presents robustness tests in Section 6. Finally, Section 7 concludes.

3.2 Theoretical perspectives on the antecedents of women on corporate boards

Many previous studies (Hillman *et al.*, 2007; Wang and Kelan, 2013; Farag and Mallin, 2016a) have imposed several economic-based theories (such as agency and resource dependence theories) to explain the presence of female directors, but limited studies (Gregorič *et al.*, 2017) have applied social-based theories (namely institutional theory) to illustrate the appointment of women directors. By contrast, this study applies both social role and institutional theories due to several reasons. First, both social role theory and institutional theory are social-based perspectives. Then applying both these theories, this study addresses limitations of previous studies in terms of lack of the use of a social-based framework on explaining the presence of women board members. Second and more importantly, this study seeks to explore the multi-level views on the relationship between country-level factors and the emergence of women as board members. Specifically, social role theory can provide explanations for the individual- and social-level views on the appointment of women directors while institutional theory shows firm- and country-level views on the presence of female board members. To conclude, the theoretical framework for investigating the impact of country-level factors (NC and NGQ) on the appointment of women directors for the current study has been developed through the elaboration of two specific theories, such as social role theory and institutional theory.

3.2.1 Social role theory

According to *social role theory*, the difference in behaviour between males and females can be explained by stereotypes and beliefs, and the social roles they live (Eagly, 2013). For example, men like working in authority positions while women enjoy caretaking roles at home (Eagly and Wood, 2011).

It seems that this theory divides into two trends — traditional and non-traditional views of social role. In line with the traditional view of social role, women usually have typical characteristics related to concern and empathy with others (Eagly and Johannesen-Schmidt, 2001). Furthermore, it seems that women are more communicative and cooperative by concentrating on social interactions while men are more agentic by pursuing a style of interaction based on power (Bakan, 1966; Eagly, Johannesen-Schmidt and Van Engen, 2003). In addition, males and females also have different behaviour at the workplace. Specifically, women display the nurturing characteristic at work while men normally behave aggressively (Kilbourne and England, 1997). Thus, women are not aggressive employees if they fail to secure promotion in comparison with their male counterparts (Kilbourne and England, 1997). Thus, those women who hold the traditional view of the female's social role would prefer not to become directors (Chizema *et al.*, 2015).

When dealing with pressure at work, both women and men behave differently due to various views of social role theory. Thus, many papers use this theory to explain the difference between women and men in gender social role expectations (Kimbrough, Guadagno, Muscanell and Dill, 2013), and overconfidence (Huang and Kisgen, 2013), among others. Today, observably, women have changed their view slightly from traditional to non-traditional perspectives of social role by taking more roles as board members and raising their voices at board meetings. Specifically, they are more collaborative, indirect, and process- or person-oriented (Holmes and Meyerhoff, 2008) and encourage firms to have responsibility to society (Chen, Velasquez Tuliao, Cullen and Chang, 2016a). These situations show that women with the non-traditional view of social role will find opportunities to become directors (Chizema *et al.*, 2015).

3.2.2 Institutional theory

Institutional theory explains the processes that an organisation provides rules, requirements and environments as guidance for social behaviour (Marquardt and Wiedman, 2016). Scott (2008) explained his concept of social institution including three components; (i) normative (e.g., attitudes, values and norms), (ii) cognitive (e.g., shared knowledge), and (iii) regulatory (e.g., laws and rules). In accordance with the framework of Scott (2008), firms impose their normative, cognitive and

regulatory processes to guide their employees to follow social behaviour (Marquardt and Wiedman, 2016). From a broad view, countries can be regarded as including regulative, cognitive, and normative structures to support individuals to achieve social behaviour (Chizema *et al.*, 2015). Thus, each firm or country differs in its institutional environment, leading to differences in practices.

Several studies apply institutional perspectives to explain the difference in the appointment of WOCBs among firms and countries. Specifically, the appointment could explain the strategic actions of firms (Saeed *et al.*, 2016), industries or business activities (Grosvold and Brammer, 2011), and requirements of shareholders on board gender diversity (Marquardt and Wiedman, 2016). Some characteristics of a country could explain female board representation such as religion (Chizema *et al.*, 2015) or law (Grosvold *et al.*, 2016), among others.

Drawing on both social role theory and institutional theory, this study expects that each country provides normative, cognitive and regulatory processes to enable males and females to fit in their roles. In other words, institutional environment including culture plays an important role in defining the beliefs of social role. Therefore, a country which follows the traditional perspective of social role is likely to have more women achieving the traditional view of their social role. By contrast, a country has more women with a non-traditional perspective of social role if it achieves the non-traditional view of social role. This indicates that if social institutions of a country change from the traditional perspective to the non-traditional perspective, the view of the social role of this country may follow suit.

Observably, countries with the traditional view of social role bring fewer opportunities to women directors. In addition, females living in these countries also would not like to become board members. Consequently, countries with the traditional view of social role can explain the absence of female directors. However, countries with the non-traditional perspective of social role provide more opportunities to female directors. Furthermore, women living in these countries try to challenge themselves by finding chances to work for a board. As a result, countries with non-traditional view of social role can provide explanation for the presence of WOCBs.

Overall, according to social role theory, countries with the traditional perspective of social role will have fewer WOCBs than countries with the non-traditional view of social role have. Additionally, based on institutional theory, this study predicts that the appointment of WOCBs differs among countries because of the difference in country institutional environments such as NC and/or NGQ.

3.3 Empirical literature review and hypotheses development

3.3.1 National culture and women on corporate boards

Culture is commonly viewed as a set of beliefs, norms, expected behaviours and shared values that guide individuals to select actions, evaluate people and events, explain their human behaviour and evaluations (Hofstede, 2003). Many authors, such as Inglehart (1977), Hofstede (1980), House *et al.* (2004), Schwartz (1992) and Trompenaars and Hampden-Turner (1997), conducted their research on the difference in culture among countries. Hofstede introduced his four national cultural dimensions based on employees' surveys of IBM subsidiaries in 75 countries from 1967 to 1973. Several authors show that Hofstede's research is out-of-date (Schmitz and Weber, 2014) and/or not related to culture (Baskerville, 2003). In addition, some studies (Hudson and Sampson III, 1999) mention that culture is more dynamic and not static. However, the current study applies the six national culture dimensions measured by Hofstede, Hofstede and Minkov (2010) for several reasons. First, according to (Zhang and Lopez-Pascual, 2012), culture include both dynamic and static perspectives, but it seems that culture is more static than dynamic. Hence, the current study can use Hofstede's cultural dimensions as static culture to investigate the impact of culture on the appointment of women directors. Second, national cultural dimensions measured by Hofstede are widely applied in different cross-cultural research such as the impact of NC on dividend policy (Bae, Chang and Kang, 2012), disclosure (Hooi, 2007), corporate investment (Shao, Kwok and Zhang, 2013), and new product development (Nakata and Sivakumar, 1996). Third, over the years, people have considered Hofstede's cultural dimensions as the basic theoretical framework to differentiate national cultures (Robbins, 2004 cited in (Carrasco *et al.*, 2015). Finally, using the national cultural dimension measured by Hofstede, this study can compare its results with the findings of Carrasco *et al.* (2015) because both studies investigate the impact of NC on the appointment of women directors.

Individualism versus collectivism (INDI) focuses on explaining the strength of connections among individuals. High score of INDI indicates individualist societies while low score shows collectivist societies. (Hofstede *et al.*, 2010). General speaking, individuals living in countries with high individualism lose their ties among others and their behaviours are based on their needs. Conversely, individuals living in collectivism countries are likely to have strong relationships with friends, colleagues and family, and their behaviours are affected by others. As regards gender position, it seems that collectivist countries achieve the traditional view of the social role while individualist regions accept new perspectives. For example, Japanese are faced with gender inequality because it has low score of individualism (Dohi and Fooladi, 2008). Therefore, the new views of social role give women in individualist countries more opportunities to work on board of directors. Interestingly,

the social role has changed recently from traditional to non-traditional views in many collectivist countries such as Japan (Dohi and Fooladi, 2008). Many papers evince the association between individualism and WOCBs. Particularly, several authors find no connection between female board representation and the individualism dimension of a country (Carrasco *et al.*, 2015; Yousafzai, Saeed and Muffatto, 2015). Specifically, using individualism measure as the main predict variable, Carrasco *et al.* (2015) pointed out that the percentage of women directors is not related to individualism or collectivism countries. However, many researchers show the strong impact of collectivism dimension of a country on women directors (Lemoine, Aggarwal and Steed, 2016a; Bullough *et al.*, 2017). In particular, women are appointed as board members when the board of directors consists of more men than women (Lemoine *et al.*, 2016a). Furthermore, Bullough *et al.* (2017) used data of 45 countries to define the influence of two main levels of collectivism on WOCBs. They found that in-group level of collectivism (family, friends, and colleagues) is an important predictor of the presence of female directors. Interestingly, they indicated that institutional collectivism plays an important role in affecting the relationship between the in-group level of collectivism and female board representation. Thus, this study hypothesises a link between individualism and WOCBs, as follows:

H1a: Firms in individualistic countries are likely to appoint more female board members than do firms in collectivistic countries.

Masculinity versus femininity (MAS) measures the difference in emotion between men and women (Hofstede *et al.*, 2010). All societies have a masculine index that was high for masculine countries and low for feminine countries. Normally, men in masculine societies have a behaviour that is distinct from that of women. Specifically, men behave assertively, toughly, and only concentrate on material success while women behave modestly, tenderly and are concerned with the quality of life. By contrast, both men and women in feminine societies focus on the quality of life, indicating that countries with low levels of masculine have changed social gender role perspectives. Therefore, women in feminine regions are willing to work outside the home and they find it easy to become board members. There is strong evidence for the significant negative relationship between MAS and female board members (Carrasco *et al.*, 2015; Chizema *et al.*, 2015; Cabeza-García, Del Brio and Rueda, 2019). In particular, using a sample of 32 countries in 2010, Carrasco *et al.* (2015) found a negative impact of masculine societies on the presence of female directors. Their findings find support for a high level of the traditional gender role in masculine countries. Additionally, Chizema *et al.* (2015) used MAS as a control variable to investigate factors affecting on the appointment of WOCBs. Based on a sample of 45 countries between 2007 and 2013, they showed that masculine societies reduced the opportunity of female board representation. To conclude based on the findings of previous studies, this study tests a link between Masculine and WOCBs, as follows:

H1b: Firms in masculine countries are likely to appoint fewer women on corporate boards than firms in feminine countries do.

Power distance index (PDI) indicates the degree of inequality, which exists and is accepted, in a country (Hofstede *et al.*, 2010). Generally, the existence of different social classes such as upper, middle and lower classes cause inequity in a society. Hofstede measured power distance in social class, education level and occupation. He found that countries with low levels of power distance bring shared power, equality and opportunities to everyone. Individuals in low power distance societies find it easy to perceive inequality in power. Considering the position of gender, it is obvious that lower level of PDI encourages gender equality. In other words, the perspectives of social gender role have changed rapidly. Thus, women in low power distance countries have more opportunities to become board members. By contrast, individuals living in high power distance countries widely accepted inequality in power. It seems that high power distance countries do not provide women with any opportunities for good promotion such as board of directors or top management. Several studies show evidence of a negative association between power distance and prevalence of women directors (Carrasco *et al.*, 2015; Cabeza-García *et al.*, 2019). However, (Grosvold, 2009) found that PDI affects the appointment of female directors positively and significantly. Based on the relevant literature review, this study expects the same results as the findings of Carrasco *et al.* (2015). Therefore, this study investigates the following hypothesis:

H1c: Firms in countries with high level of power distance are likely to appoint fewer female directors than firms in countries with low level of power distance do.

Uncertainty avoidance (UA) shows how well people can deal with anxiety (Hofstede *et al.*, 2010). On one hand, individuals living in strong uncertainty avoidance countries will have a low tolerance for diversity in perspectives and behaviours, and try to reduce risks. On the other hand, individuals living in countries with low levels of uncertainty avoidance will tend to be more open-minded about alternative behaviours, various perspectives and higher risks (Carrasco *et al.*, 2015). Because of keeping an open mind, weak uncertainty avoidance countries accept the change in social gender role. Therefore, these countries bring more opportunities to promote women to be members of top management teams. For example, a low score of UA in India can explain why Indians are willing to take big risks and why so many Indian women own their businesses (Gibson, 2008). However, several papers were not able to conclude the relationship between UA and female directors (Carrasco *et al.*, 2015; Yousafzai *et al.*, 2015). Specifically, they found insignificant and negative influence of UA on women board members. By contrast, Grosvold (2009) used data from 50 countries to show evidence on the significant and negative impact of UA on the presence of women directors. To sum up, according to relevant literature, this study hypothesises a link between uncertainty avoidance and WOCBs, as follows:

H1d: Firms in countries with high uncertainty avoidance are more likely to appoint fewer women directors than firms in countries with low uncertainty avoidance are.

Long-term orientation versus short-term orientation (LTO) describes how well a country maintains some links with religiosity and nationalism while dealing with the challenges of the present and the future (Hofstede *et al.*, 2010). High value of LTO indicates long-term orientation societies while low value shows short-term orientation societies. Individuals in long-term orientation countries focus on adaption and pragmatic problem-solving, and are willing to prepare for the future by thrift. However, individuals in short-term orientation countries usually retain the tradition and fulfil social obligations. Traditionally, women do housework while men work outside of the home in short-term orientation societies. Similarly, women in long-term regions spend their time taking care of their children. Therefore, it seems that traditional gender roles are retained in both long-term orientation and short-term orientation regions. As a result, women are faced with challenges when becoming directors in both long-term orientation and short-term orientation countries. This study examines the following hypothesis:

H1e: Firms in long-term orientation countries are likely to appoint the same number of female board members as do firms in short-term orientation countries.

Indulgence versus restraint (INDU) measures the level of happiness, freedom, and use of leisure time (Hofstede *et al.*, 2010). All countries have an indulgence index that was high for indulgent societies and low for restrained regions. Normally, individuals in indulgent countries are happier and are more satisfied in their family life than those in restrained countries are. This may be because restrained societies strictly upheld gender roles (Hofstede *et al.*, 2010). Thus, women in restrained countries achieve perspectives of traditional gender roles. This indicates that women in low levels of indulgence deal with a lack of good promotion in their career. Consequently, this study hypothesises an association between indulgence versus restraint and WOCBs as follows:

H1f: Firms in indulgent countries are more likely to appoint more female presence on corporate boards than firms in restrained countries are.

3.3.2 National governance quality and women on corporate boards

According to Bilimoria and Piderit (1994), gender discrimination may be a possible reason for the low appointment of female directors. Therefore, a country needs to decrease gender discrimination in order to increase the presence of women on corporate boards. Generally, developed countries introduce legislation to reduce discrimination on the basis of gender. Hence, both women and men have the same rights to job and educational opportunities in the developed countries (Masselot, 2007). Theoretically, effective, fair and impartial national governance ensures the safeguarding of

equal rights for males and females because it can decrease gender discrimination. Consequently, high levels of national governance quality (NGQ) increase the chance for women to become board members.

Empirically, using cross-sectional surveys from 80 countries, Wehrmeister, da Silva, Barros and Victora (2017) showed that countries with poor NGQ cause healthcare inequalities for women. This indicates that only good NGQ will bring equal opportunities to women by comparison with men. Therefore, this study predicts that women living in countries with high quality of governance have more chance to work as board members. However, surprisingly, Grosvold (2009) empirical research showed a negative influence of good NGQ on the appointment of WOCBs. Hence, this study hypothesises the following:

H2: Firms in countries with high-level quality of governance are more likely to recruit female directors as do firms in countries with low- level quality of governance.

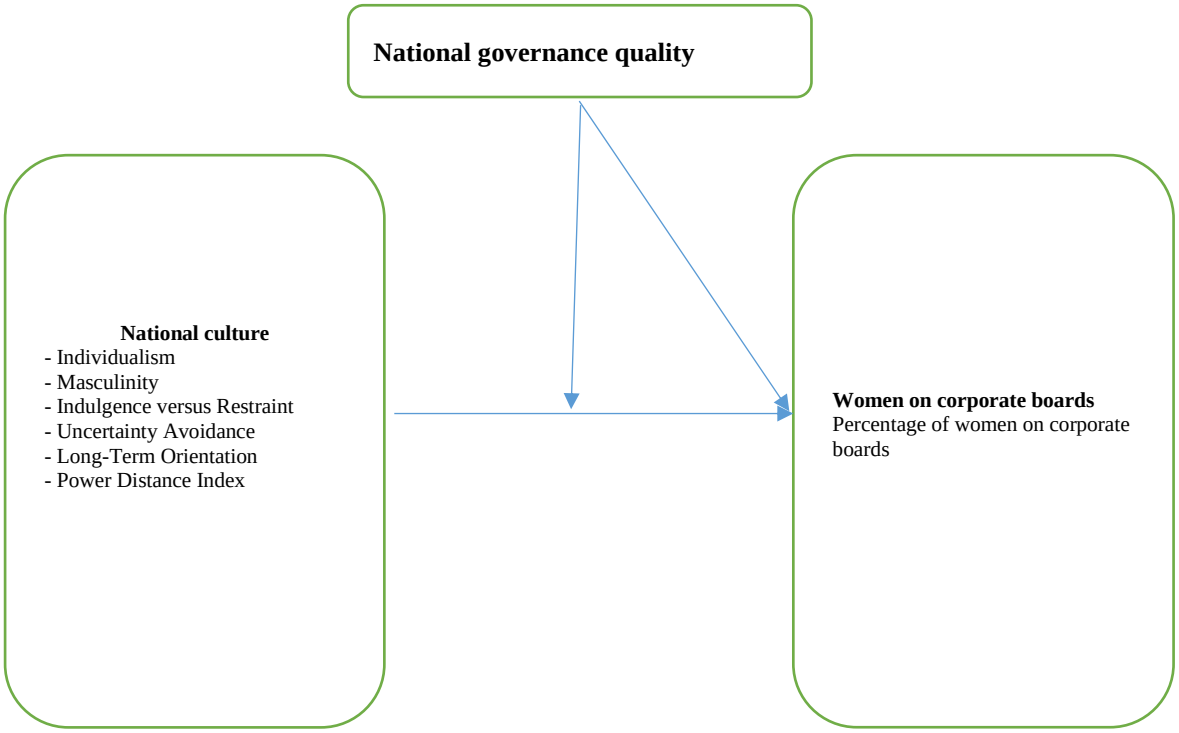
3.3.3 National governance quality affects the nexus between national culture and women on corporate boards

Previous studies show different findings on the relationship between national culture and the appointment of WOCBs. For instance, Grosvold (2009) found a positive and significant influence of PDI on the presence of female directors while Carrasco *et al.* (2015) showed evidence for a negative and significant relationship between PDI and the appointment of WOCBs. The possible reason for this is the different contexts within which the studies took place. Hence, this study considers that some unique contexts of a country may control for the connection between national culture and the presence of women directors. National governance quality is one of country's contexts. Therefore, NGQ may generate different findings on the relationship between national culture and the appointment of WOCBs. So, this study investigates the following hypothesis:

H3: The link between national culture and the appointment of women on corporate boards is indirect, and is likely moderated by national governance quality.

The current study illustrates the conceptual model in Figure 3.1.

Figure 3.1: National culture, national governance quality and women on corporate boards: A conceptual framework



3.4 Research design and methodology

According to Saunders *et al.* (2016), research design and methodology illustrates how the study collects and analyses data. Therefore, this section clearly sets out the chosen method of data collection and variable measurements and the model for data analysis.

3.4.1 Data sample

The website https://www.hofstede-insights.com/product/compare-countries/ (accessed on 06 July 2018) provides national cultural dimensions proposed by Hofstede in approximately 100 countries. In addition, the current study collects countries' indicators such as inflation, national governance quality, and others from the World Bank. Furthermore, this study collects corporate governance and financial information manually because many existing databases such as BoardEx or DataStream lack information on developing countries. This study tried to access as many annual reports including corporate governance information in developing countries as it could. The researcher randomly selected and downloaded annual reports of firms located in developed countries because they usually have corporate governance disclosure. Google Translate (https://translate.google.co.uk/) also

supported me in this endeavour in gathering data because many companies have not provided annual reports written in English.

The sample starts from 2010 for a range of reasons. First, after the global finance crisis, many countries such as Albania or Austria imposed and updated their corporate governance code (ECGI, 2017), indicating that this study may find it easy to gather corporate governance information from annual reports. Second, the world economy recovered from 2010 (UN, 2010). Therefore, collecting data from 2010 avoided the impact of global financial crisis on the appointment of WOCBs. The latest data available were for 2017 at the time of data collection. Finally, because of the difference in corporate governance disclosure among countries, this study analysed an unbalanced sample comprising 647 companies located in 78 countries from 2010 to 2017 (Refer to Table 3.1 for more details of the data sample).

Table 3.1: Number of collected firms by country

No	Country	Firms	No	Country	Firms	No	Country	Firms	No	Country	Firms
1	Albania	2	21	Germany	8	41	Malawi	4	61	Slovenia	4
2	Argentina	4	22	Ghana	7	42	Malaysia	14	62	South Africa	13
3	Australia	8	23	Greece	7	43	Malta	3	63	South Korea	9
4	Austria	11	24	Hong Kong	7	44	Mexico	6	64	Spain	6
5	Bangladesh	10	25	Hungary	3	45	Namibia	6	65	Sri Lanka	10
6	Belgium	10	26	Iceland	4	46	Netherlands	10	66	Sweden	15
7	Bhutan	4	27	India	11	47	New Zealand	19	67	Switzerland	15
8	Brazil	10	28	Indonesia	11	48	Nigeria	12	68	Taiwan	10
9	Bulgaria	3	29	Iran	2	49	Norway	10	69	Tanzania	3
10	Canada	11	30	Ireland	10	50	Pakistan	15	70	Thailand	14
11	Chile	7	31	Israel	10	51	Panama	2	71	Trinidad and Tobago	4
12	China	12	32	Italy	5	52	Peru	2	72	Turkey	15
13	Colombia	5	33	Jamaica	5	53	Philippines	12	73	Ukraine	2
14	Czech Republic	5	34	Japan	11	54	Poland	5	74	United Arab Emirates	11
15	Denmark	15	35	Jordan	8	55	Portugal	2	75	United Kingdom	17
16	Egypt	5	36	Kenya	10	56	Romania	2	76	United States	15
17	Estonia	5	37	Kuwait	15	57	Russia	3	77	Vietnam	10
18	Ethiopia	3	38	Latvia	5	58	Saudi Arabia	11	78	Zambia	4
19	Finland	15	39	Lebanon	6	59	Singapore	16		Total	647
20	France	17	40	Luxembourg	5	60	Slovakia	4			

3.4.2 Variables and measures

This study classifies all variables into three main groups. Full definitions and measures of all the variables used are presented in Table 3.2.

Table 3.2: Variable measurements and data source

Variable	Symbol	Measure
Dependent variables		
Women on corporate boards	**PWOCB**	Number of women on corporate boards divided by total number of directors.
Independent and moderating variables		
Power Distances Index	**PDI**	Measuring the level of inequality in a country. Using a survey to know employees' anxiety, boss autocratic, and how they expect their work environment to be. A score number (from 1 to 5) could measure all answers.
Individualism versus Collectivism	**INDI**	Measuring the strength of connections among people. Using survey questions including 14 work goals. A score number (from 1 to 5) could measure all answers.
Masculinity versus Femininity	**MAS**	Measuring the difference in emotional gender roles between male and female. Using survey questions including 14 work goals. A score number (from 1 to 5) could measure all answers.
Uncertainty Avoidance	**UA**	Measuring how well people can deal with anxiety. Using survey questions. A score number (from 1 to 5) could measure all answers.
Long-term Orientation versus Short-term Orientation	**LTO**	Measuring to what extent people are willing to prepare for the future. Long-Term Orientation Index score for 23 countries is based on the Chinese Value Survey. Long-Term Orientation Index score for 93 countries is based on the World Value Survey. According to the World Value Survey, a score number (from 1 to 10) could measure all answers.
Indulgence versus Restraint	**INDU**	Measuring how people enjoy life. Using the World Value Survey. A score number (from 1 to 10) could measure all answers.
National governance quality	**NGQ**	Measuring the governance quality of a country. Average of six key dimensions of governance: (1) Voice and Accountability, (2) Political Stability and Absence of violence/Terrorism, (3) Government Effectiveness, (4) Regulatory Quality, (5) Rule of Law, (6) Control of Corruption. The highest score of NGQ indicates the high level of governance quality.
Control variables		
Firm-level		
Board size	**BS**	The number of directors on the board
Firm size	**FS**	Natural logarithm of total assets
Firm age	**FA**	Age of the company since incorporation
Financial performance	**CFP**	$\frac{profit\ before\ tax}{average\ total\ assets}$
Country -level		
Gross Domestic Product Per Capita	**GDPPC**	Gross Domestic Product divided by total population
Gross Domestic Product Growth	**GDPG**	$\frac{GDP_n - GDP_{n-1}}{GDP_n}$
Inflation Rate	**INF**	Average consumer prices
Women in parliament	**WNP**	Proportion of seats held by women in national parliaments
Unemployment rate	**URATE**	Number of people, who have no jobs, divided by total labour force

Gender Diversity Quotas Index	**GDQI**	Measuring how well a country supports gender equality on the corporate board. The values range from 0 (no support) to 1 (strong support). Average of gender quotas on corporate boards, gender mentioned on corporate governance code. and voluntary or mandatory requirements of gender on corporate board.
Gender quotas on corporate boards	***GQCB***	*Dummy variable for gender quotas. Code 1 for country having gender quotas on corporate boards, code 0 for country without gender quotas on corporate boards.*
Gender mentioned on corporate governance code	***GCGC***	*Dummy variable for gender mentioned on corporate governance code. Code 1 for country having corporate governance code including gender, code 0 for country with corporate governance code not including gender.*
Requirements of gender on corporate boards	***RGCB***	*Dummy variable for gender requirement. Code 1 for country having law on female on corporate board, code 0 for country having no requirements of female on corporate board.*

First, the main dependent variable in the regression analysis is percentage of women on corporate boards (PWOCB), following a number of well-established research studies (e.g., Carrasco *et al.*, 2015; Chizema *et al.*, 2015). The second group comprises of national cultural dimensions, including *masculinity versus femininity* (MAS), *individualism versus collectivism* (INDI), *power distance index* (PDI), *uncertainty avoidance* (UA), *long-term orientation versus short-term orientation* (LTO), and *indulgence versus restraint* (INDU).

In addition, this study includes national governance quality (NGQ), which is based on the Worldwide Governance Indicators (WGI) project of the World Bank. The project measures six indicators such as Control of Corruption, Government Effectiveness, Political Stability and Absence of Violence/Terrorism, Regulatory Quality, Rule of Law, and Voice and Accountability (Kaufmann, Kraay and Mastruzzi, 2011). Theoretically, six WGI indices measured six distinct concepts. However, Langbein and Knack (2010) found that the six measures illustrate one concept. Therefore, this study applies Principal Component Analysis (PCA) to create NGQ from six governance indicators conducted by the World Bank, following Nadia and Teheni (2014). The regression model also includes various control variables, following previous papers (e.g., Carrasco *et al.*, 2015; Chizema *et al.*, 2015). Finally, the current study also includes many control variables, which are divided into two sub-groups; these are country- and firm-level factors.

As regards country-level characteristics, Estrin and Mickiewicz (2011) found a significant association between Gross Domestic Product Per Capita (*GDPPC*), Gross Domestic Product Growth (*GDPG*) and the presence of female directors. Thus, this study expects the impact of both *GDPPC* and *GDPG* on the appointment of WOCBs. Additionally, inflation rate (*INF*) has a strong relationship with female labour supply (Niemi and Lloyd, 1981), which may affect female board representation. Therefore, this study predicts a correlation between INF and women directors. Furthermore, the current study also expects that unemployment rate (URATE) is related to female directors, following the findings of Saridakis *et al.* (2014). Chizema *et al.* (2015) found evidence for

a significant relationship between the proportion of seats held by women in national parliaments (*WNP*) and the emergence of women as board of directors. Therefore, this study controls for WNP. Generally, countries with gender quotas or gender targets will appoint more female directors (Sojo *et al.*, 2016). Thus, following the findings of Sojo *et al.* (2016), the current study predicts that the gender diversity quotas index (*GDQI*) affect the presence of female board members.

This study also controls for several firm characteristics. It predicts a significant relationship between board size (*BS*) and the representation of female directors, following the results of Kang *et al.* (2007) and Farag and Mallin (2016a). Firm size (*FS*) has a significant influence on the appointment of women directors (Carter *et al.*, 2003). Thus, this study hypothesises a link between FS and WOCBs. (Strøm *et al.*, 2014) showed that younger firms appoint more female directors. Thus, based on their findings, this study expects a significant association between firm age (*FA*) and women board representation. In connection with the findings of Iren (2016), this study predicts that higher corporate financial performance last year (*CFP*) increases the presence of women board members in this year.

3.4.3 Research models

Following a well-established line of research (see Carrasco *et al.*, 2015; Chizema *et al.*, 2015), the current study estimates Eq (**3.1**) to test hypothesis 1:

$$PWOCB_{it} = \alpha + \sum_{k=1}^{6} \beta_k NC_{it} + \sum_{k=7}^{18} \beta_k CONTROLS_{it} + \varepsilon_{it} \quad (\mathbf{3.1})$$

Furthermore, the following model (Eq (**3.2**)) is then used to investigate hypothesis 2 and 3:

$$PWOCB_{it} = \alpha + \sum_{k=1}^{6} \beta_k NC_{it} + \beta_7 NGQ_{it} + \sum_{k=8}^{13} \beta_k NC_{it} XNGQ_{it} + \sum_{k=14}^{25} \beta_k CONTROLS_{it} + \varepsilon_{it} \quad (\mathbf{3.2})$$

Where **PWOCB**: The percentage of women on corporate boards; **NC**: National cultural dimensions; **NGQ**: National governance quality; **CONTROLS**: The control variables; **β**: The parameters for the independent and control variable; **t**: Year; **i**: Firm; and **ε**: Error term (Refer to Table 3.2 for more details of the variables).

In order to solve some problems of the current sample with unbalanced panel data, this study uses least squares regressions with Clustered Standard Errors technique, following Zalata *et al.* (2018) and Ntim, Lindop, Thomas, Abdou and Opong (2019).

3.5 Data analysis and discussion

3.5.1 Descriptive statistics

Table 3.3: Descriptive statistics of all variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
Dependent variables					
Number of women	5112	1.276213	1.339027	0	8
PWOCB	5112	13.67647	13.83208	0	100
Independent variables					
PDI	5,112	58.24237	23.01667	11	100
INDI	5,112	46.29499	24.12299	11	91
MAS	5,112	48.8081	19.01439	5	100
UA	5,112	58.84664	21.89883	8	100
LTO	4,699	47.90275	21.74845	4	100
INDU	4,495	50.52214	20.46598	0	97
Moderating variables					
NGQ	5,112	0.00000000531	2.29598	-4.577118	3.212807
Control variables					
Country-level					
GDPPC	5,112	28046.53	24116.9	300.3077	119225.4
INF	5,112	3.629791	4.280332	-3.749145	48.69986
URATE	5,112	6.878021	4.889297	.49	27.47
GDPG	5,112	3.350809	2.974088	-9.772974	25.55727
WNP	5,076	22.96997	11.29055	0	47.6
GDQI	5,112	.3828899	.3556115	0	1
GQCB	5,112	.2185055	.4132726	0	1
GCGC	5,112	.6549296	.4754377	0	1
RGCB	5,112	.2752347	.4466762	0	1
Firm-level					
TOTAL	5,112	52729.96	258584.2	.7723177	3632680
FS	5,112	7.753001	2.495605	-.2583592	15.10548
FA	5,112	53.60896	45.15228	3	369
BS	5,112	9.255086	3.310081	2	27
CFP	5,112	5.590048	13.78564	-472.7273	230.4161

Note: Variables are defined in Table 3.2

Table 3.3 presents summary descriptive statistics in terms of percentage of women on corporate boards (*PWOCB*), national culture (*NC*), national governance quality (*NGQ*), and control variables. The number of female directors ranges from a minimum of 0 to a maximum of 8, with a median of 1.276213 and the standard deviation of 1.339027. The value of *PWOCB* ranges from 0 to 100, with a mean of 13.67647%, indicating that not many women work as board of directors around the world. Unexpectedly, some companies (e.g., CEPS in the Czech Republic) have 100% female board

members. This may be because these firms have two-tier boards and their supervisory boards have no power. By comparison with the samples of Carrasco *et al.* (2015) and Chizema *et al.* (2015), this study finds a similar presence of female directors although its sample is up-to-date and includes more companies in developing countries, indicating that both developed and developing countries lack the presence of women directors.

The number of directors (*BS*) ranges from a minimum of 2 to a maximum of 27, with the standard deviation of 3.310081. The average of board members is 9.255086, which is similar to data sample of previous studies (see Carrasco *et al.*, 2015; Chizema *et al.*, 2015). Furthermore, similar to prior studies (see Chizema *et al.*, 2015) the percentage of women in parliaments (*WNP*) ranges from 0 to 47.6%, with a mean of 22.96997, illustrating that women enter into politics with good promotions. The value of gender diversity quotas index (*GDQI*) ranges from 0 to 1, indicating the difference in imposing gender quotas among countries. In particular, many developed countries apply gender quota laws to boost the female board representation while a great number of developing nations have not imposed any policies or recommendations to support gender equality on corporate boards. Country-level characteristics (*GDPPC*, *INF*, *URATE* and *GDPG*) and firm-level characteristics (*FA*, *FS*, and *CFP*) have wide variations, indicating that this sample is not biased.

Table 3.4 presents both Pearson and Spearman correlation matrices among variables to test for multicollinearity, following Ntim, Opong and Danbolt (2015) . This table reports the lowest difference between Pearson and Spearman correlation coefficients, indicating that no non-normality problems exist. Therefore, all variables are normally distributed. The value of coefficient estimation is less than 0.8, indicating that there is no high correlation between independent variables. Therefore, these variables are suitable for regression models. Most of the national cultural dimensions except *LTO* have a significant relationship with *PWOCB* at the 1% level. For example, the association between *INDI* and *PWOCB* is positive and significant at 1%. Therefore, this study predicts the significant relationship between national culture dimensions and the presence of female directors. In addition, *NGQ* has a significant positive impact on *PWOCB* at the level of 1%. Thus, this study predicts the link between *NGQ* and *PWOCB*. Most of the control variables (*GDPPC*, *INF*, *URATE*, *GDPG*, *WNP*, *GDQI*, and *FA*) have a significant relationship with *PWOCB*, suggesting that the change in all control variables can explain the increase or decrease in *PWOCB*.

Table 3.4: Pearson's and Spearman's correlation matrices of the variables

Variable	PWOCB	PDI	INDI	MAS	UA	LTO	INDU	NGQ	GDPPC	INF	URATE	GDPG	WNP	GDQI	BS	FS	FA	CFP
PWOCB	**1**	-0.2478*	0.2909*	-0.1595*	-0.1805*	0.0103	0.1839*	0.2852*	0.2264*	-0.1905*	0.1098*	-0.1666*	0.3632*	0.3148*	0.0565**	0.0770*	0.1148*	0.0147
PDI	-0.2766*	**1**	-0.6507*	0.0593**	0.1456*	0.0186	-0.4711*	-0.7498*	-0.6805*	0.4019*	-0.2458*	0.4302*	-0.5527*	-0.3399*	0.1135*	0.0186	-0.1596*	-0.0373
INDI	0.2912*	-0.7021*	**1**	0.1226*	-0.1605*	-0.0592**	0.5013*	0.6642*	0.6525*	-0.3823*	0.4601*	-0.4312*	0.4065*	0.5448*	0.0366	0.0990*	0.1532*	0.0002
MAS	-0.1908*	0.0967*	0.0067	**1**	-0.0160	0.0092	0.0352	-0.1033*	-0.0165	-0.0410	-0.0184	-0.0032	-0.1689*	-0.0456	0.1648*	0.0966*	0.0196	0.0729*
UA	-0.1720*	0.1480*	-0.1340*	0.1163*	**1**	0.1118*	-0.2174*	-0.2417*	-0.1809*	0.0169	0.2817*	-0.2327*	-0.1986*	-0.1161*	0.0796*	0.1449*	0.0258	-0.0989*
LTO	-0.0108	0.0204	-0.0292	0.0988*	0.0844*	**1**	-0.4221*	0.1697*	0.1944*	-0.2810*	-0.1314*	-0.0529	0.1497*	-0.0048	-0.0566**	0.2023*	-0.0155	-0.0062
INDU	0.1617*	-0.4104*	0.4591*	-0.0604*	-0.1704*	-0.3739*	**1**	0.5178*	0.4891*	-0.1475*	0.1889*	-0.2592*	0.3156*	0.3507*	0.0327	-0.0333	0.1575*	0.0788*
NGQ	0.2628*	-0.6756*	0.7098*	-0.1236*	-0.1739*	0.2478*	0.4644*	**1**	0.8970*	-0.5834*	0.1620*	-0.4117*	0.5858*	0.4966*	-0.1752*	0.0199	0.1384*	0.0173
GDPPC	0.2054*	-0.6040*	0.6304*	-0.0942*	-0.1273*	0.1948*	0.4318*	0.8419*	**1**	-0.5942*	0.1715*	-0.4344*	0.4885*	0.4778*	-0.0936*	0.1241*	0.1154*	-0.0118
INF	-0.1317*	0.2773*	-0.3344*	-0.0124	0.0159	-0.3015*	-0.1360*	-0.5630*	-0.4796*	**1**	-0.0998*	0.3187*	-0.3221*	-0.3141*	0.0726*	-0.1542*	-0.1044*	0.0424
URATE	0.1393*	-0.1506*	0.2322*	0.0666*	0.1429*	-0.1559*	0.0738*	0.0139	-0.1137*	0.0122	**1**	-0.3800*	0.1464*	0.1684*	0.0428	0.1280*	0.0757*	-0.0664*
GDPG	-0.1148*	0.3126*	-0.3345*	0.0264	-0.2259*	-0.0288	-0.1933*	-0.3237*	-0.3028*	0.1374*	-0.2534*	**1**	-0.3180*	-0.3271*	-0.0322	-0.1488*	-0.1416*	0.0664*
WNP	0.3758*	-0.5602*	0.4611*	-0.2355*	-0.1680*	0.1345*	0.3149*	0.5602*	0.4522*	-0.2691*	0.2234*	-0.2492*	**1**	0.3387*	-0.0642*	-0.0294	0.0855*	0.0685*
GDQI	0.2901*	-0.3291*	0.4950*	-0.0555**	-0.0694*	0.0064	0.3173*	0.4334*	0.3793*	-0.2481*	0.1380*	-0.1988*	0.3385*	**1**	0.1179*	0.0807*	0.1378*	-0.0075
BS	0.0228	0.0341	0.0410	0.1797*	0.0598*	-0.0014	0.0612*	-0.0963*	-0.0574*	0.0334	0.0753*	-0.0016	0.0191	0.1314*	**1**	0.4896*	0.2509*	-0.0173
FS	0.0424	-0.0058	0.1128*	0.1102*	0.1732*	0.2414*	0.0199	0.1235*	0.1224*	-0.1893*	0.0593*	-0.1342*	0.0366	0.1024*	0.4769*	**1**	0.2395*	-0.1891*
FA	0.1367*	-0.2063*	0.2182*	-0.0308	-0.0284	0.0060	0.1806*	0.1967*	0.1514*	-0.1237*	0.0515**	-0.1493*	0.1661*	0.1909*	0.2393*	0.2741*	**1**	0.0339
IS	-0.0553**	0.2059*	-0.2306*	0.0186	0.0549**	-0.0406	-0.2114*	-0.2969*	-0.2262*	0.1571*	-0.0201	0.1090*	-0.2265*	-0.2134*	0.0970*	0.2811*	0.0392	-0.3852*
CFP	0.0365	0.0178	-0.0492	0.0220	-0.0575*	0.0284	-0.0131	-0.0533**	-0.0798*	0.0594*	0.0201	0.0606*	0.0208	-0.0264	0.0348	-0.0375	0.0421	**1**

Notes: The bottom left half of the table reports Pearson's parametric correlation coefficients, while the upper right half of the table presents Spearman's non-parametric correlation coefficients. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively (Sidak-adjusted significance level).Variables are defined as follows: Percentage of women on Corporate Boards (**PWOCB**); Power Distance Index **(PDI)**; Individualism versus Collectivism (**INDI**); Masculine versus Feminility (**MAS**); Uncertainty Avoidance (**UA**); Long-term Orientation versus Short-term Orientation (**LTO**); Indulgence versus Restraint (**INDU**); Gross Domestic Product Per Capita (**GDPPC**); Inflation (**INF**); Unemployment Rate (**URATE**); Gross Domestic Product Growth (**GDPG**); Women in Parliaments (**WNP**); Gender Diversity Quotas Index (**GDQI**); Board Size (**BS**); Firm Size (**FS**); Firm Age (**FA**); Corporate Financial Performance (**CFP**).

3.5.2 Multivariate regression analyses

3.5.2.1 The relationship between national culture and the appointment of women on corporate boards

Models 1 to 6 of Table 3.5 report the results of the relationship between each national cultural dimension combined with control variables and *PWOCB*, whereas Model 7 shows the results of the association between all national cultural dimensions combined with control variables and PWOCB. The value of R^2 ranges from 19.45 to 23.01 while the p-value is equal to zero, indicating that these seven regression models can explain the change in the appointment of women on corporate boards. Interestingly, these models are better than those of Carrasco *et al.* (2015) because of the higher values of R^2. The main reason is that the current study uses panel data while Carrasco *et al.* (2015) has cross-sectional data.

Models 1 and 7 report that the relationship between *INDI* and *PWOCB* is positive and significant at the 5% and 1% levels, respectively. These results support hypothesis 1a, implying that the percentage of female directors is likely to be higher in countries with high level of individualism. Surprisingly, these findings are contrary to those of Carrasco *et al.* (2015), which show no relationship between individualistic countries and the presence of women directors. These results also support institutional theory of the difference in appointment of female directors among countries. Interestingly, these findings show that women are likely to join board of directors, suggesting that the perspectives of social role in individualistic countries have changed markedly from the traditional view to the non-traditional view.

Models 2 and 7 present the significant and negative link between *MAS* and *PWOCB* at the level of 1% ($\beta < 0$ and p-value < 0.01). These findings support hypothesis 1b and are consistent with those of Carrasco *et al.* (2015) and Chizema *et al.* (2015), who showed evidence on the significant and negative effect of masculine culture on the presence of female directors. The results of this study show the difference in female board representation, supporting the institutional view. In addition, these findings illustrate that countries with high level of masculinity will appoint fewer female directors, indicating that these countries hold the traditional view of the social roles.

To test hypothesis 3, the variable *PDI* is introduced in models 3 and 7. Model 3 reports the weakly significant and negative connection between *PDI* and *PWOCB* ($\beta < 0$ and 0.05 < p-value < 0.1), which is consistent with the findings of Carrasco *et al.* (2015), while model 7 presents the insignificant and positive relationship among them ($\beta > 0$ and p-value > 0.1). In comparison with the study of Carrasco *et al.* (2015), the different findings between Models 3 and 7 may be explained by

the use of two new national culture dimensions (e.g. *LTO* and *INDU*), which may affect *PDI*. In accordance with the results presented in Model 7, hypothesis 1c is not supported, suggesting that both low and high level of power distance societies try to achieve gender equality.

As regards Models 4 and 7, the impact of *UA* on *PWOCB* is significant and negative at the levels\ of 1% and 5%, respectively. The results support hypothesis 1d, illustrating that the presence of women directors in low uncertainty avoidance countries is higher than it is in high ones. The findings are inconsistent with those of Carrasco *et al.* (2015) and Yousafzai *et al.* (2015) because of using different database. This study shows evidence of following traditional social role of women in high uncertainty avoidance societies and the difference in the presence or absence of women directors among countries.

This study finds the insignificant and negative influence of *LTO* and *INDU* on *PWOCB* ($\beta < 0$ and p-value > 0.1) in accordance with the results presented in Models 5, 6 and 7. These findings reject hypothesis 1e and hypothesis 1f, indicating that the difference in the appointment of female directors among countries could not explained by long-term orientation or indulgent culture. Therefore, these findings could not support institutional or social role theories.

To sum up, national culture partly explains the absence or presence of women on corporate boards. Specifically, the effect of national culture on the emergence of females as board members depends on each national cultural dimension. Hence, the findings of this study partly support institutional theory in terms of explaining the difference in the appointment of female directors among countries. Similarly, these findings also partly support social gender roles. More specifically, in some countries, which the appointment of women directors is high, the perspectives of social gender role have changed slightly from traditional gender role of women (looking after children) to the non-traditional one (working outside of the home, getting promotion).

Table 3.5: The effect of national culture on the appointment of women on corporate boards

Variables	Model 1 PWOCB	Model 2 PWOCB	Model 3 PWOCB	Model 4 PWOCB	Model 5 PWOCB	Model 6 PWOCB	Model 7 PWOCB
National culture dimensions							
INDI	.0641863 (0.025)**						.1036999 (0.003)*
MAS		-.0902839 (0.000)*					-.1145449 (0.000)*
PDI			-.0469936 (0.060)***				.0395794 (0.182)
UA				-.0773803 (0.000)*			-.0537545 (0.017)**
LTO					-.0361123 (0.119)		-.0130155 (0.630)
INDU						-.0021876 (0.929)	-.0268247 (0.315)
Control variables							
GDPPC	-.0000047 (0.871)	.0000302 (0.180)	.00000695 (0.790)	.0000175 (0.436)	.0000322 (0.176)	.0000331 (0.184)	.00000112 (0.972)
INF	.0726655 (0.498)	.0385584 (0.706)	.0659138 (0.538)	.0502128 (0.624)	.0410996 (0.717)	.0936298 (0.432)	.0333524 (0.755)
URATE	.1272223 (0.189)	.2465932 (0.007)*	.1739481 (0.058)***	.2334619 (0.007)*	.1187479 (0.206)	.0638048 (0.468)	.0375231 (0.699)
GDPG	.17582 (0.094)***	.1537581 (0.157)	.1767116 (0.102)	-.0104619 (0.913)	.2223943 (0.072)***	.1755147 (0.156)	.0497306 (0.644)
WNP	.3337835 (0.000)*	.2982858 (0.000)*	.3157735 (0.000)*	.3143124 (0.000)*	.3608848 (0.000)*	.3486091 (0.000)*	.2614101 (0.000)*
GDQI	6.439002 (0.000)*	7.177757 (0.000)*	7.285 (0.000)*	7.150557 (0.000)*	7.057735 (0.000)*	7.650638 (0.000)*	5.299223 (0.001)*
BS	-.1074969 (0.412)	-.0055548 (0.966)	-.0998518 (0.443)	-.1074272 (0.406)	-.1704026 (0.196)	-.1060334 (0.419)	.0028177 (0.983)
FS	-.0542515 (0.812)	-.032056 (0.890)	-.0148653 (0.948)	.0670389 (0.778)	.1100447 (0.685)	.0468476 (0.855)	.1444485 (0.619)
FA	.0124571 (0.176)	.0129813 (0.149)	.0125271 (0.178)	.0126182 (0.164)	.0107805 (0.248)	.0139839 (0.146)	.010075 (0.276)
CFP	.0430233 (0.053)***	.0438804 (0.032)	.0406214 (0.059)***	.0356936 (0.098)***	.0447144 (0.040)**	.0323729 (0.171)	.0399562 (0.082)***
No of Obs.	5,076	5,076	5,076	5,076	4,663	4,465	4,465
No of Firms	647	647	647	647	593	567	567
Year fixed effect	Y	Y	Y	Y	Y	Y	Y
Industry fixed effect	Y	Y	Y	Y	Y	Y	Y
R^2 (%)	20.81	21.62	20.56	21.51	19.70	19.45	23.01
F-test	22.55	23.42	22.17	23.11	20.96	19.58	18.69
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mean VIF	1.64	1.55	1.63	1.56	1.58	1.57	1.83
Max VIF	2.53	1.95	2.39	1.98	1.98	1.87	3.17

Notes: This table reports estimates of the relation between national culture and appointment of women on corporate boards. The coefficients are estimated by using Clustered Standard Errors techique; p-value is in parentheses. *, **, and * ** indicate correlation is significant at the 1%, 5% and 10% levels, respectively. Variables are defined in Table 3.2.

3.5.2.2 The relationship between national governance quality and the appointment of women on corporate boards

Table 3.6 presents the results of the tests of hypothesis 2. Specifically, Model 1 reports the significant and positive impact of *NGQ* on *PWOCB* at the level of 1 %. However, the p-value of Model 1 is too weak (less than 10%), indicating that this model needs to add some new variables in order to explain the absence or presence of *PWOCB*. That is also the main reason why this table has Models 2, 3 and 4.

Models 2, 3 and 4 show that *NGQ* has an insignificant and a positive relationship with *PWOCB* ($\beta > 0$ and p-value > 0.1). As a result, this evidence indicates that the quality of national governance could not explain the presence or absence of female directors. In other words, national governance quality has no influence on the emergence of women as board members. These findings do not support previous research (Grosvold, 2009) that reported evidence on the negative effect of the quality of national governance on the appointment of women board members. Therefore, the results of this study reject hypothesis 2.

To conclude, the quality of national governance cannot explain the presence or absence of females on boards among countries. Consequently, these findings cannot support institutional theory to explain the difference in presence of female directors.

Table 3.6: The moderating role of national governance quality in the relationship between national culture and the appointment of women on corporate boards

Variables	Model 1 (PWOCB)	Model 2 (PWOCB)	Model 3 (PWOCB)	Model 4 (PWOCB)
National governance quality				
NGQ	1.634341 (0.000)*	.4223838 (0.314)	.5652942 (0.166)	.1001477 (0.856)
National culture dimensions				
INDI			.1211436 (0.000)*	.0761082 (0.058)***
MAS			-.1348032 (0.001)*	-.1307877 (0.001)*
PDI			-.0089438 (0.786)	.0282834 (0.410)
UA			-.0707036 (0.004)*	-.0735799 (0.004)*
LTO			-.001036 (0.966)	-.0234926 (0.384)
INDU			-.0198378 (0.658)	-.0627072 (0.107)
Interaction variables				
NGQ*INDI			.0272268 (0.069)***	.0357776 (0.016)**
NGQ*MAS			-.0262052 (0.112)	.0071516 (0.695)
NGQ*PDI			.0255125 (0.063)***	.0193131 (0.171)
NGQ*UA			.0315494 (0.007)*	.0193497 (0.102)
NGQ*LTO			-.0176868 (0.042)**	-.0218831 (0.018)**
NGQ*INDU			-.0257561 (0.082)***	-.0369033 (0.009)*
Control varaibles				
GDPPC		.00000352 (0.922)		.0000322 (0.431)
INF		.1121895 (0.266)		.0858177 (0.408)
URATE		.1943597 (0.030)**		.0833698 (0.478)
GDPG		.162268 (0.127)		.0129654 (0.899)
WNP		.3290146 (0.000)*		.2656733 (0.000)*
GDQI		7.159446 (0.000)*		4.765264 (0.004)*
BS		-.0708236 (0.593)		.0585737 (0.649)
FS		-.08116 (0.732)		.0582423 (0.849)
FA		.0138631 (0.136)		.0106308 (0.250)
CFP		.0414157 (0.057)***		.0462444 (0.047)**
No of Obs.	5,112	5,076	4,495	4,465
No of Firms	647	647	567	567
Year fixed effects	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y
R^2 (%)	9.74	20.35	20.88	24.61
F-test	26.26	22.25	15.81	15.75
***p*- value**	0.0000	0.0000	0.0000	0.0000
Mean VIF	1.64	1.87	2.19	2.52
Max VIF	1.80	5.00	5.05	11.04

Notes: This table reports estimates the moderating role of national governance quality in the relationship between national culture and appointment of women on corporate boards The coefficients are estimated by using Clustered Standard Errors techique; p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. The interaction variables are created for national governance quality and six national cultural dimensions proxies, respectively. All the other variables are introduced in Table 2.

3.5.2.3 The moderating role of national governance quality in the relationship between national culture and the appointment of women on corporate boards

Table 3.6 also presents the results of tests of hypothesis 3. Specifically, Models 3 and 4 of Table 3.6 report the interaction term between *NGQ* and *NC* to show the findings of the moderating role of *NGQ* in the relationship between *NC* and *PWOCB*. Model 3 shows the results of the relationship among *NGQ*, *NC*, interaction term (between *NGQ* and *NC)* and *PWOCB*, while Model 4 includes all variables of Model 3 combined with the control variables.

Model 3 of Table 3.6 shows weakly significant and positive association between *NGQ*INDI*, *NGQ*PDI* and *PWOCB* ($\beta < 0$ and $0.05 <$ p-value < 0.1). In addition, the coefficient between *NGQ*INDI* and *PWOCB* reported in Models 4 of Table 3.6 is statistically significant and positive at the levels of 5% ($\beta > 0$ and p-value < 0.05), respectively, showing that national governance quality increases the positive influence of individualism on the presence of female directors. In other words, high level of national governance quality leads firms located in individualistic countries to appoint more women directors.

Model 3 of Table 3.6 reports weakly significant and negative relationship between *NGQ*INDU* and PWOCB ($\beta < 0$ and $0.05 <$ p-value < 0.1). Furthermore, as regards Model 4 of this table, the coefficient between *NGQ*LTO* and *NGQ*INDU* is significant and negative ($\beta < 0$ and p-value $<$ 0.1), showing that national governance quality decreases the insignificant and negative impact of long-term orientation and indulgence on the emergence of female as board members. In other words, these findings illustrate that poor level of national governance quality may makes firms located in long-term orientation or indulgent countries recruit more women directors. Furthermore, this study could not find the evidence of the moderating role of *NGQ* on the relationship among *MAS*, *PDI*, and *UA* and *PWOCB* (p-value > 0.1). These results provide partial evidence to support hypothesis 3.

Observably, as mentioned in the literature review, it seems that national governance quality is a unique context of a country, illustrating the difference in the influence of national culture on the presence of female directors among countries. In more depth, the level of the moderating role of national governance in the NC-WOCBs nexus relates to each national culture dimension. Hence, the evidence of this study partly supports the institutional theory of the difference in appointment of female directors and contributes to literature on the importance of national governance quality. Particularly, the national governance quality creates good opportunities for gender equality.

3.6 Additional analysis

3.6.1 The appointment of women on corporate boards in developed and developing countries

The United Nations (UN) divide countries into two groups, developing and developed countries in particular, based on the difference in the economic status such as gross domestic product (GDP) and gross domestic product per capita (GDPPC). Therefore, this study expects that the impact of national culture and national governance quality on the presence of female directors differs between developing and developed countries. As a result, the current study splits the full sample into two groups based on which country the firm is located in. The results of this analysis for Equations (**3.1**) and (**3.2**) are represented in Tables 3.7 and 3.8, respectively. Table 3.7 reports the different impact of national cultural dimensions on the appointment of female directors in both developed and developing countries. For instance, *INDU* has a positive and significant relationship with *PWOCB* ($\beta > 0$ and p-value < 0.1) while *INDI* affects *PWOCB* negatively and insignificantly ($\beta < 0$ and p-value > 0.1) in developing countries. By contrast, *INDU* is negatively and insignificantly associated with *PWOCB* ($\beta < 0$ and p-value > 0.1) whereas *INDI* has a positive and insignificant influence on *PWOCB* ($\beta > 0$ and p-value > 0.1) in developed countries.

As expected, Table 3.8 reports the positive and significant effect of *NGQ* on *PWOCB* ($\beta>0$ and p-value <0.1) in developing countries while *NGQ* influences *PWOCB* negatively and insignificantly ($\beta < 0$ and p-value > 0.1) in developed countries, indicating the important role of national governance quality in increasing gender equality in developing countries. As regards interaction variables in developing countries, the coefficient between *NGQ*INDI* and *PWOCB* is significant and positive ($\beta > 0$ and p-value < 0.1), implying a positive moderating role of national governance quality in no relationship between *INDI* and *PWOCB*. These results indicate that national governance quality has an important role to play in the absence of female directors in developing countries but not in developed countries.

By contrast, *NGQ*PDI* affects *PWOCB* significantly and negatively ($\beta < 0$ and p-value < 0.1) in developing countries, showing that national governance quality decreases the negative relationship between power distance index and the appointment of women directors in developing countries. These findings indicate that if developing countries can increase their score of national governance quality, they can reduce the absence of women board members. Similarly, the results reported in Table 3.8 show the negative and significant impact of *NGQ*LTO* on *PWOCB* ($\beta < 0$ and p-value < 0.1), illustrating that national governance quality decreases the positive impact of long-term orientation on the presence of women board members. These findings show evidence on the

insignificant moderating role of national governance quality in the relationship between national culture and the appointment of female directors in developed countries.

Overall, the results reported in Tables 3.5 and 3.7 provide evidence to suggest that national culture can explain the presence or absence of female directors. However, each measure of national culture has a different level of explanation. The findings reported in Tables 3.6 and 3.8 provide evidence on the important role of national governance quality in the appointment of women board members, particularly in developing countries.

Table 3.7: The effect of national culture on the appointment of women on corporate boards in developed and developing countries

Variables	Developed countries	Developing countries
	PWOCB	PWOCB
National culture dimensions		
INDI	.0077494 (0.902)	-.0435065 (0.492)
MAS	-.089396 (0.011)**	-.1611826 (0.026)**
PDI	.150631 (0.008)*	-.0186133 (0.722)
UA	-.0731574 (0.207)	-.2091131 (0.000)*
LTO	-.1320923 (0.007)*	.0456869 (0.115)
INDU	-.101319 (0.144)	.077406 (0.011)**
Control variables		
GDPPC	-0.00000725 (0.870)	-.0001671 (0.008)*
INF	.0971054 (0.795)	.0946703 (0.285)
URATE	-.4802734 (0.026)**	.4141865 (0.012)**
GDPG	-.0866036 (0.596)	-.0570214 (0.699)
WNP	.330611 (0.001)*	.1014417 (0.103)
GDQI	6.029875 (0.026)*	.0751939 (0.973)
BS	.1800429 (0.372)	.015243 (0.935)
FS	.3088656 (0.612)	-.0001472 (1.000)
FA	.0105469 (0.344)	-.0098146 (0.504)
CFP	.0426336 (0.116)	-.0188379 (0.699)
No of Obs	2,268	2,197
No of Firms	285	282
Year fixed effect	Y	Y
Industry fixed effect	Y	Y
R^2 (%)	25.04	16.99
F-test	16.96	5.15
p-value	0.0000	0.0000
Mean VIF	2.11	1.88
Max VIF	3.97	2.99

Notes: This table reports estimates of the relationship between national culture and appointment of women on corporate boards in developed and developing countries. The coefficients are estimated by using Clustered Standard Errors techique; p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. All the other variables are introduced in Table 2.

Table 3.8: The moderating role of national governance quality in the relationship between national culture and the appointment of women on corporate boards in developed and developing countries

Variables	Developed countries	Developing countries
	PWOCB	PWOCB
National governance quality		
NGQ	-1.479741 (0.502)	4.892261 (0.004)*
National culture dimensions		
INDI	.014796 (0.919)	.2595265 (0.108)
MAS	-.120295 (0.169)	-.0545388 (0.624)
PDI	.0626175 (0.701)	-.1866416 (0.054)***
UA	.0264907 (0.823)	-.2481793 (0.000)*
LTO	.3164725 (0.022)**	.1054751 (0.010)*
INDU	.1777155 (0.212)	.1231372 (0.084)***
Interaction variables		
NGQ*INDI	-.0202043 (0.780)	.1487393 (0.020)**
NGQ*MAS	.0212154 (0.579)	.0522601 (0.266)
NGQ*PDI	.0388131 (0.694)	-.0940306 (0.036)**
NGQ*UA	-.052624 (0.452)	-.0325292 (0.228)
NGQ*LTO	-.2118663 (0.001)*	.0259637 (0.120)
NGQ*INDU	-.0808209 (0.241)	.0060444 (0.783)
Control variables		
GDPPC	.0000582 (0.223)	-.0003057 (0.025)**
INF	.0873737 (0.803)	.0842886 (0.290)
URATE	-.6575077 (0.014)**	.1692744 (0.357)
GDPG	-.1040979 (0.491)	.0314807 (0.824)
WNP	.4575342 (0.000)*	-.0046895 (0.947)
GDQI	3.231256 (0.301)	-.6387615 (0.777)
BS	.0727062 (0.723)	-.092542 (0.621)
FS	.6717722 (0.281)	.0476557 (0.866)
FA	.0107018 (0.345)	-.0021492 (0.885)
CFP	.04783 (0.112)	-.0132383 (0.781)
No of Obs	2,268	2,197
No of Firms	285	282
Year fixed effects	Y	Y
Industry fixed effects	Y	Y
R^2 (%)	27.25	19.42
F-test	14.45	6.14
***p*- value**	0.0000	0.0000
Mean VIF	8.99	8.18
Max VIF	20.83	54.24

Notes: This table reports estimates of the moderating role of national governance quality in the relationship between national culture and appointment of women on corporate boards in developed and developing countries. The coefficients are estimated by using Clustered Standard Errors techique; p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. The interaction variables are created for national governance quality and six national cultural dimensions, respectively. All the other variables are introduced in Table 2.

3.6.2 Alternative measures of women on corporate boards

For more robustness checks, this study uses alternative measures for women on corporate boards. In detail, following previous studies (Campbell and Mínguez-Vera, 2008; Bernardi and Threadgill, 2010; Gul *et al.*, 2011), the current study uses number of women directors (*NWOCB*) and natural logarithm of number of women directors (*LNNWOCB*) as measures of women on corporate boards. Furthermore, this study is grounded in critical mass theory to create alternative measures of women on corporate boards. Particularly, several studies (Liu *et al.*, 2014) have suggested that having one, two and three women directors can be considered as a (a) token, (b) presence and (c) voice, respectively. Thus, this study creates *NWOCB1*, *NWOCB2*, and *NWOCB3* to measure token, presence and voice status of women directors, respectively. In addition, following the work of Kanter (1977), the current study uses *UNIFORM* (0% women directors), *SKEWED* (up to 20% women), *TITLED* (20-40% women), *BALANCED* (40-60% women), and *OVER* (over 60% women directors) as alternative measures of women on corporate boards. Tables 3.9 and 3.10 present the re-regressing equations (**3.1**) and (**3.2**), respectively.

Table 3.9: The effect of national culture on the appointment of women on corporate boards, using alternative measures of women on corporate boards

Variables	Model 1 NWOCB	Model 2 LNNWOCB	Model 3 NWOCB1	Model 4 NWOCB2	Model 5 NWOCB3	Model 6 UNIFORM	Model 7 SKEWED	Model 8 TILTED	Model 9 BALANCED	Model 10 OVER
National culture dimensions										
INDI	.0120585 (0.000)*	.0052675 (0.000)*	-.002134 (0.027)**	.0008856 (0.214)	.0026273 (0.000)*	-.0013789 (0.182)	-.0022348 (0.022)**	.0030711 (0.000)*	.0002444 (0.401)	.0002982 (0.194)
MAS	-.0107827 (0.000)*	-.0040654 (0.000)*	.0011655 (0.135)	-.0002139 (0.733)	-.0026413 (0.000)*	.0016897 (0.046)**	.0020379 (0.014)**	-.0020952 (0.002)*	-.0015804 (0.000)*	-.000052 (0.239)
PDI	.0052596 (0.058)***	.0036057 (0.012)**	-.0019503 (0.062)***	-.0009105 (0.233)	.0015496 (0.024)**	.0013112 (0.257)	-.0033937 (0.002)*	.0014721 (0.051)***	.0005388 (0.070)***	.0000716 (0.439)
UA	-.005906 (0.002)*	-.0020447 (0.035)**	-.0001262 (0.854)	-.0017604 (0.001)*	-.0011056 (0.040)**	.0029923 (0.000)*	-.0020512 (0.005)*	-.0012257 (0.033)**	.0002253 (0.394)	.0000594 (0.507)
LTO	.00062 (0.769)	-.0017943 (0.121)	.0015489 (0.064)***	-.0013374 (0.052)***	.0002574 (0.664)	-.0004689 (0.616)	.0014849 (0.104)	-.000311 (0.636)	-.0008599 (0.011)**	.0001549 (0.224)
INDU	-.0021059 (0.384)	-.003369 (0.008)*	.0024658 (0.010)*	-.0008903 (0.248)	-.000543 (0.376)	-.0010324 (0.345)	.0023191 (0.022)**	-.0007805 (0.314)	-.0004833 (0.141)	-.0000229 (0.544)
Control variables										
GDPPC	-0.00000088 (0.718)	0.000000367 (0.761)	-0.00000105 (0.239)	0.000000243 (0.759)	-0.000000406 (0.582)	0.00000121 (0.214)	-0.00000155 (0.111)	-0.00000044 (0.615)	0.000000951 (0.052)***	-0.000000172 (0.103)
INF	.0060768 (0.520)	.00535 (0.355)	-.0007379 (0.825)	-.0001008 (0.970)	.0024039 (0.316)	-.0015651 (0.694)	-.0023822 (0.484)	.0046252 (0.121)	-.0000453 (0.963)	-.0006326 (0.171)
URATE	.0150113 (0.095)***	.0004183 (0.926)	.0021607 (0.519)	-.0005397 (0.829)	.0038465 (0.199)	-.0054674 (0.080)***	.0053693 (0.146)	.0027637 (0.401)	-.0022241 (0.004)*	-.0004415 (0.105)
GDPG	.0094403 (0.288)	-.000024 (0.996)	-.0011154 (0.780)	.0033094 (0.320)	.0015676 (0.540)	-.0037615 (0.349)	.0025399 (0.540)	.0003344 (0.920)	.0013913 (0.218)	-.0005041 (0.312)
WNP	.0216553 (0.000)*	.0103557 (0.000)*	-.0037731 (0.030)**	.0033708 (0.012)**	.0047597 (0.000)*	-.0043574 (0.019)**	-.0039477 (0.033)**	.0058804 (0.000)*	.0024334 (0.000)*	-0.0000087 (0.925)
GDQI	.5762456 (0.000)*	.129174 (0.046)**	.0555691 (0.252)	.0362931 (0.295)	.1233987 (0.000)*	-.2152608 (0.000)*	.094161 (0.049)**	.0980995 (0.009)*	.0319214 (0.057)***	-.0089212 (0.266)
BS	.1365178 (0.000)*	.0506025 (0.000)**	-.008257 (0.083)***	.0066844 (0.048)**	.0297644 (0.000)*	-.0281917 (0.000)*	.0320241 (0.000)*	-.0013676 (0.712)	-.0019466 (0.155)	-.0005181 (0.111)

FS	.0360343 (0.080)***	.0183025 (0.053)***	-.0126204 (0.100)***	.0058264 (0.318)	.0112945 (0.044)**	-.0045005 (0.589)	-.0118181 (0.159)	.0148401 (0.006)*	.0039245 (0.078)***	-.002446 (0.288)
FA	.0019939 (0.031)**	.0004571 (0.230)	-.0001149 (0.692)	-.0002264 (0.398)	.0005142 (0.045)**	-.0001729 (0.556)	-.0002393 (0.474)	.000521 (0.069)***	-.0000949 (0.490)	-.0000139 (0.474)
CFP	.0017129 (0.256)	.0012111 (0.292)	.0003296 (0.629)	-.0002613 (0.680)	.0007051 (0.217)	-.0007734 (0.245)	-.000418 (0.554)	.0008891 (0.118)	.0001633 (0.550)	.0001391 (0.286)
No of Obs.	4,465	2,959	4,465	4,465	4,465	4,465	4,465	4,465	4,465	4,465
No of Firms	567	459	567	567	567	567	567	567	567	567
Year fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
R^2 (%)	38.84	31.02	3.02	5.17	14.05	19.76	5.27	9.34	2.66	0.22
F-test	23.26	16.54	2.25	3.60	24.42	17.11	7.39	12.36	9.47	2.47
***p*- value**	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: This table reports estimates of the relationship between national culture and the appointment of alternative measures of women on corporate boards. The coefficients are estimated by using Clustered Standard Errors techique; p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. Variables are defined as follows:Number of women on corporate boards (NWOCB); Natural logarithm of number of women on corporate boards (LNNWOCB); Token status of women directors (NWOCB1); Presence of women directors (NWOCB2); Voice of women directors (NWOCB3); 0% women directors (UNIFORM); Up to 20% women directors (SKEWED); From 20 to 40% women directors (TILTED); From 40 to 60% women directors (BALANCE); Over 60% women directors (OVER). All the other variables are introduced in Table 3.2.

Table 3.9 reports the impact of national culture on the appointment of female board members by using alternative measures of women on corporate boards. The findings reported in Table 3.9 provide evidence of the significant influence of most of natural cultural dimensions on the presence of female directors. For example, *INDI*, *MAS*, *PDI* and *UA* affect *NWOCB* significantly (p-value < 0.1) while both *LTO* and *INDU* have an insignificant effect on *NWOCB* (p-value > 0.1). However, sometimes, I find weakly significant relationship between *PDI* and *NWOCB, NWOCB1, TILTED, BALANCED* or weakly significant association between *LTO* and *NWOCB1, NWOCB2*. Furthermore, this table illustrates that the level of the impact of national culture depends on each measure of national culture. For instance, both *INDI* and *PDI* have a negative and significant relationship with *NWOCB1* ($\beta<0$, p-value<0.1), illustrating that firms in individualistic or high power distance index countries recruit fewer female directors than firms do in collectivistic or low power distance index ones. However, either *LTO* or *INDU* relates to *NWOCB1* positively and significantly ($\beta > 0$, p-value < 0.1), indicating that companies located in countries with long-term orientation or high value of indulgence appoint more women directors than they do in ones with short-term orientation or restraint. In addition, this table also indicates that the influence of national culture on female board representation depends on the extent to which women are present on the corporate board. For example, *MAS* has a positive and significant relationship with *UNIFORM* and *SKEWED* ($\beta > 0$ and p-value < 0.1), while *MAS* influences *NWOCB, LNNWOCB, NWOCB3, TILTED* and *BALANCED* negatively and insignificantly ($\beta < 0$ and p-value > 0.1), illustrating that the presence of female directors in masculine countries is less than it is in feminine ones. In addition, it seems that national culture cannot affect the firms' decisions in terms of appointing more than 60% women directors (p-value > 0.1). To sum up, the impact of national culture on the appointment of women on corporate boards depends on national cultural dimensions and the extent to which women are present as board members.

Table 3.10: The moderating effect of national governance quality on the relationship between national culture and the appointment of women on corporate boards using proxies of women on corporate boards

Variables	Model 1 NWOCB	Model 2 LNNWOCB	Model 3 NWOCB1	Model 4 NWOCB2	Model 5 NWOCB3	Model 6 UNIFORM	Model 7 SKEWED	Model 8 TITLED	Model 9 BALANCED	Model 10 OVER
National governance quality										
NGQ	.0230587 (0.618)	-.0024163 (0.921)	.0095058 (0.613)	.0065183 (0.666)	-.0094872 (0.438)	-.0065369 (0.747)	.0041325 (0.837)	.0058918 (0.733)	-.003433 (0.572)	-.0000543 (0.965)
National cultural dimensions										
INDI	.0085393 (0.003)*	.0041582 (0.006)*	-.0021172 (0.072)***	.0006053 (0.483)	.002077 (0.005)*	-.0005651 (0.658)	-.0022452 (0.060)***	.0023451 (0.017)**	.0001243 (0.651)	.0003408 (0.173)
MAS	-.0135579 (0.000)*	-.0044654 (0.013)**	-.0002436 (0.834)	-.0001482 (0.867)	-.0029621 (0.000)*	.0033538 (0.016)**	.0005878 (0.616)	-.0026969 (0.014)**	-.0012446 (0.000)*	-0.000000103 (0.999)
PDI	.0051351 (0.102)	.002664 (0.130)	-.0010972 (0.351)	-.000683 (0.445)	.0008982 (0.228)	.000882 (0.510)	-.0027712 (0.023)**	.0017285 (0.069)***	.0002163 (0.512)	-.0000556 (0.443)
UA	-.0087968 (0.000)*	-.0029491 (0.011)**	-.0004132 (0.598)	-.001744 (0.003)*	-.0017476 (0.002)*	.0039048 (0.000)*	-.0025268 (0.002)*	-.0016708 (0.009)	.000235 (0.331)	.0000578 (0.594)
LTO	-.000706 (0.750)	-.0012695 (0.285)	.0010429 (0.262)	-.0014213 (0.062)***	.0002254 (0.713)	.0001529 (0.879)	.0008692 (0.392)	-.0003157 (0.663)	-.0008143 (0.019)**	.0001078 (0.237)
INDU	-.0049278 (0.117)	-.0041344 (0.011)**	.0020167 (0.114)	-.0006848 (0.492)	-.0011738 (0.133)	-.0001581 (0.908)	.0022167 (0.097)***	-.0015099 (0.156)	-.0003785 (0.407)	-.0001703 (0.262)
Interaction variables										
NGQ*INDI	.0053853 (0.000)*	.0016682 (0.022)**	.0001646 (0.776)	-.0001894 (0.666)	.0011904 (0.001)*	-.0011657 (0.058)***	-.0001731 (0.780)	.001416 (0.001)*	-.0000632 (0.667)	-.000014 (0.537)
NGQ*MAS	.0015502 (0.294)	.0001559 (0.838)	.0011164 (0.022)**	-.0001083 (0.804)	.0000546 (0.884)	-.0010627 (0.071)***	.0009001 (0.075)***	.0005102 (0.314)	-.0003025 (0.113)	-.0000451 (0.504)
NGQ*PDI	.0037152 (0.004)*	.0008633 (0.234)	.0000211 (0.965)	-.0002588 (0.494)	.0009081 (0.002)*	-.0006704 (0.220)	-.000113 (0.820)	.0007023 (0.086)***	.0000578 (0.610)	.0000233 (0.364)
NGQ*UA	.0019363 (0.043)**	.0004413 (0.446)	-.0001777 (0.644)	.0003219 (0.269)	.0004448 (0.069)***	-.000589 (0.165)	.0004404 (0.284)	-.0001131 (0.712)	.0002537 (0.040)**	0.0000079 (0.794)
NGQ*LTO	-.0014066 (0.084)***	-.0006554 (0.149)	.0000424 (0.897)	-.0001038 (0.723)	-.00041 (0.071)***	.0004714 (0.194)	-.0000565 (0.879)	-.0000847 (0.741)	-.000304 (0.016)**	-.0000262 (0.178)
NGQ*INDU	-.0033542 (0.002)*	-.0013582 (0.023)*	-.0002004 (0.632)	.0002324 (0.484)	-.0009551 (0.001)*	.0009231 (0.050)**	-.0000115 (0.980)	-.0007259 (0.035)**	-.0000853 (0.572)	-.0001004 (0.176)
Control variables										

GDPPC	0.0000021 (0.482)	0.00000107 (0.443)	-0.00000152 (0.137)	0.000000287 (0.780)	0.000000825 (0.366)	0.000000408 (0.722)	-0.00000136 (0.230)	-0.000000251 (0.817)	0.00000138 (0.041)**	-0.000000176 (0.222)
INF	.0100971 (0.296)	.0055442 (0.334)	-.0006037 (0.861)	.0011866 (0.673)	.0021957 (0.374)	-.0027786 (0.491)	-.0017358 (0.633)	.004471 (0.152)	.0006138 (0.533)	-.0005704 (0.125)
URATE	.0235484 (0.022)**	.0027601 (0.608)	.0025184 (0.521)	.0002407 (0.934)	.0049903 (0.098)***	-.0077494 (0.049)**	.0059211 (0.150)	.0051915 (0.155)	-.0025827 (0.006)*	-.0007806 (0.139)
GDPG	.0086171 (0.305)	-.0000582 (0.990)	-.0005374 (0.896)	.0023583 (0.470)	.0010896 (0.646)	-.0029105 (0.469)	.0016416 (0.699)	.0013873 (0.675)	.0003359 (0.746)	-.0004543 (0.279)
WNP	.0228716 (0.000)*	.0106953 (0.000)*	-.0021043 (0.258)	.0028001 (0.054)***	.0048537 (0.000)*	-.0055495 (0.005)*	-.0029074 (0.142)	.0065426 (0.000)*	.0019003 (0.000)*	.000014 (0.912)
GDQI	.5281535 (0.000)*	.1348914 (0.039)**	.0540724 (0.283)	.0281416 (0.437)	.1149256 (0.001)*	-.1971396 (0.000)*	.0757062 (0.134)	.106148 (0.005)*	.0258769 (0.110)	-.0105915 (0.252)
BS	.141001 (0.000)*	.0507627 (0.000)*	-.0073875 (0.123)	.0070192 (0.050)**	.030097 (0.000)*	-.0297288 (0.000)*	.0324286 (0.000)*	-.0005469 (0.885)	-.0017543 (0.189)	-.0003987 (0.155)
FS	.0322281 (0.122)	.0151518 (0.116)	-.0121375 (0.118)	.0055748 (0.354)	.0100122 (0.074)***	-.0034495 (0.687)	-.0113449 (0.187)	.0145206 (0.010)*	.0029979 (0.186)	-.0027241 (0.278)
FA	.0021171 (0.023)**	.0004797 (0.209)	-.0000664 (0.819)	-.000255 (0.336)	.0005421 (0.034)**	-.0002207 (0.453)	-.0002332 (0.489)	.0005813 (0.042)**	-.0001109 (0.429)	-.0000165 (0.399)
CFP	.0022346 (0.137)	.0012967 (0.253)	.0003037 (0.661)	-.00023 (0.713)	.0008232 (0.140)	-.0008968 (0.193)	-.0004394 (0.541)	.0009546 (0.095)***	.0002342 (0.393)	.0001474 (0.284)
No of Obs	4,465	4,465	4,465	4,465	4,465	4,465	4,465	4,465	4,465	4,465
No of Firms	567	567	567	567	567	567	567	567	567	567
Year fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
R^2 (%)	41.01	32.16	3.66	5.37	26.14	21.32	7.81	13.34	10.32	3.12
F-test	19.61	13.82	2.29	3.04	13.42	14.54	4.34	9.02	2.40	0.17
***p*- value**	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: This table reports estimates of the moderating role of national governance quality in the relationship between national culture and appointment of alternative measures of women on corporate boards The coefficients are estimated by using Clustered Standard Errors techique; p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. The interaction variables are created for national governance quality and six national cultural dimensions, respectively. All the other variables are introduced in Table 3.2 and Table 3.9.

Table 3.10 introduces the effect of national governance on the presence of female directors as well as the moderating role of national governance quality in the relationship between national culture and the appointment of women on corporate boards and each model in this table using one alternative measures of female directors is similar to Table 3.9. The findings in Table 3.10 show evidence that national governance quality has no direct impact on the presence or absence of female directors (p-value > 0.1), but it moderates the relationship between national culture and the appointment of women directors. For example, Table 3.10 reports weakly significant and positive relationship between *NGQ*INDU* and *UNIFORM* ($\beta > 0$ and $0.05 <$ p-value < 0.1) and weakly significant and negative association between *NGQ *MAS, NGQ*INDI* and *UNIFORM* ($\beta < 0$ and $0.05 <$ p-value < 0.1). Indeed, the p-value of the estimates of the relationship between the interaction variables (between *NGQ* and national cultural dimensions except *MAS*) and *NWOCB* is less than 0.05, indicating that national governance quality moderates the influence of national culture on the presence of female directors significantly.

This table also indicates that the level of the moderating role depends on national cultural dimensions. For instance, *NGQ * INDI* and *NGQ * PDI* relate to *NWOCB3* statistically significantly and positively ($\beta > 0$ and p-value < 0.05), whereas *NGQ *UA* has a weakly significant and positive impact on *NWOCB3* ($\beta > 0$ and $0.05 <$ p-value < 0.1). By contrast, *NGQ * INDU* has a statistical significant and negative influence on *NWOCB3* ($\beta < 0$ and p-value < 0.01) whereas *NGQ * LTO has a weakly significant and negative association with NWOCB3* ($\beta < 0$ and $0.05 <$ p-value < 0.1).

In addition, Table 3.10 also illustrates that the level of the moderating role depends on the level of female board representation. For example, *NGQ * INDI* has a positive and statistically significant effect on *NWOCB, LNNWOCB, NWOCB3* and *TILTED* ($\beta > 0$ and p-value < 0.05), whereas it affects *UNIFORM* negatively and weakly significantly ($\beta < 0$ and $0.05 <$ p-value < 0.1). However, it has no link with *NWOCB1, NWOCB2, SKEWED, BALANCED* and *OVER* (p-value > 0.1). Similarly, *NGQ*LTO* do not affect *LNNWOCB, NWOCB1, NWOCB2, UNIFORM, SKEWED, TITLED*, and *OVER*, but has a weakly significant and negative impact on *NWOCB* and *NWOCB3*. Additionally, *NGQ*LTO* has a statistically significant and negative association with *BALANCED*.

To sum up, national governance quality has no direct influence on the presence or absence of women on corporate boards. However, it moderates the relationship between national culture and the appointment of female directors and the level of its moderating role on the link between national culture and women on corporate boards depends on each national cultural dimension and the extent to which women directors are present on the board.

3.6.3 Alternative measures of national culture

For more robustness check, this study also uses alternative measures of national culture. Following previous studies (Bullough *et al.*, 2012), the current study also uses national cultural dimensions, which are proposed by the GLOBE project (House *et al.*, 2004). The project provides nine dimensions of national culture in 62 countries: these are gender egalitarianism (**GE**), performance orientation (**PO**), future orientation (**FO**), assertiveness (**ASS**), institutional collectivism (**ICON**), in-group collectivism (**ING**), power distance (**PD**), humane orientation (**HO**), and uncertainty avoidance (**UNA**) (House *et al.*, 2004). Tables 3.11 and 3.12 present the re-regressing equations (**3.1**) and (**3.2**), respectively.

Table 3.11: The relationship between national culture and the appointment of women on corporate boards, using GLOBE's national cultural dimensions

Variable	PWOCB
National cultural dimensions	
PO	-1.366823 (0.499)
FO	-4.269565 (0.021)**
GE	4.563724 (0.006)*
ASS	2.668407 (0.153)
ICO	2.258714 (0.177)
ING	-3.706997 (0.005)*
PD	3.342696 (0.089)***
HO	.8865951 (0.551)
UNA	6.573874 (0.000)*
Control variables	
GDPPC	-.0000536 (0.122)
INF	-.091383 (0.359)
URATE	.4363448 (0.000)*
GDPG	.2929452 (0.003)*
WNP	.0914903 (0.097)***
GDQI	4.976671 (0.001)*
BS	-.0702171 (0.626)
FS	.3466517 (0.117)
FA	.0078944 (0.468)
CFP	.0392676 (0.032)**
No of Obs	3,343
No of Firms	425
Year fixed effect	Y
Industry fixed effect	Y
R^2 (%)	25.38
***p*- value**	0.0000

Notes: This table reports estimates of the relationship between alternative measures of national culture and the appointment of women on corporate boards The coefficients are estimated by using Clustered Standard Errors techique; p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. This model did not inlcude a measure national culture. Variables are defined as follows: Performance Orientation **(PO);** Future Orientation (**FO**), Gender Egalitarianism (**GE**); Assertiveness (**ASS**); Institutional Collectivism (**ICON**); In-group Collectivism (**ING**); Power Distance (**PD**); Human Orientation (**HO**); Uncertainty Avoidance (**UNA**). All the other variables are introduced in Table 3.2.

Table 3.12: The moderating role of national governance quality in the relationship between national culture and the appointment of women on corporate boards, using GLOBE's national cultural dimensions

Variables	PWOCB
National governance quality	
NGQ	-1.023783 (0.197)
National cultural dimensions	
PO	.0711004 (0.979)
FO	-5.806614 (0.012)**
GE	3.624294 (0.042)**
ASS	2.534969 (0.246)
ICO	2.761837 (0.109)
ING	-9.712592 (0.000)*
PD	4.028037 (0.108)
HO	4.589352 (0.005)*
UNA	3.762201 (0.016)**
Interaction variables	
NGQ*PO	-.5688024 (0.603)
NGQ*FO	-1.037593 (0.395)
NGQ*GE	2.296481 (0.012)**
NGQ*ASS	-.5100258 (0.647)
NGQ*ICO	-.3888969 (0.695)
NGQ*ING	3.251004 (0.000)*
NGQ*PD	-1.023937 (0.398)
NGQ*HO	-2.58609 (0.000)*
NGQ*UNA	1.333886 (0.073)***
Control variables	
GDPPC	-.0000284 (0.632)
INF	-.1076149 (0.318)
URATE	.3790049 (0.004)*
GDPG	.3764627 (0.000)*
WNP	.1944076 (0.004)*
GDQI	4.395746 (0.021)**
BS	-.1314756 (0.371)
FS	.5481108 (0.020)**
FA	.0063428 (0.567)
CFP	.0286395 (0.081)***
No of Obs	3,343
No of Firms	425
Year fixed effect	Y
Industry fixed effect	Y
R^2 (%)	30.24
***p*- value**	0.000

Notes: This table reports estimates of the moderating role of national governance quality in the relationship between alternative measures of national culture and appointment of women on corporate boards. The coefficients are estimated by using Clustered Standard Errors techique; p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. The interaction variables are created for national governance quality and alternative measures of national cultural dimensions, respectively All the other variables are introduced in Table 3.2 and T\able 3.11.

Table 3.11 shows that uncertainty avoidance (*UNA*) relates to the presence of female directors positively and significantly (β > 0 and p-value < 0.01). Surprisingly, these findings are inconsistent with the measure of uncertainty avoidance (*UA*) proposed by Hofstede (see Table 3.5). These various results may be explained by the difference in the perspectives of uncertainty avoidance between Hofstede and GLOBE's project or the slight change in view of national culture. Similarly, this table presents the positive and weakly significant link between *PD* and the presence of women directors. However, it shows evidence for the significant and negative influence of *FO* and *ING* on the appointment of female board members (β < 0 and p-value < 0.1). Observably, it seems that most of the national cultural dimensions (e.g., *PO*, *ASS*, *ICO*, *HO*) proposed by GLOBE's project could not explain the presence or absence of women directors (p-value > 0.1).

Table 3.12 shows that *NGQ*GE* has a statistically significant and positive link with *PWOCB* (β > 0 and p-value < 0.01), while *NGQ*UNA* has a weakly significant and positive link with *PWOCB* (β > 0 and 0.05 < p-value < 0. 1), and both *GE* and *UNA* affect *PWOCB* positively and significantly (β > 0 and p-value < 0.1), illustrating that national governance quality increases the positive influence of gender egalitarianism and uncertainty avoidance on the presence of women directors. Furthermore, *NGQ*ING* influence *PWOCB* significantly and positively (β > 0 and p-value < 0.01) while *ING* has a significant and negative relationship with *PWOCB* (β < 0 and p-value < 0.1), illustrating that national governance quality increases the negative impact of in-group collectivism on the emergence of women as board members. By contrast, *NGQ*HO* influences *PWOCB* negatively and significantly (β < 0 and p-value < 0.1) and HO has a positive and significant correlation with *PWOCB* (β > 0 and p-value < 0.1), illustrating that national governance quality decreases the positive connection between human orientation and the appointment of women on corporate boards. However, *NGQ*FO*, *NGQ*ASS*, *NGQ*ICO*, and *NGQ*PD* has no link with *PWOCB* (p-value > 0.1), suggesting that national governance quality does not moderate the influence of future orientation, assertiveness, institutional collectivism and power distance on the presence or absence of female directors. To conclude, the level of moderating role of national governance quality in the effect of national culture on the presence of female directors depends on each national cultural dimension.

3.6.4 Controlling for endogeneity

The results of this study reported under the main analysis might be subject to potential self-selection bias if women on corporate boards or other variables are endogenously determined. Therefore, any conclusion drawn from all models of this study might be misleading. Hence, to deal with any potential endogeneity problem, the current study uses a two-stage least square (2SLS) and system GMM estimator.

Given that the focus of this study is on the determinant of women on corporate boards, it seeks good exogenous instrumental variables (IVs) for this main variable that is correlated with the suspected endogenous variable, but uncorrelated with the error terms of the dependent variable (Wooldridge, 2015). This study expects to treat *WNP* as an endogenous variable. Following the findings of previous studies (Htun and Piscopo, 2010; O'brien and Rickne, 2016), it chooses IVs which include gender quotas(*GQ*), gross domestic product per capita (*GDPPC*), and gross domestic product growth (*GDPG*). For the first IV, this study argues that many countries appoint women in parliament to satisfy the requirements of the government on gender equality. For the second and third IVs, it argues that GDPG and GDPPC are measures of a country's performance. Therefore, a one-year lag of both GDPG and GDPPC will affect the presence of WNP. These three IVs are expected to affect women in parliaments, but are uncorrelated with the error term in the main equations. This study uses two diagnostic tests, (i) endogeneity test (to determine whether endogenous regressors in the model are in fact exogenous) and (ii) over identification test (to investigate the validity of IVs) to examine IVs. The current study treats WNP as an endogenous variable and constructs simultaneous equations models, from equations (**3.1**) to (**3.2**). As regards Tables 3.13 and 3.14, the p-value of endogeneity test is less than 0.01 while the p-value of over identification is higher than 0.1, indicating that these four IVs are valid for treating PWOCB as an endogenous variable.

Next, this study uses a two-step system Generalized Method of Moments (GMM) estimator, which controls for the unobserved impacts through the transformation of the variables into first differences to reduce unobserved heterogeneity and omitted variable bias (Arellano and Bover, 1995). GMM procedures employ lagged values as IVs for the endogenous variables such as women on corporate boards. The logic is that the appointment of women on corporate boards this year can affect the presence of female directors in subsequent years; hence, the endogeneity problem is unlikely.

As a result, Tables 3.13 and 3.14 present the re-regressing equations (**3.1**) and (**3.2**), respectively when this study uses 2SLS and system GMM estimator for the robustness test. Panels A and B of Tables 3.13 and 3.14 present the 2SLS and system GMM regressions results, respectively.

Table 3.13: The relationship between national culture and the appointment of women on corporate boards, using 2SLS and GMM

	Panel A: 2SLS PWOCB	Panel B: GMM PWOCB
Lagged PWOCB		.8695039 (0.000)*
National cultural dimensions		
INDI	.1138784	.0391745 (0.000)*
MAS	.0005921 (0.988)	-.0228013 (0.001)*
PDI	.1462138	.0083482 (0.221)
UA	-.0068431 (0.711)	-.0036293 (0.484)
LTO	-.1162387	.0091609 (0.130)
INDU	-.0965313	.0058085 (0.362)
Control variables		
GDPPC	-.0000245 (0.148)	-0.00000822 (0.217)
INF	.0875903 (0.180)	-.0118423 (0.655)
URATE	-.3551534	-.0068999 (0.737)
GDPG	.1496458 (0.144)	-.0143652 (0.708)
WNP	1.016896	.0338299 (0.010)*
GDQI	4.343168	1.445722 (0.000)*
BS	-.1819567	.0582094 (0.151)
FS	.4236951	-.0475166 (0.445)
FA	.0079354 (0.126)	.0032136 (0.111)
CFP	.0240928 (0.237)	.0135062 (0.386)
No of Obs	3,901	3,901
No of Firms	567	567
Year fixed effect	Y	Y
Industry fixed effect	Y	Y
Wald-2 (*p-value*)	0.000	
Endogeneity (*p-value*)	0.0004	
Over identification (*p-value*)	0.6158	
AR(1) *p-value*		0.000
AR(2) *p-value*		0.418
Hansen test *p-value*		0.197

Notes: This table presents estimates of the relationship between national culture and the appointment of women on corporate boards. The coefficients are estimated by 2SLS and GMM. p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. All the variables are introduced in Table 3.2.

Table 3.14: The moderating effect of national governance quality on the relationship between national culture and the appointment of women on corporate boards, using 2SLS and GMM

	Panel A: 2SLS PWOCB	Panel B: GMM PWOCB
Lagged PWOCB		.8638782 (0.000)*
National governance quality		
NGQ	-1.551323	.1406796 (0.285)
National cultural dimensions		
INDI	.1498461	.0292733 (0.001)*
MAS	-.145203 (0.000)*	-.0229603 (0.007)*
PDI	.1066278	.0090496 (0.239)
UA	-.0604193	-.008051 (0.163)
LTO	-.1063519	.0078651 (0.221)
INDU	-.1117675	-.0034269 (0.681)
Interaction variables		
NGQ*INDI	.0086784 (0.452)	.0131692 (0.000)*
NGQ*MAS	.0748193	-.0013055 (0.719)
NGQ*PDI	.0156136	.0046895 (0.122)
NGQ*UA	.0039982 (0.560)	.0036627 (0.139)
NGQ*LTO	-.0180799	-.0000288 (0.990)
NGQ*INDU	-.0501188	-.0062157 (0.042)**
Control variables		
GDPPC	.0000447	-0.00000586 (0.513)
INF	-.0762271 (0.317)	-.0012201 (0.965)
URATE	-.3281117	.0248107 (0.332)
GDPG	.0616742 (0.527)	-.0163692 (0.677)
WNP	.9742631	.0296175 (0.030)**
GDQI	4.393962	1.414797 (0.000)*
BS	-.1649836	.0678273 (0.098)***
FS	.3301635	-.0567206 (0.383)
FA	.0130207	.0033075 (0.109)
CFP	.0273376 (0.165)	.0148997 (0.344)
No of Obs	3,901	3,901
No of Firms	567	567
Year fixed effect	Y	Y
Industry fixed effect	Y	Y
Wald 2 (*p-value*)	0.0000	
Endogeneity (*p-value*)	0.0000	
Over identification (*p-value*)	0.2809	
AR(1) p-value		0.000
AR(2) p-value		0.426
Hansen test p-value		0.203

Notes: This table presents estimates of the moderating effect of national governance quality on the relationship between national culture and appointment of women on corporate boards. The coefficients are estimated by using 2SLS and GMM . p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. All the variables are introduced in Table 2.

Observably, Panel A of Table 3.13 shows that *INDI* and *PDI* relate to *PWOCB* significantly and positively ($\beta > 0$ and p-value < 0.1), while *LTO* and *INDU* associate to *PWOCB* negatively and significantly ($\beta < 0$ and p-value < 0.1). By contrast, both *MAS* and *UA* have insignificant relationships with *PWOCB* (p-value > 0.1). Panel B of this table displays the positive and significant influence of *INDI* on *PWOCB* ($\beta > 0$ and p-value < 0.1). However, *MAS* has a negative and significant relationship with *PWOCB* ($\beta < 0$ and p-value < 0.1), while *PDI*, *UA*, *LTO* and *INDU* affect *PWOCB* insignificantly (p-value > 0.1). To conclude, several measures of national culture can explain the presence or absence of women on corporate boards.

The evidence reported in Panel A of Table 3.14 suggests that *NGQ* has a negative and significant link with *PWOCB* ($\beta < 0$ and p-value < 0.01), illustrating that national governance quality decreases the opportunities to become women directors. Observably, Panel A of this table reports a positive and significant influence of *NGQ * MAS* and *NGQ * PDI* on *PWOCB* ($\beta > 0$ and p-value < 0.01), illustrating that the quality of national governance increases the impact of masculinity and power distance index on the emergence of women as board members. Furthermore, *NGQ * LTO* and *NGQ * INDU* affect *PWOCB* negatively and significantly ($\beta < 0$ and p-value < 0.01), suggesting that national governance quality decreases the effect of long-term orientation and indulgent on presence of women board members. By contrast, *NGQ * INDI* and *NGQ * UA* has a positive and insignificant correlation with *PWOCB* ($\beta > 0$ and p-value > 0.1), indicating that the quality of national governance does not moderate the influence of individualism and uncertainty avoidance on the appointment of female board representation. Panel B of this table displays the same findings on a non-significant relationship between national governance quality and the presence of female directors as previous tables (see Tables 3.6, 3.10, and 3.12). This table presents that *NGQ * INDI* is positively and significantly linked with *PWOCB* ($\beta > 0$ and p-value < 0.01), suggesting that the quality of national governance increases the association between individualism and the presence of women directors. The negative and significant relationship between *NGQ * INDU* and *PWOCB* ($\beta < 0$ and p-value < 0.01) indicates that the quality of national governance decreases the influence of individualism on the emergence of female as board members. This table also shows that NGQ does not moderate the influence of most of the natural culture dimensions (i.e. *MAS*, *PDI*, *LTO*, *UA*) on *PWOCB* because the p-value is higher than 0.1. To sum up, this study could not provide evidence on the influence of national governance quality on the presence of women directors. However, it provides partial evidence on the moderating role of national governance quality in the relationship between national culture and the appointment of women on corporate boards.

The results from Tables 3.5 to 3.14 generally show that most of the control variables (*URATE*, *WNP*, *GDQI*, *BS*, *FS*, and *FA*) can explain the presence of women directors but the level of explanation depends on the level of the appointment of female directors. Surprisingly, the impact of women in

parliament (*WNP*) and gender diversity quotas index (*GDQI*) on *PWOCB* is statistically non-significant in developing countries. This may be because most developing countries have a lower percentage of women working for parliaments and do not impose gender quotas. This study could not find any evidence on the connection between other control variables such as *GDPPC*, *GDPG*, *INF*, and *CFP* and the appointment of women directors.

3.7 Conclusion

This study investigated the influence of national culture and the quality of national governance on the appointment of female directors and the moderating role of national governance quality in the relationship between national culture and female board representation using panel data from 647 firms located in 78 countries between 2010 and 2017. In line with prior papers (e.g., Carrasco *et al.*, 2015; Chizema *et al.*, 2015), this study found that firms located in countries with high masculinity are likely to recruit fewer female directors than do those in feminine ones. Furthermore, the evidence of the current study suggests that women in individualistic countries have more opportunities to work as board members than those do in collectivism ones. In addition, companies located in countries with high value of uncertainty avoidance decrease the chance for women to become directors. Additionally, this study found that national governance quality does not explain the absence or presence of women directors but it moderates the impact of national culture on the appointment of female directors.

The results of this study contribute to existing literature on the relationship between national governance quality, national culture and female board representation. Specifically, this study indicates that national governance quality does not affect the appointment of women on corporate boards directly except developing countries. However, it might moderate the influence of national culture on the presence of female directors. Importantly, this study indicates that the level of the moderating role of national governance quality depends on each national cultural dimension and the extent to which women are presented as board members. For instance, national governance quality increases the positive impact of individualism and negative influence of uncertainty avoidance on the 'voice' level of women directors. However, it does not moderate the negative effect of masculinity on the 'voice' level of female directors. In addition, national governance quality decreases the negative effect of uncertainty avoidance on the 'voice' level of female directors but does not moderate the negative impact of uncertainty avoidance on the 'presence' level of women directors. Similarly, this study also shows that the influence of national culture on the appointment of women on corporate boards depends on each national cultural dimension and the extent to which women are presented as board members. For instance, individualism versus collectivism can explain

the presence of female directors while other measures like masculinity versus femininity can illustrate the absence of women on corporate boards. However, other measures of national cultural dimension have no association with the determinants of female board members. The findings of this study support institutional theory, which explains the difference in the presence or absence of female directors among firms and countries. Furthermore, this study finds that the perspectives of social gender role have changed slightly from the traditional gender role of women such as taking care of the home and children to the non-traditional one of working outside of home.

The results of this study suggest important applications for boosting the appointment of female directors. First, each country should impose regulations or recommendations on board gender diversity. Second, countries — particularly developing ones — should improve national governance quality to increase the presence of women directors.

This study provides some suggestions for future research to alleviate its limitations. First, the concept of national culture is extremely complicated. This study also finds different results when using national culture conducted by Hofstede and GLOBE's project. These findings may indicate the change in the culture. Indeed, Matei and Abrudan (2018) found that some measures of culture such as economic ones change quickly. They also found that some national cultures are more unstable than others. Thus, future research should identify and use good measures of culture. Second, this study expects to see future research with balanced panel data because many companies in developing countries will provide corporate governance information with annual reports written in English owing to globalisation.

4. Chapter 4: Women on corporate boards, national culture, national governance, corporate financial and environmental performance around the world

Abstract

The relationship between women directors and environmental performance (ENVIP) differs among countries. The main reason is that some factors (national culture or national governance quality) may moderate this relationship. Drawing on neo-institutional theory (NIT), the current study investigates (i) how women directors affect ENVIP, (ii) how female directors moderate the trade-off between ENVIP and financial performance, and (iii) whether NGQ and NC can explain the differences in the relationship between WOCBs and ENVIP among countries that this study observes. The final sample includes 2,179 companies located in 48 countries from 2010 to 2017. National cultural dimensions are based on the project of Hofstede while national governance quality is measured by the World Bank. The current study conducts multivariate analyses by using ordinary least squares regressions with Clustered Standard Errors technique and also divides the sample into developing and developed countries. For the robustness test, this study uses alternative measures of WOCBs (e.g., number of women directors, 'critical mass' of women directors) and a two-stage least squares (2SLS) estimate. The findings show that WOCBs have significant and positive impact on ENVIP, but they do not affect the trade-off between ENVIP and financial performance. This study also finds that the level of the moderating role of NC and NGQ in the link between WOCBs and ENVIP depends on each national cultural dimension and the extent to which women are presented as board members. Interestingly, the results provide evidence to support both legitimacy and economic views of NIT.

Keywords: National Culture, Cross-country, National Governance Quality, Neo-institutional Theory, Women on Corporate Boards, Environmental Performance, Financial Performance

4.1 Introduction

Environmental performance (ENVIP) has become an increasingly relevant topic attracting debate among government, policy-makers, environmentalists, and researchers. For instance, governments are concerned about environmental issues because they are important factors affecting the sustainable development of the economy and society (Bi, Luo, Ding and Liang, 2015). Environmentalists are worried about the millions of deaths caused by air pollution (Gu, Wong, Law, Dong, Ho, Yang and Yim, 2018). Studies on environmental disclosure were first published 30 years ago (see Cowen, Ferreri and Parker, 1987; Bewley and Li, 2000). Therefore, the world needs to find ways to solve the increasing environmental problems we face. One solution to these problems is improving corporate governance practices (De Villiers, Naiker and Van Staden, 2011). Board gender diversity is a key mechanism of corporate governance. Therefore, increasing board gender diversity may decrease environmental issues.

Theoretically, a number of theories can explain the impact of WOCBs on ENVIP. First, according to agency theory, women directors may increase corporate environmental disclosure because they improve board independence and effectiveness by enhancing opportunities to monitor (male) managers' behaviour (Jensen and Meckling, 1976). Second, from the stakeholder and resource dependence theoretical perspectives, women directors exert pressure on firms to provide information on the environment in order to meet the expectations of stakeholders (McGuinness *et al.*, 2017; Haque and Ntim, 2018). Third, according to Torchia *et al.* (2011), tokenism theory suggests that companies only appoint a small number of women on corporate boards to show gender equality on their boards rather than to ask opinions of women on performance. Hence, the minor appointment of female directors may not have any impact on corporate environmental disclosure. Finally, under the legitimacy theoretical perspective, women directors increase companies' reputation by improving their commitments to the environment and society in general (Suchman, 1995; Ntim and Soobaroyen, 2013b). In brief, agency, stakeholder and resource dependency perspectives concentrate on economic benefits while legitimacy and tokenism theories focus on public and social benefits in terms of appointing women on corporate boards. However, these above theories only provide one view on the influence of women directors on environmental performance. Therefore, it is arguably necessary to use a broad, multi-dimensional, and all-encompassing theory, which can adopt views from various theories.

Empirically, many studies investigate the influence of women directors on: (i) financial performance (Carter *et al.*, 2003; Carter *et al.*, 2010); (ii) corporate disclosure (Elmagrhi *et al.*, 2016; Ntim *et al.*, 2017; Manita *et al.*, 2018); (iii) corporate social responsibility (Bear *et al.*, 2010; Harjoto *et al.*, 2015; McGuinness *et al.*, 2017; Liao *et al.*, 2018); and (iv) compensation (Lucas-Perez *et al.*, 2015; Usman

et al., 2018). Currently, many studies also focus on identifying the impact of female directors on ENVIP (Rao *et al.*, 2012; Rupley *et al.*, 2012; Haque, 2017; Elmagrhi *et al.*, 2019). However, the studies on the relationship between women on corporate boards and environmental performance have some limitations. First, most of these empirical studies were carried out the context of a single country such as Australia (Rao *et al.*, 2012), the US (Rupley *et al.*, 2012; Harjoto *et al.*, 2015), the UK (Liao *et al.*, 2015) and China (Elmagrhi *et al.*, 2019). It seems that limited empirical studies (Galbreath, 2010) use data from cross-countries. Second, empirical studies have measured ENVIP by using databases (Rakins, Bloomberg) (Jizi, 2017; McGuinness *et al.*, 2017; Elmagrhi *et al.*, 2019), dummy variables (Liao *et al.*, 2015), or content analysis (Akbas, 2016). It appears that many empirical studies (Velte, 2016; Ismail and Latiff, 2019) collect environmental, social and governance (Francoeur *et al.*) data from DataStream but only limited studies use DataStream to gather information on environmental performance (Kyaw, Olugbode and Petracci, 2017; Manrique and Martí-Ballester, 2017). Finally, the impact of women directors on environmental performance differs among countries such as negative (Cucari *et al.*, 2018), positive (Elmagrhi *et al.*, 2019) or no relationship (Akbas, 2016). Hence, arguably, the link between female directors and environmental disclosure is indirect and moderated by some factors. Furthermore, national governance quality should be involved in corporate governance research (Nguyen *et al.*, 2015). However, it seems that most research ignores national governance mechanisms and their moderating impact on corporate governance (Filatotchev *et al.*, 2013), indicating a lack of studies investigating the impact of national governance quality on the relationship between female directors and environmental performance. As a result, these limitations motivate me to test the relationship among women on corporate boards, corporate environmental performance, corporate financial performance, national culture and national governance quality by using DataStream to gather information on corporate environmental performance around the world.

Using a sample of 2,179 companies located in 48 countries from 2010 to 2017, this study conducts empirical research with four key purposes to solve some limitations of previous studies (e.g., the moderating role of national governance quality in the link between WOCBs and ENVIP has not been defined). First, the current study investigates the link between female directors and corporate environmental performance. Second, this study identifies the moderating role of women directors in the trade-off between corporate environmental performance and corporate financial performance. Finally and importantly, this study examines the effect of national culture and national governance quality on corporate environmental performance as well as the moderating role of national culture and national governance quality in the link between women directors and corporate environmental performance.

This study makes some contributions. *In theory*, the current study supports the legitimation and economic views of NIT in that companies appear to focus on increasing corporate environmental performance to enhance corporate legitimacy as well as attract the support of different influential stakeholders to increase corporate financial performance. In addition, this study contributes to growing literature on the complex relationship between national governance quality, national culture, women directors, and environmental and financial performance. Specifically, the major contribution of this study is finding the positive influence of national governance quality on environmental performance as well as the positive moderating role of national governance quality on the positive relationship between female directors and corporate environmental performance. Indeed, the level of this moderating role depends on the extent to which women are present on corporate boards. Similarly and importantly, both the impact of national culture on environmental performance and the moderating role of national culture in the link between female directors and environmental performance depend on each national cultural dimension and the extent to which females are present as board members. Furthermore, the next contribution is to show no evidence on the trade-off between environmental and financial performance. Additionally, these results contribute to evidence on the positive link between women directors and environmental performance. *In practice*, this study suggests some ways to boost corporate environmental performance. More specifically, each country should impose environmental policies to let companies report environmental performance as well as develop national governance quality. In addition, each firm should appoint at least three women directors, who account for 20% to 40% of board size, to increase environmental performance.

The rest of the study is structured as follows. The second section discusses the theoretical framework of the study. The third section reviews empirical literature and hypothesis development. The following sections provide research design, and report the findings and discussion, followed by concluding remarks.

4.2 Theoretical framework on the relationship between board gender diversity, national culture, national governance quality and environmental performance

Many previous studies have imposed several economic- (agency and resource dependence) and socio-based (legitimacy and stakeholder) theories to explain the relationship between corporate governance and environmental performance (Liao *et al.*, 2015; Alnabsha *et al.*, 2018; Elmagrhi *et al.*, 2019). However, this study applies ecofeminism theory and neo-institutional theory (NIT) for four reasons. First, the application of ecofeminism theory, which focuses on the association between women and environment, in investigation of the relationship between corporate governance and environmental performance is rare. Second, NIT is considered as a broad, multi-dimensional and

all-encompassing theory because it is able to directly and/or indirectly capture both economic (agency and resource dependence) and social (legitimacy and stakeholder) perspectives, simultaneously (see Meyer and Rowan, 1977; DiMaggio and Powell, 1983; Ashforth and Gibbs, 1990; Suchman, 1995; Alvesson and Spicer, 2019). Third and more importantly, this study seeks to explore multi-dimensional and complex relationships among WOCBs, ENVIP, CFP, NC and NGQ, which inherently involves multiple institutions and stakeholders (e.g., creditors, employees, government, economists, and others) with divergent interests. Therefore, I strongly believe that only a broad, multi-dimensional and all- encompassing theory such as NIT is the most appropriate theoretical framework to carry out this empirical analysis. Finally, following previous studies (Haque and Ntim, 2020), this research is a direct response to the suggestions of previous studies (Aguilera, 2005; Aguilera, Rupp, Williams and Ganapathi, 2007), that future research uses alternative theories over traditional ones (e.g., agency, legitimacy, resource dependence, stakeholder, etc.) in order to gain new insights on corporate governance.

4.2.1 Ecofeminism theory

Observably, ecofeminism theory focuses on developing perspectives of 'feminism' on environment. This theory has a long history starting from 1974 and concentrates on making visible historical relationship between 'women' and 'nature' (Warren, 2001). According to Buckingham-Hatfield (2001), ecofeminism divides into two broad strands namely cultural or essentialist ecofeminism, and social or constructivist ecofeminism. First, cultural ecofeminism can refer to as 'essentialist' or 'spiritual' or 'radical' feminism, and tend to be happened in North America (Buckingham-Hatfield, 2001; Warren, 2001). According to cultural ecofeminism, women have a powerful and positive relationship with nature due to three main reasons, as follows: (i) women's *reproductive potential and capacity* makes them 'close to nature' than men via a biological tie with nature, (ii) *a resurrection of pre-patriarchal religions and spiritual practices* (e.g., Goddess worship) are in a honor of women's bodies and procreative powers, (iii) *social and psychological structures* make people believe that women's ways of knowing and moral reasoning are better at solving environmental problems then men's ones (Buckingham-Hatfield, 2001; Warren, 2001). Second, social ecofeminism can refer to 'constructivist' feminism and tend to dominate European thinking (Buckingham-Hatfield, 2001; Buckingham, 2004). It seems that social ecofeminism criticizes cultural ecofeminism and draws from social feminist literature. Specifically, social ecofeminists do not believe that essential nature of women (i.e., reproductive potential and capacity), their homogenous 'experience' or 'ways of thinking', and their ahistorical concept makes women inherently closer to nature than men. Social ecofeminists consider that social and economic structures make women work in areas

(i.e., low paid jobs, home carers), which expose them to a particular set of environmental incivilities. Hence, women could 'share' their experience and argue on nature's behalf in some cases when social and economic structures damage environment widely (Buckingham, 2004). According to Warren (2001), the third strands of ecofeminism is materialist/socialist ecofeminism, which combine both views of cultural and social ecofeminism. Specifically, materialist/socialist ecofeminists suggest that the relationship between women and nature is affected by both women's biology and social construction.

As mentioned above, previous studies show different views on 'ecofeminism', but it is widely accepted that they are referring to the relationship between 'women' and 'nature' (Sargisson, 2001; Warren, 2001). Many studies apply ecofeminism theory to explain the association between women and climate change (Resurrección, 2013; Gaard, 2015), environmental justice (Kirk, 1997; Mann, 2011), environmentally-related consumption (Dobscha, 1993), environmental governance and management (Mukherjee, 2013) and environment and development (Jackson, 1993). However, limited studies (Soman, 2017) apply ecofeminism theory to investigate the relationship between women directors and corporate social responsibility, environmental performance in particular.

To sum up, ecofeminism theory can explain the positive association between 'women' and 'nature'. In other words, women have more concern on environment than men do. Therefore, with broad views women on corporate boards will suggest company to disclosure more information on environmental performance. Hence, I expect that this theory can provide framework to explain the positive impact of women directors on environmental performance.

4.2.2 Neo-institutional theory

Observably, NIT concentrates on developing perspectives of 'institution'. This theory has a long history starting from 1977 (Alvesson and Spicer, 2019). Hence, it seems that the concept of 'institution' is defined in diverse ways (see DiMaggio and Powell, 1983; Scott, 1987;2008; Powell and DiMaggio, 2012). For example, the neo-institutional theory proposed by (DiMaggio and Powell, 1983) identified three mechanisms of institutional isomorphic change. Specifically, they are (i) *coercive* isomorphism (e.g., the presence of institutions is based on government law/regulations as well as cultural expectations), (ii) *mimetic* isomorphism (e.g., the capacity of an institution to communicate others via learning or sharing best experience or practices), and (iii) *normative* isomorphism (e.g., how an institution is widely expected and accepted standards of social behaviour). Therefore, institutions change their structures and practices, not because of effectiveness or efficiency, but due to legitimacy (Alvesson and Spicer, 2019). Furthermore, drawing from Scott

(2008), NIT includes three levels of analysis; these are societal (global) institutions, governance structures, and actors. They also provide explanation for each level, as follows: (i) societal (global) institutions (the highest level provides a platform, where what are considered to be possible, acceptable, and legitimate models and menus of social behaviour are formally proposed and informally enacted), (ii) governance structures (the middle level, including organisation fields (institutions operate in similar industries or provide similar goods or services) and organisations themselves (institutions differ in function, size, structure, culture, and capacity for change and they all influence, and are influenced by, their organisational fields and institutional environments) and (iii) actors (the bottom level, consisting of individuals or groups) (Judge, Li and Pinsker, 2010). Each level of analysis is affected by the forces of diffusion and imposition of institutional norms as well as established new institutional norms (Judge *et al.*, 2010). Therefore, Judge *et al.* (2010) concluded that the key assumption of institutional theory under the perspective of Scott (2008) is that all social actors are seeking and/or reinventing legitimacy norms within the institutional environment. As mentioned above, previous studies show different ways to define the concept of 'institution', but it is widely accepted that they are referring to socio-economic beliefs, norms, and practices associated with different aspects of society (culture, education, job, law, religion) (Judge *et al.*, 2010). Economic institutions can be not only formal (following laws and regulations) but also informal (following norms and conventions) (Ntim and Soobaroyen, 2013b). They concentrate on findings the motives for members of society (such as individuals, countries, firms, and groups) to maximise economic growth (North, 1990; Scott, 2008). Thus, under economic views, it is agreeable to link NIT with the concepts of 'economic efficiency' (Aguilera and Cuervo-Cazurra, 2004; Zattoni and Cuomo, 2008; Ntim and Soobaroyen, 2013b), 'instrumentality' (Aguilera *et al.*, 2007), and 'substantiveness' (Ashforth and Gibbs, 1990). Furthermore, NIT shows the same views on the influence of external environmental resources on institutions' behaviour as resource dependence theory does (Willyard, 2016). In addition, according to Klepczarek (2017), the concept of NIT is based on the motivational function of agency theory. Therefore, more specifically, NIT, which captures the perspectives of resource dependence and agency theories, suggests that economic institutions (e.g., individuals, companies, countries, and groups) try to maximise their own interests by competing with others for limited societal resources (Aguilera *et al.*, 2007).

However, from the sociological perspectives, Meyer and Rowan (1977) mentioned that institutions are not only a means of providing goods and services but are also systems of cultural, ethical, moral and social values. Therefore, according to social-oriented NIT, institutions are defined as trying to gain the approval of or support from the larger and powerful members of society for their right to exist (social, moral, and symbolic legitimacy) (Ashforth and Gibbs, 1990; Zattoni and Cuomo, 2008) rather than competing for limited social resources (economic, instrumental, substantive efficiency)

(Aguilera *et al.*, 2007; Ntim and Soobaroyen, 2013b). In addition, both NIT and legitimacy theory share the same views on the legitimacy of institutions (Aguilera *et al.*, 2007; Alvesson and Spicer, 2019). Thus, more specifically, NIT, which captures the perspectives of social-oriented theories (stakeholder and legitimacy), suggests that social legitimacy institutions involve demonstrating awareness of, and concern for, how one's actions and inactions impact on, as well as may be perceived by, others (Suchman, 1995).

To sum up, NIT, which can capture both simple opposing theoretical views (economic-oriented and social-oriented theories), suggests that institutions seek to maximise their economic/financial benefits as well as level of approval or acceptance of social legitimacy. Generally speaking, it takes a long time for institutions to achieve economic/financial benefits but a short time for them to gain social legitimacy.

Neo-institutional theory has been successfully employed at country-level (Aguilera and Jackson, 2003; Aguilera and Cuervo-Cazurra, 2004; Zattoni and Cuomo, 2008; Judge *et al.*, 2010) as well as firm-level (Ntim and Soobaroyen, 2013b; Elmagrhi *et al.*, 2019; Haque and Ntim, 2020). Interestingly, many studies apply this theory to explain CSR practices among corporations (Ntim and Soobaroyen, 2013b; Kyaw *et al.*, 2017). Surprisingly, though, limited studies (Haque and Ntim, 2020) imposed this theory as framework for explain environmental disclosure among companies. Therefore, this study seeks to extend and apply NIT to explain the differences in environmental performance at country- and firm-levels. More specifically, the current study expects that NIT can explain how women on corporate boards affect corporate environmental performance.

According to Scott (2008), NIT suggests various ways for institutions to gain social legitimacy such as voluntarily adopt and/or comply with accepted institutional conventions, norms and rules. It is a fact that the adoption of the Paris Agreement has encouraged national climate policy-making, notably in developing countries (Höhne, Kuramochi, Warnecke, Röser, Fekete, Hagemann, Day, Tewari, Kurdziel and Sterl, 2017). In other words, it seems that most countries impose environmental laws to provide information for firms in terms of reducing environmental issues (e.g., environmental disclosure). Therefore, companies may need to comply with solving environmental targets by following the guidance of government (coercive, regulative pressures), learning from best practice from peers (cognitive, educative, mimetic pressures) and as a part of international norms (e.g., Paris Agreement) (Clarkson, Li, Pinnuck and Richardson, 2015; Kim, An and Kim, 2015). Therefore, providing information on the environment improves not only corporate legitimacy (by enhancing corporate reputation) but also economic benefits (by gaining access to critical resources like financial resource with the support of various influential stakeholders such as the government and shareholders).

Haque and Ntim (2020) found that EU companies appear to symbolically focus on providing environmental policies in order to enhance corporate legitimacy and improve investors' perceptions rather than implementing these policies that can bring about significant improvement in actual environmental performance. Therefore, they provided evidence to support the legitimation/moral view, but not the efficiency/economic view of NIT. Furthermore, based on NIT and resource dependence theory, Kyaw *et al.* (2017) showed evidence on the positive impact of women directors on ENVIP.

This study predicts that at the firm-level, ecofeminist theory and NIT provide a framework for explaining the positive relationship between WOCBs and ENVIP. In depth, both theories can explain the moderating role of WOCBs on the trade-off between ENVIP and CFP. In addition, at country-level, NIT can be employed to explain the significant moderating role of national culture and national governance quality in the positive link between women directors and corporate environmental performance.

4.3 Literature review and hypotheses development

4.3.1 Women on corporate boards and environmental performance

According to tokenism theory, the minor appointment of women directors can show gender equality but does not affect board decision-making (Torchia *et al.*, 2011). Thus, the minor presence of female directors may have no significant effect on corporate environmental performance. Generally speaking, women and men differ in traditional, cultural and social backgrounds (Liao *et al.*, 2015). Additionally, women directors can express various opinions because they have different forms and levels of education, knowledge, and experience compared with their male counterparts (Post and Byron, 2015). Under agency perspective, the presence of WOCBs may improve board effectiveness because they are good at managerial monitoring skills, and bringing various ideas, opinions, skills and perspectives to their corporate boards (Jensen and Meckling, 1976; McGuinness *et al.*, 2017). Hence, a higher percentage of female directors will increase environmental disclosure because they are more likely to be concerned with environmental issues (Liao *et al.*, 2015). Similarly, according to both stakeholder and resource dependence theories, female directors require firms to disclose environmental performance in order to meet the expectations of stakeholders and gain the support of powerful stakeholders to access various resources (McGuinness *et al.*, 2017; Haque and Ntim, 2018). Additionally, under legitimacy and neo-institutional perspectives, recruiting more WOCBs can improve firms' reputation because they will put pressure on firms to have more corporate social responsibility (e.g., disclosing environmental information) (Suchman, 1995; Ntim and Soobaroyen,

2013b). In brief, theoretically, the higher the presence of female directors is, the higher corporate environmental performance is.

Many studies examine the relationship between board gender diversity and corporate environmental performance using the context of developed countries (e.g., Canada, UK, US) (Rao *et al.*, 2012; Rupley *et al.*, 2012; Liao *et al.*, 2015) and developing countries (e.g., China, Libya, Malaysia) (Haladu and Salim, 2016; Alnabsha *et al.*, 2018; Elmagrhi *et al.*, 2019). These results differ among these studies (see McGuinness *et al.*, 2017; Cucari *et al.*, 2018; Elmagrhi *et al.*, 2019; Fernandes, Bornia and Nakamura, 2019). Specifically, female directors have no link with corporate environmental performance (Galbreath, 2010; Prado-Lorenzo and Garcia-Sanchez, 2010; Akbas, 2016; Trireksani and Djajadikerta, 2016; Fernandes *et al.*, 2019). In particular, using a sample of 283 companies in the Carbon Disclosure Project 6, Prado-Lorenzo and Garcia-Sanchez (2010) found that women directors do not affect environmental performance because they are not involved in disclosing greenhouse gas emissions. Similarly, Galbreath (2010) concluded that female board representation cannot address climate change after carrying out empirical research by using data of 98 companies across 10 countries. It seems that women on corporate boards in developing countries do not affect environmental performance (Khan, 2010; Akbas, 2016; Trireksani and Djajadikerta, 2016; Fernandes *et al.*, 2019). The insignificant relationship between board gender diversity and environmental performance can be explained by two main reasons. First, the appointment of women directors is low in each sample (Galbreath, 2010; Akbas, 2016; Trireksani and Djajadikerta, 2016). Second, women directors in developing countries are not powerful enough to raise their voice regarding environmental protection.

By contrast, limited empirical evidence on the negative impact of female board members on disclosing environmental information is published (Walls, Berrone and Phan, 2012; Cucari *et al.*, 2018). Particularly, women on corporate boards of 313 firms from S&P 500 had a negative and weak influence on environmental disclosure from 1997 to 2005 (Walls *et al.*, 2012). Similarly, Cucari *et al.* (2018) illustrated the negative association between Italian women directors and environmental performance. They mentioned that the appointment of Italian female board members is high enough to provide more information on the environment. However, Italy has a low level of environmental performance because the presence of women directors is affected by regular pressure instead of good expertise (Cucari *et al.*, 2018).

It appears that many studies show that women on corporate boards improve corporate environmental performance (Bear *et al.*, 2010; Rupley *et al.*, 2012; Liao *et al.*, 2015; Glass, Cook and Ingersoll, 2016; Li, Jiang, Zhao, Chen, Liu and Shi, 2017; Elmagrhi *et al.*, 2019). For example, women directors in the US are more likely to pursue environmentally friendly strategies (Glass *et al.*, 2016), develop good firm environmental policy (Li *et al.*, 2017), increase corporate social responsibility

(Bear *et al.*, 2010; Boulouta, 2013; Hafsi and Turgut, 2013; Zhang *et al.*, 2013), and positively relate to voluntary environmental disclosure (Rupley *et al.*, 2012); thus they may disclose more information on the environment. Similarly, using a sample of 329 of the largest companies in the UK, Liao *et al.* (2015) also found a positive connection between female directors and environmental disclosure. In addition, Elmagrhi *et al.* (2019) showed evidence for a positive link between women directors in developing countries and environmental performance by using a data sample in China.

With regard to theoretical explanation and above empirical findings, this study expects the positive relationship between female directors and environmental performance. Thus, the current study proposes the following hypothesis:

H1: Women on corporate boards have a strong effect on environmental performance.

4.3.2 Women on corporate boards, environmental performance, and financial performance

Stakeholder theory explains that companies aim to balance the conflict demands of various stakeholders such as suppliers, shareholders, managers, government and employees, among others (Freeman, 2010). Hence, this theory explains how a company balances environmental performance (demand of societies and governments) and financial performance (shareholders' demand) (Ruf, Muralidhar, Brown, Janney and Paul, 2001). Specifically, an increase in corporate social performance improves financial performance. Furthermore, under stakeholder perspectives, a company should achieve corporate social performance to satisfy various stakeholders (Ruf *et al.*, 2001). In depth, environmental performance is an important concern of corporate social responsibility. Therefore, stakeholder theory can suggest the positive link between environmental performance and firm performance.

A great number of studies examine the link between corporate environmental performance and corporate financial performance; however, there exist no clear-cut conclusions because of mixed results including positive (Hossain, Chowdhury, Evans and Lema, 2015; Maletič, Maletič, Dahlgaard, Dahlgaard-Park and Gomišček, 2016), negative (Brammer, Brooks and Pavelin, 2006; Lima Crisóstomo, de Souza Freire and Cortes de Vasconcellos, 2011), and no relationship (Tarus, 2015). For example, Elsayed and Paton (2005) also showed evidence on mixed findings after using static and dynamic panel data estimates of the relationship between environmental performance and financial performance in UK from 1994 to 2000 and using various measures of financial performance (e.g., Tobin's Q, return on assets, and return on sales). Furthermore, Horváthová (2012) carried out empirical research in the Czech Republic to show that environmental performance negatively links with firm performance this year, but will have positively influence firm's performance next year.

Therefore, it seems that there are some factors moderating the connection between corporate environmental performance and corporate financial performance. Consequently, based on theoretical explanation and following Rodriguez-Fernandez (2016), who reported evidence on the important role of corporate governance practices in the relationship between CSR and firm performance, this study expects that the link between environmental performance and financial performance is moderated by female directors. Thus, this study hypothesises that:

H2: Women on corporate boards moderate the trade-off between corporate environmental performance and corporate financial performance.

4.3.3 The moderating role of national culture in the relationship between women on corporate boards and environmental performance

According to Salloum, Jabbour and Mercier-Suissa (2017), the effectiveness of board demographic diversity could be moderated by some factors such as religion and culture. In other words, a country's context may affect the impact of board gender diversity on corporate outcomes such as corporate performance or corporate social responsibility. Similarly, after carrying out a meta-analysis of 87 studies, Byron and Post (2016) suggested that future studies investigate how the institutional contexts of firms enhance or mitigate the association between female directors and corporate social responsibility. Thus, broadly speaking, the link between female board representation and corporate social responsibility may be moderated by country's contexts.

There exist unclear conclusions on the relationship between women on corporate boards and environmental performance because of different findings. For example, female directors in China have a positive link with environmental performance (McGuinness *et al.*, 2017; Elmagrhi *et al.*, 2019) while women directors in the US decrease environmental performance (Walls *et al.*, 2012). Environmental performance is considered as a measure of corporate social responsibility. Therefore, following the suggestion of Byron and Post (2016) and Salloum *et al.* (2017), the current study expects that country's contexts may enhance or mitigate the relationship between women on corporate boards and corporate environmental performance.

Culture is one of the unique contexts of a country. Adnan, Van Staden and Hay (2011) found that the interaction of national culture with governance structure has a significant impact on CSR disclosure. In other words, national culture affects the link between corporate governance structure and CSR disclosure. Additionally, using a sample of 300 Malaysian firms, Abd Rahman and Ismail (2018) showed that culture has an impact on CSR disclosure and moderates the influence of female directors on firm's CSR disclosure. Furthermore, many studies show evidence on the effect of national culture on environmental disclosure (Husted, 2005; Ho, Wang and Vitell, 2012; Calza, Cannavale and

Tutore, 2016). In depth, after carrying out empirical research in Malaysia, Alazzani, Hassanein and Aljanadi (2017) found that women directors pay more attention to social issues than to environmental performance. They also suggested that future research should use the data of other countries to acquire more findings because national culture influences the relationship between board gender diversity and environmental performance.

Many studies (e.g., Inglehart, 1977; Hofstede, 1980; Schwartz, 1992; Trompenaars and Hampden-Turner, 1997; House *et al.*, 2004) show different measures of culture. It appears that many cross-countries studies use culture measured by Hofstede (1980) (see Hooi, 2007; Bae *et al.*, 2012; Shao *et al.*, 2013; Jian, Jaaffar, Ooi and Amran, 2017). For instance, using a sample of 159 banks from nine countries between 2004 and 2010, García-Meca, Uribe-Bohórquez and Cuadrado-Ballesteros (2018) found that culture has an influence on the relationship between female board members and corporate social responsibility disclosure. Specifically, they created a cultural system index by calculating the sum of the six national cultural dimensions measured by Hofstede (1980). They mentioned that a weaker cultural system (i.e. individualism, masculine, high power distance index, short-term orientation, little indulgence, and high uncertainty avoidance) decreases the positive connection between women directors and corporate social responsibility disclosure including environmental information. Therefore, this study hypothesises that:

H3: The impact of women on corporate boards on environmental performance is moderated by national culture.

Individualism versus collectivism (INDI) illustrates how individuals integrate into a group. Individualistic countries have a high score of INDI while collectivistic ones have a low score (Hofstede *et al.*, 2010). Generally, individuals act independently in individualist societies. Thus, they do what they think is correct. Therefore, companies located in individualist countries may not be so concerned about the requirements of stakeholders. As a result, the level of environmental disclosure may not be high in these countries. Consequently, theoretically, individualism may negatively affect the association between female directors and environmental performance. Some studies show evidence of a negative link between individualism and environmental disclosure (Buhr and Freedman, 2001; Ho *et al.*, 2012; Pucheta-Martínez and Gallego-Álvarez, 2019). For instance, using a sample of companies located in 49 countries, Ho *et al.* (2012) found a negative influence of individualism on corporate social performance including environmental information. In addition, Pucheta-Martínez and Gallego-Álvarez (2019) concluded that companies located in individualistic countries have less environmental disclosure after using a sample from 28 countries between 2004 and 2015. Furthermore, Buhr and Freedman (2001) found that the level of voluntary environmental disclosure in Canada is higher than it is in the US. This is because Canada is a collectivistic country while the US is an individualistic one. In this vein, García-Sánchez, Cuadrado-Ballesteros and Frias-

Aceituno (2016) mentioned that collectivist countries try to push firms to publish corporate social responsibility including environmental performance. In addition, the positive link between women directors and environmental disclosure in banking sectors decreases in countries with a weak cultural system, which is individualism (García-Meca *et al.*, 2018). Thus, based on relevant literature and the findings of García-Meca *et al.* (2018), this study hypothesises the following:

H3a: Individualism versus collectivism negatively moderates the relationship between women on corporate boards and environmental performance.

Masculinity versus femininity (MAS) shows the difference in emotion between male and female. Masculine countries have high score of MAS whilst feminine ones have low score (Hofstede *et al.*, 2010). Generally, men in masculine societies have different concerns in comparison with women. Specifically, men only focus on material success while women concentrate on the quality of life. Furthermore, according to Luo and Tang (2015), quality of life relates to quality of natural environment. Hence, only women in masculine concern environment. However, it seems that women has no power in masculine societies. Thus, theoretically, the positive impact of women directors on environmental disclosure may decrease in masculine societies. Some empirical studies find that companies located in masculine countries provide less environmental information (Ringov and Zollo, 2007; Luo and Tang, 2015; García-Sánchez *et al.*, 2016; Pucheta-Martínez and Gallego-Álvarez, 2019). For example, Ringov and Zollo (2007) carry out empirical evidence with a sample of 23 North American, European and Asian countries to show evidence on a negative relationship between masculine and environmental performance. Furthermore, García-Sánchez *et al.* (2016) conclude that companies located in feminism countries provide less environmental performance after using data from twenty countries. In depth, García-Meca *et al.* (2018) show evidence that a weak cultural system, which is caused by masculine, reduces the positive link between female directors and environmental disclosure. As a result, based on relevant literature and the findings of García-Meca *et al.* (2018), this study hypothesises the following:

H3b: *Masculinity versus femininity* negatively moderates the relationship between women on corporate boards and environmental performance.

Power distance index (PDI) measures the level of inequality which exists, and is accepted, in a country (Hofstede *et al.*, 2010). Countries with a high score of power distance index limit the free exchange of ideas, discourage information openness, and inhibit policy adaptability (Luo and Tang, 2015). Hence, theoretically, the level of environmental disclosure may be extremely low in these countries. Therefore, countries with high power distance decrease the positive impact of women directors on providing environmental information. Empirically, many studies show evidence that power distance negatively affects environmental performance (Ringov and Zollo, 2007; Peng, Dashdeleg and Chih, 2014; Luo and Tang, 2015). Particularly, the results of analysing data of 1189

firms from 29 countries show the negative impact of the power distance index on corporate social responsibility including environmental performance (Peng *et al.*, 2014). Furthermore, Luo and Tang (2015) analysed a sample of 1762 companies from 33 countries to find that the power distance index is negatively linked with carbon disclosure propensity. In depth, according to García-Meca *et al.* (2018), the positive influence of female board members on environmental disclosure decreases in countries with a weak cultural system, which is caused by high power distance. Therefore, this study investigates the following hypothesis based on relevant literature:

H3c: *Power distance index* negatively moderates the relationship between women on corporate boards and environmental performance.

Uncertainty avoidance (UA) expresses how well people can deal with uncertainty and ambiguity (Hofstede *et al.*, 2010). According to Carrasco *et al.* (2015), individuals living in low uncertainty avoidance countries will tend to be more open-minded about alternative behaviours, various perspectives, and higher risks. Thus, countries with low levels of uncertainty avoidance may disclose more information on environment whilst the level of environmental disclosure may be low in high uncertainty avoidance societies. Hence, theoretically, the positive influence of women directors on environmental disclosure reduces in countries with high scores of uncertainty avoidance. Empirically, using a sample of 55 countries, Vachon (2010) concluded that the higher the uncertainty avoidance, the lower green corporatism and environmental innovation. Furthermore, the positive connection between female directors and environmental performance decreases in weak cultural system countries, which are caused by high score of uncertainty avoidance (García-Meca *et al.*, 2018). To sum up, according to relevant literature, this study hypothesises the following:

H3d: *Uncertainty avoidance* negatively moderates the relationship between women on corporate boards and environmental performance.

Long-term orientation versus short-term orientation (LTO) measures how well a country maintains some links with religiosity and nationalism while dealing with the challenges of the present and the future (Hofstede *et al.*, 2010). Long-term orientation countries have a high score of LTO whilst short-term orientation societies have a low score. Normally, individuals in long-term orientation countries concentrate on adaption and pragmatic problem-solving, and are willing to prepare for the future. Hence, they are willing to be concerned about environmental performance. Thus, theoretically, countries with long-term orientation may improve the positive influence of female board members on environmental performance. Empirically, some studies find that long-term orientation positively links to environmental disclosure (Luo and Tang, 2015; Petruzzella, Salvi and Giakoumelou, 2017). Particularly, Petruzzella *et al.* (2017) illustrated that firms located in long-term orientation countries disclose more environmental performance after analysing data of 591 firms around the words. Additionally, García-Meca *et al.* (2018) show that a weak cultural system, which is caused by short-

term orientation, decreases the positive association between women directors and environmental performance. Hence, long-term orientation increases the positive association. Therefore, based on relevant literature, this study examines the following hypothesis:

H3e: *Long-term orientation versus short-term orientation* positively moderates the relationship between women on corporate boards and environmental performance.

Indulgence versus restraint (INDU) shows how individuals in a country feel happy, experience freedom, and use their leisure time (Hofstede *et al.*, 2010). Indulgent societies have high scores on the indulgence index while restrained ones have low scores. Generally, individuals in indulgent countries prefer to control their life and live happily and freely. Thus, individuals in indulgent societies may be concerned with environmental issues because they want to protect their life. Therefore, indulgent countries may disclose more environmental information. As a result, theoretically, the positive effect of female directors on environmental disclosure improves in indulgent countries. Empirically, Petruzzella *et al.* (2017) concluded that indulgence positively relates to environmental performance. Furthermore, García-Meca *et al.* (2018) mentioned that weak cultural systems with little indulgence decrease the positive influence of women directors on environmental disclosure. Therefore, based on relevant literature, this study hypothesises the following:

H3f: *Indulgence versus restraint* positively moderates the relationship between women on corporate boards and environmental performance.

4.3.4 The moderating role of national governance quality in the relationship between women on corporate boards and environmental performance

National governance quality is another country-specific context. As mentioned above, country's context may generate different findings for the relationship between women directors and environmental performance. Therefore, national governance quality may affect the link between board gender diversity and environmental disclosure.

Empirical studies investigating the impact of national governance quality on environmental disclosure and the moderating role of national governance quality in the relationship between women on boards and environmental performance are generally rare. Only limited studies show evidence on the significant association between control of corruption and environmental performance (Damania, Fredriksson and List, 2003; Ioannou and Serafeim, 2012; Gallego-Alvarez, Vicente-Galindo, Galindo-Villardón and Rodríguez-Rosa, 2014; Baldini, Dal Maso, Liberatore, Mazzi and Terzani, 2018). For example, Damania *et al.* (2003) found that corruption decreases environmental policy stringency. Furthermore, limited empirical studies illustrate the impact of government

effectiveness on environmental performance (Apostoaie and Maxim, 2017). Additionally, according to Wingqvist, Drakenberg, Slunge, Sjöstedt and Ekbom (2012), both corruption and government effectiveness increase environmental outcomes. Specially, Wingqvist *et al.* (2012) mentioned that country's contexts affect environmental management. Therefore, they suggested analysing country's contexts to identify key governance factors for improving environmental management. In addition, Elamer, Ntim and Abdou (2017) showed that higher national governance quality increases disclosure in Middle East and North Africa (MENA) countries. As a result, based on a review of the relevant literature, this study expects that national governance quality may affect corporate environmental disclosure. Broadly speaking, national governance quality may have an influence on the association between female directors and corporate environmental performance. Therefore, the current study hypothesises the following:

H4: National governance quality moderates the relationship between women on corporate boards and environmental performance.

4.4 Research design and methodology

According to Saunders *et al.* (2016), research design and methodology illustrates how the study collects and analyses data. Therefore, this section clearly explains the method of data collection and variable measurements and the model for data analysis.

4.4.1 Data sample

The website https://www.hofstede-insights.com/product/compare-countries/ (accessed on 06 July 2018) provides national cultural dimensions proposed by Hofstede in approximately 100 countries. In addition, this study collects country's indicators such as inflation, national governance quality, and others from the World Bank. Furthermore, the current study gathers corporate governance, environmental and financial information from DataStream. The initial sample begins in 2010 due to the unavailability of significant amounts of data before 2010, while the latest data available were 2017 data at the time of data collection. This study excludes companies that lack data. Finally, the sample includes 2,179 companies located in 48 countries (refer to Table 4.1 for more details about number of firms by country).

Table 4.1: Number of firms by country

No	Country	Number of firms	No	Country	Number of firms
1	Argentina	10	**25**	Luxembourg	4
2	Australia	117	**26**	Malaysia	36
3	Austria	13	**27**	Mexico	22
4	Belgium	25	**28**	Morocco	3
5	Brazil	39	**29**	Netherland	22
6	Canada	149	**30**	New Zealand	15
7	Chile	14	**32**	Norway	17
8	China	59	**32**	Philippine	23
9	Colombia	10	**33**	Poland	15
10	Czech	4	**34**	Portugal	8
11	Denmark	24	**35**	Russia	26
12	Egypt	9	**36**	Saudi Arabia	6
13	Finland	21	**37**	Singapore	33
14	France	73	**38**	South Africa	74
15	Germany	52	**39**	South Korea	54
16	Greece	10	**40**	Spain	28
17	Hong Kong	60	**41**	Sweden	38
18	India	52	**42**	Switzerland	46
19	Indonesia	19	**43**	Taiwan	82
20	Ireland	9	**44**	Thailand	17
21	Israel	12	**45**	Turkey	19
22	Italy	26	**46**	United Arabic	5
23	Japan	278	**47**	United Kingdom	189
24	Kuwait	8	**48**	United State of American	304
				Total	**2179**

4.4.2 Variables and measure

The current study classifies all variables into three main groups. Full definitions and measures of all the variables used are presented in Table 4.2.

Table 4.2: Variables and measures

Variable	Symbol	Measure
Dependent variables		
Environmental performance	**ENVIP**	Measures three categories; namely, resource use, emissions and innovation.
Firm performance	**CFP**	$\frac{profit\ before\ tax}{average\ total\ assets}$
Independent variables		
Number of women on corporate board	**NWOCB**	Number of board seats held by women
Women on corporate boards	**PWOCB**	Number of women on corporate boards divided by total number of directors
Moderating variables		
Power Distances Index	**PDI**	Measuring the level of inequality in a country. Using a survey to know employees' fear, boss autocratic, and how they expect their work environment to be. A score number (usually from 1 to 5) could measure all answers.
Individualism versus Collectivism	**INDI**	Measuring the strength of connections among people. Using survey questions including 14 work goals. A score number (usually from 1 to 5) could measure all answers.
Masculinity versus Femininity	**MAS**	Measuring the difference in emotional gender roles between male and female. Using survey questions including 14 work goals. A score number (usually from 1 to 5) could measure all answers.
Uncertainty Avoidance	**UA**	Measuring how well people can deal with anxiety. Using survey questions. A score number (usually from 1 to 5) could measure all answers.
Long-term Orientation versus Short-term Orientation	**LTO**	Measuring to what extent people are willing to prepare for the future. Long-Term Orientation Index score for 23 countries is based on the Chinese Value Survey. Long-Term Orientation Index score for 93 countries is based on the World Value Survey. According to the World Value Survey, a score number (usually from 1 to 10) could measure all answers.
Indulgence versus Restraint	**INDU**	Measuring how people enjoy life. Using World Value Survey. A score number (usually from 1 to 10) could measure all answers.
National governance quality	**NGQ**	Measuring the governance quality of a country. Average of six key dimensions of governance: (1) Voice and Accountability, (2) Political Stability and Absence of violence/Terrorism, (3) Government Effectiveness, (4) Regulatory Quality, (5) Rule of Law, (6) Control of Corruption. The highest score of GQ indicates the high level of governance quality. Principal component analysis (PCA) 6 measures collected from World Bank
Control variables		
Firm-level		
Board size	**BS**	The number of directors on the board
Board independence	**BI**	Number of independence directors divided by total number of directors
CSR committee	**CSR**	Dummy variable. 1 if company has CSR committee while 0 for others
Firm size	**FS**	Natural logarithm of total assets
Firm age	**FA**	Age of the company since incorporation

Leverage	**LEV**	Total debt divides total asset
Country -level		
Gross Domestic Product Per Capita	**GDPPC**	Gross Domestic Product divided by total population
Gross Domestic Product Growth	**GDPG**	$\frac{GDP_n - GDP_{n-1}}{GDP_n}$
Inflation Rate	**INF**	Average consumer prices
Women in parliament	**WNP**	Proportion of seats held by women in national parliaments

First, the dependent variables in the regression analysis consist of environmental performance (*ENVIP*) and corporate financial performance (*CFP*). Environmental performance measure is based on the environmental pillars of Environmental, Social and Governance (Francoeur *et al.*) score, which is provided by Thomson Reuters (DataStream).

Second, the main explanatory variable is percentage of women on corporate boards (PWOCB), following a number of well-established research studies (e.g., Carrasco *et al.*, 2015; Chizema *et al.*, 2015). The moderating variables of this study comprise national cultural dimensions and national governance quality (*NGQ*). Specifically, national cultural includes masculinity versus femininity (*MAS*), individualism versus collectivism (*IND*I), power distance index (*PDI*), uncertainty avoidance (*UA*), long-term orientation versus short-term orientation (*LTO*), and indulgence versus restraint (*INDU*), which were constructed by Hofstede. Furthermore, *NGQ* is based on the Worldwide Governance Indicators (WGI) project of the World Bank. The project measures six indicators; these are Control of Corruption, Government Effectiveness, Political Stability and Absence of Violence/Terrorism, Regulatory Quality, Rule of Law, and Voice and Accountability (Kaufmann *et al.*, 2011). Theoretically, six WGI indices measured six distinct concepts. However, Langbein and Knack (2010) posited that the six measures actually illustrate one overall concept. Therefore, this study uses Principal Component Analysis (PCA) to create NGQ from six governance indicators implemented by the World Bank, following Nadia and Teheni (2014).

The regression model of this study also includes various control variables, following previous papers (Alnabsha *et al.*, 2018; Elmagrhi *et al.*, 2019). Specifically, this study includes many control variables, which are divided into two sub-groups such as country- and firm-level factors. This study expects that country-level characteristics such as gross domestic product per capita (*GDPPC*), gross domestic product growth (*GDPG*), inflation rate (*INF*) and women in national parliaments (*WNP*) have significant relationships with environmental and financial performance, following prior studies (Gallego-Alvarez *et al.*, 2014). The current study also predicts a significant influence of board size (*BS*), firm size (*FS*), firm leverage (*FL*), board independence (*BI*), corporate social responsibility committee (*CSR*) and firm age (*FA*) on environmental and financial performance, following the

results of previous studies (Walls *et al.*, 2012; Rao and Tilt, 2016b; Alnabsha *et al.*, 2018; Cucari *et al.*, 2018).

4.4.3 Research model

Following a well-established line of research (Elmagrhi *et al.*, 2019), this study estimates Equation (**4.1**) to test hypothesis 1:

$$ENVIP_{it} = \alpha + \beta_1 PWOCB_{it} + \sum_{k=2}^{8} \beta_k CONTROLS_{it} + \varepsilon \quad (\mathbf{4.1})$$

This study investigates Equation (**4.2**) to test hypothesis 2, as follows:

$$ROA_{it} = \alpha + \beta_1 PWOCB_{it} + \beta_2 ENVIP_{it} + \beta_3 PWOCB_{it} * ENVIP_{it} + \sum_{j=4}^{10} \beta_j CONTROL_{it} + \varepsilon \quad (\mathbf{4.2})$$

This study examines Equation (**4.3**) to test hypothesis 3, as follows:

$$ENVIP_{it} = \alpha + \beta_1 PWOCB_{it} + \sum_{j=2}^{7} \beta_j NC_{it} + \sum_{m=8}^{13} \beta_m PWOCB_{it} * NC_{it} + \sum_{n=14}^{20} \beta_n CONTROL_{it} + \varepsilon \quad (\mathbf{4.3})$$

This study examines Equation (**4.4**) to test hypothesis 4, as follows:

$$ENVIP_{it} = \alpha + \beta_1 PWOCB_{it} + \beta_2 NGQ_{it} + \beta_3 NGQ_{it} * PWOCB_{it} + \sum_{n=14}^{20} \beta_n CONTROL_{it} + \varepsilon \quad (\mathbf{4.4})$$

where: **ENVIP**: Environmental performance; **CFP**: Financial performance; **PWOCB**: The percentage of women on corporate boards; **NC**: National cultural dimensions; **NGQ**: National governance quality; **CONTROLS**: The control variables; **β**: The parameters for the independent and control variable; **t**: Year; **i**: Firm; and **ε**: Error term (refer to Table 4.2 for more details of variables). In order to solve some problems of the final sample with unbalanced panel data, the current study uses least squares regressions with Clustered Standard Errors technique, following Zalata *et al.* (2018) and Ntim *et al.* (2019).

4.5 Data analysis and discussion

4.5.1 Descriptive statistics

Table 4.3: Descriptive statistics of all variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
Dependent variables					
ENVIP	15,431	59.305	30.68417	4.36	95.52
CFP	15,365	5.458138	10.58927	-201.53	265.57
Independent variables					
NWOCB	15,431	1.407103	1.447696	0	13
PWOCB	15,431	12.84737	12.20343	0	66.67
Moderating variables					
PDI	15,431	50.93319	17.80379	11	100
INDI	15,431	60.86994	25.98971	13	91
MAS	15,431	59.58227	19.45778	5	95
UA	15,431	58.77604	22.75212	8	100
LTO	15,370	53.91184	25.12546	7	100
INDU	15,286	54.28457	17.0799	4	97
NGQ	15,431	.0004057	2.296135	-7.024271	2.811899
Control variables					
Country-level					
GDPPC	15,431	38578.02	19455.72	1345.77	119225.4
GDPG	15,431	2.592438	2.318674	-9.132494	25.55727
INF	15,431	2.176125	2.425344	-1.736037	41.2
WNP	15,403	22.64763	9.930663	0	45
Firm-level					
BS	15,431	10.62154	3.686902	1	31
BI	15,424	49.81275	27.69386	0	100
CSR	15,431	.615255	.4865507	0	1
Total assets	15,431	42600000	183000000	1707.946	3630000000
FS	15,431	15.81518	1.702033	7.443047	22.01206
FA	15,431	68.03785	54.06663	1	544
LEV	15,427	.2484644	.1996712	0	7.946215

Table 4.3 presents summary descriptive statistics in terms of presence of *ENVIP*, *CFP*, *PWOCB*, *NC*, *NGQ*, and control variables. The value of environmental performance (*ENVIP*) ranges from 4.36 to 95.52, with a mean of 59.305, illustrating that the reporting environmental information differs among countries. Furthermore, the average *ENVIP* of this study is higher than that of previous studies (Velte, 2016), indicating that many companies may focus on disclosing environmental performance. Financial performance (*CFP*) ranges from a minimum of -201.53 % to a maximum of 265.57% with a median of 5.458138, indicating that some firms make a loss while others create profit. The wide range of *CFP* shows evidence of an unbiased sample. The number of women on corporate boards ranges from a minimum of 0 to a maximum of 13, with a median of 1.407103 and a standard deviation of 1.447696. The value of the proportion of women on corporate boards ranges from 0% to 66.67%, with a mean of 12.84737, indicating that not many women work on board of directors around the world. By comparison with the study of Galbreath (2010) , the sample of this study has similar presence of female directors although it is much more up-to-date and includes more companies in developing countries, indicating that both developed and developing countries lack the presence of women directors.

Country-level characteristics (*GDPPC*, *GDPG*, *INF* and *WNP*) and firm-level characteristics (*FA*, *FS*, *LEV*, *BS*, *BI* and *CSR*) have wide variations, indicating that the sample is not biased.

Table 4.4: Pearson's and Spearman's correlation matrices of the variables

Variables	ENVIP	CFP	PWOCB	PDI	INDI	MAS	UA	LTO	INDU	NGQ	GDPPC	GDPG	INF	WNP	BS	BI	CSR	FS	FA	LEV
ENVIP	**1**	-0.0375*	0.1982*	-0.0663*	0.0072	0.0156	0.1265*	0.1649*	-0.0491*	0.0298**	0.0034	-0.1987*	-0.1935*	0.0331*	0.2528*	0.0241	0.5856*	0.3761*	0.3076*	0.0923*
CFP	0.0081	**1**	0.0560*	-0.0368*	0.0834*	-0.0584*	-0.1742*	-0.1266*	0.1033*	-0.0050	-0.0060	0.1098*	0.1654*	0.0463*	-0.0966*	0.0904*	-0.0480*	-0.2744*	-0.0666*	-0.1123*
PWOCB	0.1996*	0.0466*	**1**	-0.3182*	0.3863*	-0.1949*	-0.2488*	-0.3193*	0.3303*	0.2016*	0.2296*	-0.0980*	-0.0361*	0.4190*	0.1341*	0.3534*	0.1754*	0.0968*	0.1484*	0.0155
PDI	-0.0698*	0.0131	-0.2734*	**1**	-0.6789*	-0.1628*	0.2660*	0.3054*	-0.6833*	-0.7684*	-0.6740*	0.2562*	0.2262*	-0.4123*	0.2101*	-0.3536*	-0.1246*	0.2019*	-0.1727*	0.0751*
INDI	0.0374*	0.0203	0.3758*	-0.7373*	**1**	0.1221*	-0.3290*	-0.6429*	0.6997*	0.4305*	0.6734*	-0.1955*	-0.0602*	0.1606*	-0.0955*	0.5912*	0.0617*	-0.1157*	0.1848*	-0.0091
MAS	-0.0144	-0.0411*	-0.3232*	-0.0096	0.0254	**1**	0.1170*	0.1815*	-0.0770*	0.0231	0.0347*	-0.1827*	-0.2415*	-0.3213*	0.0179	-0.2074*	0.0006	0.0080	0.1827*	-0.0781*
UA	0.1261*	-0.0977*	-0.2405*	0.2284*	-0.3246*	0.3212*	**1**	0.3870*	-0.3689*	-0.2115*	-0.1893*	-0.3403*	-0.2741*	-0.2363*	0.0783*	-0.4193*	0.0292***	0.1002*	0.0297***	0.0215
LTO	0.1324*	-0.0450*	-0.3093*	0.3057*	-0.5781*	0.2937*	0.4636*	**1**	-0.6397*	-0.1039*	-0.3379*	-0.1165*	-0.3098*	-0.1714*	0.0879*	-0.5343*	0.0459*	0.1428*	-0.0115	-0.0376*
INDU	-0.0207	0.0307**	0.2952*	-0.6255*	0.6798*	-0.1530*	-0.3340*	-0.6168*	**1**	0.4900*	0.5520*	-0.0688*	0.0106	0.3585*	-0.2456*	0.4743*	0.0565*	-0.2442*	0.0874*	-0.0241
NGQ	0.0860*	-0.0495*	0.1843*	-0.7253*	0.5368*	0.0590*	-0.1270*	-0.0312**	0.4473*	**1**	0.7198*	-0.2204*	-0.2823*	0.3403*	-0.2401*	0.2460*	0.0776*	-0.1690*	0.1067*	-0.0876*
GDPPC	0.0393*	-0.0486*	0.2096*	-0.6948*	0.6161*	0.0427*	-0.1575*	-0.1529*	0.4638*	0.8440*	**1**	-0.1698*	-0.3636*	0.1672*	-0.1730*	0.4186*	0.0097	-0.0565*	0.1871*	-0.0322***
GDPG	-0.1669*	0.0739*	-0.1187*	0.3692*	-0.3329*	-0.1072*	-0.3102*	0.0274	-0.2274*	-0.3848*	-0.3415*	**1**	0.2212*	-0.0633*	-0.0540*	0.0388*	-0.1574*	-0.0101	-0.1681*	0.0031
INF	-0.1260*	0.0886*	-0.0940*	0.3219*	-0.1655*	-0.2020*	-0.1248*	-0.2139*	-0.1625*	-0.5543*	-0.4909*	0.1708*	**1**	-0.0267	0.0216	0.0977*	-0.0404*	-0.0678*	-0.1649*	0.0078
WNP	0.0561*	0.0160	0.4130*	-0.3508*	0.2205*	-0.5210*	-0.3152*	-0.1782*	0.3382*	0.2200*	0.1406*	-0.1131*	-0.0634*	**1**	0.0773*	0.3032*	0.0884*	-0.0596*	0.0205	0.0334*
BS	0.2400*	-0.0270	0.0942*	0.1521*	-0.1187*	0.0293***	0.1546*	0.1121*	-0.2104*	-0.1818*	-0.1725*	-0.0211	0.0437*	0.1476*	**1**	-0.0868*	0.1723*	0.4987*	0.1614*	0.1008*
BI	0.0318**	0.0360*	0.3151*	-0.3408*	0.5243*	-0.2553*	-0.4623*	-0.5274*	0.4532*	0.2257*	0.3003*	-0.0418*	-0.0128	0.1197*	-0.1120*	**1**	0.0819*	0.0156	0.0821*	0.0405*
CSR	0.5949*	-0.0185	0.1662*	-0.1222*	0.0998*	-0.0192	0.0263	0.0229	0.0653*	0.0964*	0.0394*	-0.1531*	-0.0529*	0.1299*	0.1625*	0.0866*	**1**	0.2416*	0.1896*	0.0835*
FS	0.3643*	-0.0758*	0.1125*	0.1595*	-0.1402*	0.0123	0.1292*	0.1549*	-0.2015*	-0.1244*	-0.0479*	0.0205	-0.0467*	-0.0735*	0.4891*	0.0236	0.2372*	**1**	0.2158*	0.1781*
FA	0.2945*	0.0076	0.1421*	-0.1878*	0.1738*	0.1352*	0.0482*	-0.0091	0.1118*	0.1779*	0.1941*	-0.1584*	-0.1404*	-0.0311**	0.1298*	0.0635*	0.1811*	0.2191*	**1**	-0.0107
LEV	0.0486*	-0.1045*	-0.0007	0.0652*	-0.0287***	-0.0537*	0.0393*	-0.0317***	-0.0161	-0.0731*	-0.0559*	-0.0143	0.0219	-0.0051	0.0684*	0.0216	0.0473*	0.0875*	-0.0313	**1**

Notes: The bottom left half of the table reports Pearson's parametric correlation coefficients, while the upper right half of the table presents Spearman's non-parametric correlation coefficients. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively (Sidak-adjusted significance level). All variables are introduced in Table 4.2.

Table 4.4 presents both Pearson's and Spearman's correlation matrices among variables to test for multicollinearity, following Ntim *et al.* (2015) . This table reports the lowest difference between Pearson and Spearman correlation coefficients, indicating that no non-normality problems exist. Therefore, all variables are normally distributed. The value of coefficient estimation is less than 0.8, indicating that there is no high correlation between independent variables. Therefore, these variables are suitable for regression models. It is widely shown that *PWOCB* has a significant positive relationship with *ENVIP* at the 1% level. Hence, this study predicts the significant impact of women directors on corporate environmental performance. In addition, most of the national cultural dimensions except *MAS* and *INDU* and national governance quality (*NGQ*) have significant relationships with *ENVIP* at the 1% level. Therefore, the current study expects the moderating role of *NC* and *NGQ* in the connection between *PWOCB* and *ENVIP*. Most of the control variables (*GDPPC*, *INF*, *GDPG*, *WNP*, *BS*, *BI*, *FA*, *FS*, *CSR* and *LEV*) have significant relationships with *ENVIP*, suggesting that the change in all control variables can explain the increase or decrease in corporate environmental performance.

4.5.2 Multivariate regression analyses

4.5.2.1 The relationship between women on corporate boards and environmental performance

Table 4.5 reports the impact of female directors and control variables on environmental performance between three subsamples: full sample, developing countries, and developed countries. Specifically, Model 1 shows the results of the relationship between *PWOCB* and *ENVIP* whilst Models 2, 3, and 4 presents the influence of *PWOCB* combined with control variables on *ENVIP*. The value of R^2 ranges from 10.10 to 51.94 while the p-value is equal to zero, indicating that these four regression models can explain the change in the corporate environmental performance. The models of the current study are better than those of Elmagrhi *et al.* (2019), who conducted empirical research in a developing country. Furthermore, Liao *et al.* (2015), who conducted empirical research in a developed country, and this study achieved the same value of R^2. The main reason is that as regards this sample, developed countries have more observations than developing countries have.

The results reported in Table 4.5 shows that *PWOCB* has a statistically significant impact on *ENVIP* at the level of 1% ($\beta > 0$ and p-value < 0.01) in developed countries and the full sample (Panels A and C, respectively) while *PWOCB* affects *ENVIP* positively and insignificantly ($\beta > 0$ and p-value > 0.1) in developing countries. Thus, the results show that female board members increase corporate environmental performance, which supports hypothesis 1. These result are in agreement with those

obtained by previous studies (Rupley *et al.*, 2012; Liao *et al.*, 2015; Elmagrhi *et al.*, 2019) that show evidence on the positive link between female directors and corporate environmental performance. The findings of this study illustrate that women directors concentrate on environmental issues, which support ecofeminism theory. Hence, they are likely to report environmental performance. The results of this study are contrary to those of previous ones (Galbreath, 2010; Walls *et al.*, 2012; Cucari *et al.*, 2018), indicating that women directors in this study may have good expertise and sufficient power to express their ideas relating to environmental issues.

Table 4.5: The relationship between women on corporate boards and environmental performance

Variable	Panel A Full sample		Panel B Developing countries	Panel C Developed countries
	Model 1 (ENVIP)	**Model 2 (ENVIP)**	**Model 3 (ENVIP)**	**Model 4 (ENVIP)**
PWOCB	.5140155 (0.000) *	.16414 (0.000) *	.0360074 (0.564)	.1724351 (0.000) *
Control variables				
GDPPC		-.0000388 (0.151)	-.0000127 (0.827)	-.00019 (0.000) *
GDPG		-.7874414 (0.000) *	-.3005939 (0.216)	-.705558 (0.006) *
INF		-.2945442 (0.069) ***	-.0255702 (0.890)	-.9638064 (0.003) *
WNP		.1304929 (0.005) *	-.1500939 (0.024) **	.3730598 (0.000) *
BS		.1473978 (0.221)	.389489 (0.041) **	.0250824 (0.868)
BI		-.0342715 (0.029) *	.0810895 (0.011) **	-.0539286 (0.004) *
CSR		29.13941 (0.000) *	29.83698 (0.000) *	28.17731 (0.000) *
FS		5.340701 (0.000) *	4.797385 (0.000) *	5.466403 (0.000) *
FA		4.533697 (0.000) *	4.626589 (0.000) *	4.556909 (0.000) *
LEV		-.8856799 (0.650)	-1.921537 (0.509)	-.4513893 (0.870)
No of Obs.	15,431	15,392	4,645	10,747
No of Firms	2,179	2,179	688	1,491
Year fixed effect	Y	Y	Y	Y
Industry fixed effect	Y	Y	Y	Y
R^2 (%)	10.10	265.29	50.39	51.94
F-test	111.29	50.81	109.10	174.91
p-value	0.0000	0.0000	0.0000	0.0000
Mean VIF	1.82	1.74	1.94	1.74
Max VIF	2.81	2.98	4.24	2.61

Notes: This table reports estimates of the relation between women on corporate boards and environmental performance. The coefficients are estimated by using Clustered Standard Errors technique; p-value is in parentheses. *, **, and * ** indicate correlation is significant at the 1%, 5% and 10% levels, respectively. All variables are introduced in Table 4.2.

4.5.2.2 The moderating role of women on corporate boards in the relationship between environmental performance and financial performance

Table 4.6 presents the results of the moderating role of women on corporate boards in the relationship between environmental performance and financial performance between three subsamples: full sample, developing countries, and developed countries. Specifically, the influence of *PWOCB* and *ENVIP* on *CFP* is reported in Models 1 and 2, respectively. Model 3 reports the impact of *PWOCB*, *ENVIP*, and interaction variable (*PWOCB* * *ENVIP*) on *CFP* for the full sample while Models 4, 5 and 6 show the results of Model 4 combined with control variables for the full sample, developing countries, and developed countries, respectively. Most of the value of R^2 is less than 10% (except the model for developing countries) while the p-value is equal to zero, indicating that these regression models are not strong enough to explain the change in the corporate financial performance. The increase or decrease in the corporate financial performance in developing countries can be explained by the model because R^2 = 16.89 and p-value = 0.000. Most models of the current study are not as good as those of Rodriguez-Fernandez (2016), who carried out empirical research in a developed country, because the final sample of the current study includes observations in both developing and developed countries.

As regards Table 4.6, *PWOCB* displays a strong positive relationship with *CFP* ($\beta > 0$ and p-value < 0.01) in the full sample and developed countries, whereas *PWOCB* affects *CFP* positively and insignificantly ($\beta > 0$ and p-value > 0.1) in developing countries. Similarly, the impact of *ENVIP* on *CFP* is positive and statistically significant in the full sample and developed countries ($\beta > 0$ and p-value < 0.01), while *ENVIP* has insignificant and positive association with *CFP* in developing countries ($\beta > 0$ and p-value > 0.1). These findings show evidence for the statistically significant and positive impact of *PWOCB* and *ENVIP* on *CFP*.

The coefficient of *PWOCB* * *ENVIP* is negative ($\beta < 0$) and its p-value is higher than 0.1 between the three subsamples, indicating that the relationship between *PWOCB* * *ENVIP* and *CFP* is statistically non-significant. In other words, these findings suggest that women on corporate boards do not affect the relationship between corporate environmental performance and corporate financial performance. Hence, this study does not show evidence to support hypothesis 2. The results of the current study are not in line with the proposed conceptual model of Rodriguez-Fernandez (2016), who suggested that good corporate governance recommendations can affect the link between environmental and financial performance.

Table 4.6: The moderating role of women on corporate boards in the relationship between environmental performance and firm performance

Variables	Panel A Full sample				Panel B Developing countries	Panel C Developed countries
	Model 1 (CFP)	Model 2 (CFP)	Model 3 (CFP)	Model 4 (CFP)	Model 5 (CFP)	Model 6 (CFP)
PWOCB	.0421325 (0.001) *		.0406918 0.001) *	.0423875 (0.003) *	-.005738 (0.789)	.0494275 (0.006) *
ENVIP		.0073401 0.239)	.0038776 0.526)	.0261589 (0.000) *	.0128611 (0.162)	.030252 (0.000) *
Interaction variables						
PWOCB*ENVIP			-.0001756 0.700)	.0001553 (0.743)	-.0002058 (0.753)	-.0002918 (0.625)
Control variables						
GDPPC				.0000235 (0.047) **	-.0000249 (0.105)	-0.00000245 (0.911)
GDPG				.2550887 (0.000) *	.2516563 (0.000) *	.265457 (0.021) **
INF				.2911129 (0.000) *	.114681 (0.063) ***	.6804153 (0.001) *
WNP				-.0011047 (0.940)	-.0309803 (0.300)	-.0083405 (0.614)
BS				-.0539336 (0.167)	-.0353346 (0.581)	-.0730697 (0.176)
BI				.0180442 (0.002) *	.0140976 (0.147)	.011235 (0.108)
CSR				-.6922718 (0.048) **	.8609092 (0.054) ***	-1.361264 (0.003) *
FS				-.4029836 (0.050) **	-1.266005 (0.000) *	-.1095594 (0.693)
FA				.1596841 (0.496)	.1238917 (0.702)	.138006 (0.649)
LEV				-5.05238 (0.003) *	-8.798377 (0.000) *	-2.733074 (0.284)
No of Obs	15,365	15,365	15,365	15,327	4,606	10,721
No of Firms	2,179	2,179	2,179	2,179	688	9.94
Year fixed effect	Y	Y	Y	Y	Y	Y
Industry fixed effect	Y	Y	Y	Y	Y	Y
R^2 (%)	4.34	4.16	4.35	7.08	16.98	5.67
F-test	14.75	15.75	14.48	18.05	16.31	9.94
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mean VIF	1.82	1.81	1.75	1.76	1.96	1.76
Max VIF	2.8	2.8	2.81	3.00	4.36	2.62

Notes: This table reports estimates of the moderating role of women on corporate boards in the relationship between environmental performance and firm performance. The coefficients are estimated by using Clustered Standard Errors technique; p-value is in parentheses. *, **, and * ** indicate correlation is significant at the 1%, 5% and 10% levels, respectively. All variables are introduced in Table 4.2.

Table 4.7: The moderating role of national culture in the relationship between women on corporate boards and environmental performance

Variables	Panel A Full sample			Panel B Developing countries	Panel C Developed countries
	Model 1 (ENVIP)	Model 2 (ENVIP)	Model 3 (ENVIP)	Model 4 (ENVIP)	Model 5 (ENVIP)
PWOCB		.5281177 (0.000) *	.1414493 (0.000) *	.1153478 (0.430)	.2852774 (0.039) **
National cultural dimensions					
INDI	.2308404 (0.000) *	.1470684 (0.001) *	.089744 (0.007) *	.0626727 (0.424)	-.0377104 (0.690)
MAS	-.221447 (0.000) *	-.1082785 (0.002) *	-.1224083 (0.000) *	-.1636664 (0.166)	.00499 (0.939)
PDI	-.0616626 (0.236)	-.047551 (0.374)	-.0094418 (0.832)	-.0674477 (0.375)	.1247595 (0.319)
UA	.1664178 (0.000) *	.1535077 (0.000) *	.0540402 (0.025) **	-.0044792 (0.930)	-.0903277 (0.352)
LTO	.2763729 (0.000) *	.2507827 (0.000) *	.1256609 (0.000) *	.0478119 (0.320)	.1349463 (0.001) *
INDU	-.0142935 (0.786)	-.0139616 (0.798)	.0073208 (0.850)	.095243 (0.091) ***	-.0259575 (0.814)
Interaction variables					
INDI * PWOCB		.0093021 (0.003) *	-0.00000824 (0.997)	-.0010945 (0.847)	-.0060139 (0.337)
MAS * PWOCB		.0003349 (0.876)	-.0006371 (0.694)	.0061625 (0.423)	.0021295 (0.376)
PDI * PWOCB		.0035538 (0.320)	-.0020837 (0.407)	-.0028174 (0.542)	.008263 (0.193)
UA * PWOCB		-.0032835 (0.171)	-.0005091 (0.756)	-.0005261 (0.881)	-.0050585 (0.349)
LTO * PWOCB		-.0019783 (0.460)	-.0009554 (0.592)	-.0002671 (0.936)	-.0085711 (0.001) *
INDU * PWOCB		.0012263 (0.775)	.0009217 (0.737)	.0012959 (0.721)	.0021163 (0.710)
Control variables					
GDPPC			-.0000645 (0.078) ***	.0000182 (0.815)	-.0001442 (0.011) **
GDPG			-.5153683 (0.002) *	.2309516 (0.407)	-.4677628 (0.055) ***
INF			-.1547653 (0.355)	.0274251 (0.886)	.0598949 (0.858)
WNP			.0394299 (0.489)	-.1969529 (0.071) ***	.4842519 (0.000) *
BS			.1936184 (0.115)	.3853525 (0.042) **	.1063615 (0.500)
BI			-.0089291 (0.615)	.0647661 (0.068) ***	.0037359 (0.867)
CSR			28.7845 (0.000) *	29.07424 (0.000) *	27.34212 (0.000) *
FS			4.919473 (0.000) *	4.793304 (0.000) *	5.148076 (0.000) *
FA			4.552036 (0.000) *	4.139838 (0.000) *	4.342367 (0.000) *
LEV			-1.208916 (0.543)	-2.016086 (0.515)	-.376165 (0.892)
No of Obs.	15,286	15,286	15,247	4,500	10,747
No of Firms	2,154	2,154	2,154	663	1,491
Year fixed effect	Y	Y	Y	Y	Y
Industry fixed effect	Y	Y	Y	Y	Y
R^2 (%)	11.86	16.23	51.60	51.50	52.66
F-test	96.14	77.78	192.08	80.66	128.96
p-value	0.0000	0.0000	0.0000	0.0000	0.0000
Mean VIF	2.02	2.11	2.23	2.95	22.86
Max VIF	3.64	4.30	5.03	9.81	4.82

Notes: This table reports estimates of the moderating role of national culture in the relationship between WOCBs and ENVIP. The coefficients are estimated by using Clustered Standard Errors techique; p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. The interaction variables created for six national culture proxies and WOCBs, respectively. All the other variables introduced in Table 4.2.

4.5.2.3 The moderating role of national culture in the relationship between women on corporate boards and environmental performance

Table 4.7 shows the results of the moderating role of national culture in the link between women on corporate boards and environmental performance between three subsamples: full sample, developing countries, and developed countries. Specifically, Model 1 presents the results of the impact of *NC* on *ENVIP* whilst Model 2 reports the influence of *PWOCB*, *NC* and interaction variables (between *NC* and *PWOCB*) on *ENVIP*. Models 3, 4 and 5 display the results of Model 2 combined with control variables between three subsamples—namely, full sample, developing countries, and developed countries. The value of R^2 ranges from 11.86 to 52.66, illustrating that the regression models are strong enough to explain for an increase or a decrease in environmental performance. Thus, in other words, these models provide good results as this study expected.

Table 4.7 reports that *INDI* has a statistically significant and positive link with *ENVIP* ($\beta > 0$ and p-value < 0.01) for the full sample, whereas *INDI* relates to *ENVIP* positively and insignificantly ($\beta > 0$ and p-value > 0.1) in both developing and developed countries, indicating that firms in individualist countries concentrate more on environmental performance than those do in collectivist ones. These findings are inconsistent with those of previous studies (Buhr and Freedman, 2001; Ho *et al.*, 2012; Pucheta-Martínez and Gallego-Álvarez, 2019), who find a negative influence of *INDI* on *ENVIP*. In addition, this table reports a negative and insignificant association between *INDI* * *PWOCB* and *ENVIP* ($\beta < 0$ and p-value > 0.1) for all three subsamples, illustrating that individualism or collectivism do not influence the link between women on corporate boards and environmental performance. In other words, there is no evidence of the difference in the impact of women directors on environmental performance between individualistic and collectivistic countries. These findings are not in line with those of García-Meca *et al.* (2018), who showed that individualism decreases the positive link between female board members and environmental performance. To sum up, this study does not support hypothesis 3a.

This table also presents that *MAS* relates to *ENVIP* significantly and negatively ($\beta < 0$ and p-value < 0.01) for the full sample, whilst *MAS* has an insignificant correlation with *ENVIP* (p-value > 0.1) in both developing and developed countries, suggesting that companies in masculine countries do not focus on environmental performance by comparison with those in feminine ones. This study shares the same findings with prior ones (Ringov and Zollo, 2007; Luo and Tang, 2015),that show evidence on the negative association between masculinity and environmental disclosure. Furthermore, the link between *MAS* * *PWOCB* and *ENVIP* is statistically non-significant (p-value > 0.1) for all three subsamples, indicating that the connection between female board members and environmental

performance is not moderated by masculinity or femininity. These findings do not show evidence for the difference in the impact of women directors on environmental performance between masculine and feminine countries. The results of this study are not consistent with those of García-Meca *et al.* (2018), who found that masculinity moderates the positive link between women directors and environmental performance. Thus, hypothesis 3b is not supported.

As regards Table 4.7, both *PDI* and *PDI * PWOCB* have non-significant and negative relationships with *ENVIP* ($\beta < 0$ and p-value > 0.1) for the full sample and developing countries, while they relate *ENVIP* positively and insignificantly for developed countries ($\beta > 0$ and p-value > 0.1). These findings evince that power distance index does not affect environmental performance. This study findings differ from previous studies (Peng *et al.*, 2014; Luo and Tang, 2015) that find a negative impact of power distance index on corporate environmental disclosure. The results of the current study also indicate that power distance index does not increase or decrease the impact of women directors on environmental performance. These findings are inconsistent with those of García-Meca *et al.* (2018), who showed empirical evidence on the moderating role of power distance in the relationship between board gender diversity and environmental disclosure. Hence, this study does not support hypothesis 3c.

The impact of *UA* and *UA * PWOCB* on *ENVIP* is reported in Table 4.7. Specifically, *UA* affects *ENVIP* positively and significantly at the level of 5% ($\beta > 0$ and p-value < 0.05) for the full sample, while *UA* has a negative and non-significant correlation with *ENVIP* in both developing and developed countries ($\beta < 0$ and p-value > 0.1). These findings illustrate that there is no difference in the impact of *UA* on *ENVIP* between developing and developed countries. However, these results suggest that firms in high uncertainty avoidance countries concentrate more on environmental performance than firms in low ones do. The findings of this study differ from those of Vachon (2010), who found that countries with high uncertainty avoidance are likely to improve environmental performance. Furthermore, the relationship between *UA * PWOCB* and *ENVIP* is statistically negative and non-significant ($\beta < 0$ and p-value > 0.1) for all three subsamples, indicating that high or low uncertainty avoidance does not influence the connection between female directors and corporate environmental performance. These results are inconsistent with those of García-Meca *et al.* (2018), who found the moderating role of uncertainty avoidance in the connection between women directors and environmental performance. Hence, this study does not support hypothesis 3d.

Table 4.7 displays the positive and significant impact of *LTO* on *ENVIP* ($\beta > 0$ and p-value < 0.01) for the full sample and developed countries while *LTO* affects *ENVIP* positively and insignificantly ($\beta > 0$ and p-value > 0.1) for developing countries. These findings suggest that firms located in long-term orientation countries concentrate more on environmental performance than those firms do in short-term orientation ones. This study shows different findings by comparison with those of

Petruzzella *et al.* (2017), who found a significant and positive relationship between long-term orientation and environmental performance. This table also reports the negative and non-significant relationship between *LTO * PWOCB* and *ENVIP* (β < 0 and p-value > 0.1) for the full sample and developing countries, whereas the correlation between *LTO * PWOCB* and *ENVIP* is statistically negative and significant for developed countries (β < 0 and p-value < 0.1). These findings suggest that long-term orientation does not affect the link between female directors and environmental performance except developed countries. These results are not in line with those of García-Meca *et al.* (2018), who showed evidence for moderating role of long-term orientation in the positive link between board gender diversity and environmental performance. Therefore, the findings of this study do not support hypothesis 3e.

The relationship between *INDU* and *ENVIP* differs among subsamples. Specifically, this relationship is negative and non-significant (β > 0 and p-value > 0.1) for the full sample, indicating that indulgence does not relate to environmental performance. These results are opposite to those of Petruzzella *et al.* (2017), who illustrated the positive and significant influence of *INDU* on *ENVIP*. Furthermore, *INDU* has significant and positive impact on *ENVIP* (β > 0 and p-value < 0.1) for developing countries while *INDU* affects *ENVIP* negatively and insignificantly (β < 0 and p-value > 0.1) for developed countries. Table 4.7 reports the positive and insignificant link between *INDU * PWOCB* and *ENVIP* (β > 0 and p-value > 0.1) for all three subsamples, illustrating that indulgence or restraint do not moderate the connection between women on corporate boards and environmental performance. These findings are not consistent with García-Meca *et al.* (2018), who provided evidence for the moderating role of indulgence versus restraint in the connection between female board representation and environmental performance. Thus, this study does not support hypothesis 3f.

To sum up, most of the national cultural dimensions (except *PDI* and *INDU*) have a significant influence on *ENVIP*. These findings are the same as prior studies (Husted, 2005; Calza *et al.*, 2016), which find the significant influence of national culture on environmental performance. However, all the interaction variables between national cultural dimensions and women on corporate boards affect *ENVIP* insignificantly. These results does not support hypothesis 3. This study shows opposite findings from previous studies (Adnan *et al.*, 2011; Abd Rahman and Ismail, 2018), which find evidence for the moderating role of national culture in the relationship between women directors and environmental performance.

Table 4.8: The moderating role of national governance quality in the relationship between women on corporate boards and environmental performance

Variables	Panel A Full sample			Panel B Developing countries	Panel C Developed countries
	Model 1 (ENVIP)	Model 2 (ENVIP)	Model 3 (ENVIP)	Model 4 (ENVIP)	Model 5 (ENVIP)
PWOCB		.4759857 (0.000) *	.1523487 (0.000) *	.0710584 (0.440)	.0673465 (0.289)
NGQ	1.149537 (0.000) *	.7249847 (0.004) *	.9239659 (0.008) *	1.904545 (0.002) *	-1.213939 (0.121)
Interaction variables					
NGQ * PWOCB		.0300057 (0.127)	.0491619 (0.000) *	.0161833 (0.537)	.0801895 (0.031) *
Control variables					
GDPPC			-.0001161 (0.005) *	-.0002564 (0.010) *	-.000158 (0.003) *
GDPG			-.7633713 (0.000) *	-.2023828 (0.397)	-.6135044 (0.014) **
INF			-.2335307 (0.150)	.1521555 (0.422)	-.8122115 (0.024) **
WNP			.099557 (0.034) **	-.2072985 (0.003) *	.3928746 (0.000) *
BS			.1957544 (0.104)	.4054526 (0.034) **	-.0007145 (0.996)
BI			-.034458 (0.028) **	.0848544 (0.007) *	-.052404 (0.005) *
CSR			28.96163 (0.000) *	29.12901 (0.000) *	28.42967 (0.000) *
FS			5.323052 (0.000) *	5.173137 (0.000) *	5.411545 (0.000) *
FA			4.497047 (0.000) *	4.149942 (0.000) *	4.502751 (0.000) *
LEV			-1.053447 (0.589)	-1.833434 (0.526)	-.6865695 (0.803)
No of Obs.	15,431	15,431	15,392	4,645	10,747
No of Firms	2,179	2,179	2,179	688	1,491
Year fixed effect	Y	Y	Y	Y	Y
Industry fixed effect	Y	Y	Y	Y	Y
R^2 (%)	6.95	10.38	51.03	50.87	52.05
F-test	106.56	100.60	247.45	103.89	163.78
p-value	0.0000	0.0000	0.0000	0.0000	0.0000
Mean VIF	1.81	1.75	1.92	2.25	1.89
Max VIF	2.81	2.44	4.57	5.22	3.57

Notes: This table reports estimates of the moderating role of national governance quality in the relationship between women on corporate and environmental performance. The coefficients are estimated by using Clustered Standard Errors technique; p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. The interaction variables are created for national governance quality and women on corporate boards. All the other variables are introduced in Table 4.2.

4.5.2.4 The moderating role of national governance quality in the relationship between women on corporate boards and environmental performance

Table 4.8 reports the results of the moderating role of national governance quality in the relationship between women on corporate boards and environmental performance between three subsamples: full sample, developing countries, developed countries. Specifically, Model 1 presents the results of the impact of *NGQ* on *ENVIP* while Model 2 displays the influence of *PWOCB*, *NGQ* and interaction variables (*NGQ * PWOCB*) on *ENVIP*. Models 3, 4 and 5 display the results of Model 2 combined with control variables on *ENVIP* between three subsamples — namely, the full sample, developing countries, and developed countries. Most of the values of R^2 are higher than 10% except Model 1, illustrating that these regression models are strong enough to explain an increase or a decrease in environmental performance.

As regards Table 4.8, *NGQ* influences *ENVIP* positively and significantly ($\beta > 0$ and p-value < 0.01) for the full sample and developing countries, while *NGQ* has a negative and non-significant relationship with *ENVIP* for developed countries ($\beta < 0$ and p-value > 0.1). These results indicate that firms located in countries with high value of national governance quality focus on corporate environmental performance. These findings are similar to those of Elamer *et al.* (2017), who showed evidence for the impact of national governance quality on disclosure. Hence, consistent with literature and as expected, national governance quality plays an important role in enhancing environmental performance.

Additionally, it seems that national governance quality does not impact the connection between women directors and environmental performance in developing countries because *NGQ * PWOCB* has non-significant and positive link with *ENVIP* ($\beta > 0$ and p-value > 0.1). However, the relationship between *NGQ * PWOCB* and *ENVIP* is positive and significant ($\beta > 0$ and p-value < 0.05) for the full sample and developed countries, illustrating that national governance quality increases the positive link between female directors and environmental performance. The findings make new contributions to literature on the moderating role of national governance quality in the association between women directors and environmental performance. More specifically, consistent with the literature, women directors of firms located in countries with high levels of national governance quality concentrate on providing more information on environmental performance than they do in countries with low levels of national governance quality. In other words, as expected, countries with high level of national governance quality enhance the positive influence of women directors on environmental performance. These findings support hypothesis 4.

This study evinces the positive impact of women directors on environmental performance as well as the moderating role of national governance quality on the WOCBs-ENVIP nexus. It seems that women have more concern on environment then they require companies to provide more information on environmental performance. Hence, this study show evidence to support ecofeminism theory, which concentrates on positive relationship between women and environment. Furthermore, these companies in the sample appear to disclose more environmental performance in order to enhance corporate legitimacy, improve investors' perceptions, and develop their reputation. Hence, this study supports the legitimation/moral view of NIT. Furthermore, the current study does not show evidence to support the trade-off between environmental performance and financial performance. However, this study does find that corporate environmental performance increases corporate financial performance significantly. In other words, companies improve their financial performance if they provide more information on environmental performance. Therefore, this study provides evidence to support the efficiency/economic perspective of NIT. To sum up, these findings of this study support the legitimation/moral *and* efficiency/economic views of NIT and ecofeminism theory.

4.6 Additional analysis

4.6.1 Alternative measures of women on corporate boards

As a further robustness check, this study uses alternative measures for women on corporate boards. In detail, following previous studies (Campbell and Mínguez-Vera, 2008; Bernardi and Threadgill, 2010; Gul *et al.*, 2011), the current study uses number of women directors (*NWOCB*) and natural logarithm of number of women directors (*LNNWOCB*) as measures of women on corporate boards. Furthermore, this study is grounded on critical mass theory to create alternative measures of women on corporate boards. Particularly, several studies (Liu *et al.*, 2014) have suggested that having one, two and three women directors can be considered as a (a) token, (b) presence and (c) voice, respectively. Thus, the current study creates *NWOCB1*, *NWOCB2*, and *NWOCB3* to measure token, presence and voice status of women directors, respectively. Furthermore, following the work of Kanter (1977), this study uses *UNIFORM* (0% women directors), *SKEWED* (up to 20% women), *TILTED* (20-40% women), *BALANCED* (40-60% women), and *OVER* (over 60% women directors) as alternative measures of women on corporate boards. Tables 4.9, 4.10, 4.11 and 4.12 present the re-regressing equations (**4.1**), (**4.2**), (**4.3**) and (**4.4**), respectively.

Table 4.9: The relationship between women on corporate boards and environmental performance, using proxies of women on corporate boards

Variable	Model 1 (ENVIP)	Model 2 (ENVIP)	Model 3 (ENVIP)	Model 4 (ENVIP)	Model 5 (ENVIP)	Model 6 (ENVIP)	Model 7 (ENVIP)	Model 8 (ENVIP)	Model 9 (ENVIP)	Model 10 (ENVIP)
Proxies of women on corporate boards										
LNNWOCB	2.945077 (0.001) *									
NWOCB		1.253579 (0.000) *								
NWOCB1			-.5519172 (0.444)							
NWOCB2				.8722359 (0.263)						
NWOCB3					3.432654 (0.000) *					
UNIFORM						-2.668926 (0.003) *				
SKEWED							-.9461859 (0.148)			
TILTED								4.016018 (0.000) *		
BALANCED									2.677505 (0.141)	
OVER										2.197014 (0.785)
Control variables										
GDPPC	-.0000194 (0.541)	-.0000341 (0.207)	-.0000266 (0.323)	-.0000276 (0.306)	-.0000296 (0.272)	-.0000315 (0.244)	-.000026 (0.333)	-.0000299 (0.264)	-.0000281 (0.297)	-.0000264 (0.326)
GDPG	-.7441706 (0.000) *	-.7687234 (0.000) *	-.7673493 (0.000) *	-.776365 (0.000) *	-.756458 (0.000) *	-.794283 (0.000) *	-.76198 (0.000) *	-.7652765 (0.000) *	-.7720728 (0.000) *	-.7712707 (0.000) *
INF	-.3203665 (0.151)	-.27865 (0.086) ***	-.263511(0.106)	-.27345 (0.09) ***	-.2651881 (0.103)	-.306166 (0.058) ***	-.2550327 (0.117)	-.2655958 (0.102)	-.269025 (0.099) ***	-.269018 (0.099) ***
WNP	.1948336 (0.000) *	.1429547 (0.002) *	.201451 (0.000) *	.1990035 (0.000) *	.1657179 (0.000) *	.1673398 (0.000) *	.2024397 (0.000) *	.1605556 (0.000) *	.1961165 (0.000) *	.2019649 (0.000) *
BS	-.0103535 (0.947)	.0070818 (0.957)	.1802796 (0.135)	.1772745 (0.141)	.0882623 (0.476)	.1067296 (0.387)	.210791 (0.084) ***	.1762713 (0.143)	.1875488 (0.119)	.1840119 (0.127)
BI	-.0209221 (0.274)	-.0320899 (0.04) **	-.0190338 (0.214)	-.0214366 (0.163)	-.0243223 (0.115)	-.031264 (0.047) **	-.0170748 (0.265)	-.0275327 (0.074) ***	-.019287 (0.208)	-.0193974 (0.206)
CSR	28.1508 (0.000) *	29.18129 (0.000) *	29.41861 (0.000) *	29.40192 (0.000) *	29.29061 (0.000) *	29.29529 (0.000) *	29.42035 (0.000) *	29.19226 (0.000) *	29.42025 (0.000) *	29.43301 (0.000) *
FS	5.247314 (0.000) *	5.336988 (0.000) *	5.435339 (0.000) *	5.449796 (0.000) *	5.342048 (0.000) *	5.432903 (0.000) *	5.425966 (0.000) *	5.344122 (0.000) *	5.439408 (0.000) *	5.44807 (0.000) *
FA	3.261422 (0.000) *	4.568791 (0.000) *	4.726588 (0.000) *	4.712327 (0.000) *	4.63556 (0.000) *	4.618222 (0.000) *	4.740157 (0.000) *	4.606887 (0.000) *	4.729509 (0.000) *	4.729624 (0.000) *
LEV	-.1412548 (0.950)	-.7261086 (0.710)	-.9099147 (0.645)	-.952162 (0.630)	-.7663072 (0.697)	-.9832165 (0.615)	-.8829528 (0.656)	-.7172584 (0.715)	-.9762621 (0.621)	-.9369375 (0.635)
No of Obs.	10,260	15,392	15,392	15,392	15,392	15,392	15,392	15,392	15,392	15,392
No of Firms	1,751	2,179	2,179	2,179	2,179	2,179	2,179	2,179	2,179	2,179

Year fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
R^2 (%)	48.22	50.73	50.53	50.54	50.67	50.65	50.55	50.77	50.54	50.53
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: This table reports estimates of the relation between alternative measures of women on corporate boards and environmental performance. The coefficients are estimated by using Clustered Standard Errors techisque, p-value is in parentheses. *, **, and * ** indicate correlation is significant at the 1%, 5% and 10% level, respectively. All variables are introduced in Table 4.2

Table 4.10: The moderating role of women on corporate boards in the relationship between environmental performance and firm performance, using the proxies of women on corporate boards

Variables	Model 1 (CFP)	Model 2 (CFP)	Model 3 (CFP)	Model 4 (CFP)	Model 5 (CFP)	Model 6 (CFP)	Model 7 (CFP)	Model 8 (CFP)	Model 9 (CFP)	Model 10 (CFP)
ENVIP	.0336033 (0.000) *	.0265073 (0.000) *	.0279863 (0.000) *	.0276242 (0.000) *	.0279517 (0.000) *	.0269389 (0.000) *	.0281151 (0.000) *	.0276653 (0.000) *	.0279966 (0.000) *	.0278292 (0.000) *
Proxies of women on corporate boards										
LNNWOCB	.2905935 (0.313)									
NWOCB		.2345973 (0.034) **								
NWOCB1			.2889295 (0.280)							
NWOCB2				.8597945 (0.002) *						
NWOCB3					-.1315235 (0.675)					
UNIFORM						-1.11436 (0.001) *				
SKEWED							.4587169 (0.044) **			
TILTED								.1749315 (0.566)		
BALANCED									2.098083 (0.016) **	
OVER										1.633977 (0.613)
Interaction variables										
LNNWOCB*ENVIP	.000874 (0.921)									
NWOCB*ENVIP		-.0028757 (0.441)								
NWOCB1*ENVIP			-.0036936 (0.698)							
NWOCB2*ENVIP				.0005121 (0.953)						
NWOCB3*ENVIP					-.000879 (0.940)					
UNIFORM*ENVIP						-.0022066 (0.843)				
SKEWED*ENVIP							-.0036925 (0.658)			
TILTED*ENVIP								.0000738 (0.994)		
BALANCED*ENVIP									-.0222948 (0.527)	
OVER*ENVIP										.0288706 (0.741)
Control variables										

GDPPC	-.0000045 (0.659)	-.00002 (0.065) ***	-.00002 (0.082) ***	-.00002 (0.066) ***	-.00002 (0.081) ***	-.00002 (0.053) ***	-.000021 (0.079) ***	-.00002 (0.079) ***	-.00002 (0.063) ***	-.00002 (0.08) ***
GDPG	.2640313 (0.000) *	.2598068 (0.000) *	.2581493 (0.000) *	.2554262 (0.000) *	.2600837 (0.000) *	.2500682 (0.000) *	.2557566 (0.000) *	.2606348 (0.000) *	.2598834 (0.000) *	.2604544 (0.000) *
INF	.2451833 (0.000) *	.295966 (0.000) *	.295219 (0.000) *	.2933114 (0.000) *	.2977449 (0.000) *	.2819117 (0.000) *	.2917369 (0.000) *	.2978504 (0.000) *	.2973737 (0.000) *	.2978054 (0.000) *
WNP	-.0137883 (0.446)	.0072428 (0.617)	.0162852 (0.228)	.0132614 (0.331)	.0177047 (0.200)	.0015713 (0.911)	.0158723 (0.236)	.0144263 (0.311)	.0121149 (0.362)	.0160988 (0.230)
BS	-.0732993 (0.174)	-.07478 (0.083) ***	-.0434346 (0.250)	-.0510918 (0.181)	-.0408155 (0.312)	-.076694 (0.066) ***	-.0583613 (0.142)	-.0449472 (0.239)	-.0420799 (0.265)	-.0446143 (0.242)
BI	.0113713 (0.050) **	.0197134 (0.001) *	.0214796 (0.000) *	.0197567 (0.001) *	.0219909 (0.000) *	.016724 (0.005) *	.0205557 (0.000) *	.0214119 (0.000) *	.0219502 (0.000) *	.0217792 (0.000) *
CSR	.086242 (0.815)	-.68478 (0.049) **	-.6507(0.059) ***	-.6783478 (0.05) **	-.65453 (0.058) ***	-.6803 (0.051) ***	-.6578819 (0.057) ***	-.66062 (0.058) ***	-.6577 (0.057) ***	-.6566 (0.058) ***
FS	-.9462742 (0.000) *	-.39477 (0.057) ***	-.38134 (0.061) ***	-.38356 (0.058) ***	-.38268(0.066) ***	-.38811 (0.057) ***	-.3783245 (0.062) ***	-.39035 (0.057) ***	-.39014 (0.054) ***	-.387 (0.056) ***
FA	.0325698 (0.912)	.171982 (0.468)	.203133 (0.396)	.1876839 (0.432)	.2059709 (0.386)	.1632094 (0.490)	.193878 (0.416)	.1986659 (0.405)	.2083416 (0.380)	.2030288 (0.395)
LEV	-5.13915 (0.041) **	-5.027754 (0.003) *	-5.075239 (0.003) *	-5.07332 (0.003) *	-5.064639 (0.003) *	-5.076123 (0.003) *	-5.083792 (0.003) *	-5.048934 (0.003) *	-5.088404 (0.003) *	-5.05584 (0.003) *
No of Obs.	10,217	15,327	15,327	15,327	15,327	15,327	15,327	15,327	15,327	15,327
No of Firms	1,751	2,179	2,179	2,179	2,179	2,179	2,179	2,179	2,179	2,179
Year fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
R^2 (%)	8.72	6.97	6.93	7.02	6.92	7.09	6.96	6.92	7.00	6.92
F-test	15.12	18.06	18.05	18.73	18.38	18.20	18.30	17.88	18.19	17.85
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: This table reports estimates of the moderating role of alternative measures of women on corporate boards in the relationship between environmental performance and firm performance. The coefficients are estimated by using Clustered Standard Errors technique; p-value is in parentheses. *, **, and * ** indicate correlation is significant at the 1%, 5% and 10% levels, respectively. All variables are introduced in Table 4.2.

Table 4.11: The moderating role of national culture in the relationship between women on corporate boards and environmental performance, using proxies of women on corporate boards

Variables	Model 1 (ENVIP)	Model 2 (ENVIP)	Model 3 (ENVIP)	Model 4 (ENVIP)	Model 5 (ENVIP)	Model 6 (ENVIP)	Model 7 (ENVIP)	Model 8 (ENVIP)	Model 9 (ENVIP)	Model 10 (ENVIP)
Proxies of women on corporate boards										
LNNWOCB	2.191114 (0.019) **									
NWOCB		1.143763 (0.001) *								
NWOCB1			-.114016 (0.875)							
NWOCB2				1.744114 (0.046) **						
NWOCB3					1.75836 (0.083) ***					
UNIFORM						-4.043215 (0.000) *				
SKEWED							-.2884713 (0.661)			
TILTED								3.259146 (0.000) *		
BALANCED									2.410032 (0.302)	
OVER										-.1170892 (0.987)
National cultural dimensions										
INDI	.1197988 (0.002) *	.0995537 (0.003) *	.0845119 (0.010) *	.1215315 (0.000) *	.0951347 (0.009) *	.0912312 (0.004) *	.1066703 (0.001) *	.0933508 (0.003) *	.1051011 (0.001) *	.1026407 (0.001) *
MAS	-.1856469 (0.000) *	-.1325027 (0.000) *	-.1240064 (0.000) *	-.1466053 (0.000) *	-.12921 (0.000) *	-.1457895 (0.000) *	-.1542603 (0.000) *	-.1360423 (0.000) *	-.1457519 (0.000) *	-.142616 (0.000) *
PDI	-.054345 (0.284)	-.0044203 (0.923)	-.0303143 (0.488)	.0206718 (0.641)	-.0224988 (0.651)	-.0278558 (0.524)	-.0200095 (0.642)	-.0137293 (0.751)	-.0141509 (0.744)	-.0156241 (0.715)
UA	.0883117 (0.002) *	.0558565 (0.020) **	.0532966 (0.033) **	.0572341 (0.020) **	.048276 (0.062) ***	.0567293 (0.017) **	.0563656 (0.017) **	.0542541 (0.022) **	.0552356 (0.021) **	.0571562 (0.016) **
LTO	.1243427 (0.000) *	.1233293 (0.000) *	.1256704 (0.000) *	.1262801 (0.000) *	.1318399 (0.000) *	.1342647 (0.000) *	.1281894 (0.000) *	.1210962 (0.000) *	.1243876 (0.000) *	.120009 (0.000) *
INDU	-.0302159 (0.526)	.0057778 (0.880)	.0439384 (0.292)	-.0114924 (0.763)	.0028924 (0.944)	.0007553 (0.984)	-.0001393 (0.997)	.0013834 (0.971)	.0035336 (0.926)	-.0031538 (0.934)
Interaction variables										
INDI * LNNWOCB	-.0431191 (0.350)									
MAS *LNNWOCB	.077716 (0.073) ***									
PDI*LNNWOCB	-.0480409 (0.391)									
UA*LNNWOCB	-.0041931 (0.915)									

LTO*LNNWOCB	-.0498023 (0.235)									
INDU*LNNWOCB	.1018239 (0.107)									
INDI * NWOCB		-.0074256 (0.620)								
MAS * NWOCB		-.004011 (0.777)								
PDI * NWOCB		-.0279766 (0.145)								
UA * NWOCB		.0003894 (0.978)								
LTO * NWOCB		-.0295465 (0.047) **								
INDU * NWOCB		-.0035719 (0.862)								
INDI * NWOCB1			.085643 (0.078) ***							
MAS * NWOCB1			-.1014336 (0.027) **							
PDI * NWOCB1			.0766632 (0.226)							
UA * NWOCB1			.021553 (0.520)							
LTO * NWOCB1			.0095744 (0.812)							
INDU * NWOCB1			-.142762 (0.018) **							
INDI * NWOCB2				-.1231644 (0.026) *						
MAS * NWOCB2				.0301893 (0.550)						
PDI * NWOCB2				-.1615896 (0.017) **						
UA * NWOCB2				.0114003 (0.771)						
LTO * NWOCB2				.0010441 (0.982)						
INDU * NWOCB2				.0898147 (0.292)						
INDI * NWOCB3					.0258969 (0.636)					
MAS * NWOCB3					-.039225 (0.425)					
PDI * NWOCB3					-.0023302 (0.971)					
UA * NWOCB3					.0206819 (0.657)					
LTO * NWOCB3					-.0700013 (0.148)					
INDU * NWOCB3					-.009908 (0.903)					
INDI * UNIFORM						-.0587541 (0.307)				
MAS * UNIFORM						.145905 (0.003) *				

PDI * UNIFORM						.080639 (0.270)				
UA * UNIFORM						-.0338595 (0.369)				
LTO * UNIFORM						.0493973 (0.285)				
INDU * UNIFORM						.11741 (0.069) ***				
INDI * SKEWED							.014914 (0.733)			
MAS * SKEWED							-.077022 (0.061) ***			
PDI * SKEWED							-.0339616 (0.554)			
UA * SKEWED							.0311185 (0.329)			
LTO * SKEWED							-.0268059 (0.480)			
INDU * SKEWED							-.1358558 (0.020) **			
INDI * TILTED								-.0209507 (0.679)		
MAS * TILTED								-.019776 (0.665)		
PDI * TILTED								-.0146327 (0.801)		
UA * TILTED								-.0077045 (0.850)		
LTO * TILTED								-.0287287 (0.525)		
INDU * TILTED								.0602611 (0.416)		
INDI * BALANCED									-.0823001 (0.562)	
MAS * BALANCED									.083974 (0.322)	
PDI * BALANCED									-.2457299 (0.146)	
UA * BALANCED									.0734565 (0.521)	
LTO * BALANCED									-.0124559 (0.904)	
INDU * BALANCED									-.1537705 (0.403)	
INDI * OVER										.6568366 (0.007) *
MAS * OVER										.1288768 (0.510)
PDI * OVER										.1802127 (0.825)
UA * OVER										-.6726072 (0.333)
LTO * OVER										.7512165 (0.031) **
INDU * OVER										-.0075234 (0.989)

Control variables										
GDPPC	-.0000719 (0.08) ***	-.000061 (0.099) ***	-.0000558 (0.116)	-.0000563 (0.112)	-.000066 (0.072) ***	-.00007 (0.055) ***	-.000059 (0.097) ***	-.0000565 (0.113)	-.00006 (0.096) ***	-.0000568 (0.109)
GDPG	-.389086 (0.045) **	-.4834471 (0.003) *	-.4736747 (0.003) *	-.481801 (0.003) *	-.4603673 (0.005) *	-.4507703 (0.005) *	-.4447517 (0.006) *	-.485284 (0.003) *	-.453784 (0.005) *	-.4552913 (0.005) *
INF	-.2960049 (0.178)	-.1532865 (0.361)	-.201418 (0.215)	-.2000141 (0.226)	-.1611949 (0.330)	-.0958251 (0.568)	-.1786109 (0.277)	-.1617716 (0.328)	-.184404 (0.264)	-.1786158 (0.280)
WNP	.0327851 (0.620)	.0509084 (0.370)	.0775246 (0.153)	.0685823 (0.208)	.0610538 (0.276)	.0347659 (0.534)	.0704414 (0.196)	.0535547 (0.331)	.070146 (0.199)	.0759661 (0.163)
BS	.0481107 (0.761)	.0759356 (0.567)	.1947245 (0.110)	.186411 (0.128)	.1514816 (0.231)	.0966152 (0.441)	.1832685 (0.138)	.207017 (0.091) ***	.2002467 (0.102)	.1921859 (0.116)
BI	.0052643 (0.811)	-.0122805 (0.495)	-.0048981 (0.778)	-.0077109 (0.660)	-.0084229 (0.632)	-.0033348 (0.853)	-.0028804 (0.870)	-.0089083 (0.611)	-.0069691 (0.688)	-.0065966 (0.704)
CSR	27.69586 (0.000) *	28.77087 (0.000) *	29.04009 (0.000) *	29.04842 (0.000) *	28.91219 (0.000) *	28.75786 (0.000) *	29.04595 (0.000) *	28.85416 (0.000) *	29.13156 (0.000) *	29.12562 (0.000) *
FS	4.845231 (0.000) *	4.884535 (0.000) *	5.109296 (0.000) *	5.080102 (0.000) *	5.019865 (0.000) *	4.976973 (0.000) *	5.147051 (0.000) *	4.983659 (0.000) *	5.122682 (0.000) *	5.117844 (0.000) *
FA	3.302335 (0.000) *	4.558843 (0.000) *	4.779038 (0.000) *	4.780991 (0.000) *	4.664508 (0.000) *	4.509233 (0.000) *	4.78055 (0.000) *	4.634062 (0.000) *	4.760065 (0.000) *	4.772541 (0.000) *
LEV	-.8998453 (0.702)	-1.066102 (0.592)	-1.243869 (0.531)	-1.288882 (0.520)	-1.116053 (0.577)	-1.426797 (0.473)	-1.279033 (0.522)	-1.051571 (0.597)	-1.253712 (0.533)	-1.255172 (0.532)
No of Obs.	10,161	15,247	15,247	15,247	15,247	15,247	15,247	15,247	15,247	15,247
No of Firms	1,735	2,154	2,154	2,154	2,154	2,154	2,154	2,154	2,154	2,154
Year fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
R^2 (%)	49.35	51.56	51.44	51.42	51.42	51.69	51.40	51.55	51.32	51.33
F-test	105.21	193.11	192.14	192.36	192.98	194.83	191.88	192.59	191.64	191.98
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: This table reports estimates of the moderating role of national culture in the relationship between alternative measeures of women on corporate boards and environmental performance. The coefficients are estimated by using Clustered Standard Errors techique; p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. The interaction variables are created for six national culture dimensions and alternative measures of women on corporate boards, respectively. All the other variables are introduced in Table 4.2.

Table 4.12: The moderating role of national governance quality in the relationship between women on corporate boards and environmental performance, using proxies of women on corporate boards

Variables	Model 1 (ENVIP)	Model 2 (ENVIP)	Model 3 (ENVIP)	Model 4 (ENVIP)	Model 5 (ENVIP)	Model 6 (ENVIP)	Model 7 (ENVIP)	Model 8 (ENVIP)	Model 9 (ENVIP)	Model 10 (ENVIP)
NGQ	1.184992 (0.007) *	.8348834 (0.017) **	.8661966 (0.015) **	.5230186 (0.132)	.645653 (0.066) ***	.7707539 (0.027) **	.6873248 (0.047) **	.746639 (0.031) **	.7006729 (0.043) *	.6905364 (0.046) **
Proxies of women on corporate boards										
LNNWOCB	2.941248 (0.001) *									
NWOCB		1.281268 (0.000) *								
NWOCB1			-.5978406 (0.407)							
NWOCB2				.6198026 (0.425)						
NWOCB3					3.354281 (0.000) *					
UNIFORM						-2.963413 (0.001) *				
SKEWED							-.9151159 (0.162)			
TILTED								3.616598 (0.000) *		
BALANCED									2.774852 (0.106)	
OVER										-1.623506 (0.851)
Interaction variables										
NGQ*LNNWOCB	.778211 (0.020) **									
NGQ * NWOCB		.2902229 (0.010) *								
NGQ * NWOCB1			-.58979 (0.056) ***							
NGQ * NWOCB2				1.007793 (0.005) *						
NGQ * NWOCB3					.63545 (0.086) ***					
NGQ * UNIFORM						-.696962 (0.033) **				
NGQ * SKEWED							-.2420671 (0.403)			
NGQ * TILTED								.9167559 (0.008) *		
NGQ*BALANCED									.0552821 (0.958)	
NGQ * OVER										3.11389 (0.106)
Control variables										
GDPPC	-.000113 (0.016) **	-.0001038 (0.012) **	-.000084 (0.036) **	-.000086 (0.033) **	-.000093 (0.022) **	-.000096 (0.019) **	-.000082 (0.042) **	-.00009 (0.025) **	-.000085 (0.035) **	-.000084 (0.038) **

GDPG	-.6869354 (0.000) *	-.7230916 (0.000) *	-.7084923 (0.000) *	-.7194751 (0.000) *	-.6943421 (0.000) *	-.7301387 (0.000) *	-.691433 (0.000) *	-.7219638 (0.000) *	-.6942145 (0.000) *	-.6979171 (0.000) *
INF	-.1833586 (0.418)	-.1956683 (0.229)	-.1542577 (0.343)	-.1706432 (0.296)	-.1621473 (0.320)	-.2108248 (0.196)	-.139025 (0.396)	-.1770015 (0.277)	-.1490196 (0.364)	-.1529132 (0.351)
WNP	.1590624 (0.004) *	.1178374 (0.012) **	.1894803 (0.000) *	.1844621 (0.000) *	.1482628 (0.001) *	.141789 (0.002) *	.1888409 (0.000) *	.1440645 (0.001) *	.1820014 (0.000) *	.1864669 (0.000) *
BS	.0364104 (0.815)	.040092 (0.759)	.184357 (0.126)	.202578 (0.094) ***	.112416 (0.366)	.1372773 (0.265)	.214395 (0.079) ***	.198847 (0.098) ***	.1985219 (0.100)	.1948209 (0.106)
BI	-.0220384 (0.248)	-.0326806 (0.037) **	-.0185038 (0.227)	-.0227907 (0.138)	-.0236981 (0.125)	-.0338253 (0.032) **	-.0164981 (0.281)	-.027398 (0.075) ***	-.0189687 (0.216)	-.018732 (0.222)
CSR	27.8575 (0.000) *	28.97798 (0.000) *	29.17228 (0.000) *	29.17556 (0.000) *	29.08762 (0.000) *	29.10095 (0.000) *	29.19302 (0.000) *	28.99982 (0.000) *	29.20382 (0.000) *	29.2121 (0.000) *
FS	5.267913 (0.000) *	5.327476 (0.000) *	5.521706 (0.000) *	5.502874 (0.000) *	5.389084 (0.000) *	5.448027 (0.000) *	5.52665 (0.000) *	5.387189 (0.000) *	5.530762 (0.000) *	5.541743 (0.000) *
FA	3.275504 (0.000) *	4.517572 (0.000) *	4.692196 (0.000) *	4.698058 (0.000) *	4.584433 (0.000) *	4.558449 (0.000) *	4.697146 (0.000) *	4.569059 (0.000) *	4.686274 (0.000) *	4.691719 (0.000) *
LEV	-.1733847 (0.939)	-.7838244 (0.688)	-.7469003 (0.705)	-.8761591 (0.657)	-.7385352 (0.706)	-1.045135 (0.592)	-.7301257 (0.711)	-.751127 (0.702)	-.8477171 (0.666)	-.7953984 (0.685)
No of Obs.	10,260	15,392	15,392	15,392	15,392	15,392	15,392	15,392	15,392	15,392
No of Firms	1,751	2,179	2,179	2,179	2,179	2,179	2,179	2,179	2,179	2,179
Year fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
R^2 (%)	48.47	50.87	50.63	50.68	50.76	50.77	50.61	50.89	50.60	50.59
F-test	134.62	246.17	249.17	248.32	248.33	247.50	248.38	250.00	247.51	247.72
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: This table reports estimates of the moderating role of national governance quality in the relationship between alternative measures of women on corporate boards and environmental performance. The coefficients are estimated by using Clustered Standard Errors techique; p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. The interaction variables are created for national governance quality and alternative measures of women on corporate boards. All the other variables are introduced in Table 4.2.

Models 1 and 2 of Table 4.9 reports the positive and significant impact of *NWOCB* and *LNNWOCB* on *ENVIP* ($\beta > 0$ and p-value < 0.01), indicating that both number of female directors and natural logarithm of number of female directors increase environmental performance. Furthermore, the 'token' and 'presence' status of female directors (*NWOCB1* and *NWOCB2*) affect environmental performance insignificantly (p-value > 0.1), while the 'voice' status of women board members (*NWOCB3*)has enough power to provide more information on environmental performance ($\beta > 0$ and p-value < 0.1). Additionally, Table 4.9 also presents that *UNIFORM* affects *ENVIP* negatively and significantly ($\beta < 0$ and p-value < 0.01), while *TILTED* has a positive and significant link with *ENVIP* ($\beta > 0$ and p-value < 0.01). Additionally, *SKEWED*, *BALANCED* and *OVER* influence *ENVIP* insignificantly (p-value > 0.1). These results suggest that a company discloses less environmental performance if it does not appoint any female directors, while if it appoints from 20% to 40% of women directors, it provides more information on environmental performance. By contrast, a company, which has up to 20% or over 40% of women directors, does not have any influence on environmental performance.

Table 4.10 presents the positive and significant influence of *NWOCB*, *NWOCB2*, *SKEWED*, and *BALANCED* on *CFP* ($\beta > 0$ and p-value < 0.05), while *UNIFORM* has a negative and significant effect on *CFP* ($\beta < 0$ and p-value < 0.01). These results illustrate that the impact of female board representation affects environmental performance depending on the extent to which women are present on corporate boards. This table also displays that the p-value of all interaction variables between proxies of female board members and environmental performance is higher than 0.1, illustrating that none of the alternative measures of women on corporate boards moderates the relationship between environmental performance and financial performance.

Table 4.11 shows that limited measures of national culture moderate the link between women directors and environmental performance and the level of moderating role of national culture depend on each measure of culture. For instance, *LTO* affects the impact of *NWOCB* and *OVER* on *ENVIP* (p-value < 0.1), whereas *UA* does not moderate the relationship between any alternative measures of women on corporate boards and environmental disclosure (p-value > 0.1). Furthermore, the moderating role of national culture in the connection between female directors and environmental performance depends on the extent to which women are present on corporate boards. For example, *MAS* NWOCB1* and *MAS * SKEWED* has a negative and significant impact on *ENVIP* ($\beta < 0$ and p-value < 0.1), indicating that *MAS* decreases the positive influence of *NWOCB1* and *SKEWED* on *ENVIP*. However, *MAS * LNNWOCB* and *MAS * UNIFORM* has a positive and significant link with *ENVIP* ($\beta > 0$ and p-value < 0.1), illustrating that *MAS* increases the positive effect of *LNNWOCB* and *UNIFORM* on *ENVIP*. By contrast, *MAS* has a non-significant correlation with the impact of female board members (measured by *NWOCB*, *NWOCB2*, *NWOCB3*, *TILTED*, *BALANCED* and

OVER) on *ENVIP*. To conclude, this table suggests that national culture does not have a strong moderating role in the relationship between women board members and environmental performance and the level of this moderating role depends on each national culture dimension and the status of female board representation (the extent to which females are present as board members).

Table 4.12 reports the insignificant effect of *NGQ * SKEWED*, *NGQ * BALANCED* and *NGQ * OVER* on *ENVIP* (p-value > 0.1). However, *NGQ * LNNWOCB*, *NGQ * NWOCB*, *NGQ * NWOCB2*, *NGQ * NWOCB3* and *NGQ * TILTED* affects *ENVIP* positively and significantly (β > 0 and p-value < 0.1). By contrast, *NGQ * NWOCB1* and *NGQ * UNIFORM* relates to *ENVIP* negatively and significantly (β < 0 and p-value < 0.1). These findings illustrate that national governance quality moderates the link between female directors and environmental performance and the level of moderating role of national governance quality in this link depends on the status of women directors on corporate boards.

4.6.2 Controlling for endogeneity

The results of this study reported under the main analysis might be subject to potential self-selection bias if environmental performance and women on corporate boards are endogenously determined. Therefore, any conclusion drawn from these models might be misleading. Hence, to deal with any potential endogeneity problem, the current study uses a two-stage least square (2SLS) estimate. Given that the focus of this study is on women on corporate boards and environmental performance, this study seeks for good exogenous instrumental variables (IVs) for this main variable that is correlated with the suspected endogenous variable, but uncorrelated with the error terms of the dependent variable (Wooldridge, 2015). Following the findings of previous studies (Bullough *et al.*, 2012; Chizema *et al.*, 2015; Sojo *et al.*, 2016), this study chose IVs which include gender diversity quotas index (*GDQI*), global gender gap index (*GGGI*), and women in parliament (*WNP*). For the first IV, this study argues that many companies appoint women directors to satisfy the requirements of the government. Therefore, women directors may not have strong ability to work as directors. Hence, they cannot express their ideas on environmental issues. The global gender gap index (*GGGI*) measures the extent of gender-based gaps among four key dimensions (Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment). For the second IV, this study argues that women lack the opportunity to become directors if they live in a country with high *GGGI*. For the third IV, the current study argues that women living in countries with high percentage of women working for parliament will keep an open mind of traditional gender role (e.g., do housework, take care of children, etc.). Therefore, they try to find opportunity to work from home. Hence, they can work as directors and raise their voice on issues. As a result, this study

expects that two-year lag and one-year lag of women in parliament will influence the appointment of female directors. These four IVs are expected to affect women on corporate boards, but are uncorrelated with the error term in the main equations. This study uses two diagnostic tests — (i) endogeneity test (to determine whether endogenous regressors in the model are in fact exogenous) and (ii) over identification test (to investigate the validity of IVs) to examine IVs. This study treats PWOCB as an endogenous variable and constructs simultaneous equations models, from equations (**4.1**) to (**4.4**). As regards Tables 4.13 and 4.16, the p-value of endogeneity test is less than 0.01 while the p-value of over identification is higher than 0.1 (except Table 4.14), indicating that these four IVs are valid for treating PWOCB as an endogenous variable.

Table 4.13: The relationship between women on corporate boards and environmental performance using 2SLS

Variables	2SLS (ENVIP)
PWOCB	.4252749 (0.000) *
Control variables	
GDPPC	-.0000881 (0.000) *
GDPG	-.8063563 (0.000) *
INF	-.3600666 (0.004) *
WNP	.0132881 (0.711)
BS	.0239006 (0.736)
BI	-.0545308 (0.000) *
CSR	27.73465 (0.000) *
FS	4.97224 (0.000) *
FA	4.607754 (0.000) *
LEV	-1.372338 (0.177)
No of Obs.	11,037
No of Firms	2,165
Year fixed effect	Y
Industry fixed effect	Y
Wald 2 (p-value**)**	0.0000
Endogeneity (p-value**)**	0.0000
Over identification (p-value**)**	0.3206

Notes: This table reports estimates of the relation between women on corporate boards and environmental performance. The coefficients are estimated by using 2SLS; p-value is in parentheses. *, **, and * ** indicate correlation is significant at the 1%, 5% and 10% levels, respectively. All variables are introduced in Table 4.2.

Table 4.14: The moderating role of women on corporate boards in the relationship between environmental performance and firm performance using 2SLS

Variables	**2SLS (CFP)**
PWOCB	.1463465 (0.000) *
ENVIP	.0247284 (0.000) *
Interaction variables	
PWOCB*ENVIP	-.0007734 (0.008) *
Control variables	
GDPPC	-.0000238 (0.002) *
GDPG	.313064 (0.000) *
INF	.2680418 (0.000) *
WNP	-.0482508 (0.006) *
BS	-.0619118 (0.075) ***
BI	.0075274 (0.132)
CSR	-.8872452 (0.001) *
FS	-.226191 (0.007) *
FA	.0599138 (0.674)
LEV	-5.603271 (0.000) *
No of Obs.	10,988
No of Firms	2,165
Year fixed effect	Y
Industry fixed effect	Y
Wald 2 (p-value**)**	0.0000
Endogeneity (p-value**)**	0.0009
Over identification (p-value**)**	0.0567

Notes: This table reports estimates of the moderating role of women on corporate board in the relationship between environmental performance and firm performance. The coefficients are estimated by using 2SLS; p-value is in parentheses. *, **, and * ** indicate correlation is significant at the 1%, 5% and 10% levels, respectively. All variables are introduced in Table 4.2.

Table 4.15: The moderating role of national culture in the relationship between women on corporate boards and environmental performance using 2SLS

Variables	2SLS (ENVIP)
PWOCB	1.351754 (0.000) *
National cultural dimensions	
INDI	-.1766926 (0.000) *
MAS	-.0015931 (0.948)
PDI	-.1253116 (0.000) *
UA	.0972961 (0.000) *
LTO	.1735445 (0.000) *
INDU	.0738466 (0.005) *
Interaction variables	
INDI * PWOCB	-.0087507 (0.000) *
MAS * PWOCB	.0125947 (0.000) *
PDI * PWOCB	-.0073619 (0.000) *
UA * PWOCB	-.0018398 (0.111)
LTO * PWOCB	.0024104 (0.062) ***
INDU * PWOCB	.0026176 (0.164)
Control variables	
GDPPC	-.0000237 (0.295)
GDPG	-.2801501 (0.066) ***
INF	.1254867 (0.425)
WNP	-.3738112 (0.000) *
BS	-.0736824 (0.391)
BI	-.0455306 (0.000) *
CSR	26.40126 (0.000) *
FS	3.736173 (0.000) *
FA	3.959943 (0.000) *
LEV	-.4207151 (0.713)
No of Obs.	10,942
No of Firms	2,142
Year fixed effect	Y
Industry fixed effect	Y
Wald 2 (p-value**)**	0.0000
Endogeneity (p-value**)**	0.0000
Over identification (p-value**)**	0.1403

Notes: This table reports estimates of the moderating role of national culture in the relationship between women on corporate boards and environmental performance. The coefficients are estimated by using 2SLS; p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. The interaction variables are created for six national culture proxies and women on corporate boards, respectively. All the other variables are introduced in Table 4.2.

Table 4.16: The moderating role of national governance quality in the relationship between women on corporate boards and environmental performance using 2SLS

Variables	**2SLS (ENVIP)**
PWOCB	.4271688 (0.000) *
NGQ	.7238985 (0.000) *
Interaction variables	
NGQ * PWOCB	.0343651 (0.000) *
Control variables	
GDPPC	-.0001486 (0.000) *
GDPG	-.7413898 (0.000) *
INF	-.2723254 (0.042) **
WNP	-.0133145 (0.703)
BS	.0674638 (0.347)
BI	-.0546426 (0.000) *
CSR	27.54383 (0.000) *
FS	4.958745 (0.000) *
FA	4.555905 (0.000) *
LEV	-1.409656 (0.167)
No of Obs.	11,037
No of Firms	2,165
Year fixed effect	Y
Industry fixed effect	Y
Wald 2 (p-value**)**	0.0000
Endogeneity (p-value**)**	0.0000
Over identification (p-value**)**	0.2040

Notes: This table reports estimates of the moderating role of national governance quality in the relationship between women on corporateboards and environmental performance. The coefficients are estimated by using 2SLS; p-value is in parentheses. *, **, and * **indicate correlation is significant at the 1%, 5% and 10% levels, respectively. The interaction variables are created for national governance quality and women on corporate boards. All the other variables are introduced in Table 4.2.

Table 4.13 reports the positive and significant influence of female directors on environmental performance ($\beta > 0$ and p-value < 0.01), which is similar to the results of Table 4.5. These results confirm that women on corporate boards improve corporate environmental performance. In other words, companies, which have high percentage of female directors, will focus on providing more information on environmental performance.

Table 4.14 presents the negative and significant relationship between *PWOCB * ENVIP* and *CFP* ($\beta < 0$ and p-value < 0.01), suggesting that female directors decrease the positive impact of environmental performance on financial performance. In other words, women on corporate boards play an important moderating role in trade-off between corporate environmental performance and corporate financial performance. This table shows different findings from Table 4.6.

Table 4.15 reports the significant impact of interaction variables (between national culture and women on corporate boards) on environmental performance except *UA * PWOCB* and *INDU * PWOCB*. Particularly, both *INDI * PWOCB* and *PDI * PWOCB* affects *ENVIP* negatively and significantly ($\beta < 0$ and p-value < 0.01). In addition, *MAS * PWOCB* has a positive and statistically significant relationship with *ENVIP* ($\beta > 0$ and p-value < 0.01) while *LTO * PWOCB* has a positive and weakly significant association with *ENVIP* ($\beta > 0$ and 0.05< p-value < 0.1). By contrast, *UA * PWOCB* and *INDU * PWOCB* does not affect *ENVIP* (p-value > 0.1). These results indicate that national culture partly moderates the WOCBs-ENVIP nexus. Particularly, both individualism versus collectivism and power distance index decrease the positive link between female directors and environmental performance while either masculine versus feminine or long-term orientation versus short-term orientation increases this link. However, uncertainty avoidance and indulgence versus restraint affects this link insignificantly. This table presents different findings from Table 4.7.

Table 4.16 displays the positive and statistically significant link between *NGQ * PWOCB* and *ENVIP* ($\beta > 0$ and p-value < 0.01), which is also reported in Table 4.8. These findings suggest that national governance quality increases the positive impact of women directors on environmental performance.

4.7 Conclusion

This study investigates the complex relationship among women on corporate boards, corporate environmental performance, corporate financial performance, national culture, and national governance quality. Specifically, the current study finds the effect of WOCBs on ENVIP and the moderating role of female directors on the trade-off between corporate environmental performance and corporate financial performance. In addition, it investigates the moderating role of national culture and national governance quality in the link between female board members and corporate environmental performance by using panel data from 2,179 firms located in 48 countries between

2010 and 2017. In line with prior studies (Liao *et al.*, 2015; Elmagrhi *et al.*, 2019), the current study found that women on corporate boards enhance corporate environmental performance. However, the findings of this study did not show evidence for the moderating role of female directors in the trade-off between corporate environmental performance and corporate financial performance. Furthermore, the results of this study showed that national culture has a significant impact on corporate environmental performance but cannot moderate the link between female directors and environmental performance. In addition, this study provided evidence for the positive relationship between the quality of national governance and corporate environmental performance as well as the significant and positive moderating role of NGQ in the relationship between WOCBs and ENVIP.

The results of this study contribute to existing literature on the complicated relationship among national governance quality, national culture, women directors, corporate environmental performance, and corporate financial performance. For instance, the major contribution is the link between national governance quality and environmental performance. Specifically, this study indicates that national governance quality has a positive influence on environmental performance and also increases the positive link between women directors and corporate environmental performance. Indeed, the level of the moderating effect of national governance quality on the nexus between women directors and environmental performance also depends on the extent to which female are present as board members. Similarly and importantly, this study finds that both the impact of national culture on environmental performance and the moderating role of national culture in the WOCBs-ENVIP nexus depends on each national cultural dimension and the extent to which women are present on corporate boards. Furthermore, the next contribution is to show no evidence on the trade-off between corporate environmental performance and corporate financial performance. Additionally, this study shows that companies in which there are at least three women directors and who account for between 20% and 40% of board size disclose more information on environmental performance. Finally, these results offer empirical support for both views (legitimation and economic) of NIT in that firms appear to focus on environmental performance to enhance corporate legitimacy as well as attain the support of different influential stakeholders to increase financial performance.

This study's results suggest important applications for improving corporate environmental disclosure. First, each country should impose regulations or recommendations on appointment of WOCBs who have a significant impact on increasing environmental performance. Second, the link between female directors and environmental disclosure depends on the number of female directors in place. Hence, firms should think of how many women directors they need to recruit in order to increase environmental performance. More specifically, the appointment of women directors should be at least three members representing about 20% to 40% of board size. Third, each

country should improve national governance quality because it increases the positive link between women directors and environmental disclosure. Fourth, firms can increase financial performance by improving environmental performance.

This study provides some suggestions for future research to alleviate its limitations. First, the concept of national culture is extremely complicated. Furthermore, Matei and Abrudan (2018) found that some measures of culture such as economic ones change quickly. They also found that some national cultures are more unstable than others. Thus, only using the measure of NC proposed by Hofstede may not evaluate culture correctly because it is out-of-date. Thus, future research should find and use good measures of culture. Second, currently, many developing countries pay attention to reducing environmental issues by imposing environmental policies (Höhne *et al.*, 2017). Therefore, future research should use balanced panel data due to an increase in environmental performance. Third, environmental policies may affect how companies disclose environmental performance. Hence, firms located in these countries will provide more information on environmental performance. Therefore, future research should investigate the influence of environmental policies on environmental performance. Finally, according to Dragomir (2018), identifying new informational resources can improve the quality of corporate environmental performance measurement. Therefore, future research can find the most effective measure(s) of environmental performance.

5. Chapter 5: Conclusion

5.1 Thesis summary

5.1.1 Summary of study one

The main aim of the first study was to review the most up-to-date research on WOCBs in order to identify what the world knows and does not know about WOCBs. This study reviewed research with both theoretical and empirical views relating to the appointment of WOCBs and their contributions to corporate outcomes. Therefore, the final sample consisted of 634 mixed, qualitative and quantitative studies in 270 scholarly journals in different disciplines, such as *accounting, auditing and finance; corporate governance; business, business ethics and CSR; economics; gender; leadership and management;* and *administrative, social sciences and sociology*, among others from 1981 to 2019.

Study one finds that many past studies applied various theories which can explain the absence or the presence of women directors as well as the effect of female board members on corporate outcomes. Indeed, some theories (e.g., agency and resource dependence theories) provide frameworks for many themes while several theories (e.g., legitimacy theory) only apply to one theme (i.e. CSR). After reviewing theories, the current study finds that women deal with various challenges in order to get opportunities to work as board members. By contrast, they make more contributions to corporate outcomes with their role as board members.

Furthermore, in accordance with analysing empirical findings, the current thesis divides factors, which have an influence on the absence or presence of female directors, into four levels — namely country-, firm-, social- and individual-- level. The study finds that these four factors have different influences on the appointment of WOCBs. Additionally, this study shows a lack of studies, which investigate the effect of country-level factors (e.g., NC, NGQ) on the antecedents of female directors. In addition, this study cannot conclude the relationship between WOCBs and corporate outcomes, like compensation, CSR, and firm performance although most recent studies show a positive relationship.

Finally, this study finds that past studies lack qualitative and mixed-methods approaches. Furthermore, the findings show a lack of cross-cultural research, application of multi-theoretical perspectives, and research on compensation or environmental performance.

5.1.2 Summary of study two

Study two tests the impact of national culture and national governance quality on the presence of female directors and the moderating role of national governance quality in the nexus between national culture and the appointment of female directors. This study analyses unbalanced panel data from 647 firms located in 78 countries between 2010 and 2017.

This study uses OLS with cluster approach to test three hypotheses. For robust test, I use alternative measure of women on corporate boards and national culture. Furthermore, this study includes 2SLS and GMM approaches to control endogeneity problems of panel data. A summary of study two's findings in different method approached is illustrated in Table 5.1 below.

Table 5.1: Summary the findings of study two

Hypotheses	Expected signs	Actual results		
		OLS	2SLS	GMM
H1: National culture have impact on the appointment of women on corporate boards.	+/-	+/-	+/-	+/-
H1a: *Firms in individualistic countries are likely to appoint more female board members than do firms in collectivistic countries.*	+	+	+	+
H1b: *Firms in masculine countries are likely to appoint fewer women on corporate boards than firms in feminine countries do.*	-	-	Positive and insignificant	-
H1c: *Firms in countries with high level of power distance are likely to appoint fewer female directors than firms in countries with low level of power distance do.*	-	Positive and insignificant	+	Positive and insignificant
H1d: *Firms in countries with high uncertainty avoidance are more likely to appoint fewer women directors than firms in countries with low uncertainty avoidance are.*	-	-	Negative and insignificant	Negative and insignificant
H1e: *Firms in long-term orientation countries are likely to appoint the same number of female board members as do firms in short-term orientation countries.*	No relationship	Negative and insignificant	-	Positive and insignificant
H1f: *Firms in indulgent countries are more likely to appoint more female presence on corporate boards than firms in restrained countries are.*	+	Negative and insignificant	-	Positive and insignificant
H2: Firms in countries with high-level quality of governance are more likely to recruit female directors as do firms in countries with low- level quality of governance.	+	Positive and insignificant	-	Positive and insignificant
H3: The link between national culture and the appointment of women on corporate boards is indirect, and is likely moderated by national governance quality.	+/-	+/-	+/-	+/-

Note: +: Positive and significant; -: Negative and significant

Table 5.1 compares the findings in expected signs, OLS, 2SLS and GMM. Specifically, Table 5.1 shows slight difference in findings among OLS, 2SLS, and GMM approaches. For instance, the findings of OLS approach shows that uncertainty avoidance decreases the appointment of women on corporate boards while the results of 2SLS and GMM approaches illustrate that uncertainty avoidance may reduce the chance of becoming women directors. Similarly, Table 5.1 also reports the slight difference in findings between expected signs and actual results. For example, based on literature review, I expect that power distance decreases the presence of female directors while the actual results show that power distance may increase the appointment of women board members. Additionally, both actual results and expected signs show that individualism increases the presence of female board members. Actual results show slightly different findings by comparison with expected signs, indicating that this study shows evidence to support previous literature and hypotheses.

Summarising the findings from main and robust tests, I find, as follows. Specifically, the second study finds that the level of the influence of NC on the absence or presence of WOCBs depends on each national cultural dimension and the level of presence of female directors. For example, individualism versus collectivism can illustrate the presence of female directors while other measures like masculinity versus femininity can explain the absence of women board members. By contrast, other measures of NC (e.g., power distance index, uncertainty avoidance, long-term orientation versus short-term orientation, indulgence versus restraint) have no association with the determinants of female board representation. Furthermore, power distance index decreases the 'token' appointment of women directors but increases the 'voice' presence of female directors.

In addition, the findings of this study report that the quality of national governance cannot explain the absence or presence of women directors in developed countries but it can illustrate the appointment of female directors in developing countries. In other words, NGQ has a positive influence on the emergence of women as board members in developing countries.

Furthermore, the results of this study show that the quality of national governance moderates the relationship between NC and the presence of women directors. Indeed, the level of moderating role relates to measures of NC and level of the appointment of female directors. In particular, NGQ increases the positive effect of individualism and negative impact of uncertainty avoidance on the 'voice' presence of female board members. However, quality of national governance does not moderate the negative effect of masculine on the 'voice' appointment of women directors. Additionally, NGQ decreases the negative effect of uncertainty avoidance on the 'voice' appointment of women board members but does not moderate the negative impact of uncertainty avoidance on the 'presence' appointment of WOCBs.

5.1.3 Summary of study three

Study three identifies the complex relationships among female directors, corporate environmental disclosure, financial performance, national culture, and the quality of national governance. Particularly, the current study examines the impact of women directors on disclosing environmental information. It also tests the influence of female directors on the trade-off between ENVIP and CFP. This study also investigates the moderating role of both NC and NGQ in the connection between women directors and corporate environmental performance. This study analyses an unbalanced a panel data from 2,179 firms located in 48 countries between 2010 and 2017.

This study uses OLS with cluster approach to test four hypotheses. For robust test, I use alternative measure of women on corporate boards. Furthermore, this study includes 2SLS approaches to control endogeneity problems of panel data. A summary of study two's findings in different method approached is illustrated in Table 5.2 below.

Table 5.2: Summary the findings of study three

Hypotheses	**Expected signs**	**Actual results**	
		OLS	**2SLS**
H1: Women on corporate boards have a strong effect on environmental performance.	+	+	+
H2: Women on corporate boards moderate the trade-off between corporate environmental performance and corporate financial performance.	+/-	Positive and insignificant	-
H3: The impact of women on corporate boards on environmental performance is moderated by national culture.	+/-	Insignificant relationship	+/-
***H3a**: Individualism versus collectivism negatively moderates the relationship between women on corporate boards and environmental performance.*	-	Negative and insignificant	-
***H3b:** Masculinity versus femininity negatively moderates the relationship between women on corporate boards and environmental performance.*	-	Negative and insignificant	+
***H3c:** Power distance index negatively moderates the relationship between women on corporate boards and environmental performance.*	-	Negative and insignificant	-
***H3d:** Uncertainty avoidance negatively moderates the relationship between women on corporate boards and environmental performance.*	-	Negative and insignificant	Negative and insignificant
***H3e:** Long-term orientation versus short-term orientation positively moderates the relationship between women on corporate boards and environmental performance.*	+	Negative and insignificant	+
***H3f:** Indulgence versus restraint positively moderates the relationship between women on corporate boards and environmental performance.*	+	Positive and insignificant	Positive and insignificant
H4: National governance quality moderates the relationship between women on corporate boards and environmental performance.	+/-	+	+

Note: +: Positive and significant; -: Negative and significant

Table 5.2 compares the findings in expected signs, OLS, and 2SLS. Specifically, Table 5.2 reports slight difference in findings between OLS and 2SLS approaches. For example, both the findings of OLS and 2SLS approaches show that women directors increase environmental performance. Furthermore, the findings of OLS show that individualism versus collectivism may reduce the impact of women directors on environmental performance, whereas the results of 2SLS illustrate that individualism versus collectivism significantly decreases the influence of women board members and environmental performance. Likewise, Table 5.2 also shows the slight difference in findings between expected signs and actual results. For example, based on literature review, I expect that indulgence versus restraint positively moderates the effect of women directors on environmental performance, while actual results show that indulgence versus restraint may increase the impact of women board members and environmental performance. In addition, both actual results and expected signs show that women directors disclose more information on environmental. Actual results show slightly different findings by comparison with expected signs, indicating that this study shows evidence to support previous literature and hypotheses.

Summarising the findings from main and robust tests, I find, as follows. Specifically, the current study shows evidence of a positive relationship between women directors and corporate environmental performance. Indeed, if companies appoint the number of female directors as at least three members and hold from 20% to 40% of board seats, their environmental performance increases quickly.

The findings of this study show no link between environmental disclosure and financial performance. In other words, companies are not faced with the trade-off between ENVIP and CFP. Hence, women directors cannot moderate this trade-off.

The results of this study find that the level of the impact of NC on corporate environmental disclosure relates to each national cultural dimension. For instance, some measures of NC (e.g., individualism versus collectivism, uncertainty avoidance, long-term orientation versus short-term orientation) increase environmental performance significantly while others (e.g., masculinity versus femininity) decrease environmental disclosure. The findings of this study evince a slight moderating role of NC on the relationship between female directors and environmental disclosure. The level of this moderating role depends on each national cultural dimension and the level of appointment of women directors. For example, individualism versus collectivism and power distance index decrease the positive impact of the ‘voice’ level of female directors on ENVIP. By contrast, other measures of NC (e.g., uncertainty avoidance, long-term orientation versus short-term orientation, uncertainty avoidance, indulgence versus restraint) do not influence the relationship between the ‘voice’ level of female directors on environmental disclosure.

The findings of the current study provide evidence for the positive relationship between quality of national governance and corporate environmental disclosure. In addition, this study finds the moderating role of NGQ in the link between female directors and ENVIP. Indeed, the level of this moderating role relates to the level of appointment of women directors. For example, NGQ increases the positive relationship between the 'voice' level of female directors and corporate environmental disclosure but decreases the negative connection between 'uniform' level of women directors and ENVIP.

5.2 Thesis implications

The current thesis aims to support policy-makers, practitioners and academic researchers to make relevant decisions on women directors. Specifically, academic researchers can seek more empirical evidence on WOCBs to fill in the research gap, which is provided by the current thesis. Importantly, this thesis has implications for the debate at both firm- and country-levels.

At the country-level, the current thesis first implies that each country should impose regulations and recommendations on board gender diversity to boost the appointment of women directors. Indeed, the level of the appointment of female directors has increased quickly following a country's application of a mandatory gender quotas law. Second, each country should focus on developing NGQ in order to improve the presence of women directors as well as the positive influence of female board members and corporate environmental performance.

At the firm-level, the current thesis implies first that firms should recruit more women directors because they can gain more benefits of board gender diversity such as increasing corporate environmental performance. Indeed, the number of female directors should be at least three members and they should make up from 20% to 40% of total number of board members. Second, firms should disclose more information on environmental performance because they can get support from powerful stakeholders, then they can increase financial performance.

5.3 Thesis contributions

This SLR contributes to the topic of WOCBs in several ways. First, after reviewing theoretical frameworks relating to multi-level views (e.g., country- , firm-, social- and individual-levels) of the antecedents of WOCBs and their influence on corporate outcomes, the current thesis finds that women directors bring more benefits to companies although they are faced with some (gender-based) challenges in terms of becoming board members. Second, analysing empirical research, the current thesis classifies factors affecting the appointment of female board members into four levels (country-,

firm-, social- and individual-levels) and finds that these factors affect the antecedents of WOCBs differently. Third, this thesis finds it difficult to reach a conclusion on the influence of female directors on corporate outcomes, such as compensation, CSR, and firm performance although most recent studies show positive impacts. Finally, this thesis offers suggestions for future research based on many limitations among past studies, such as a lack of qualitative and mixed-methods studies, cross-cultural research, application of multi-theoretical perspectives, and research on compensation.

The empirical results of this thesis contribute to existing literature on the complex relationship among the appointment of WOCBs, ENVIP, CFP, NC, and NGQ in several ways. First, the current thesis indicates that the quality of national governance does not affect the presence of women board members directly except in developing countries. Second and by contrast, it increases ENVIP and plays an important role in moderating the influence of NC on the emergence of women directors and the positive relationship between WOCBs and ENVIP. Indeed, the level of the moderating role of NGQ depends on each measure of NC and the level of appointment of WOCBs. Third, this thesis shows that the impact of NC on the appointment of women board members, environmental performance, and the link between female directors and environmental disclosure depends on each national cultural dimension and level of the presence of female directors. Fourth, the higher level of environmental disclosure the companies have, the better financial performance they achieve. The final contribution is the evidence on the impact of female directors on corporate environmental disclosure. Indeed, if the number of women directors is at least three members and make up 20% to 40% of board size, the companies will disclose more information on the environment.

Furthermore, the findings of the current thesis also offer empirical support for the theoretical framework in several ways. First, this thesis supports both perspectives — particularly legitimation and economic — of NIT in that companies appear to concentrate on disclosing environmental information to enhance corporate legitimacy as well as gain the support of different powerful stakeholders to increase CFP. Second, the thesis also supports institutional theory, which explains the difference in presence or absence of female directors among firms and countries. Finally, this thesis finds that social gender role perspectives have changed slightly from the traditional gender role of women (e.g., taking care of children at home) to a non-traditional one (e.g., working outside of home to earn money or have a good promotion).

5.4 Thesis limitations and suggestions for future research

Although the current thesis tries to solve limitations of past studies, it also has some limitations that need to be addressed. These are set out below: First, this thesis excludes a significant number of

'Non-corporate governance research' studies (13,267), which may provide interesting ideas on women directors. Hence, future research should raise a question on women directors in the non-corporate governance context.

Second, the thesis may have missed some important views of female directors from 'non – English' studies and conference papers. Thus, future research should access English and non-English studies and conference papers to provide a broader view of female directors.

Third, there are different measures of NC (see Inglehart, 1977; Schwartz, 1992; Trompenaars and Hampden-Turner, 1997). Furthermore, according to Matei and Abrudan (2018), some measures of culture such as economic ones changes quickly. They also found that some national cultural dimensions are more unstable than others. Thus, only using the measure of NC proposed by Hofstede may not allow us to evaluate culture correctly because it may be out of date. Thus, future research should apply relevant measures of national culture.

Fourth, environmental policies may affect how companies disclose environmental information. Therefore, future research should investigate the influence of environmental policies on environmental performance.

Fifth, Dragomir (2018) mentioned that new informational resources can improve the quality of environmental performance measures. Therefore, future research can find the most effective measure of corporate environmental performance.

Finally, many developing countries focus on reducing environmental issues by imposing environmental policies (Höhne *et al.*, 2017). Thus, firms located in these countries will disclose more environmental information. Similarly, they will provide corporate governance information with annual reports written in English owing to globalisation. As a result, future research can analyse balanced panel data due to an increase in environmental disclosure as well as corporate governance disclosure.

REFERENCES

Abbott, L.J. , Parker, S. and Presley, T.J. (2012) 'Female board presence and the likelihood of financial restatement', *Accounting Horizons*, 26(4), pp. 607-629.

Abd Rahman, I.M. and Ismail, K.N.I.K. (2018) 'The moderating effect of culture on the relationship between women directors and CSR disclosure in Malaysia', *Asian Journal of Accounting and Governance*, 9, pp. 133-142.

Abendroth, A.-K. , Melzer, S. , Kalev, A. and Tomaskovic-Devey, D. (2017) 'Women at work: Women's access to power and the gender earnings gap', *Industrial and Labor Relations Review*, 70(1), pp. 190-222.

Abraham, M. (2017) 'Pay formalization revisited: Considering the effects of manager gender and discretion on closing the gender wage gap', *Academy of Management Journal*, 60(1), pp. 29-54.

Adams, R.B. (2016) 'Women on boards: The superheroes of tomorrow?', *Leadership Quarterly*, 27(3), pp. 371-386.

Adams, R.B. and Ferreira, D. (2009) 'Women in the boardroom and their impact on governance and performance', *Journal of financial economics*, 94(2), pp. 291-309.

Adams, R.B. and Kirchmaier, T. (2016) 'Women on boards in finance and STEM industries', *American Economic Review*, (5), pp. 277-281.

Adnan, S.M. , Van Staden, C. and Hay, D. (2011) 'Does the interaction of national culture with governance structure influence quality and quantity of CSR disclosure', *NZ sustainability accounting research symposium, University of Auckland Business School*. Available at: http://docs.business.auckland.ac.nz/doc/shayuti-mohamed.pdf (accessed 11/12/2019)

Aebi, V. , Sabato, G. and Schmid, M. (2012) 'Risk management, corporate governance, and bank performance in the financial crisis', *Journal of Banking & Finance*, 36(12), pp. 3213-3226.

Agarwal, S. , Qian, W. , Reeb, D.M. and Sing, T.F. (2016) 'Playing the boys game: Golf buddies and board diversity', *The American Economic Review*, 106(5), pp. 272-276.

Agrawal, A. and Knoeber, C.R. (1996) 'Firm performance and mechanisms to control agency problems between managers and shareholders', *Journal of financial and quantitative analysis*, 31(3), pp. 377-397.

Aguilera, R.V. (2005) 'Corporate governance and director accountability: An institutional comparative perspective', *British Journal of Management*, 16, pp. S39-S53.

Aguilera, R.V. and Cuervo-Cazurra, A. (2004) 'Codes of good governance worldwide: what is the trigger?', *Organization studies*, 25(3), pp. 415-443.

Aguilera, R.V. and Jackson, G. (2003) 'The cross-national diversity of corporate governance: Dimensions and determinants', *Academy of management Review*, 28(3), pp. 447-465.

Aguilera, R.V. , Rupp, D.E. , Williams, C.A. and Ganapathi, J. (2007) 'Putting the S back in corporate social responsibility: A multilevel theory of social change in organizations', *Academy of management review*, 32(3), pp. 836-863.

Ahern, K.R. and Dittmar, A.K. (2012) 'The changing of the boards: The impact on firm valuation of mandated female board representation', *The Quarterly Journal of Economics*, 127(1), pp. 137-197.

Ahl, H. and Nelson, T. (2015) 'How policy positions women entrepreneurs: A comparative analysis of state discourse in Sweden and the United States', *Journal of Business Venturing* 30(2), pp. 273-291.

Ahmed, A. and Ali, S. (2017) 'Boardroom gender diversity and stock liquidity: Evidence from Australia', *Journal of Contemporary Accounting and Economics*, 13(2), pp. 148-165.

Akbas, H.E. (2016) 'The relationship between board characteristics and environmental disclosure: Evidence from Turkish listed companies', *South East European Journal of Economics & Business (1840118X)*, 11(2), pp. 7-19.

Al-Dhamari, R.A. , Ku Ismail, K.N.I. and Al-Gamrh, B.A. (2016) 'Board diversity and corporate payout policy: Do free cash flow and ownership concentration matter?', *Corporate Ownership and Control*, 14(1Continued2), pp. 373-383.

Al-Rahahleh, A.S. (2017) 'Corporate governance quality, board gender diversity, corporate dividend policy: Evidence from Jordan ', *Australasian Accounting Business & Finance Journal*, 11(2), pp. 86-104.

Alazzani, A. , Hassanein, A. and Aljanadi, Y. (2017) 'Impact of gender diversity on social and environmental performance: evidence from Malaysia', *Corporate Governance: The International Journal of Effective Board Performance*, 17(2), pp. 266-283.

Ali, J. and Shabir, S. (2017) 'Does gender make a difference in business performance? : Evidence from a large enterprise survey data of India', *Gender in Management: An International Journal*, 32(3), pp. 218-233.

Ali, M. , Ng, Y.L. and Kulik, C.T. (2014) 'Board age and gender diversity: A test of competing linear and curvilinear predictions', *Journal of business ethics*, 125(3), pp. 497-512.

Alnabsha, A. , Abdou, H.A. , Ntim, C.G. and Elamer, A.A. (2018) 'Corporate boards, ownership structures and corporate disclosures: Evidence from a developing country', *Journal of Applied Accounting Research*, 19(1), pp. 20-41.

Alonso-Almeida, M.D. (2013) 'Influence of gender and financing on tourist company growth', *Journal of business research*, 66(5), pp. 621-631.

Alonso-Almeida, M.d.M. (2012) 'Water and waste management in the Moroccan tourism industry: The case of three women entrepreneurs', *Women's Studies International Forum*, 35(5), pp. 343-353.

Alves, P. , Couto, E.B. and Francisco, P.M. (2015) 'Board of directors' composition and capital structure', *Research in International Business and Finance*, 35, pp. 1-32.

Alvesson, M. and Spicer, A. (2019) 'Neo-institutional theory and organization studies: a mid-life crisis?', *Organization Studies*, 40(2), pp. 199-218.

Amore, M.D. and Garofalo, O. (2016) 'Executive gender, competitive pressures, and corporate performance', *Journal of Economic Behavior & Organization*, 131, pp. 308-327.

Apostoaie, C.-M. and Maxim, A. (2017) 'Political determinants of national environmental performance in the European Union', *European Journal of Sustainable Development*, 6(1), pp. 277-277.

Ararat, M. , Aksu, M. and Tansel Cetin, A. (2015) 'How board diversity affects firm performance in emerging markets: Evidence on channels in controlled firms', *Corporate Governance: An International Review*, 23(2), pp. 83-103.

Arellano, M. and Bover, O. (1995) 'Another look at the instrumental variable estimation of error-components models', *Journal of econometrics*, 68(1), pp. 29-51.

Arena, C. , Cirillo, A. , Mussolino, D. , Pulcinelli, I. , Saggese, S. and Sarto, F. (2015) 'Women on board: Evidence from a masculine industry', *Corporate Governance* 15(3), pp. 339-356.

Artz, K.W. , Norman, P.M. , Hatfield, D.E. and Cardinal, L.B. (2010) 'A longitudinal study of the impact of R&D, patents, and product innovation on firm performance', *Journal of Product Innovation Management*, 27(5), pp. 725-740.

Arun, T.G. , Almahrog, Y.E. and Ali Aribi, Z. (2015) 'Female directors and earnings management: Evidence from UK companies', *International Review of Financial Analysis*, 39, pp. 137-146.

Arzubiaga, U. , Iturralde, T. , Maseda, A. and Kotlar, J. (2017) 'Entrepreneurial orientation and firm performance in family SMEs: the moderating effects of family, women, and strategic involvement in the board of directors', *International Entrepreneurship and Management Journal*, pp. 1-28.

Ashforth, B.E. and Gibbs, B.W. (1990) 'The double-edge of organizational legitimation', *Organization science*, 1(2), pp. 177-194.

Ashraf, M. (2009) 'Characteristics of female managers in the US labour market', *Applied Economics Letters*, 16(17), pp. 1683-1686.

Atkinson, S.M. , Baird, S.B. and Frye, M.B. (2003) 'Do female mutual fund managers manage differently?', *Journal of Financial Research*, 26(1), pp. 1-18.

Azmat, F. and Yuka, F. (2016) 'Family embeddedness and entrepreneurship experience: a study of Indian migrant women entrepreneurs in Australia', *Entrepreneurship & Regional Development*, 28(9/10), pp. 630-656.

Bae, S.C. , Chang, K. and Kang, E. (2012) 'Culture, corporate governance, and dividend policy: international evidence', *Journal of Financial Research*, 35(2), pp. 289-316.

Baixauli-Soler, J.S. , Lucas-Perez, M.E. , Martin-Ugedo, J.F. , Minguez-Vera, A. and Sanchez-Marin, G. (2016) 'Executive directors' compensation and monitoring: the influence of gender diversity on Spanish boards', *Journal of Business Economics & Management*, 17(6), pp. 1133-1154.

Bakan, D. (1966) *The duality of human existence: Isolation and communication in Western man*. Beacon Press.

Baldini, M. , Dal Maso, L. , Liberatore, G. , Mazzi, F. and Terzani, S. (2018) 'Role of country-and firm-level determinants in environmental, social, and governance disclosure', *Journal of Business Ethics*, 150(1), pp. 79-98.

Ballington, J. and Binda, F.e. (2006) *The Implementation of Quotas: European Experiences*. International IDEA; distributed by Independent Publishers Group, Chicago.

Baltagi, B. (2013) *Econometric analysis of panel data*. Fifth edn.: John Wiley & Sons.

Bao, S. , Fainshmidt, S. , Nair, A. and Vracheva, V. (2014) 'Women in upper echelons of management, tenure and legal risk', *British Journal of Management*, 25(2), pp. 388-405.

Barako, D.G. and Brown, A.M. (2008) 'Corporate social reporting and board representation: evidence from the Kenyan banking sector', *Journal of Management & Governance*, 12(4), p. 309-324.

Bardasi, E. , Sabarwal, S. and Terrell, K. (2011) 'How do female entrepreneurs perform? Evidence from three developing regions', *Small Business Economics*, 37(4), pp. 417-441.

Barua, A. , Davidson, L.F. , Rama, D.V. and Thiruvadi, S. (2010) 'CFO gender and accruals quality', *Accounting Horizons*, 24(1), pp. 25-39.

Baskerville, R.F. (2003) 'Hofstede never studied culture', *Accounting, organizations and society*, 28(1), pp. 1-14.

Bear, S. , Rahman, N. and Post, C. (2010) 'The impact of board diversity and gender composition on corporate social responsibility and firm reputation', *Journal of Business Ethics*, 97(2), pp. 207-221.

Becker-Blease, J. , Elkinawy, S. , Hoag, C. and Stater, M. (2016) 'The effects of executive, firm, and board characteristics on executive exit', *Financial Review*, 51(4), pp. 527-557.

Bellucci, A. , Borisov, A. and Zazzaro, A. (2010) 'Does gender matter in bank–firm relationships? Evidence from small business lending', *Journal of Banking & Finance*, 34(12), pp. 2968-2984.

Belot, F. and Serve, S. (2018) 'Earnings quality in private SMEs: Do CEO demographics matter?', *Journal of Small Business Management*, 56, pp. 323-344.

Ben-Amar, W. , Chang, M. and McIlkenny, P. (2017) 'Board gender diversity and corporate response to sustainability initiatives: Evidence from the Carbon Disclosure Project', *Journal of Business Ethics*, 142(2), pp. 369-383.

Benkraiem, R. , Hamrouni, A. , Lakhal, F. and Toumi, N. (2017) 'Board independence, gender diversity and CEO compensation', *Corporate Governance: The International Journal of Business in Society*, 17(5), pp. 845-860.

Bennedsen, M. , Kongsted, H.C. and Nielsen, K.M. (2004) 'Board size effects in closely held corporations', *CAM Institute of Economics, University of Copenhagen Working Papers*. Available at: https://www.econstor.eu/bitstream/10419/208484/1/cbs-wp2004-09.pdf (accessed 12/12/2019).

Berenguer, E. , Giráldez, P. and Cardone-Riportella, C. (2016) 'Managerial positions of women in Spanish exporting SMEs', *Revista Espanola de Financiacion y Contabilidad*, 45(3), pp. 300-326.

Berger, A.N. , Kick, T. and Schaeck, K. (2014) 'Executive board composition and bank risk taking', *Journal of Corporate Finance*, 28, pp. 48-65.

Bernardi, R.A. , Bean, D.F. and Weippert, K.M. (2005) 'Minority membership on boards of directors: the case for requiring pictures of boards in annual reports', *Critical Perspectives on Accounting*, 16(8), pp. 1019-1033.

Bernardi, R.A. and Threadgill, V.H. (2010) 'Women directors and corporate social responsibility', *Electronic Journal of Business Ethics and Organization Studies*, 15(2), pp. 15-21.

Bewley, K. and Li, Y. (2000) 'Disclosure of environmental information by Canadian manufacturing companies: a voluntary disclosure perspective', in *Advances in environmental accounting & management*. Emerald Group Publishing Limited, pp. 201-226.

Bi, G. , Luo, Y. , Ding, J. and Liang, L. (2015) 'Environmental performance analysis of Chinese industry from a slacks-based perspective', *Annals of Operations Research*, 228(1), pp. 65-80.

Bianco, M. , Ciavarella, A. and Signoretti, R. (2015) 'Women on corporate boards in Italy: The role of family connections', *Corporate Governance: An International Review*, 23(2), pp. 129-144.

Bilimoria, D. and Piderit, S.K. (1994) 'Board committee membership: Effects of sex-based bias', *Academy of management journal*, 37(6), pp. 1453-1477.

Bjuggren, P.-O. , Nordström, L. and Palmberg, J. (2018) 'Are female leaders more efficient in family firms than in non-family firms?', *Corporate Governance: The International Journal of Business in Society*, 18(2), pp. 185-205.

Bøhren, Ø. and Staubo, S. (2016) 'Mandatory Gender Balance and Board Independence', *European Financial Management*, 22(1), pp. 3-30.

Bøhren, Ø. and Strøm, R.Ø. (2010) 'Governance and politics: Regulating independence and diversity in the board room', *Journal of Business Finance & Accounting*, 37(9/10), pp. 1281-1308.

Boulouta, I. (2013) 'Hidden connections: The link between board gender diversity and corporate social performance', *Journal of Business Ethics*, 113(2), pp. 185-197.

Boussaid, N. , Hamza, T. and Sougné, D. (2015) 'Corporate board attributes and conditional accounting conservatism: Evidence from French firms', *Journal of Applied Business Research*, 31(3), pp. 871-890.

Brammer, S. , Brooks, C. and Pavelin, S. (2006) 'Corporate social performance and stock returns: UK evidence from disaggregate measures', *Financial management*, 35(3), pp. 97-116.

Brammer, S. , Millington, A. and Pavelin, S. (2009) 'Corporate reputation and women on the board', *British Journal of Management*, 20(1), pp. 17-29.

Brodie, R.J. , Winklhofer, H. , Coviello, N.E. and Johnston, W.J. (2007) 'Is e-marketing coming of age? An examination of the penetration of e-marketing and firm performance', *Journal of interactive marketing*, 21(1), pp. 2-21.

Brunzell, T. and Liljeblom, E. (2014) 'Chairmens perceptions of female board representation: A study on Nordic listed companies', *Equality, Diversity and Inclusion*, 33(6), pp. 523-534.

Brush, C. , Ali, A. , Kelley, D. and Greene, P. (2017) 'The influence of human capital factors and context on women's entrepreneurship: Which matters more?', *Journal of Business Venturing Insights*, 8, pp. 105-113.

Buckingham-Hatfield, S. (2001) 'Gender and Environment', *International Encyclopedia of the Social & Behavioral Sciences, Pergamon*, pp. 5907-5910.

Buckingham, S. (2004) 'Ecofeminism in the twenty-first century', *Geographical journal*, 170(2), pp. 146-154.

Bugeja, M. , Matolcsy, Z. and Spiropoulos, H. (2016) 'The association between gender-diverse compensation committees and CEO compensation', *Journal of Business Ethics*, 139(2), pp. 375-390.

Bugeja, M. , Matolcsy, Z.P. and Spiropoulos, H. (2012) 'Is there a gender gap in CEO compensation?', *Journal of Corporate Finance*, 18(4), pp. 849-859.

Buhr, N. and Freedman, M. (2001) 'Culture, institutional factors and differences in environmental disclosure between Canada and the United States', *Critical Perspectives on Accounting*, 12(3), pp. 293-322.

Bullough, A. , Kroeck, K.G. , Newburry, W. , Kundu, S.K. and Lowe, K.B. (2012) 'Women's political leadership participation around the world: An institutional analysis', *The Leadership Quarterly*, 23(3), pp. 398-411.

Bullough, A. , Renko, M. and Abdelzaher, D. (2017) 'Women's business ownership: Operating within the context of institutional and in-group collectivism', *Journal of Management*, 43(7), pp. 2037-2064.

Byron, K. and Post, C. (2016) 'Women on boards of directors and corporate social performance: A meta-analysis', *Corporate Governance: An International Review*, 24(4), pp. 428-442.

Cabeza-García, L. , Del Brio, E.B. and Rueda, C. (2019) 'Legal and cultural factors as catalysts for promoting women in the boardroom', *BRQ Business Research Quarterly*, 22(1), pp. 56-67.

Cai, C.X. , Keasey, K. and Short, H. (2006) 'Corporate governance and information efficiency in security markets', *European Financial Management*, 12(5), pp. 763-787.

Calza, F. , Cannavale, C. and Tutore, I. (2016) 'The important effects of national culture on the environmental proactivity of firms', *Journal of Management Development*, 35(8), pp. 1011-1030.

Campbell, K. and Mínguez-Vera, A. (2008) 'Gender diversity in the boardroom and firm financial performance', *Journal of business ethics*, 83(3), pp. 435-451.

Capezio, A. and Mavisakalyan, A. (2016) 'Women in the boardroom and fraud: Evidence from Australia', *Australian Journal of Management*, 41(4), pp. 719-734.

Cardoso, A.R. and Winter-Ebmer, R. (2010) 'Female-led firms and gender wage policies', *Industrial and Labor Relations Review*, 64(1), pp. 143-163.

Carrasco, A. , Francoeur, C. , Labelle, R. , Laffarga, J. and Ruiz-Barbadillo, E. (2015) 'Appointing women to boards: Is there a cultural bias?', *Journal of Business Ethics*, 129(2), pp. 429-444.

Carter, D.A. , D'Souza, F. , Simkins, B.J. and Simpson, W.G. (2010) 'The gender and ethnic diversity of US boards and board committees and firm financial performance', *Corporate Governance: An International Review*, 18(5), pp. 396-414.

Carter, D.A. , Simkins, B.J. and Simpson, W.G. (2003) 'Corporate governance, board diversity, and firm value', *Financial review*, 38(1), pp. 33-53.

Carter, M.E. , Franco, F. and Gine, M. (2017) 'Executive gender pay gaps: The roles of female risk aversion and board representation', *Contemporary Accounting Research*, 34(2), pp. 1232-1264.

Cetindamar, D. , Gupta, V.K. , Karadeniz, E.E. and Egrican, N. (2012) 'What the numbers tell: The impact of human, family and financial capital on women and men's entry into entrepreneurship in Turkey', *Entrepreneurship & Regional Development*, 24(1-2), pp. 29-51.

Chakrabarty, S. and Bass, A.E. (2014) 'Corporate governance in microfinance institutions: board composition and the ability to face institutional voids', *Corporate Governance: An International Review*, 22(5), pp. 367-386.

Chapple, L. and Humphrey, J.E. (2014) 'Does board gender diversity have a financial impact? Evidence using stock portfolio performance', *Journal of Business Ethics*, 122(4), pp. 709-723.

Chen, C.w. , Velasquez Tuliao, K. , Cullen, J.B. and Chang, Y.Y. (2016a) 'Does gender influence managers' ethics? A cross-cultural analysis', *Business Ethics: A European Review*, 25(4), pp. 345-362.

Chen, G. , Crossland, C. and Huang, S. (2016b) 'Female board representation and corporate acquisition intensity', *Strategic Management Journal*, 37(2), pp. 303-313.

Chen, J. , Leung, W.S. and Goergen, M. (2017) 'The impact of board gender composition on dividend payouts', *Journal of Corporate Finance*, 43, pp. 86-105.

Chen, Z. and Keefe, M.O.C. (2018) 'Board of director compensation in China: To pay or not to pay? How much to pay?', *Emerging Markets Review*, 37, pp. 66-82.

Chirwa, E.W. (2008) 'Effects of gender on the performance of micro and small enterprises in Malawi', *Development Southern Africa*, 25(3), pp. 347-362.

Chizema, A. , Kamuriwo, D.S. and Shinozawa, Y. (2015) 'Women on corporate boards around the world: Triggers and barriers', *The Leadership Quarterly*, 26(6), pp. 1051-1065.

Christoffersen, J. (2013) 'A review of antecedents of international strategic alliance performance: synthesized evidence and new directions for core constructs', *International Journal of Management Reviews*, 15(1), pp. 66-85.

Clarkson, P.M. , Li, Y. , Pinnuck, M. and Richardson, G.D. (2015) 'The valuation relevance of greenhouse gas emissions under the European Union carbon emissions trading scheme', *European Accounting Review*, 24(3), pp. 551-580.

Coffey, B.S. and Wang, J. (1998) 'Board diversity and managerial control as predictors of corporate social performance', *Journal of Business Ethics*, 17(14), pp. 1595-1603.

Cole, R.A. and Mehran, H. (2016) 'What do we know about executive compensation at small privately held firms?', *Small Business Economics*, 46(2), pp. 215-237.

Collier, P.M. (2008) 'Stakeholder accountability: A field study of the implementation of a governance improvement plan', *Accounting, Auditing & Accountability Journal*, 21(7), pp. 933-954.

Cowen, S.S. , Ferreri, L.B. and Parker, L.D. (1987) 'The impact of corporate characteristics on social responsibility disclosure: A typology and frequency-based analysis', *Accounting, Organizations and society*, 12(2), pp. 111-122.

Cucari, N. , Esposito De Falco, S. and Orlando, B. (2018) 'Diversity of Board of Directors and Environmental Social Governance: Evidence from Italian Listed Companies', *Corporate Social Responsibility and Environmental Management*, 25(3), pp. 250-266.

Cumming, D. , Leung, T.Y. and Rui, O. (2015) 'Gender diversity and securities fraud', *Academy of management Journal*, 58(5), pp. 1572-1593.

D. Kolev, K. , Hughes-Morgan, M. and Rehbein, K. (2019) 'The role of female directors in the boardroom: Examining their impact on competitive dynamics', *Business & Society*, p. 0007650319847477.

D'Amato, A. (2017) 'Do women perform better in family firms?: Exploring the moderating role of family firm status', *International Journal of Wine Business Research*, 29(3), pp. 299-315.

Damania, R. , Fredriksson, P.G. and List, J.A. (2003) 'Trade liberalization, corruption, and environmental policy formation: theory and evidence', *Journal of environmental economics and management*, 46(3), pp. 490-512.

Darrat, A.F. , Gray, S. , Park, J.C. and Wu, Y. (2016) 'Corporate governance and bankruptcy risk', *Journal of Accounting, Auditing & Finance*, 31(2), pp. 163-202.

Dasgupta, A. , Ha, L. , Jonnalagadda, S. , Schmeiser, S. and Youngerman, H. (2018) 'The daughter effect: do CEOs with daughters hire more women to their board?', *Applied Economics Letters*, 25(13), pp. 891-894.

de Anca, C. and Gabaldon, P. (2014) 'The media impact of board member appointments in Spanish-listed companies: A gender perspective', *Journal of Business Ethics*, 122(3), pp. 425-438.

de Cabo, R.M. , Gimeno, R. and Nieto, M.J. (2012) 'Gender diversity on European banks' boards of directors', *Journal of Business Ethics*, 109(2), pp. 145-162.

De Villiers, C. , Naiker, V. and Van Staden, C.J. (2011) 'The effect of board characteristics on firm environmental performance', *Journal of Management*, 37(6), pp. 1636-1663.

De Vita, L. , Mari, M. and Poggesi, S. (2014) 'Women entrepreneurs in and from developing countries: Evidences from the literature', *European Management Journal*, 32(3), pp. 451-460.

Dechow, P.M. (1994) 'Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals', *Journal of accounting and economics*, 18(1), pp. 3-42.

Deloitte (2017) 'Women in the boardroom: a global perspective' 5th. Deloitte Global Center for Corporate Governance. Available at: https://www2.deloitte.com/global/en/pages/risk/articles/women-in-the-boardroom5th-edition.html (Accessed: 01/12/2018).

Dezsö, C.L. and Ross, D.G. (2012) 'Does female representation in top management improve firm performance? A panel data investigation', *Strategic Management Journal*, 33(9), pp. 1072-1089.

Dezső, C.L. , Ross, D.G. and Uribe, J. (2016) 'Is there an implicit quota on women in top management? A large-sample statistical analysis', *Strategic Management Journal*, 37(1), pp. 98-115.

DiMaggio, P.J. and Powell, W.W. (1983) 'The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields', *American sociological review*, pp. 147-160.

Dobbin, F. and Jiwook, J. (2011) 'Corporate board gender diversity and stock performance: The competence gap or institutional investor biast? ', *North Carolina Law Review*, 89(3), pp. 809-840.

Dobscha, S. (1993) 'Women and the environment: Applying ecofeminism to environmentally-related consumption', *ACR North American Advances*, 20, pp. 36-40.

Dohi, I. and Fooladi, M.M. (2008) *Forum on Public Policy, A Journal of the Oxford Roundtable, available at: www. forumonpublicpolicy. com/archivesp ring08/dohi. pdf*. Citeseer.

Doldor, E. , Sealy, R. and Vinnicombe, S. (2016) 'Accidental activists: Headhunters as marginal diversity actors in institutional change towards more women on boards', *Human Resource Management Journal*, 26(3), pp. 285-303.

Dong, Y. , Girardone, C. and Kuo, J.M. (2017) 'Governance, efficiency and risk taking in Chinese banking', *The British Accounting Review*, 49(2), pp. 211-229.

Dowling, M. and Aribi, Z.A. (2013) 'Female directors and UK company acquisitiveness', *International Review of Financial Analysis*, 29, pp. 79-86.

Dragomir, V.D. (2018) 'How do we measure corporate environmental performance? a critical review', *Journal of Cleaner Production*, 196, pp. 1124-1157.

Dreher, G.F. , Lee, J.-Y. and Clerkin, T.A. (2011) 'Mobility and cash compensation: The moderating effects of gender, race, and executive search firms', *Journal of Management*, 37(3), pp. 651-681.

Du, X. (2016) 'Does confucianism reduce board gender diversity? Firm-level evidence from China', *Journal of Business Ethics*, (2), pp. 399-436.

E-Vahdati, S. , Zulkifli, N. and Zakaria, Z. (2018) 'A moderated mediation model for board diversity and corporate performance in ASEAN countries', *Sustainability*, 10(2), pp. 556-576.

Eagly, A.H. (2013) *Sex differences in social behavior: A social-role interpretation*. Psychology Press.

Eagly, A.H. , Johannesen-Schmidt, M.C. and Van Engen, M.L. (2003) 'Transformational, transactional, and laissez-faire leadership styles: a meta-analysis comparing women and men'. American Psychological Association, 129(4), pp.569-591.

Eagly, A.H. and Johannesen-Schmidt, M.C. (2001) 'The leadership styles of women and men', *Journal of social issues*, 57(4), pp. 781-797.

Eagly, A.H. and Wood, W. (2011) 'Social role theory', *Handbook of theories in social psychology*, 2, pp. 458-476.

ECGI (2017) *Index of code*. Available at: http://www.ecgi.org/codes/all_codes.php (Accessed: 16/08/2017).

Elamer, A.A. , Ntim, C.G. and Abdou, H.A. (2017) 'Islamic governance, national governance, and bank risk management and disclosure in MENA countries', *Business & Society*, pp. 1-42.

Elghuweel, M.I. , Ntim, C.G. , Opong, K.K. and Avison, L. (2017) 'Corporate governance, Islamic governance and earnings management in Oman: A new empirical insights from a behavioural theoretical framework', *Journal of Accounting in Emerging Economies*, 7(2), pp. 190-224.

Ellemers, N. , Rink, F. , Derks, B. and Ryan, M.K. (2012) 'Women in high places: When and why promoting women into top positions can harm them individually or as a group (and how to prevent this)', *Research in Organizational Behavior*, 32, pp. 163-187.

Ellwood, S. and Garcia-Lacalle, J. (2015) 'The influence of presence and position of women on the boards of directors: The case of NHS foundation trusts', *Journal of Business Ethics*, 130(1), pp. 69-84.

Elmagrhi, M.H. , Ntim, C.G. , Crossley, R.M. , Malagila, J.K. , Fosu, S. and Vu, T.V. (2017) 'Corporate governance and dividend pay-out policy in UK listed SMEs', *International Journal of Accounting & Information Management*, 25(4), pp. 459-483.

Elmagrhi, M.H. , Ntim, C.G. , Elamer, A.A. and Zhang, Q. (2019) 'A study of environmental policies and regulations, governance structures and environmental performance: The role of female directors', *Business Strategy and the Environment*, 28(1), pp. 206-220.

Elmagrhi, M.H. , Ntim, C.G. , Malagila, J. , Fosu, S. and Tunyi, A.A. (2018) 'Trustee board diversity, governance mechanisms, capital structure and performance in UK charities', *Corporate Governance: The International Journal of Business in Society*, 18(3), pp. 478-508.

Elmagrhi, M.H. , Ntim, C.G. and Wang, Y. (2016) 'Antecedents of voluntary corporate governance disclosure: A post-2007/08 financial crisis evidence from the influential UK Combined Code', *Corporate Governance*, 16(3), pp. 507-538.

Elnahas, A.M. and Kim, D. (2017) 'CEO political ideology and mergers and acquisitions decisions', *Journal of Corporate Finance*, 45, pp. 162-175.

Elsaid, E. (2015) 'Comparing outgoing female CEOs with prior CEO experience to outgoing female CEOs with no prior CEO experience', *Journal of Applied Business Research*, 31(3), pp. 809-820.

Elsayed, K. and Paton, D. (2005) 'The impact of environmental performance on firm performance: static and dynamic panel data evidence', *Structural change and economic dynamics*, 16(3), pp. 395-412.

Estrin, S. and Mickiewicz, T. (2011) 'Institutions and female entrepreneurship', *Small business economics*, 37(4), pp. 397-415.

Faccio, M. , Marchica, M.-T. and Mura, R. (2016) 'CEO gender, corporate risk-taking, and the efficiency of capital allocation', *Journal of Corporate Finance*, 39, pp. 193-209.

Farag, H. and Mallin, C. (2016a) 'The impact of the dual board structure and board diversity: Evidence from Chinese initial public offerings (IPOs)', *Journal of Business Ethics*, 139(2), pp. 333-349.

Farag, H. and Mallin, C. (2016b) 'The influence of CEO demographic characteristics on corporate risk-taking: evidence from Chinese IPOs', *European Journal of Finance*, pp. 1-30.

Farag, H. and Mallin, C. (2017) 'Board diversity and financial fragility: Evidence from European banks', *International Review of Financial Analysis*, 49, pp. 98-112.

Fauzi, F. , Basyith, A. and Ho, P.L. (2017) 'Women on boardroom: Does it create risk?', *Cogent Economics and Finance*, 5(1), pp. 1-14.

Fernandes, S.M. , Bornia, A.C. and Nakamura, L.R. (2019) 'The influence of boards of directors on environmental disclosure', *Management Decision*, 57(9), pp. 2358-2382.

Fernandez-Feijoo, B. , Romero, S. and Ruiz-Blanco, S. (2014) 'Women on boards: Do they affect sustainability reporting?', *Corporate Social Responsibility & Environmental Management*, 21(6), pp. 351-364.

Fernandez-Mateo, I. and Fernandez, R.M. (2016) 'Bending the pipeline? Executive search and gender inequality in hiring for top management jobs', *Management Science*, 62(12), pp. 3636-3655.

Fielden, S.L. and Hunt, C.M. (2011) 'Online coaching: An alternative source of social support for female entrepreneurs during venture creation', *International Small Business Journal*, 29(4), pp. 345-359.

Filatotchev, I. , Jackson, G. and Nakajima, C. (2013) 'Corporate governance and national institutions: A review and emerging research agenda', *Asia Pacific Journal of Management*, 30(4), pp. 965-986.

Fitzsimmons, T.W. , Callan, V.J. and Paulsen, N. (2014) 'Gender disparity in the C-suite: Do male and female CEOs differ in how they reached the top?', *The Leadership Quarterly*, 25(2), pp. 245-266.

Ford, D. and Rohini, P. (2011) *Gender quotas and female leadership: A review. Background paper for the world development report on gender*. Available at: http://siteresources.worldbank.org/INTWDR2012/Resources/7778105-1299699968583/7786210-1322671773271/Pande-Gender-Quotas-April-2011.pdf.

Francis, B. , Hasan, I. , John, K. and Sharma, Z. (2013) 'Asymmetric benchmarking of pay in firms', *Journal of Corporate Finance*, 23, pp. 39-53.

Francis, B.B. , Hasan, I. , Qiang, W. and Meng, Y. (2014) 'Are female CFOs less tax aggressive? Evidence from tax aggressiveness', *Journal of the American Taxation Association*, 36(2), pp. 171-202.

Francoeur, C. , Labelle, R. and Sinclair-Desgagné, B. (2008) 'Gender diversity in corporate governance and top management', *Journal of business ethics*, 81(1), pp. 83-95.

Freeman, R.E. (2010) *Strategic management: A stakeholder approach*. Cambridge university press.

Gaard, G. (2015) *Women's Studies International Forum*. Elsevier.

Gabaldon, P. , De Anca, C. , Mateos De Cabo, R. and Gimeno, R. (2016) 'Searching for women on boards: An analysis from the supply and demand perspective', *Corporate Governance: An International Review*, 24(3), pp. 371-385.

Galbreath, J. (2010) 'Corporate governance practices that address climate change: An exploratory study', *Business Strategy and the Environment*, 19(5), pp. 335-350.

Galia, F. and Zenou, E. (2012) 'Board composition and forms of innovation: does diversity make a difference?', *European Journal of International Management*, 6(6), pp. 630-650.

Gallego-Alvarez, I. , Vicente-Galindo, M. , Galindo-Villardón, M. and Rodríguez-Rosa, M. (2014) 'Environmental performance in countries worldwide: Determinant factors and multivariate analysis', *Sustainability*, 6(11), pp. 7807-7832.

Gao, H. , Lin, Y. and Ma, Y. (2016) 'Sex discrimination and female top managers: evidence from China', *Journal of Business Ethics*, 138(4), pp. 683-702.

García-Meca, E. (2016) 'Political connections, gender diversity and compensation policy', *Review of Managerial Science*, 10(3), pp. 553-576.

García-Meca, E. , García-Sánchez, I.-M. and Martínez-Ferrero, J. (2015) 'Board diversity and its effects on bank performance: An international analysis', *Journal of Banking and Finance*, 53, pp. 202-214.

García-Meca, E. , Uribe-Bohórquez, M.-V. and Cuadrado-Ballesteros, B. (2018) 'Culture, Board Composition and Corporate Social Reporting in the Banking Sector', *Administrative Sciences*, 8(3), pp. 1-23.

García-Sánchez, I.-M. , Cuadrado-Ballesteros, B. and Frias-Aceituno, J.-V. (2016) 'Impact of the institutional macro context on the voluntary disclosure of CSR information', *Long Range Planning*, 49(1), pp. 15-35.

Geiler, P. and Renneboog, L. (2015) 'Are female top managers really paid less?', *Journal of Corporate Finance*, 35, pp. 345-369.

Ghabayen, M.A. , Mohamad, N.R. and Ahmad, N. (2016) 'Board characteristics and corporate social responsibility disclosure in the jordanian banks', *Corporate Board: Role, Duties and Composition*, 12(1CONT1), pp. 84-99.

Gibson, A.D. (2008) 'Cultural value differences and women-owned businesses in the United States: a preliminary exploration', *The Journal of Applied Business and Economics*, 8(2), p. 23-34.

Gillan, S.L. (2006) 'Recent developments in corporate governance: An overview', *Journal of Corporate Finance*, 12(3), pp. 381-402.

Gitundu, E.W. , Kisaka, S.E. , Kiprop, S.K. and Kibet, L.K. (2016) 'The effects of ownership and corporate governance reforms on efficiency of privatized companies in Kenya', *International Journal of Economics and Financial Issues*, 6(1), pp. 323-331.

Glass, C. , Cook, A. and Ingersoll, A.R. (2016) 'Do women leaders promote sustainability? Analyzing the effect of corporate governance composition on environmental performance', *Business Strategy and the Environment*, 25(7), pp. 495-511.

Goh, L. and Gupta, A. (2016) 'Remuneration of non-executive directors: Evidence from the UK', *The British Accounting Review*, 48, pp. 379-399.

Gordini, N. and Rancati, E. (2017) 'Gender diversity in the Italian boardroom and firm financial performance', *Management Research Review*, 40(1), pp. 75-94.

Gottschalk, S. and Niefert, M. (2013) 'Gender differences in business success of German start-up firms', *International Journal of Entrepreneurship and Small Business*, 18(1), pp. 15-46.

Gould, J.A. , Kulik, C.T. and Sardeshmukh, S.R. (2018) 'Trickle-down effect: The impact of female board members on executive gender diversity', *Human Resource Management*, 57(4), pp. 931-945.

Graham, M.E. , Belliveau, M.A. and Hotchkiss, J.L. (2017) 'The view at the top or signing at the bottom? Workplace diversity responsibility and women's representation in management', *Industrial and Labor Relations Review*, 70(1), pp. 223-258.

Gregorič, A. , Oxelheim, L. , Randøy, T. and Thomsen, S. (2017) 'Resistance to change in the corporate elite: female directors' appointments onto Nordic boards', *Journal of Business Ethics*, 141(2), pp. 267-287.

Gröschl, S. and Arcot, S. (2014) 'Female hospitality executives and their effects on firm performance', *Tourism & Hospitality Research*, 14(3), pp. 143-151.

Grosvold, J. (2009) *Where are all the women? Institutional context and the prevalence of women on the corporate board of directors*. PhD thesis. University of Bath Available at: https://purehost.bath.ac.uk/ws/portalfiles/portal/187931456/Grosvold-J-2009.pdf. (accessed 10/12/2019)

Grosvold, J. (2011) 'Where are all the women? Institutional context and the prevalence of women on the corporate board of directors', *Business & Society*, 50(3), pp. 531-555.

Grosvold, J. and Brammer, S. (2011) 'National institutional systems as antecedents of female board representation: An empirical study', *Corporate Governance: An International Review*, 19(2), pp. 116-135.

Grosvold, J. , Rayton, B. and Brammer, S. (2016) 'Women on corporate boards: A comparative institutional analysis', *Business and Society*, 55(8), pp. 1157-1196.

Gu, Y. , Wong, T.W. , Law, C. , Dong, G.H. , Ho, K.F. , Yang, Y. and Yim, S.H.L. (2018) 'Impacts of sectoral emissions in China and the implications: air quality, public health, crop production, and economic costs', *Environmental Research Letters*, 13(8).

Guillet, B.D. , Kucukusta, D. and Xiao, Q. (2012) 'An examination of executive compensation in the restaurant industry', *International Journal of Hospitality Management*, 31(1), pp. 86-95.

Gul, F.A. , Hutchinson, M. and Lai, K.M.Y. (2013) 'Gender-diverse boards and properties of analyst earnings forecasts', *Accounting Horizons*, 27(3), pp. 511-538.

Gul, F.A. , Srinidhi, B. and Ng, A.C. (2011) 'Does board gender diversity improve the informativeness of stock prices?', *Journal of Accoungting & Economics*, 51(3), pp. 314-338.

Gull, A.A. , Nekhili, M. , Nagati, H. and Chtioui, T. (2018) 'Beyond gender diversity: How specific attributes of female directors affect earnings management', *The British Accounting Review*, 50(3), pp. 255-274.

Gupta, A. and Raman, K. (2014) 'Board diversity and CEO selection ', *Journal of Financial Research*, 37(4), pp. 495-518.

Gupta, V. , Hanges, P.J. and Dorfman, P. (2002) 'Cultural clusters: Methodology and findings', *Journal of world business*, 37(1), pp. 11-15.

Gyapong, E. , Ahmed, A. , Ntim, C.G. and Nadeem, M. (2019) 'Board gender diversity and dividend policy in Australian listed firms: the effect of ownership concentration', *Asia Pacific Journal of Management* pp. 1-41.

Gyapong, E. , Monem, R.M. and Hu, F. (2016) 'Do women and ethnic minority directors influence firm value? Evidence from post-apartheid South Africa', *Journal of Business Finance & Accounting*, 43(3/4), pp. 370-413.

Hafsi, T. and Turgut, G. (2013) 'Boardroom diversity and its effect on social performance: Conceptualization and empirical evidence', *Journal of Business Ethics*, 112(3), pp. 463-479.

Hagendorff, J. and Keasey, K. (2012) 'The value of board diversity in banking: Evidence from the market for corporate control', *European Journal of Finance*, 18(1), pp. 41-58.

Haladu, A. and Salim, B.B. (2016) 'Board Characteristics and Sustainability Reporting: Environmental Agencies' Moderating Effects', *International Journal of Economics and Financial Issues*, 6(4), pp. 1525-1533.

Haldar, A. , Shah, R. and Nageswara Rao, S.V.D. (2015) 'Gender diversity in large listed Indian companies', *Corporate Ownership and Control*, 12(3CONT5), pp. 573-580.

Hamzah, A.H. and Zulkafli, A.H. (2014) 'Board diversity and corporate expropriation', *Procedia - Social and Behavioral Sciences*, 164, pp. 562-568.

Haque, F. (2017) 'The effects of board characteristics and sustainable compensation policy on carbon performance of UK firms', *The British Accounting Review*, 49(3), pp. 347-364.

Haque, F. and Ntim, C.G. (2018) 'Environmental policy, sustainable development, governance mechanisms and environmental performance', *Business Strategy and the Environment*, 27(3), pp. 415-435.

Haque, F. and Ntim, C.G. (2020) 'Executive compensation, sustainable compensation policy, carbon performance and market value', *British Journal of Management*, 31, pp. 525-546.

Harjoto, M. , Laksmana, I. and Lee, R. (2015) 'Board diversity and corporate social responsibility', *Journal of Business Ethics*, 132(4), pp. 641-660.

Harris, C.R. and Jenkins, M. (2006) 'Gender differences in risk assessment: why do women take fewer risks than men?', *Judgment and Decision Making*, 1(1), pp. 48-63.

Haslam, S.A. , Ryan, M.K. , Kulich, C. , Trojanowski, G. and Atkins, C. (2010) 'Investing with prejudice: The relationship between women's presence on company boards and objective and subjective measures of company performance', *British Journal of Management*, 21(2), pp. 484-497.

Hensvik, L.E. (2014) 'Manager impartiality: Worker-firm matching and the gender wage gap', *Industrial and Labor Relations Review*, 67(2), pp. 395-421.

Hill, A.D. , Upadhyay, A.D. and Beekun, R.I. (2015) 'Do female and ethnically diverse executives endure inequity in the CEO position or do they benefit from their minority status? An empirical examination', *Strategic Management Journal*, 36(8), pp. 1115-1134.

Hillman, A.J. , Shropshire, C. and Cannella Jr, A.A. (2007) 'Organizational predictors of women on corporate boards', *Academy of Management Journal*, 50(4), pp. 941-952.

Ho, F.N. , Wang, H.-M.D. and Vitell, S.J. (2012) 'A global analysis of corporate social performance: The effects of cultural and geographic environments', *Journal of business ethics*, 107(4), pp. 423-433.

Hodigere, R. and Bilimoria, D. (2015) 'Human capital and professional network effects on women's odds of corporate board directorships', *Gender in Management: An International Journal*, 30(7), pp. 523-550.

Hofstede, G. (1980) *Culture's consequences : international differences in work-related values*. Beverly Hills : Sage.

Hofstede, G. (2003) *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. Sage publications.

Hofstede, G. , Hofstede, G.J. and Minkov, M. (2010) *Cultures and Organizations: Software of the Mind* McGraw-Hill Professional, New York.

Höhne, N. , Kuramochi, T. , Warnecke, C. , Röser, F. , Fekete, H. , Hagemann, M. , Day, T. , Tewari, R. , Kurdziel, M. and Sterl, S. (2017) 'The Paris Agreement: resolving the inconsistency between global goals and national contributions', *Climate Policy*, 17(1), pp. 16-32.

Holgersson, C. (2013) 'Recruiting managing directors: Doing homosociality', *Gender, Work & Organization*, 20(4), pp. 454-466.

Hollindale, J. , Kent, P. , Routledge, J. and Chapple, L. (2019) 'Women on boards and greenhouse gas emission disclosures', *Accounting & Finance*, 59(1), pp. 277-308.

Holmes, J. and Meyerhoff, M. (2008) *The handbook of language and gender*. John Wiley & Sons.

Hoobler, J.M. , Masterson, C.R. , Nkomo, S.M. and Michel, E.J. (2018) 'The business case for women leaders: Meta-analysis, research critique, and path forward', *Journal of Management*, pp. 2473-2499.

Hooi, G. (2007) 'The effects of culture on international banking disclosures', *Asia-pacific journal of accounting & economics*, 14(1), pp. 7-25.

Horváthová, E. (2012) 'The impact of environmental performance on firm performance: Short-term costs and long-term benefits?', *Ecological Economics*, 84, pp. 91-97.

Hossain, M. , Chowdhury, M.H. , Evans, R. and Lema, A.C. (2015) 'The relationship between corporate social responsibility and corporate financial performance: Evidence from a developing country', *Corporate Ownership & Control*, 12(3), pp. 474–487.

House, R.J. , Hanges, P.J. , Javidan, M. , Dorfman, P.W. and Gupta, V. (2004) *Culture, leadership, and organizations: The GLOBE study of 62 societies*. Sage publications.

Hsu, C.-s. , Lai, W.-h. and Yen, S.-h. (2019) 'Boardroom diversity and operating performance: The moderating effect of strategic change', *Emerging Markets Finance and Trade* 55(11), pp. 2448-2472.

Htun, M. and Piscopo, J.M. (2010) *Conflict Prevention and Peace Forum, December*.

Huang, J. and Kisgen, D.J. (2013) 'Gender and corporate finance: Are male executives overconfident relative to female executives?', *Journal of Financial Economics*, 108(3), pp. 822-839.

Hudson, V.M. and Sampson III, M.W. (1999) 'Culture is more than a static residual: Introduction to the special section on culture and foreign policy', *Political Psychology*, 20(4), pp. 667-675.

Hughey, C.J. and Sulkowski, A.J. (2012) 'More disclosure= better CSR reputation? An examination of CSR reputation leaders and laggards in the global oil & gas industry', *Journal of Academy of Business and Economics*, 12(2), pp. 24-34.

Hussain, N. , Rigoni, U. and Orij, R.P. (2018) 'Corporate Governance and Sustainability Performance: Analysis of Triple Bottom Line Performance', *Journal of Business Ethics*, 149(2), pp. 411-432.

Husted, B.W. (2005) 'Culture and ecology: A cross-national study of the determinants of environmental sustainability', *MIR: Management International Review*, 45(3), pp. 349-371.

Hyland, M.M. and Marcellino, P.A. (2002) 'Examining gender on corporate boards: A regional study', *Corporate Governance: The international journal of business in society*, 2(4), pp. 24-31.

Iannotta, M. , Gatti, M. and Huse, M. (2016) 'Institutional complementarities and gender diversity on boards: A configurational approach', *Corporate Governance: An International Review*, 24(4), pp. 406-427.

Inglehart, R. (1977) *The silent revolution : changing values and political styles among Western publics*. Princeton, N.J. : Princeton University Press, c1977.

Ioannou, I. and Serafeim, G. (2012) 'What drives corporate social performance? The role of nation-level institutions', *Journal of International Business Studies*, 43(9), pp. 834-864.

Iqbal, Z. , O, S. and Baek, H.Y. (2006) 'Are female executives more risk-averse than male executives?', *Atlantic Economic Journal*, 34(1), pp. 63-74.

Iren, P. (2016) 'Gender diversity of boardrooms and firm financial performance', *Risk Governance and Control: Financial Markets and Institutions*, 6(3Continued1SpecialIssue), pp. 28-33.

Isidro, H. and Sobral, M. (2015) 'The effects of women on corporate boards on firm value, financial performance, and ethical and social compliance', *Journal of Business Ethics*, 132(1), pp. 1-19.

Ismail, A.M. and Latiff, I.H.M. (2019) 'Board Diversity and Corporate Sustainability Practices: Evidence on Environmental, Social and Governance (ESG) Reporting', *International Journal of Financial Research*, 10(3).

Jackson, C. (1993) 'Doing what comes naturally? Women and environment in development', *World Development*, 21(12), pp. 1947-1963.

Jensen, M.C. and Meckling, W.H. (1976) 'Theory of the firm: Managerial behavior, agency costs and ownership structure', *Journal of financial economics*, 3(4), pp. 305-360.

Jeong, S.-H. and Harrison, D.A. (2017) 'Glass breaking, strategy making, and value creating: Meta-analytic outcomes of women as CEOs and TMT members', *Academy of Management Journal*, 60(4), pp. 1219-1252.

Jia, M. and Zhang, Z. (2011) 'Agency costs and corporate philanthropic disaster response: The moderating role of women on two-tier boards-evidence from people's republic of China', *The International Journal of Human Resource Management*, 22(9), pp. 2011-2031.

Jia, M. and Zhang, Z. (2013) 'Critical Mass of Women on BODs, Multiple Identities, and Corporate Philanthropic Disaster Response: Evidence from Privately Owned Chinese Firms', *Journal of Business Ethics*, 118(2), pp. 303-317.

Jian, W.Z. , Jaaffar, A.H. , Ooi, S.K. and Amran, A. (2017) 'The Effects of National Culture, Corporate Governance and CSR Governance on CSR Disclosure Quality', *Global Business and Management Research*, 9(4s), pp. 298-314.

Jizi, M. (2017) 'The Influence of Board Composition on Sustainable Development Disclosure', *Business Strategy & the Environment (John Wiley & Sons, Inc)*, 26(5), pp. 640-655.

Jobome, G.O. (2006) 'Management pay, governance and performance: The case of large UK nonprofits', *Financial Accountability & Management*, 22(4), pp. 331-358.

Joecks, J. , Pull, K. and Vetter, K. (2013) 'Gender diversity in the boardroom and firm performance: What exactly constitutes a 'critical mass?'', *Journal of Business Ethics*, 118(1), pp. 61-72.

Judge, W. , Li, S. and Pinsker, R. (2010) 'National adoption of international accounting standards: An institutional perspective', *Corporate Governance: An International Review*, 18(3), pp. 161-174.

Jurkus, A.F. , Park, J.C. and Woodard, L.S. (2011) 'Women in top management and agency costs', *Journal of Business Research*, 64(2), pp. 180-186.

Kaczmarek, S. , Kimino, S. and Pye, A. (2012) 'Antecedents of board composition: The role of nomination committees', *Corporate Governance: An International Review*, 20(5), pp. 474-489.

Kagzi, M. and Guha, M. (2018) 'Board demographic diversity: a review of literature', *Journal of Strategy and Management*, 11(1), pp. 33-51.

Kakabadse, N.K. , Figueira, C. , Nicolopoulou, K. , Hong Yang, J. , Kakabadse, A.P. and Özbilgin, M.F. (2015) 'Gender diversity and board performance: Women's experiences and perspectives', *Human Resource Management*, 54(2), pp. 265-281.

Kalysh, K. , Kulik, C.T. and Perera, S. (2016) 'Help or hindrance? Work–life practices and women in management', *The Leadership Quarterly*, 27(3), pp. 504-518.

Kang, H. , Cheng, M. and Gray, S.J. (2007) 'Corporate governance and board composition: Diversity and independence of Australian boards', *Corporate Governance: An International Review*, 15(2), pp. 194-207.

Kanter, R.M. (1977) 'Some effects of proportions on group life: Skewed sex ratios and responses to token women', *American journal of Sociology*, 82(5), pp. 965-990.

Kaufmann, D. , Kraay, A. and Mastruzzi, M. (2011) 'The worldwide governance indicators: methodology and analytical issues', *Hague Journal on the Rule of Law*, 3(2), pp. 220-246.

Kaur, A. and Singh, B. (2015) 'Does gender diversity on Indian boards impede IPO underpricing?', *Management and Labour Studies*, (1-2), pp. 194-205.

Khan, M.H.-U.-Z. (2010) 'The effect of corporate governance elements on corporate social responsibility (CSR) reporting: Empirical evidence from private commercial banks of Bangladesh', *International Journal of Law & Management*, 52(2), pp. 82-109.

Khaw, K.L.-H. , Liao, J. , Tripe, D. and Wongchoti, U. (2016) 'Gender diversity, state control, and corporate risk-taking: Evidence from China', *Pacific-Basin Finance Journal*, 39, pp. 141-158.

Khlif, H. and Achek, I. (2017) 'Gender in accounting research: a review', *Managerial Auditing Journal*, 32(6), pp. 627-655.

Kilbourne, B. and England, P. (1997) *Occupational skill, gender, and earnings*. Rutgers University Press. Women and Work: A Reader.

Kim, D. and Starks, L.T. (2016) 'Gender diversity on corporate boards: Do women contribute unique skills?', *The American Economic Review*, 106(5), pp. 267-271.

Kim, H.A. , Jeong, S.W. , Kang, T. and Lee, D. (2017) 'Does the presence of female executives curb earnings management? Evidence from Korea', *Australian Accounting Review*, 27(4), pp. 494-506.

Kim, Y.-B. , An, H.T. and Kim, J.D. (2015) 'The effect of carbon risk on the cost of equity capital', *Journal of Cleaner Production*, 93, pp. 279-287.

Kimbrough, A.M. , Guadagno, R.E. , Muscanell, N.L. and Dill, J. (2013) 'Gender differences in mediated communication: Women connect more than do men', *Computers in Human Behavior*, 29(3), pp. 896-900.

Kirk, G. (1997) 'Ecofeminism and environmental justice: Bridges across gender, race, and class', *Frontiers: A Journal of Women Studies*, 18(2), pp. 2-20.

Kirsch, A. (2018) 'The gender composition of corporate boards: A review and research agenda', *The Leadership Quarterly*, 29(2), pp. 346-364.

Klepczarek, E. (2017) 'Corporate Governance Theories in the New Institutional Economics Perspective. The Classification of Theoretical Concepts', *Studia Prawno-Ekonomiczne*, (105), pp. 243-258.

Koenig, A.M. , Eagly, A.H. , Mitchell, A.A. and Ristikari, T. (2011) 'Are leader stereotypes masculine? A meta-analysis of three research paradigms', *Psychological bulletin*, 137(4), pp. 616-642.

Kreiser, P.M. and Davis, J. (2010) 'Entrepreneurial orientation and firm performance: The unique impact of innovativeness, proactiveness, and risk-taking', *Journal of small business & entrepreneurship*, 23(1), pp. 39-51.

Kristie, J. (2011) 'The power of three', *Dir. Boards*, 35(5), pp. 22-32.

Kubíček, A. , Strouhal, J. and Štamfestová, P. (2017) 'Impact of board structure on IPO underpricing in Central Europe', *International Advances in Economic Research*, 23(1), pp. 129-130.

Kulich, C. , Trojanowski, G. , Ryan, M.K. , Alexander Haslam, S. and Renneboog, L.D. (2011) 'Who gets the carrot and who gets the stick? Evidence of gender disparities in executive remuneration', *Strategic Management Journal*, 32(3), pp. 301-321.

Kyaw, K. , Olugbode, M. and Petracci, B. (2015) 'Does gender diverse board mean less earnings management?', *Finance Research Letters*, 14, pp. 135-141.

Kyaw, K. , Olugbode, M. and Petracci, B. (2017) 'Can board gender diversity promote corporate social performance?', *Corporate Governance: The international journal of business in society*, 17(5), pp. 789-802.

Labelle, R. , Francoeur, C. and Lakhal, F. (2015) 'To regulate or not to regulate? Early evidence on the means used around the world to promote gender diversity in the boardroom', *Gender, Work and Organization*, 22(4), pp. 339-363.

Lam, K.C.K. , McGuinness, P.B. and Vieito, J.P. (2013) 'CEO gender, executive compensation and firm performance in Chinese-listed enterprises', *Pacific-Basin Finance Journal*, 21, pp. 1136-1159.

Langbein, L. and Knack, S. (2010) 'The worldwide governance indicators: Six, one, or none?', *The Journal of Development Studies*, 46(2), pp. 350-370.

Lanis, R. and Richardson, G. (2012) 'Corporate social responsibility and tax aggressiveness: An empirical analysis', *Journal of Accounting and Public Policy*, 31(1), pp. 86-108.

Lee, I.H. , Paik, Y. and Uygur, U. (2016) 'Does gender matter in the export performance of international new ventures? Mediation effects of firm-specific and country-specific advantages', *Journal of International Management*, 22(4), pp. 365-379.

Lee, J. and Jungbae Roh, J. (2012) 'Revisiting corporate reputation and firm performance link', *Benchmarking: An International Journal*, 19(4/5), pp. 649-664.

Lee, L. , Marshall, R. , Rallis, D. and Moscardi, M. (2015) *Global trends in gender diversity on corporate boards*. Available at: https://www.msci.com/documents/10199/04b6f646-d638-4878-9c61-4eb91748a82b (Accessed: 01/12/2018).

Lemoine, G.J. , Aggarwal, I. and Steed, L.B. (2016a) 'When women emerge as leaders: Effects of extraversion and gender composition in groups', *The Leadership Quarterly*, 27(3), pp. 470-486.

Lemoine, G.J. , Aggarwal, I. and Steed, L.B. (2016b) 'When women emerge as leaders: Effects of extraversion and gender composition in groups', *The Leadership Quarterly*, 27, pp. 470-486.

Lenard, M.J. , Yu, B. , York, E.A. and Wu, S. (2017) 'Female business leaders and the incidence of fraud litigation', *Managerial Finance*, 43(1), pp. 59-75.

Leung, D. , Law, R. , Van Hoof, H. and Buhalis, D. (2013) 'Social media in tourism and hospitality: A literature review', *Journal of travel & tourism marketing*, 30(1-2), pp. 3-22.

Levi, M. , Li, K. and Zhang, F. (2014) 'Director gender and mergers and acquisitions', *Journal of Corporate Finance*, 28, pp. 185-200.

Li, J. , Jiang, W. , Zhao, F. , Chen, S. , Liu, T. and Shi, S. (2017) 'Gender Diversity on Boards and Firms' Environmental Policy', *Business Strategy and the Environment*, 26(3), pp. 306-315.

Liao, L. , Lin, T. and Zhang, Y. (2018) 'Corporate board and corporate social responsibility assurance: Evidence from China', *Journal of Business Ethics*, 150(1), pp. 211-225.

Liao, L. , Luo, L. and Tang, Q. (2015) 'Gender diversity, board independence, environmental committee and greenhouse gas disclosure', *The British Accounting Review*, 47(4), pp. 409-424.

Lima Crisóstomo, V. , de Souza Freire, F. and Cortes de Vasconcellos, F. (2011) 'Corporate social responsibility, firm value and financial performance in Brazil', *Social Responsibility Journal*, 7(2), pp. 295-309.

Liu, Y. , Wei, Z. and Xie, F. (2014) 'Do women directors improve firm performance in China?', *Journal of Corporate Finance*, 28, pp. 169-184.

López-Duarte, C. , Vidal-Suárez, M.M. and González-Díaz, B. (2016) 'International business and national culture: a literature review and research agenda', *International Journal of Management Reviews*, 18(4), pp. 397-416.

Lucas-Perez, M.E. , Minguez-Vera, A. , Baixauli-Soler, J.S. , Martin-Ugedo, J.F. and Sanchez-Marin, G. (2015) 'Women on the board and managers' pay: Evidence from Spain', *Journal of Business Ethics*, 129(2), pp. 265-280.

Luo, L.L. and Tang, Q. (2015) 'Does national culture influence corporate carbon disclosure propensity?', *Journal of International Accounting Research*, 15(1), pp. 17-47.

Lyngsie, J. and Foss, N.J. (2017) 'The more, the merrier? Women in top-management teams and entrepreneurship in established firms', *Strategic Management Journal*, 38(3), pp. 487-505.

Mahadeo, J.D. , Soobaroyen, T. and Hanuman, V.O. (2012) 'Board composition and financial performance: Uncovering the effects of diversity in an emerging economy', *Journal of Business Ethics*, 105(3), pp. 375-388.

Mahmood, Z. , Kouser, R. , Ali, W. , Ahmad, Z. and Salman, T. (2018) 'Does corporate governance affect sustainability disclosure? A mixed methods study', *Sustainability*, 10(1), pp. 207-227.

Majeed, S. , Aziz, T. and Saleem, S. (2015) 'The effect of corporate governance elements on corporate social responsibility (CSR) disclosure: An empirical evidence from listed companies at KSE Pakistan', *International Journal of Financial Studies*, (4), pp. 530-556.

Maletič, M. , Maletič, D. , Dahlgaard, J.J. , Dahlgaard-Park, S.M. and Gomišček, B. (2016) 'Effect of sustainability-oriented innovation practices on the overall organisational performance: An empirical examination', *Total Quality Management & Business Excellence*, 27(9-10), pp. 1171-1190.

Mallin, C.A. (2013) *Corporate governance*. 4th edn.: Oxford University Press.

Manita, R. , Bruna, M.G. , Dang, R. and Houanti, L.H. (2018) 'Board gender diversity and ESG disclosure: evidence from the USA', *Journal of Applied Accounting Research*, 19(2), pp. 206-224.

Mann, S.A. (2011) 'Pioneers of US ecofeminism and environmental justice', *Feminist Formations*, pp. 1-25.

Manrique, S. and Martí-Ballester, C.-P. (2017) 'Analyzing the effect of corporate environmental performance on corporate financial performance in developed and developing countries', *Sustainability*, 9(11), p. 1957.

Marco, R. (2012) 'Gender and economic performance: Evidence from the Spanish hotel industry', *International Journal of Hospitality Management* 31(3), pp. 981-989.

Marinova, J. , Plantenga, J. and Remery, C. (2016) 'Gender diversity and firm performance: Evidence from Dutch and Danish boardrooms', *The International Journal of Human Resource Management*, 27(15), pp. 1777-1790.

Markóczy, L. , Sun, S.L. and Zhu, J. (2019) 'The glass pyramid: Informal gender status hierarchy on boards', *Journal of Business Ethics*, pp. 1-19.

Marquardt, C. and Wiedman, C. (2016) 'Can shareholder ctivism improve gender diversity on corporate boards?', *Corporate governance: An international review*, 24(4), pp. 443-461.

Marques, H. (2015) 'Does the gender of top managers and owners matter for firm exports?', *Feminist Economics*, 21(4), pp. 89-117.

Marquis, C. and Lee, M. (2013) 'Who is governing whom? Executives, governance, and the structure of generosity in large US firms', *Strategic Management Journal*, 34(4), pp. 483-497.

Martin, L.M. , Warren-Smith, I. , Scott, J.M. and Roper, S. (2008) 'Boards of directors and gender diversity in UK companies', *Gender in Management: An International Journal*, 23(3), pp. 194-208.

Masselot, A. (2007) 'The state of gender equality law in the European Union', *European Law Journal*, 13(2), pp. 152-168.

Matei, M.-C. and Abrudan, M.-M. (2018) 'Are National Cultures Changing? Evidence from the World Values Survey', *Procedia-Social and Behavioral Sciences*, 238, pp. 657-664.

Mathisen, G.E. , Ogaard, T. and Marnburg, E. (2013) 'Women in the boardroom: How do female directors of corporate boards perceive boardroom dynamics?', *Journal of business ethics*, 116(1), pp. 87-97.

McGowan, P. , Cooper, S. , Durkin, M. and O'Kane, C. (2015) 'The influence of social and human capital in developing young women as entrepreneurial business leaders', *Journal of Small Business Management*, 53(3), pp. 645-661.

McGuinness, P.B. (2016) 'IPO firm performance and its link with board officer gender, family-ties and other demographics', *Journal of Business Ethics*, pp. 1-23.

McGuinness, P.B. , Lam, K.C. and Vieito, J.P. (2015) 'Gender and other major board characteristics in China: Explaining corporate dividend policy and governance', *Asia Pacific Journal of Management*, 32(4), pp. 989-1038.

McGuinness, P.B. , Vieito, J.P. and Wang, M. (2017) 'The role of board gender and foreign ownership in the CSR performance of Chinese listed firms', *Journal of Corporate Finance*, 42, pp. 75-99.

McHugh, P.J. and Perrault, E. (2018) 'Accelerating time: The effect of social pressures and regulation on board gender diversity post-IPO', *Journal of General Management*, 43(3), pp. 95-105.

Meyer, J.W. and Rowan, B. (1977) 'Institutionalized organizations: Formal structure as myth and ceremony', *American journal of sociology*, 83(2), pp. 340-363.

Miller, T. and Triana, M.d.C. (2009) 'Demographic diversity in the boardroom: Mediators of the board diversity–firm performance relationship', *Journal of Management studies* 46(5), pp. 755-786.

Mínguez-Vera, A. and Martin, A. (2011) 'Gender and management on spanish SMEs: An empirical analysis', *International Journal of Human Resource Management*, 22(14), pp. 2852-2873.

Morgan, N.A. , Vorhies, D.W. and Mason, C.H. (2009) 'Market orientation, marketing capabilities, and firm performance', *Strategic Management Journal*, 30(8), pp. 909-920.

Mukherjee, R. (2013) 'Ecofeminism: Role of women in environmental governance and management', *Galgotias Journal of Legal Studies*, 1(2), pp. 1-7.

Muravyev, A. (2017) 'Boards of directors in Russian publicly traded companies in 1998–2014: Structure, dynamics and performance effects', *Economic Systems*, 41(1), pp. 5-25.

Nadia, Z.B.H. and Teheni, Z.E.G. (2014) 'Finance, governance and inequality: A non parametric approach', *International Strategic Management Review*, 2(1), pp. 31-38.

Nakata, C. and Sivakumar, K. (1996) 'National culture and new product development: An integrative review', *The Journal of Marketing*, pp. 61-72.

Nazir, M.I. , Zulfiqar, M. , Saeed, M.B. and Habib, Y. (2016) 'The influence of board characteristics on shareholders assessment of risk for small and large firms: Evidence from Pakistan', *International Journal of Economics and Financial Issues*, 6(2), pp. 596-606.

Nekhili, M. and Gatfaoui, H. (2013) 'Are Demographic Attributes and Firm Characteristics Drivers of Gender Diversity? Investigating Women's Positions on French Boards of Directors', *Journal of Business Ethics*, 118(2), pp. 227-249.

Nekhili, M. , Nagati, H. , Chtioui, T. and Nekhili, A. (2017) 'Gender-diverse board and the relevance of voluntary CSR reporting', *International Review of Financial Analysis*, 50, pp. 81-100.

Neuman, W.L. (2014) *Social research methods : qualitative and quantitative approaches*. Harlow : Pearson, 2014. 7th ed., Pearson new international ed. Pearson custom library.

Nguyen, H. and Faff, R. (2006) 'Impact of board size and board diversity on firm value: Australian evidence', *Corporate Ownership and Control*, 4(2 A), pp. 24-32.

Nguyen, T. , Locke, S. and Reddy, K. (2015) 'Ownership concentration and corporate performance from a dynamic perspective: Does national governance quality matter?', *International Review of Financial Analysis*, 41, pp. 148-161.

Nicholson, G.J. and Kiel, G.C. (2007) 'Can directors impact performance? A case-based test of three theories of corporate governance', *Corporate Governance: An International Review*, 15(4), pp. 585-608.

Niemi, B.T. and Lloyd, C.B. (1981) 'Female labor supply in the context of inflation', *The American Economic Review*, 71(2), pp. 70-75.

North, D.C. (1990) *Institutions, institutional change and economic performance*. Cambridge university press.

Ntim, C.G. (2016) 'Corporate governance, corporate health accounting, and firm value: The case of HIV/AIDS disclosures in Sub-Saharan Africa', *International Journal of Accounting*, 51(2), pp. 155-216.

Ntim, C.G. , Lindop, S. , Thomas, D.A. , Abdou, H. and Opong, K.K. (2019) 'Executive pay and performance: the moderating effect of CEO power and governance structure', *The International Journal of Human Resource Management*, 30(6), pp. 921-963.

Ntim, C.G. , Opong, K.K. and Danbolt, J. (2015) 'Board size, corporate regulations and firm valuation in an emerging market: a simultaneous equation approach', *International Review of Applied Economics*, 29(2), pp. 194-220.

Ntim, C.G. and Soobaroyen, T. (2013a) 'Black economic empowerment disclosures by South African listed corporations: The influence of ownership and board characteristics', *Journal of Business Ethics*, 116(1), pp. 121-138.

Ntim, C.G. and Soobaroyen, T. (2013b) 'Corporate governance and performance in socially responsible corporations: New empirical insights from a Neo-Institutional framework', *Corporate Governance: An International Review*, 21(5), pp. 468-494.

Ntim, C.G. , Soobaroyen, T. and Broad, M.J. (2017) 'Governance structures, voluntary disclosures and public accountability: The case of UK higher education institutions', *Accounting, Auditing and Accountability Journal*, 30(1), pp. 65-118.

O'brien, D.Z. and Rickne, J. (2016) 'Gender quotas and women's political leadership', *American Political Science Review*, 110(1), pp. 112-126.

Oakley, J.G. (2000) 'Gender-based barriers to senior management positions: Understanding the scarcity of female CEOs', *Journal of business ethics*, 27(4), pp. 321-334.

Palvia, A. , Vähämaa, E. and Vähämaa, S. (2015) 'Are female CEOs and chairwomen more conservative and risk averse? Evidence from the banking industry during the financial crisis', *Journal of Business Ethics*, 131(3), pp. 577-594.

Panzer, L. and Müller, S. (2015) 'Earnings quality and gender diversity on German supervisory boards: An empirical analysis', *Problems and Perspectives in Management*, 13(4), pp. 9-18.

Pathan, S. and Faff, R. (2013) 'Does board structure in banks really affect their performance?', *Journal of Banking & Finance*, 37(5), pp. 1573-1589.

Peng, Y.-S. , Dashdeleg, A.-U. and Chih, H.L. (2014) 'National Culture and Firm's CSR Engagement: A Cross-Nation Study', *Journal of Marketing & Management*, 5(1), pp. 38-49.

Perryman, A.A. , Fernando, G.D. and Tripathy, A. (2016) 'Do gender differences persist? An examination of gender diversity on firm performance, risk, and executive compensation', *Journal of Business Research*, 69, pp. 579-586.

Peterson, C.A. and Philpot, J. (2007) 'Women's roles on US Fortune 500 boards: Director expertise and committee memberships', *Journal of Business Ethics*, 72(2), pp. 177-196.

Petruzzella, F. , Salvi, A. and Giakoumelou, A. (2017) 'The impact of national culture on corporate environmental performance: How much does your origin say about how green you are?', *Journal of Environmental Sustainability*, 5(1), pp. 1-25.

Post, C. and Byron, K. (2015) 'Women on boards and firm financial performance: A meta-analysis', *Academy of Management Journal*, 58(5), pp. 1546-1571.

Post, C. , Rahman, N. and McQuillen, C. (2015) 'From board composition to corporate environmental performance through sustainability-themed alliances', *Journal of Business Ethics*, 130(2), pp. 423-435.

Powell, W.W. and DiMaggio, P.J. (2012) *The new institutionalism in organizational analysis*. University of Chicago press.

Prado-Lorenzo, J.-M. and Garcia-Sanchez, I.-M. (2010) 'The role of the board of directors in disseminating relevant information on greenhouse gases', *Journal of business ethics*, 97(3), pp. 391-424.

Pucheta-Martinez, M.C. and Bel-Oms, I. (2016) 'The board of directors and dividend policy: The effect of gender diversity', *Industrial and Corporate Change*, 25(3), pp. 523-547.

Pucheta-Martínez, M.C. , Bel-Oms, I. and Olcina-Sempere, G. (2016a) 'Corporate governance, female directors and quality of financial information', *Business Ethics: A European Review*, 25(4), pp. 363-385.

Pucheta-Martínez, M.C. , Bel-Oms, I. and Olcina-Sempere, G. (2016b) 'Female institutional directors on boards and firm value', *Journal of Business Ethics*, pp. 1-21.

Pucheta-Martínez, M.C. , Bel-Oms, I. and Olcina-Sempere, G. (2018) 'The association between board gender diversity and financial reporting quality, corporate performance and corporate social responsibility disclosure: A literature review', *Academia Revista Latinoamericana de Administración*, 31(1), pp. 177-194.

Pucheta-Martínez, M.C. and Gallego-Álvarez, I. (2019) 'Corporate Environmental Disclosure Practices in Different National Contexts: The Influence of Cultural Dimensions', *Organization & Environment*, p. 1086026619860263.

Pyo, G. and Lee, H.-Y. (2013) 'The association between corporate social responsibility activities and earnings quality: Evidence from donations and voluntary issuance of CSR reports', *Journal of Applied Business Research (JABR)*, 29(3), pp. 945-962.

Quintana-García, C. and Benavides-Velasco, C.A. (2016) 'Gender diversity in top management teams and innovation capabilities: The initial public offerings of biotechnology firms', *Long Range Planning*, 49(4), pp. 507-518.

Radebaugh, L.H. , Gray, S.J. and Black, E.L. (2006) *International accounting and multinational enterprises*. Wiley Online Library.

Rahman, I.M.A. and Ismail, K.N.I.K. (2016) 'Do representation of women directors and their demographic characteristics affect CSR disclosure? Evidence from Malaysia', *Business, Management and Economics Research*, (4), pp. 81-89.

Rahman, I.M.A. , Jamil, N.N. and Ismail, K.N.I.K. (2019) 'Does political connection moderate women directors' effect on CSR disclosure? Evidence from Malaysia', *Asian Journal of Accounting and Governance*, 11.

Ramly, Z. , Chan, S.-G. , Mustapha, M. and Sapiei, N. (2017) 'Women on boards and bank efficiency in ASEAN-5: the moderating role of the independent directors', *Review of Managerial Science*, 11(1), pp. 225-250.

Ramón-Llorens, M.C. , García-Meca, E. and Duréndez, A. (2017) 'Influence of CEO characteristics in family firms internationalization', *International Business Review*, 26(4), pp. 786-799.

Randøy, T. , Thomsen, S. and Oxelheim, L. (2006) 'A Nordic perspective on corporate board diversity', *Age*, 390(0.5428).

Rao, K. and Tilt, C. (2016a) 'Board composition and corporate social responsibility: The role of diversity, gender, strategy and decision making', *Journal of Business Ethics*, 138(2), pp. 327-347.

Rao, K. and Tilt, C. (2016b) 'Board diversity and CSR reporting: An Australian study', *Meditari Accountancy Research*, 24(2), pp. 182-210.

Rao, K.K. , Tilt, C.A. and Lester, L.H. (2012) 'Corporate governance and environmental reporting: An Australian study', *Corporate Governance: The international journal of business in society*, 12(2), pp. 143-163.

Reddy, S. and Jadhav, A.M. (2019) 'Gender diversity in boardrooms–A literature review', *Cogent Economics & Finance*, 7(1), p. 1644703.

Reguera-Alvarado, N. , Fuentes, P.d. and Laffarga, J. (2017) 'Does board gender diversity influence financial performance? Evidence from Spain', *Journal of Business Ethics*, 141(2), pp. 337-350.

Resurrección, B.P. (2013) *Women's Studies International Forum*. Elsevier.

Ringov, D. and Zollo, M. (2007) 'Corporate responsibility from a socio-institutional perspective The impact of national culture on corporate social performance', *Corporate Governance*, 7(4), pp. 476-485.

Robb, A.M. and Watson, J. (2012) 'Gender differences in firm performance: Evidence from new ventures in the United States', *Journal of Business Venturing* 27(5), pp. 544-558.

Rodgers, W. , Söderbom, A. and Guiral, A. (2015) 'Corporate social responsibility enhanced control systems reducing the likelihood of fraud', *Journal of Business Ethics*, 131(4), pp. 871-882.

Rodriguez-Fernandez, M. (2016) 'Social responsibility and financial performance: The role of good corporate governance', *BRQ Business Research Quarterly*, 19(2), pp. 137-151.

Roomi, M.A. (2013) 'Entrepreneurial capital, social values and Islamic traditions: Exploring the growth of women-owned enterprises in Pakistan', *International Small Business Journal*, 31(2), pp. 175-191.

Rose, C. , Munch-Madsen, P. and Funch, M. (2013) 'Does board diversity really matter? Gender does not, but citizenship does', *International Journal of Business Science & Applied Management*, 8(1), pp. 15-27.

Rossi, F. , Cebula, R.J. and Barth, J.R. (2017) 'Female representation in the boardroom and firm debt: empirical evidence from Italy', *Journal of Economics and Finance*, pp. 1-24.

Ruf, B.M. , Muralidhar, K. , Brown, R.M. , Janney, J.J. and Paul, K. (2001) 'An empirical investigation of the relationship between change in corporate social performance and financial performance: A stakeholder theory perspective', *Journal of business ethics*, 32(2), pp. 143-156.

Rupley, K.H. , Brown, D. and Marshall, R.S. (2012) 'Governance, media and the quality of environmental disclosure', *Journal of Accounting and Public Policy*, 31(6), pp. 610-640.

Ryan, M.K. , Haslam, S.A. , Hersby, M.D. and Bongiorno, R. (2011) 'Think crisis–think female: The glass cliff and contextual variation in the think manager–think male stereotype', *Journal of Applied Psychology*, 96(3), p. 470.

Saeed, A. and Sameer, M. (2017) 'Impact of board gender diversity on dividend payments: Evidence from some emerging economies', *International Business Review*, 26(6), pp. 1100-1113.

Saeed, A. , Yousaf, A. and Belghitar, Y. (2016) 'Firm-level determinants of gender diversity in the boardrooms: Evidence from some emerging markets', *International Business Review*, 25(5), pp. 1076-1088.

Saggar, R. and Singh, B. (2017) 'Corporate governance and risk reporting: Indian evidence', *Managerial Auditing Journal*, 32(4-5), pp. 378-405.

Salloum, C. , Jabbour, G. and Mercier-Suissa, C. (2017) 'Democracy across Gender Diversity and Ethnicity of Middle Eastern SMEs: How Does Performance Differ?', *Journal of Small Business Management*.

Sanan, N.K. (2016) 'Board Gender Diversity, Financial and Social Performance of Indian Firms', *Vision*, 20(4), pp. 361-367.

Santacreu-Vasut, E. , Shenkar, O. and Shoham, A. (2014) 'Linguistic gender marking and its international business ramifications', *Journal of International Business Studies*, 45(9), pp. 1170-1178.

Sargisson, L. (2001) 'What's wrong with ecofeminism', *Environmental Politics*, 10(1), pp. 52-64.

Sarhan, A.A. , Ntim, C.G. and Al-Najjar, B. (2019) 'Board diversity, corporate governance, corporate performance, and executive pay', *International Journal of Finance & Economics*, pp. 1-26.

Saridakis, G. , Marlow, S. and Storey, D.J. (2014) 'Do different factors explain male and female self-employment rates?', *Journal of Business Venturing*, 29(3), pp. 345-362.

Sartawi, I.I.S.M. , Hindawi, R.M. , Bsoul, R. and Ali, A.e.J. (2014) 'Board composition, firm characteristics, and voluntary disclosure: The case of Jordanian firms listed on the Amman stock exchange', *International Business Research*, 7(6), pp. 67-82.

Saunders, M. , Lewis, P. and Thornhill, A. (2016) *Research methods for business students*. Seventh edn.: Pearson Education

Schmitz, L. and Weber, W. (2014) 'Are hofstede's dimensions valid? a test for measurement invariance of uncertainty avoidance', *interculture journal: Online-Zeitschrift für interkulturelle Studien*, 13(22), pp. 11-26.

Schneider, M.R. , Iseke, A. and Pull, K. (2019) 'The gender pay gap in European executive boards: the role of executives' pathway into the board', *The International Journal of Human Resource Management*, pp. 1-23.

Schwartz, S.H. (1992) *Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries*. Advances in Experimental Social Psychology.

Scott, W.R. (1987) 'The adolescence of institutional theory', *Administrative science quarterly*, pp. 493-511.

Scott, W.R. (2008) *Institutions and organizations: Ideas and interests*. Third edn.: Sage.

Seierstad, C. , Warner-Søderholm, G. , Torchia, M. and Huse, M. (2017) 'Increasing the number of women on boards: The role of actors and processes', *Journal of Business Ethics*, 141(2), pp. 289-315.

Şener, İ. and Karaye, A.B. (2014) 'Board Composition and Gender Diversity: Comparison of Turkish and Nigerian Listed Companies', *Procedia - Social and Behavioral Sciences*, 150, pp. 1002-1011.

Shao, L. , Kwok, C.C. and Zhang, R. (2013) 'National culture and corporate investment', *Journal of International Business Studies*, 44(7), pp. 745-763.

Shilton, J. , McGregor, J. and Tremaine, M. (1996) 'Feminizing the boardroom: A study of the effects of corporatization on the number and status of women directors in New Zealand companies', *Women in Management Review*, 11(3), pp. 20-26.

Sial, M. , Zheng, C. , Cherian, J. , Gulzar, M. , Thu, P. , Khan, T. and Khuong, N. (2018) 'Does corporate social responsibility mediate the relation between boardroom gender diversity and firm performance of Chinese listed companies?', *Sustainability*, 10(10), pp. 3591-3609.

Siciliano, J.I. (1996) 'The relationship of board member diversity to organizational performance', *Journal of Business Ethics*, 15(12), pp. 1313-1320.

Siegel, D.S. and Simons, K.L. (2010) 'Assessing the effects of mergers and acquisitions on firm performance, plant productivity, and workers: newl evidence from matched employer-employee data', *Strategic Management Journal*, 31(8), pp. 903-916.

Sila, V. , Gonzalez, A. and Hagendorff, J. (2016) 'Women on board: Does boardroom gender diversity affect firm risk?', *Journal of Corporate Finance*, 36, pp. 26-53.

Singh, V. , Terjesen, S. and Vinnicombe, S. (2008) 'Newly appointed directors in the boardroom:: How do women and men differ?', *European management journal*, 26(1), pp. 48-58.

Singh, V. and Vinnicombe, S. (2004) 'Why so few women directors in top UK boardrooms? Evidence and theoretical explanations', *Corporate Governance: An International Review*, 12(4), pp. 479-488.

Singh, V. , Vinnicombe, S. and Johnson, P. (2001) 'Women directors on top UK boards', *Corporate Governance: An International Review*, 9(3), pp. 206-216.

Sojo, V.E. , Wood, R.E. , Wood, S.A. and Wheeler, M.A. (2016) 'Reporting requirements, targets, and quotas for women in leadership', *The Leadership Quarterly*, 27(3), pp. 519-536.

Solakoglu, M.N. (2013) 'The role of gender diversity on firm performance: a regression quantile approach', *Applied Economics Letters* 20(17), pp. 1562-1566.

Soman, S. (2017) *Re-visiting Corporate Social Responsibility (CSR) in the Nordic countries: A critical discourse analysis from an ecofeminist perspective*. Uppsala University. Available at: https://www.diva-portal.org/smash/get/diva2:1182129/FULLTEXT01.pdf (Accessed: 05/12/2020).

Song, P.H. , Lee, S.-Y.D. , Toth, M. , Singh, S.R. and Young, G.J. (2018) 'Gender differences in hospital CEO compensation: A national investigation of not-for-profit hospitals', *Medical Care Research and Review*, [Published online ahead of print January 1, 2018], p. 1077558718754573.

Srinidhi, B.I.N. , Gul, F.A. and Tsui, J. (2011) 'Female directors and earnings quality', *Contemporary Accounting Research*, 28(5), pp. 1610-1644.

Stephen, R.R. and Raul, G. (1993) 'Must Invisible Colleges Be Invisible? An Approach to Examining Large Communities of Network Users', *Internet Research*, 3(1).

Strobl, S. , Rama, D.V. and Mishra, S. (2016) 'Gender Diversity in Compensation Committees', *Journal of Accounting, Auditing & Finance*, 31(4), pp. 415-427.

Strøm, R.Ø. , D'Espallier, B. and Mersland, R. (2014) 'Female leadership, performance, and governance in microfinance institutions', *Journal of Banking and Finance*, 42, pp. 60-75.

Strydom, M. , Au Yong, H.H. and Rankin, M. (2017) 'A few good (wo)men? Gender diversity on Australian boards', *Australian Journal of Management*, 42(3), pp. 404-427.

Suchman, M.C. (1995) 'Managing legitimacy: Strategic and institutional approaches', *Academy of management review*, 20(3), pp. 571-610.

Sun, J. , Liu, G. and Lan, G. (2011) 'Does female directorship on independent audit committees constrain earnings management?', *Journal of Business Ethics*, 99(3), pp. 369-382.

Sun, S. , Zhu, J. and Ye, K. (2015) 'Board openness during an economic crisis', *Journal of Business Ethics*, 129(2), pp. 363-377.

Tarus, D.K. (2015) 'Corporate social responsibility engagement in Kenya: bottom line or rhetoric?', *Journal of African Business*, 16(3), pp. 289-304.

Tauringana, V. , Radicic, D. , Kirkpatrick, A. and Konadu, R. (2017) 'Corporate boards and environmental offence conviction: evidence from the United Kingdom', *Corporate Governance: The international journal of business in society*, 17(2), pp. 341-362.

Terjesen, S. , Sealy, R. and Singh, V. (2009) 'Women directors on corporate boards: A review and research agenda', *Corporate Governance: An International Review*, 17(3), pp. 320-337.

Thébaud, S. (2016) 'Passing up the job: The role of gendered organizations and families in the entrepreneurial career process', *Entrepreneurship Theory and Practice*, 40(2), pp. 269-287.

Thorton, E. (2008) *Where Was Lehman's Board?* Available at: https://www.bloomberg.com/news/articles/2008-09-11/where-was-lehmans-board (Accessed: 10/05/2020).

Tinsley, C.H. , Wade, J.B. , Main, B.G.M. and O'Reilly, C.A. (2017) 'Gender diversity on U.S corporate boards: Are we running in place? ', *Industrial and Labor Relations Review*, 70(1), pp. 160-189.

Toh, S.M. and Leonardelli, G.J. (2012) 'Cultural constraints on the emergence of women as leaders', *Journal of World Business*, 47, pp. 604-611.

Torchia, M. , Calabrò, A. , Gabaldon, P. and Kanadli, S.B. (2018) 'Women directors contribution to organizational innovation: A behavioral approach', *Scandinavian Journal of Management*, 34, pp. 215-224.

Torchia, M. , Calabrò, A. and Huse, M. (2011) 'Women directors on corporate boards: From tokenism to critical mass', *Journal of Business Ethics*, 102(2), pp. 299-317.

Tranfield, D. , Denyer, D. and Smart, P. (2003) 'Towards a methodology for developing evidence-informed management knowledge by means of systematic review', *British journal of management*, 14(3), pp. 207-222.

Trireksani, T. and Djajadikerta, H.G. (2016) 'Corporate governance and environmental disclosure in the Indonesian mining industry', *Australasian Accounting, Business and Finance Journal*, 10(1), pp. 18-28.

Trompenaars, F. and Hampden-Turner, C. (1997) *Riding the waves of culture : understanding cultural diversity in business*. London : Nicholas Brealey, 1997.

Ujunwa, A. (2012) 'Board characteristics and the financial performance of Nigerian quoted firms', *Corporate Governance: The International Journal of Effective Board Performance*, 12(5), pp. 656-674.

UN (2010) *World Economic Situation and Prospects 2010*. Available at: http://www.un.org/en/development/desa/policy/wesp/wesp_archive/2010wespupdate.pdf (Accessed: 29/12/2018).

Usman, M. , Zhang, J. , Wang, F. , Sun, J. and Makki, M.A.M. (2018) 'Gender diversity in compensation committees and CEO pay: evidence from China', *Management Decision*, 56(5), pp. 1065-1087.

Vachon, S. (2010) 'International operations and sustainable development: Should national culture matter?', *Sustainable Development*, 18(6), pp. 350-361.

Vähämaa, E. (2014) 'Executive turnover, gender, and earnings management: An exploratory analysis', *Accounting Perspectives*, 13(2), pp. 103-122.

Valls Martínez, M.d.C. and Cruz Rambaud, S. (2019) 'Women on corporate boards and firm's financial performance', *Women's Studies International Forum*, 76, p. 102251.

Velte, P. (2016) 'Women on management board and ESG performance', *Journal of Global Responsibility*, 7(1), pp. 2041-2056.

Vieito, J.P.T. (2012) 'Gender, top management compensation gap, and company performance: Tournament versus behavioral theory', *Corporate Governance: An International Review*, 20(1), pp. 46-63.

Wahid, A.S. (2018) 'The effects and the mechanisms of board gender diversity: Evidence from financial manipulation', *Journal of Business Ethics*, pp. 1-21.

Walls, J.L. , Berrone, P. and Phan, P.H. (2012) 'Corporate governance and environmental performance: Is there really a link?', *Strategic Management Journal*, 33(8), pp. 885-913.

Wang, J. and Coffey, B.S. (1992) 'Board composition and corporate philanthropy', *Journal of business Ethics*, 11(10), pp. 771-778.

Wang, J.C. , Markóczy, L. , Sun, S.L. and Peng, M.W. (2018) 'She'-EO Compensation Gap: A Role Congruity View', *Journal of Business Ethics*, pp. 1-16.

Wang, M. and Kelan, E. (2013) 'The gender quota and female leadership: Effects of the Norwegian gender quota on board chairs and CEOs', *Journal of Business Ethics*, (3), pp. 449-466.

Ward, A.M. and Forker, J. (2017) 'Financial management effectiveness and board gender diversity in member-governed, community financial institutions', *Journal of Business Ethics*, 141(2), pp. 351-366.

Warren, K.J. (2001) 'Feminist Theory: Ecofeminist and Cultural Feminist', *International Encyclopedia of the Social & Behavioral Sciences*, pp. 5495-5499.

Wehrmeister, F.C. , da Silva, I.C.M. , Barros, A.J. and Victora, C.G. (2017) 'Is governance, gross domestic product, inequality, population size or country surface area associated with coverage and equity of health interventions? Ecological analyses of cross-sectional surveys from 80 countries', *BMJ global health*, 2(4), p. e000437.

Welsh, D.H.B. , Kaciak, E. and Thongpapanl, N. (2016) 'Influence of stages of economic development on women entrepreneurs' startups', *Journal of Business Research*, 69(11), pp. 4933-4940.

Wilding, R. , Wagner, B. , Seuring, S. and Gold, S. (2012) 'Conducting content-analysis based literature reviews in supply chain management', *Supply Chain Management: An International Journal*, 17(5), pp. 544-555.

Wiley, C. and Monllor-Tormos, M. (2018) 'Board gender diversity in the STEM&F sectors: the critical mass required to drive firm performance', *Journal of Leadership & Organizational Studies*, 25(3), pp. 290-308.

Willyard, K. (2016) *Competing Open Systems Perspectives*. Available at: http://www.katewillyard.com/academic-blog/competing-open-systems-perspectives# (Accessed: 27/04/2020).

Wingqvist, G.Ö. , Drakenberg, O. , Slunge, D. , Sjöstedt, M. and Ekbom, A. (2012) *The role of governance for improved environmental outcomes: Perspectives for developing countries and countries in transition*. Available at: https://www.naturvardsverket.se/Documents/publikationer6400/978-91-620-6514-0.pdf.

Woodhams, C. , Xian, H. and Lupton, B. (2015) 'Women managers' careers in China: Theorizing the influence of gender and collectivism', *Human Resource Management*, 54(6), pp. 913-931.

Wooldridge, J.M. (2015) *Introductory econometrics: A modern approach*. Nelson Education.

Wu, P. , Yao, X. and Muhammad, S. (2017) 'The effect of female participation in top management teams on the growth performance of small and medium-sized enterprises (SMEs): Evidence from a panel-data analysis in Chinese-listed SMEs', *Asia Pacific Journal of Innovation and Entrepreneurship*, 11(1), pp. 108-119.

Xu, X. , Chen, X. , Jia, F. , Brown, S. , Gong, Y. and Xu, Y. (2018) 'Supply chain finance: A systematic literature review and bibliometric analysis', *International Journal of Production Economics*, 204, pp. 160-173.

Yanadori, Y. , Gould, J.A. and Kulik, C.T. (2016) 'A fair go? The gender pay gap among corporate executives in Australian firms', *International Journal of Human Resource Management*, pp. 1-25.

Yang, E.C.L. , Khoo-Lattimore, C. and Arcodia, C. (2017) 'A systematic literature review of risk and gender research in tourism', *Tourism Management*, 58, pp. 89-100.

Yasser, Q.R. , Al Mamun, A. and Ahmed, I. (2017) 'Corporate social responsibility and gender diversity: Insights from Asia Pacific', *Corporate Social Responsibility & Environmental Management*, 24(3), pp. 210-221.

Ye, D. , Deng, J. , Liu, Y. , Szewczyk, S.H. and Chen, X. (2019) 'Does board gender diversity increase dividend payouts? Analysis of global evidence', *Journal of Corporate Finance*, 58, pp. 1-26.

Yordanova, D.I. and Alexandrova-Boshnakova, M.I. (2011) 'Gender effects on risk-taking of entrepreneurs: evidence from Bulgaria', *International Journal of Entrepreneurial Behaviour & Research*, 17(3), pp. 272-295.

Yousafzai, S.Y. , Saeed, S. and Muffatto, M. (2015) 'Institutional Theory and Contextual Embeddedness of Women's Entrepreneurial Leadership: Evidence from 92 Countries', *Journal of Small Business Management*, 53(3), pp. 587-604.

Zaichkowsky, J.L. (2014) 'Women in the board room: One can make a difference', *International Journal of Business Governance and Ethics*, 9(1), pp. 91-113.

Zalata, A.M. , Ntim, C. , Aboud, A. and Gyapong, E. (2019) 'Female CEOs and core earnings quality: new evidence on the ethics versus risk-aversion puzzle', *Journal of Business Ethics*, (In press).

Zalata, A.M. , Ntim, C.G. , Choudhry, T. , Hassanein, A. and Elzahar, H. (2019) 'Female directors and managerial opportunism: Monitoring versus advisory female directors', *The Leadership Quarterly*, 30(5), pp. 1-16.

Zalata, A.M. , Tauringana, V. and Tingbani, I. (2018) 'Audit committee financial expertise, gender, and earnings management: Does gender of the financial expert matter?', *International Review of Financial Analysis*, 55, pp. 170-183.

Zattoni, A. and Cuomo, F. (2008) 'Why adopt codes of good governance? A comparison of institutional and efficiency perspectives', *Corporate governance: an international review*, 16(1), pp. 1-15.

Zhang, J.Q. , Zhu, H. and Ding, H.B. (2013) 'Board composition and corporate social responsibility: An empirical investigation in the post Sarbanes-Oxley era', *Journal of Busniess Ethics*, 114(3), pp. 381-392.

Zhang, Y. and Lopez-Pascual, J. (2012) 'Dynamic versus static culture in international business: a study of Spanish banking in China', *Cross Cultural Management: An International Journal*, 19(4), pp. 588-611.

Zhang, Y. and Qu, H. (2016) 'The impact of ceo succession with gender change on firm performance and successor early departure: Evidence from China's publicly listed companies in 1997-2010', *Academy of Management Journal*, 59(5), pp. 1845-1868.

APPENDIX

Detailed list of journal and number of studies sampled from each journal

Journal	No of studies
Accounting, auditing and finance	**127**
Academy of Accounting and Financial Studies Journal	1
Accounting & Finance	6
Accounting & Taxation	1
Accounting and Business Research	1
Accounting Horizons	3
Accounting Perspectives	1
Accounting, Auditing and Accountability Journal	2
Accounting Research Journal	1
Advances in Accounting	2
Afro-Asian Journal of Finance and Accounting	1
Asian Journal of Accounting and Governance	2
Asian Review of Accounting	1
Asia-Pacific Journal of Accounting & Economics	1
Asia-Pacific Journal of Financial Studies	1
Australasian Accounting Business & Finance Journal	1
Australian Accounting Review	2
China Journal of Accounting Research	1
Contemporary Accounting Research	3
Critical Perspectives on Accounting	1
Emerging Markets Finance and Trade	7
European Financial Management	1
European Journal of Finance	2
Finance Research Letters	1
Financial Accountability & Management	1
Financial Markets, Institutions & Instruments	1
Financial Review	2
Global Finance Journal	1
Indonesian Journal of Sustainability Accounting and Management	1
International Academic Journal of Accounting and Financial Management	1
International Journal of Academic Research in Accounting, Finance and Management Sciences	1
International Journal of Accounting	1
International Journal of Accounting & Information Management	2
International Journal of Finance & Economics	1
International Journal of Financial Research	1
International Journal of Financial Studies	1
International Review of Financial Analysis	6
Iranian Journal of Accounting, Auditing &Finance	1
Journal of Accounting and Economics	1
Journal of Accounting and Public Policy	1
Journal of Accounting in Emerging Economies	2
Journal of Accounting and Public Policy	1

Journal	No of studies
Journal of Accounting, Auditing and Finance	2
Journal of Applied Accounting Research	1
Journal of Banking and Finance	7
Journal of Business Finance & Accounting	3
Journal of Contemporary Accounting and Economics	3
Journal of Corporate Finance	14
Journal of Financial Regulation and Compliance	1
Journal of Financial Research	2
Journal of Finance and Investment Analysis	1
Journal of Property Investment & Finance	1
Managerial Finance	4
Meditari Accountancy Research	1
Pacific Accounting Review	1
Pacific-Basin Finance Journal	4
Quarterly Journal of Finance & Accounting	1
Research in International Business and Finance	3
Review of Financial Economics	1
Review of Quantitative Finance and Accounting	2
Social and Environmental Accountability Journal	1
The British Accounting Review	5
Business, business ethics and CSR	**130**
American Journal of Industrial and Business Management	1
Asian Business and Management	1
Asian Journal of Business Ethics	1
Corporate Social Responsibility and Environmental Management	8
Electronic Journal of Business Ethics and Organization Studies	1
International Business and Accounting Research Journal	1
International Journal of Academic Research in Business and Social Sciences	1
International Journal of Business Governance and Ethics	2
International Journal of Business Science & Applied Management	1
International Journal of Wine Business Research	1
International Small Business Journal	2
Journal of African Business	2
Journal of Applied Business Research	5
Journal of Business and Management	1
Journal of Business Economics & Management	1
Journal of Business Ethics	65
Journal of Business Research	11
Journal of Business Venturing	4
Journal of Business Venturing Insights	1
Journal of International Business Studies	1
Journal of Small Business & Entrepreneurship	1
Journal of Small Business Management	7
Journal of World Business	1
Small Business Economics	1
Social Responsibility Journal	1
Society for Business Ethics	1

Journal	No of studies
Sustainability	6
Sustainable Development	1
Corporate governance	**69**
Corporate Board: Role, Duties & Composition	4
Corporate Governance	4
Corporate Governance: An International Review	16
Corporate Governance: The International Journal of Business in Society	16
Corporate Governance: The International Journal of Effective Board Performance	6
Corporate Ownership and Control	10
Governance: An International Journal of Policy, Administration, and Institutions	1
Industrial and Corporate Change	2
International Business Research	2
International Business Review	4
IUP Journal of Corporate Governance	1
Risk Governance and Control: Financial Markets and Institutions	3
Economics	**63**
Advances in Economics and Business	1
American Economic Review	1
American Journal of Agricultural Economics	1
Amfiteatru Economic	1
Applied Economics	3
Applied Economics Letters	5
Applied Financial Economics	1
Asian Economic and Financial Review	1
Atlantic Economic Journal	1
Cogent Economics and Finance	1
Economia Global e Gestão	1
Economic Annals-XXI	1
Economic Letters	1
Economic Systems	2
Economics and Sociology	1
Economics Bulletin	3
Ekonomika / Economics	1
European Economic Review	1
European Journal of Economics, Finance and Administrative Sciences	1
Feminist Economics	1
Industrial Relations: A Journal of Economy and Society	2
International Advances in Economic Research	2
International Journal of Economic Policy Studies	1
International Journal of Economics and Finance	1
International Journal of Economics and Financial Issues	3
International Journal of Social Economics	1
International Review of Economics and Finance	3
Japan & the World Economy	1
Journal of Applied Economics	1
Journal of Economic Behavior & Organization	1
Journal of Economic Inequality	1

Journal	No of studies
Journal of Economics & Business	2
Journal of Economics and Finance	2
Journal of Financial Economics	3
Journal of Labor Economics	1
Knowledge Horizons – Economics	1
Prague Economic Papers	2
Small Business Economics	3
South African Journal of Economic and Management Sciences	1
South Asia Economic Journal	1
South East European Journal of Economics and Business	2
The American Economic Review	1
The Quarterly Journal of Economics	1
The Quarterly Review of Economics and Finance	1
The Economic Journal	2
Gender	**25**
Gender in Management: An International Journal	16
Gender, Work and Organization	3
Indian Journal of Gender Studies	1
Women's Studies International Forum	5
Leadership and management	**124**
Academy of Management Journal	6
Asia Pacific Journal of Management	2
Australian Journal of Management	2
British Journal of Management	7
BRQ Business Research Quarterly	1
Business & Society	3
Business Ethics: A European Review	4
Business Strategy and the Environment	5
Business, Management and Economics Research	1
Cogent Business & Management	2
E a M: Ekonomie a Management	1
European Journal of International Management	1
European Management Review	1
European Research on Management and Business Economics	2
Global Journal of Management & Business Research	1
Group & Organization Management	1
Human Resource Management	5
Human Resource Management Journal	2
Industrial Marketing Management	1
International Business Management	1
International Entrepreneurship and Management Journal	1
International Journal of Advances in Management and Economics	1
International Journal of Business Science & Applied Management	1
International Journal of Hospitality Management	2
International Journal of Human Resource Management	3
International Journal of Innovation Management	1
International Journal of Law & Management	1

Journal	No of studies
International Journal of Productivity and Performance Management	1
Investment Management and Financial Innovations	3
Journal of General Management	1
Journal of International Management	1
Journal of Leadership & Organizational Studies	1
Journal of Management	2
Journal of Management and Governance	10
Journal of Management Studies	1
Journal of Managerial Issues	2
Leadership	1
Leadership & Organization Development Journal	1
Management and Labour Studies	1
Management Decision	7
Management Research Review	1
Management Science	2
Managerial Auditing Journal	1
Nonprofit Management and Leadership	1
Problems and Perspectives in Management	1
Public Management Review	1
Review of Managerial Science	3
Scandinavian Journal of Management	1
Strategic Management Journal	9
The International Journal of Human Resource Management	3
The Leadership Quarterly	9
Tourism Management	1
Administrative, sociology, and other social sciences	**20**
Administrative Sciences	1
Administrative Science Quarterly	1
American Journal of Sociology	1
American Political Science Review	1
American Sociological Review	1
Annals of the American Academy of Political and Social Science	1
Canadian Journal of Administrative Sciences	1
European Scientific Journal	1
Procedia - Social and Behavioral Sciences	3
Revista de Cercetare si Interventie Sociala	1
Social Science Research	2
SSRN (Social Science Research Network)	6
Others	**70**
Total	**634**

[i] As of 11th May 2020