

**The Association between Gender Diversity, Directors' Qualification
and the Performance of Australian Listed Companies**

By

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A thesis submitted in partial fulfilment of the requirements for the degree of
Master of Research

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Date: 22 November 2016

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List of Abbreviations

Attendance	Proportion of Meeting Attended by the Directors
Big4Audit	Indicator Variable for the Big Four Auditors
Blau	Blau Index
BoardSize	Board Size
DirAge	Director's Age
FemAuditCom	Female Audit Committee Indicator Variable
FemCEO	Female Chief Executive Officer
FemChair	Female Chair
FemDir	Total Number of Female Directors
FemDum	Female Indicator Variable
Fsize	Organisation Size
Growth	Sales Growth
IndepenDir	Proportion of Independent Directors
IndType	Indicator Variable for the Type of Industry
OrgAge	Organisation's Age
PropFem	Proportion of Female Directors
ROA	Return on Assets
ROE	Return on Equity

Declaration

I hereby declare that this thesis, submitted in partial fulfillment of the requirements for the degree of Master of Research, in the Department of Accounting and Corporate Governance of the Faculty of Business and Economics at the Macquarie University, is my own work and the product of my own research. It has not, nor any part of it, been submitted for the fulfillment of the requirements or part requirements of a degree/diploma, to any university or institution other than Macquarie University.

I further certify that it does not contain, to the best of my knowledge, any material that has been previously published or submitted to any university, without acknowledgement. Any help and assistance received by me during this research and during the preparation of this thesis, has been duly acknowledged.

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22 November 2016

ACKNOWLEDGEMENTS

First of all, I thank God for giving me the physical and mental strength to fulfil my dreams. I would like to express my deepest appreciation to my principal supervisor Associate Professor Rahat Munir for his invaluable time and effort during my study and thesis writing process. Thank you, for your endless support to keep my progress on track, for your detailed critiques to make a remarkable improvement in my work and for your constructive feedback to enhance the quality of the final thesis. My honest appreciation is also to my Associate Supervisor Dr. Catriona Lavermicocca for her patient supervision, passionate support and comprehensive reviews. It has been a great opportunity for me working with both of you and without your encouragement, scholarly support and commitment of time, this thesis would not have become a reality.

I would also like to express my gratitude to the Australian Government Endeavour Postgraduate Scholarship Authority for the scholarship to pursue my Master of Research degree. I am also grateful to the Department of Accounting and Corporate Governance, Faculty of Business and Economics, Macquarie University, Australia for providing me the opportunity to study abroad and for arranging such excellent academic and research facilities.

My grateful thanks to husband, Mr. Muhammad Saifuddin Khan, and my daughter, Ms. Sanjana Khan, who gave up so much in order for me to undertake this research, such a huge undertaking, and for their continuous encouragement, patience and support to complete this thesis. I dedicate this thesis to my parents who have always been a source of endless prayers for me.

ABSTRACT

The aim of this study is to examine the impact of two important diversity characteristics of board members, namely gender and qualification and expertise on the performance of Australian organisations measured by Tobin's Q, Return on Assets (ROA) and Return on Equity (ROE). While it is recognized by many researchers that female empowerment can lead to a positive contribution to the organisation, it is still a controversial research topic with inconclusive and mixed findings (Liu, Wei, & Xie, 2014). The key motivation for this study is to address the issue of mixed findings regarding the impact of gender diversity on organisation performance and to provide insights into the impact of directors' qualification. The study uses agency theory and stewardship theory, with data for this study collected from SIRCA and DataStream resulting in the 509 Australian organisations for the period 2010-2014 used in this study. A panel data regression was applied to observe the influence of gender diversity and directors' qualification and expertise on the financial performance of organisations in Australian context.

This study finds that gender diversity, directors' qualification and expertise are positively associated with organisation performance proxy by Tobin's Q, ROA and ROE. Various gender diversity proxies such as proportion of female directors, number of female directors, female chair, female CEO and female director in audit committee are positively associated with Tobin's Q, ROA and ROE. Directors' education at master level improves Tobin's Q and ROE. Further, directors' qualifications in the legal and mining disciplines are positively associated with Tobin's Q and ROA respectively. Similarly, directors' mining expertise positively impacts the ROA. Hence, the study concludes that female directors, their qualification and expertise are valuable to the organisation. The findings of this study have policy implications, and policy makers may use the findings of this study in setting regulations relating to board membership. Organisations may also use these findings in deciding the composition and selecting board of directors.

CHAPTER ONE: INTRODUCTION

1.1 Background

The aim of this study is to examine the impact of two important diversity characteristics of board members, namely, gender and qualification on the performance of organisations in Australia. The board of directors play a key role in the governance of organisations, having the ultimate responsibility on behalf of shareholders for the performance of the organisation. The effectiveness of the Board and the decisions it makes, shape the viability and success of the organisation, affecting investors, employees, customers and other stakeholders. Accordingly Boards are subject to scrutiny, by their shareholders and regulators. Board members are subject to legal duties and obligations in undertaking their functions and in some circumstances face liability for the actions of their organisation. The Board has a responsibility to guide for the survival and development of the organisation and to help set the internal culture and how it is perceived externally. Numerous studies acknowledge that diverse boards can facilitate the organisation through a variety of contributions including insightful opinion and new initiatives that lead to better performance (Schippers, Den Hartog, Koopman, & Wienk, 2003; Watson, Kumar, & Michaelsen, 1993).

Further, board diversity assists in better market perceptions, invention, modernization and resolution of problems (Carter, Simkins, & Simpson, 2003). Diverse boards can help the organisation to extend national and international relations in a competitive market and also help to widen board independence as directors come from different gender, ethnicity, and cultural backgrounds (Arfken, Bellar, & Helms, 2004). A dynamic business environment highlights that board diversity is one of the most important governance matters for organisations (Milliken & Martins, 1996).

A review of board diversity literature suggests that boards should consist of individuals from different gender, ethnicity, nationality, cultural, social, educational and professional background in order to be effective (Boeker, 1997; Kilduff, Angelmar, & Mehra, 2000; Milliken & Martins, 1996; Pelled, 1996; Petersen, 2000; Timmerman, 2000; Watson, Johnson, & Merritt, 1998). Gender diversity, in particular in terms of having more females on the Board, is taken as an imperative part of the broader concept of board diversity (Milliken & Martins, 1996). In the corporate sector, female participation has been increasing at higher

rates than ever before (Catalyst, 2014a), for instance, the percentage of female shares of board seats in Norway, Finland, France, Sweden, Belgium, U.K., Denmark, Netherlands, Canada and the U.S. were 35.5%, 29.9%, 29.7%, 28.8%, 23.4%, 22.8%, 21.9%, 21%, 20.8% and 19.2% respectively by the end of 2014 (Catalyst, 2014b). Moreover, based on a study of Fortune 500 companies it was found that companies with more female directors achieve higher financial performance than those with less female directors (Catalyst, 2007). For instance, on average, the return on equity and return on invested capital of the organisations with more female directors are more than half the attainment of organisations with less female on the board (Catalyst, 2007). It follows that, from the perspective of financial performance, organisations that have more females on their board would benefit in the competitive business world (Catalyst, 2004).

Transnational institutions such as the International Labour Organisation (ILO) and World Trade Organization (WTO) note gender diversity as an important condition for the achievement of social and economic development. In their Action Plan 2008-2009 ILO identifies opportunities to reduce gender inequalities in the institutional areas (Catalyst, 2011). According to the World Bank (2010), a country can support its economic development, better governance, and higher living standards by reducing gender inequality. Similarly, legislative, regulatory and voluntary board diversity initiatives have also been adopted by governments and businesses in different countries to increase female participation on boards and it is generally agreed that organisations would benefit from these initiatives (Catalyst, 2014a).

Existing evidences suggest that Australia is behind many of the developed countries in adopting any strict regulation to increase female directors on the board. Although no female quota exists in Australia, more than 20% of female participation is found on ASX 200 boards increasing by 14.4% from 8.3% in 2009 to 22.7% in 2016. Board appointments of female directors have increased by 38% from 2008 to 2016 (Australian Institute of Company Directors, 2016). This indicates that female participation and empowerment is recognised by boards as making a positive contribution to the organisation. It is estimated that increasing female board participation by 6% would result in an increase in GDP of 11% and contribute \$25 billion per year to the Australian economy (Bendall, 2015). In addition, the participation of females in the workforce is an important aspect of an educated community and a possible measure of a country's level of economic development (O'Neil, 2014). Despite the significance of board diversity, a few prior studies have examined the role of the overall

board, without any distinction between male or female directors on the organisation performance, thereby leaving an empirical gap in the literature. Hence, this study addresses that gap in the literature by examining whether female participation on the board and director capabilities have an impact on an organisation's performance in Australia.

Directors' qualification is also an important issue of board diversity and organisation performance. The board of directors consists of individuals who must possess relevant experience in a variety of fields such as business, industry, regulatory, public service, information technologies, corporate governance and international experience. Similarly, the board members must have attained some level of educational and professional qualification such as undergraduate, masters or doctoral degree, Chartered Accountancy, CPA etc. to contribute to the development of the organisation (Colgate World Care, 2016).

The board is made up of a group of individuals who mutually provide professional knowledge and skills as a collective resource to ensure the appropriate performance of organisational activities (Carpenter & Westphal, 2001). Directors with their accumulated knowledge and skills can supervise and provide better advice to the managers (Kroll, Walters, & Wright, 2008). Gray et al. (2013) suggest that past experience and current directorships also extend directors effectiveness to perform their responsibilities. Board members with their skill and experience help to achieve organisation success (Carpenter & Westphal, 2001). It is expected that directors' qualification and experience would impact organisation performance. In Australia, around half of directors of 176 S&P/ASX200 organisations come from a few occupations and industry backgrounds including current or former CEOs or directors and from two industry groupings: banking, finance and financial services and resources (Regnan, 2010). While a growing body of literature examines the board diversity in relation to demographic, racial, age, cultural, top management-team diversity, executive diversity, board member diversity (Kilduff et al., 2000; Pelled, 1996; Simons & Pelled, 1999; Timmerman, 2000; Watson et al., 1993), literature is relatively silent about the association between board members' qualification on organisation performance. Further, the consequence of directors' qualification on organisation performance has been a focus in the previous studies in the Australian context. Hence, this study seeks to examine empirically whether directors' qualification has an impact on organisation performance in the Australian context.

Based on the above analysis the following research question has been formulated for this study:

Does gender diversity and directors' qualification affect organisation performance?

To address the research question, this study uses agency theory and stewardship theory. Agency theory requires internal control and monitoring of managerial activities by the board of directors so that management cannot utilise the authority given by the owners for their own interest. Research indicates that female directors are more involved in monitoring activities, as compared to males, (Adams & Ferreira, 2009) and qualified board members are better monitors to management (Kroll et al., 2008). So they can protect the interest of owners. Therefore, agency theory is important to use in this study. Agency theory does not consider other motivational factors outside economic benefit and consequently stewardship theory is also useful to this study.

Stewardship theory argues that managerial motivation depends on self-actualisation and the achievement of the organisational objectives as stewards, also results in personal satisfaction (Davis, Schoorman, & Donaldson, 1997). Female directors, as well as qualified board members, can protect the interest of the organisation as stewards, assuming that their self-esteem is related to the reputation of the organisation. Accordingly stewardship theory has been also used in this study.

The information regarding corporate governance and financial data of Australian publicly listed organisations is obtained from SIRCA and DataStream respectively for the period from 2010 to 2014. The key variables used in this study are proportion of female directors, female dummy, number of female directors, female CEO, female chair, female in the audit committee, Blau index and to measure gender diversity in the board, directors' professional qualification and experience, Tobin's Q, Return on Assets (ROA) and Return on Equity (ROE).

1.2 Motivations

There are three motivations for this study. Each of them is discussed below:

1.2.1 To address the issue of mixed findings regarding the impact of gender diversity on organisation performance

Many organisations consider diverse boards with female directors can enhance independence, development and act as a better control mechanism to increase organisation performance (Catalyst, 2007). Female participation on boards has increased and gender diversity in the boardroom is considered more importance than ever before (Catalyst, 2014a). Different initiatives from legislation to voluntary board diversity targets have been applied in several countries. For example, the female quotas for boards in Finland, France, Iceland, Norway and Spain are 40% whereas in Canada, Italy, Belgium and Netherlands are 50%, 33%, 33% and 30% respectively (Catalyst, 2014a). In Australia, gender quota has not been implemented yet despite the fact that female participation increased by 14.4% on ASX200 boards from 2008 to 2016. and female appointments on board has been increased by 41% from 2009 to 2016 (Australian Institute of Company Directors, 2016).

Recently, the Australian Institute of Company Directors announced a target of 30% female directors on boards by 2018 and this target requires accountability to ensure the increase of female on boards in Australia (Fox, 2015). Since initiatives have been taken to involve more females on boards, to reduce gender inequality and to extend their role in the organisation, this study attempts to examine empirically whether gender diversity in the board members has any impact on organisation effectiveness. Several studies in the past have investigated the link between organisational financial performance and corporate governance by board size, board diligence, board independence, Chair-CEO separation, board remuneration, ownership structure etc. (Bhagat & Black, 2001; Bhagat, Carey, & Elson, 1999; Brick, Palmon, & Wald, 2006; Christensen, Kent, & Stewart, 2010; Kapopoulos & Lazaretou, 2007). However there are few empirical studies that investigate the link between gender diversity and financial performance and this study seeks to fill this gap.

The association between gender diversity and organisation performance provides mixed results in the literature. For instance, Adams and Ferreira (2009) find that gender diversity has an important effect in case of weak governance as female directors involve themselves more in audit and nominating committees. Based on China's listed organisations it is found that board gender diversity consequences are imperative in legal person controlled organisations but not in state-controlled organisations (Liu et al., 2014). Another study of

Dutch listed companies concludes with female directors on boards perform better than companies without female directors (Lückerath-Rovers, 2013).

There is also other evidence in the literature that find a positive association between gender diversity and organisation performance, for instance, that a higher female proportion of directors on the board have a positive impact on organisation performance (Bonn, 2004). Other findings include a strong correlation between effective operational performance and female executive directors (Fondas & Sassalos, 2000), that female directors hold different perspectives to make the boardroom discussion vital (Letendre, 2004) and that gender diversity boosts stock price informativeness by extending voluntary public disclosure of big organisations (Gul, Srinidhi, & Ng, 2011).

On the contrary, there are some other studies that show negative association between gender diversity and organisation performance for instance, heterogeneous groups suffer due to the lack of effective communication and relational clash (Earley & Mosakowski, 2000), in a decision making process feedback is not obtained promptly from a diverse board (Hambrick, Cho, & Chen, 1996) and conflict may arise due to the identification and collaboration of directors belong to same gender (Richard, Barnett, Dwyer, & Chadwick, 2004). In a diverse board decision making may be lengthy and create disagreement among the board members (Lau & Murnighan, 1998). Jianakoplos and Bernasek (1998) argue that an organisation's financial performance on the stock market may be poorer due to higher risk aversion of female directors as opposed to male directors.

Based on the review of existing literature, it is hard to provide a rational explanation why existing studies show mixed results regarding the impact of gender diversity on organisation performance. Hence, due to the inconclusive evidence, this study is motivated to disentangle some of this intricacy by analysing gender diversity, identifying the nature of each component in gender diversity to determine whether any legislative requirement for gender diversity is appropriate in Australia from this perspective.

1.2.2 To examine the association of each component of female director on board and Blau index with organisation performance using Australian data on gender diversity

In existing Australian studies, the proportion of female directors is used as a component of corporate board structure but none of the existing studies have investigated the association between each component of female on the board such as proportion of female directors, female director dummy, number of female directors on the board, female chair, female CEO, female membership in audit committee and organisation performance. This study attempts to fill this gap in the literature by specifically investigating the role of each gender diversity component on organisation performance in Australia. Each component has specific characteristics and influence, so examining each component separately is required to obtain a deeper understanding and to create a good balance between all aspects to improve organisation performance. Blau index is the most common method to examine the proportion of female in the gender diversity research. Therefore, this study attempts to apply Blau index to determine gender diversity and its impact on organisation performance.

1.2.3 To provide insights into the impact of directors' qualification on organisation performance

Directors' qualification has been emphasised as a requirement for the execution of organisational activities in several studies. For instance, the board of directors possesses different types of expertise as a group and this is required so that they can contribute properly in the organisational activities (Carpenter & Westphal, 2001). Kroll et al. (2008) find that vigilant and knowledgeable directors are not only better monitors but also more useful advisors to top managers. Gray and Nowland (2013) suggest that directors' prior experience and number of current directorships must be evaluated as a major determinant of director's efficacy. Several studies show positive association between directors' qualification and organisation performance, for instance, education, and expertise based board diversity are advantageous for organisational undertaking (Milliken & Martins, 1996), highly educated directors can promote advancement in policy initiatives (Poon, Yap, & Teck-Heang, 2013), qualified board members have the capability required for superior decision making (Ramli & Esa, 2012) and are considered as indispensable part of improved organisation performance (Haniffa & Cooke, 2002).

In Australia, most of the big companies do not have good quality evidence of board diversity with nearly half of the directors of 176 S&P/ASX200 organisations coming from few occupations and industry backgrounds. For example, most of them are former CEOs or directors and they are mainly from two industry groupings: banking, finance and financial

services and resources (Regnan, 2010). Organisations face difficulty due to the lack of directors qualification and experience in different areas to ensure sustainable development and to compete in the international market (Regnan, 2010). There is insufficient directors with an engineering and manufacturing background on boards in Australia to ensure advancement and innovation in Australian industry which is considered crucial (Regnan, 2010).

Several studies have been undertaken to examine the influence of directors' qualification on organisation performance in the context of North America, Europe, and Asia while the consequence of directors' qualification on organisation performance has been given less importance in the Australian literature. Bilimoria et al. (1994a) investigated the qualification of directors in terms of tenure, age, director type rather than specific professional qualification and expertise. This study attempts to explore the impact of directors' qualification, namely directors' professional qualification and expertise, on organisation performance in Australia and seeks to fill this gap in the literature. Each component has particular features and importance, so analysing each component separately will help to improve our understanding of all aspects to develop organisation performance.

1.3 Contributions and practical implications

The study contributes to the literature in several ways. First, this study provides insights into the financial performance of Australian listed organisations based on gender diversity and directors' qualification. Second, there are clear policy implications from the findings of this study to recommend reform with respect to the corporate governance structure of Australian organisations. Legislative initiatives can be introduced to ensure a particular percentage of female board members which would likely impact sustainable organisation performance. Regulators may set the minimum qualification to become a director on the board. Third, a finding of linkage between director qualification and organisation performance may also be used for more investment in the education sector and different training programmes for the directors to gain knowledge and expertise in particular areas. Fourth, the findings can help organisations to make proper decisions regarding the composition and selection of the board of directors.

1.4 Structure of the thesis

The rest of the study is arranged as follows. Chapter 2 provides the theories used in this study, reviews prior literature relevant to this study and develops hypotheses. Chapter 3 discusses the research methodology, variables that are used and data collection procedure. Chapter 4 outlines the descriptive statistics and the findings of hypotheses testing. Chapter 5 presents the conclusions, implications, and contributions for practitioners, policy makers and academia and limitations of the current study.

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

This chapter is structured as follows. Section 2.1 elaborates the theoretical framework used for the study. It includes agency theory and stewardship theory that are used to explain the association of gender diversity and directors' qualification on organisation performance. Section 2.2 presents the literature review and hypotheses development. Section 2.2.1 reviews the prior literature that have investigated the association between gender diversity and organisation performance and based on this evaluation hypotheses has been developed. Section 2.2.2 reviews the previous literature that has explored the association between director's qualification and organisation performance and based on this discussion hypotheses has been developed. Finally, section 2.3 provides a summary of the chapter.

2.1 Theoretical framework

The responsibility of the board of directors to operate the organisation has been explained in agency theory (Jensen & Meckling, 1976). Agency theory describes an agreement between owner and manager where owners are the principals who delegate managers, as agents, the authority to perform business activities to maximize their wealth and managers take the responsibility to utilise the opportunity for their own welfare (Jensen & Meckling, 1976). The interest of top managers diverges from the shareholders because both of them want to maximize their own utility as a rational agent or principal (Jensen & Meckling, 1976). They suggest that internal control can be used by the directors to observe the behaviour of the agent to minimize the agency cost incurred by the principal. Davis et al. (1997) also argue that control structure can be applied to the agent to reduce the losses of principal because of interest divergence.

One of the governance mechanisms of agency theorists, to protect shareholder interest and to reduce agency cost, is governance structure (Jensen & Meckling, 1976). They recommend that the board of directors can monitor the managers by performance appraisal and execution of audit and they can also inform the objectives and interests of owners to the managers and supervise them to minimize the agency cost of shareholders. Female directors engage

themselves more with the monitoring committee and gender diverse boards are helpful to the organisations with weak governance where additional board monitoring is required (Adams & Ferreira, 2009). As agency theory emphasises the independence of directors to perform their duty, gender diversity can be linked to agency theory. For instance, diverse groups can ensure equality and justice of the directors in an organisation (Kim, Hoskisson, & Keasey, 1997). Gender diverse boards help to enhance supervision of managerial activities and thus expands the independence of board members (Campbell & Mínguez-Vera, 2008). Moreover, companies always try to engage superior quality directors for proper monitoring of management (Fairchild & Li, 2005) and knowledgeable directors are the better monitors of top managers. Kroll et al. (2008) argue that supervision by the board can be done more effectively with a broad knowledge in directors and they can enhance the value of the organisation. Gender diversity and directors' qualification can help to minimize the possible exploitation of the power given by the owners to the managers to act on their behalf and to ensure the interest of the owners and the organisation through the supervision of managerial activities. Thus, a gender diverse board and directors' qualification are an important component of board structure and may have an important impact on the agency relationship.

Agency theory depicts that there is a distinction between the interest of owners and managers (Jensen & Meckling, 1976) and the interest of shareholders and managers can be brought into line through supervision and financial incentives (Davis et al., 1997) but there are some limitations of agency theory. All the motivation cannot be considered as self-serving (Doucouliagos, 1994) and the demand of social existence is not related to agency theory (Frank, 2009). At the objective level the separation of interest between managers and owners are explained in the agency theory (Jensen & Meckling, 1976) but organisational sociologists argue that managers are motivated depending on their individual perception (Donaldson & Davis, 1991). When managers believe that their welfare can be achieved through the success of the organisation they can align their personal interest with that of the organisation and its owners (Donaldson & Davis, 1991). Agency theory does not consider these inherent motivational factors of executives. Therefore, stewardship theory will be used to overcome those limitations.

According to stewardship theory, managers as stewards are motivated to act in the best interest of their principals. Managers are motivated by achievement and self-actualisation and give priority to obtaining organisational objectives rather than personal benefit. Stewards believe their interests are aligned with the interests of owners and they try to achieve

organisational rather than personal objectives (Davis et al., 1997). They argue that the empowerment of governance structure and mechanisms are effective to smooth the progress of the manager's action. Due to the consistency of steward's personal and organisational objectives, monitoring and bonding costs are reduced, so the independence of the steward should be increased to maximize benefit. Donaldson and Davis (1991) find that CEOs who are stewards gain the proper support by their power and good judgment. When the CEO chairs the board of directors this expectation can be fulfilled. They say that CEO-chair takes the responsibility to gain organisational objective rather than personal interest. Therefore, control and monitoring can undermine their motivation to aim for organisational achievement (Davis et al., 1997). Davis et al. (1997) argue that executives as stewards desire the governance structure that authorises them rather than those that supervise.

Organisations need to appoint better quality directors as organisation performance depends on the effective decision making of directors (Fairchild & Li, 2005). Fairchild and Li (2005) find that superior quality directors help to increase an organisation's stock performance. Directors with sufficient knowledge can provide valuable suggestions to the executives (Kroll et al., 2008). Gender diversity has an important impact on organisation performance (Liu et al., 2014) and executive female directors perform their duty more effectively as they remain close to the activities of the organisation and they have more capacity to exercise their power in the decision-making process that is not possible to that extent within the board room. As stewardship theory requires organisation structure where board controlled by management are given authority and responsibility at the same time, gender diversity and directors' qualification can be related to this theory. Directors are empowered so that they may be dedicated to guard the organisation and promote consistency between the interest of owners and managers. They can help to safeguard and protect the organisation as a custodian assuming that their inspiration depends on other intrinsic factors than financial reward. Thus, gender diversity and directors' qualification may have an important influence on stewardship theory.

2.2 Literature review and hypotheses development

2.2.1 Association between gender diversity and organisation performance

The gender diversity of the board is a fundamental premise of governance restructuring attempts throughout the world (Adams & Ferreira, 2009). In recent years, government regulators of the developed countries are placing greater emphasis on gender diversity on the board of organisations (Liu et al., 2014). The board effectiveness depends on how various issues are discussed by directors during the board meetings. Boards that are diligent enhance their oversight level leading to financial improvement of the organisation as do other aspects like preparations for meetings, attentiveness, and participation during meetings as well as follow-ups after meetings (Carcello, Hermanson, Neal, & Riley, 2002). In addition, it is stated by Bathula (2008) that the number of board meetings represents board intensity yet there is a significant negative relationship between the financial performance of organisations and number of board meetings. Adams and Ferreira (2009) find that female directors make a major contribution to organisation performance. The participation rate of female directors is higher comparing to male directors and females involve themselves more than males with monitoring related committees that are beneficial to organisations with weak governance (Adams & Ferreira, 2009). They argue that in a gender diverse board CEOs are more responsible for poor stock price performance and turnover is also more responsive to stock price performance (Adams & Ferreira, 2009). It is also reported by Francoeur et al. (2006) that gender diverse boards hold meetings more frequently and their female directors report fewer attendance issues compared to males. Similar sentiments are also indicated by the findings of Smith et al. (2006) that female directors have better attendance rates compared to males and that the presence of female directors on the board can improve the overall attendance of the board.

Some studies indicate that performance of organisations is promoted when the number of outside diverse (including females) directors is increased. For instance, Tornyeva and Wereko (2012) report in their study that there is a positive association between financial performance of organisations and the presence of independent female directors. They provide evidence and argue that female independent directors are tougher monitors compared to male directors. Similarly, female CEOs and directors are more risk averse and put more effort in

monitoring (Parrotta & Smith, 2013). Moreover, it is found by Carter et al. (2003) that there is a positive association between the organisation value (Tobin's Q) and board diversity (independent female directors) in their study involving a sample of Fortune 1000 organisations. The reason could be based on the fact that organisation benefits more from female independent directors through the influx of fresh perspectives and abilities associated with gender diversity in the board.

Liu et al., (2014) show a positive association between gender diversity and organisation performance in China, the world's biggest emergent country. Under different ownership structure, female directors have an extensive impact in legal person controlled organisations as opposed to state-controlled organisations in China (Liu et al., 2014). Based on the listed organisations in China from 1999 to 2011, they segregate female directors into executive and independent directors and find that executive female directors play a more effective role than independent female directors because executive female directors are closer to the organisation's activities and thus place more authority in the decision-making process outside the board room. Females mostly attain the highest position in organisations through executive roles. Executive board directors play an important role in organisations by ensuring that service quality is maintained and emphasising that certain financial performance indicators must be attained to ensure the organisation's survival (Ellwood & Garcia-Lacalle, 2015).

The study by Fondas and Salsalos (2000) assesses the presence of female executive directors in organisations and find that excluding female board chair on average, there are 2.6 executive female directors. It is also shown that correlation between high operational performance and female executive role is strong. The accounting measures of financial performance include ROE and ROA. The high correlation could be attributed to the fact that a female is more likely to have rare and unique information to provide during discussions on the board compared to males. Moreover, females who get appointed as executive directors have expertise in different areas such as maintaining a relationship with stakeholders, legal issues, human resource management as opposed to males who tend to have expertise and knowledge relating to regular business activities (Zelechowski & Bilimoria, 2004). However, it is found in the study by Ellwood and Garcia-Lacalle (2015) that higher presence of females among executive directorship does not significantly result in financial returns. Therefore, when there are more female executive directors on the board, the effects on financial performance is not discernible.

As the main leader, the board chair plays a key role in the financial performance of an organisation. The board chair is a powerful actor in an organisation hence, their demographic characteristics such as gender of must be taken into account (Ellwood & Garcia-Lacalle, 2015). The study by Kang, (2013) find that a higher proportion of females (29 percent) occupy the position of board chair in the organisations studied. The influence of board diversity in terms of gender is more observable when females occupy the position of board chair where more positive influence can be exerted by the female on the performance of the organisation. Nonetheless, an empirical study by Parrotta & Smith (2013) concludes that the gender of board chair does not have a strong correlation with variability and level of organisation outcome factors. On the part of Ellwood and Garcia-Lacalle (2015), the costs of clinical negligence are minimized when the organisations have a female chair. The reason is that female chairs tend to observe gender values and reduce negative social outcomes. They also note that no difference in the results is found in terms of the financial dimensions. This implies that having a female chair can have an impact on the performance of organisations whether social performance or financial performance.

The number of appointments of female directors increased in New Zealand due to reforms of government policy, economic deregulation and corporatisation (Shilton, McGregor, & Tremaine, 1996). Bilimoria and Piderit (1994a) find gender biases for the appointment of directors on the organisation committees. Male directors are appointed more in the compensation, executive and finance committees whereas female directors are appointed more in the public affairs committees (Bilimoria & Piderit, 1994b). A higher level of female directors improves the organisations' financial performance (Blackburn, Doran, & Shrader, 1994).

Some prior Australian studies use a proportion of female directors as a component of board structure and find a positive influence on organisation performance. Shareholder concentration is an important issue for gender diversity since higher shareholder concentration does not support diverse board and causes less female participation on the board (Kang, Cheng, & Gray, 2007). There is a positive association between female director ratio and organisation performance (Bonn, 2004). Bonn et al. (2004) argues that female directors are appointed in a responsible position on the board for their extraordinary attributes or education and these significant features help for the achievement of organisation

performance. Gender diversity has a positive impact on the performance of organisations (Bonn, Yoshikawa, & Phan, 2004). They make a comparison between the impact of corporate governance on organisation performance in Australia and Japan and do not find any support for a positive association between female representation on the board in Japanese organisations and organisation performance as the number of females on board is too small to create any impact on performance. On the contrary, Australian organisations show positive association between gender diversity and organisation performance.

Similar research has also been done in other economies with differing results. Based on a study of Dutch companies it is found that organisations with female directors perform better than organisations without female directors (Lückerath-Rovers, 2013). The participation of females on the board is very low in Netherlands and all the performance measures do not show positive relation with the presence of female on board but the authors argue that female directors have more contact with the stakeholders at all levels of the organisation that helps to enhance goodwill of the organisation.

The presence of females on the board does not have an effect on the organisation in Spain, a civil law country featured by large family ownership and the board of directors is not entirely independent of managers and there is only a small proportion of female involvement in business (Campbell & Mínguez-Vera, 2008). The authors examine the ratio of female to male on the board and find that diversity indices have a positive influence on an organisation that actually requires a balance between female and male rather than the only presence of male directors. As corporate governance reform in Spain has occurred through government initiatives, a gender diverse board is now essential for sustainable development in Spain (Campbell & Mínguez-Vera, 2008). An investigation of listed Danish organisations does not show any association between gender diversity and organisation performance (Rose, 2007). Although Denmark has already done a lot in terms of the liberalisation of females, a major portion of the board room consists of male directors. In the process of socialisation, the norms and values of typically conservative board members, are accepted and as a result, any achievement of a female board member is not recognised (Rose, 2007). Schrader et al. (1997) also do not find any significant influence on organisation performance due to the higher participation of females in top management or on the board. Females do not have any significant role since only a small number remain in top management and they are allocated

to perform the activities that make less of a contribution to the organisation (Shrader, Blackburn, & Iles, 1997).

There is empirical evidence suggesting that gender diversity shows negative influence on organisation performance. That is a gender diverse board is not supportive of each other and suffers from sentimental clash (Williams & O'Reilly, 1998). Heterogeneous groups are unable to respond quickly due to the variation of their judgement (Earley & Mosakowski, 2000). As the directors belong to the same gender they support the opinion of each other, this also increases the possibility of disagreement (Richard et al., 2004). Moreover, in a diverse board, all the members hold their argument and raise different issues that eventually create disagreement and decision making would be prolonged and less useful (Lau & Murnighan, 1998). This may create a major obstacle when organisations need to respond promptly to compete with other competitors in the dynamic business world (Williams & O'Reilly, 1998) and thus, the gender diverse board may have negative consequence in the decision-making process when providing feedback (Hambrick et al., 1996). Jianakoplos and Bernasek (1998) find that females are more reluctant to take risk as opposed to males which leads to lower organisation performance. Due to the frequent resignation and attendance problem of female directors, organisations also suffer from financial difficulty (Cox & Blake, 1991).

Some other studies in the literature do not find any association between gender diversity and organisation performance. Based on a study of the 500 largest organisations of Scandinavian countries, Randoy et al. (2006) finds no significant association between gender diversity and organisation performance. Du Rietz and Henrekson (2000) also do not find any association between the inclusion of female in the boardroom and organisation performance. Farrell and Hersch (2005) find that there is no improvement in the organisation performance due to the selection of female directors on the boards of Fortune 500 organisations and consider the inclusion of female as an obligation from a social perspective.

Female directors on boards enable equitable representation thus creating a social structure that allows the organisation to access diverse perspectives and a wider pool of talent (Singh & Vinnicombe, 2004). Such gender diversity contributes towards problem-solving and creativity in organisations. Female directors also bring different viewpoints to the board because their knowledge and experiences are different from male directors by virtue of having different roles outside the workplace hence expanding the pool of information in

consideration (Post & Byron, 2015). Gul, Srinidhi, and Ng (2011) show gender diversity of boards enhance the stock price informativeness of organisations. Further, they find that the relation is stronger in organisations with weak corporate governance, which may mean that female directors substitute the weaknesses of corporate governance. Female directors who possess higher educational qualifications have an important role in organisation performance (Smith et al., 2006). They can provide opinion from different perspectives to add value to the decision-making process and even disagreement of a gender diverse board may lead to superior decisions (Letendre, 2004). Female directors tend to value tolerance and interdependence compared to male directors which are important in eliciting information and enhancing collaboration among directors (Adams & Funk, 2012). It is reported by Bart and McQueen (2013) that female directors use a cooperative approach during decision making which results in the optimal decision when there are competing interests. Hence, the perspectives available are diversified by the female directors and this contributes towards improving the ability of the organisation to generate more profits from investments and assets (Miller & Triana, 2009). Having a board that is gender diverse implies that the organisation has a broader understanding of the multiple stakeholders and the marketplace (Carter et al., 2003). Based on the above discussions, this study proposes the following hypotheses:

H1: Higher the female directors (proxy by proportion of female directors, female director dummy, number of female directors, female chair, female CEO, female audit committee member and Blau Index) in the Board of Directors have a positive impact on organisations' financial performance

2.2.2 Association between professional qualification and expertise of directors and organisation performance

The main function of the board is to ensure proper execution of business activities which boosts the confidence of investors and hence contributes towards the financial stability of the organisation. Directors are appointed by the shareholders to maintain their wealth and they have the authority for the appraisal of the organisation's proposed plan and initiatives and they also act as a major device to observe the activities of management (Fairchild & Li, 2005). Hence, the board can also be considered as the business control system due to their monitoring role and contribution towards better management of organisations. This is because the supervision of management actions by the directors helps in the protection of

interests of shareholders thus enhancing the performance of the organisation. However, effective supervision of the management by the directors implies that the directors should be adequately equipped with knowledge relating to management like accounting, finance, legal issues, marketing and other areas related to the process of decision making. Such requirement suggests that the qualification of directors contributes positively and significantly towards decisions made by management which then translates into better performance of the organisation (Vo & Phan, 2013).

Effective functioning of the board requires that the directors should have a high professional qualification, sound judgment, and integrity (Hoque, Islam, & Azam, 2013). Furthermore, directors who have professional qualifications can guarantee effective solutions from the board, which can only be attained when they have high intellectual abilities. People with high professional qualifications should be nominated on the board in order to attain competence and skills which are important since organisations require more talent to attain organisational effectiveness. There are various empirical studies which have indicated that a positive association exists between organisation performance and competencies (Ghazali, 2010; Hartarska & Mersland, 2012; Ponnu & Karthigeyan, 2010). On the other hand, having highly qualified directors benefits the organisation through the mix of capabilities and competence which contributes towards creating perspectives that are diverse. Similarly, it is noted by Hermes and Lensink (2011) that boards that are diverse implies that there are diverse competence and strategic skills which are not only essential elements of corporate governance but also benefit the organisation in various ways. For example, the monitoring role is implemented more effectively when the directors are professionally qualified.

In this regard, giving directorship to people with high professional qualification satisfies the need for board diversity (Johnson & Nino-Zarazua, 2011) and expectations of merit (Lapie & Mersland, 2011). The board directors as a group combine different capabilities and competencies which collectively represent the pool of capital and bring value in the execution of the governance function of the board. Moreover, agency theory concerns the relationship between the principal and the agent since this can result in a conflict of interest between the managers and the owners. So, it is considered that having a competent board is a very important factor and mechanism to direct the organisation effectively and is able to enhance wealth for shareholders through the control system and efficient monitoring of top management.

In particular, when board directors are diverse, the financial performance of the organisation is also enhanced. Organisations often face uncertainty and risk. Therefore, controlling and forecasting tangible or intangible factors in the marketplace that can influence the performance of the organisation is very difficult. On the other hand, customers are more aware of service, delivery and quality. Besides, the business environment is unique and this explains the need for boards that function properly. In essence, a board functions properly when a number of activities such as the provision of the strategic direction of the organisation, firing or hiring management and monitoring activities are performed (Mersland, Randoy, & Strom, 2011).

In the opinion of Ismail et al. (2013), directors with high qualifications extend the board's knowledge base which stimulates the directors to consider taking best alternatives through the use of a more considerate process. This is why corporate governance codes in various countries like US and Malaysia require that the directors on the board should be individuals who have an appropriate professional qualification. This criterion for professional qualification directly points to the educational background of the directors. According to Noor and Fadzil (2013), educational background provides the professional qualification required to contribute towards the betterment of the performance of the organisation. In addition, it is recommended by Johl et al. (2013) that organisations should encourage training and education of directors so as to increase their level of effectiveness.

It is also found by Poon et al. (2013) that directors who possess high educational backgrounds such as PhDs tend to provide a richer innovative source to policy development initiatives. This is backed by the fact that an individual's qualifications are essential for making decisions faster. A similar position is also noted by Ramli and Esa (2012) that when the board is composed of individuals who are highly qualified, then they provide the necessary ability for optimal decision making. There are also a number of empirical studies which have provided a link between the directors' professional qualification or educational backgrounds and an increase in performance of organisations. According to the study by Makhlouf et al. (2014), the qualification of directors should be based on educational qualification instead of other characteristics like director type, tenure, and age. This is based on the fact that they find that accounting and business education of directors have a significant relationship with information disclosure which demonstrates credibility and accountability of top management.

Moreover, Smith et al. (2006) indicate that the positive impact of female directors on the performance of organisations depends on the professional qualifications they hold. This suggestion can be generalised easily for all the board directors. Consequently, it is clear that the specialisation and professional qualification of board directors have an influence on the financial performance of the organisation.

Most of the studies which have examined the effect of professional qualification have mostly focused on the directors with financial or banking expertise. Although there is a general indication that board directors having financial or banking experience can influence the debt ratios, some studies have disagreed over the direction of such influence. For instance, the study by Byrd and Mizruchi (2005) find a negative link between debt ratios (that is higher debt levels) and directors' professional qualifications and this is associated with the continued borrowing of the organisations.

According to Bathula (2008), boards with financial or banking expertise benefit from consistent reporting and other market advantages. It is found by Francis et al. (2012) that directors with financial background on boards of organisations are linked with higher stock returns and lower cases of restated earnings (Agrawal & Chadha, 2005). In terms of the cognitive diversity, the directors who are chosen to the board based on their professional qualifications make better decisions and this could be associated with the fact that higher professional qualifications lead to higher professional experience. Qualified directors also provide a good source of innovative solutions to problems facing the organisation and thus develop policy measures with rigor and analytical depth for offering better and unique perspectives on strategies. Young (2000) posit that lack of competent board can result in low innovation and poor critical thinking.

Chiang & He (2010) demonstrate that the professional qualifications of directors matter and mainly for Tobin's Q and ROA. It is found by Yermack (2006) that share prices can be sensitive to the professional qualification of directors especially in the fields of finance and accounting. Since the professional qualifications are very important, they can be included as an index when evaluating adherence of the corporation to good governance. These sentiments suggest that qualified directors are very important for the board to deliver better performance of the organisation (Haniffa & Cooke, 2002; Smith et al., 2006).

Several studies find that directors' competencies are related to organisation performance (Dunphy, Turner, & Crawford, 1997; Ghobadian, O'Regan, Howard, Gallear, & Ljungquist, 2007; Ingley & Van der Walt, 2001; Westphal & Milton, 2000). Fairchild and Li (2005) measure the target organisations' directors' quality based on the stock performance. Fairchild and Li (2005) classify directors as "above average"/"below average" if the stock performance is superior/inferior compared to the control organisations for a period of three years prior to the target announcement. They find that organisations selecting above average directors achieve a better outcome than those organisations appointing below average directors. So, companies searching superior quality directors need proper judgement as the board facilitates to achieve the corporate performance (Fairchild & Li, 2005). Qualified board members may help others to resolve any problem considering the substitutes based on their knowledge (Cox & Blake, 1991) and they can also provide new concepts from different perspectives which would be helpful for the implementation of policies on strategic issues (Westphal & Milton, 2000).

Differences among board of directors are viewed clearly based on their professional experience. Instead of considering exclusivity of the board based on being uniform or the demographic and structural characteristics, more focus should be placed on assessing the professional qualification of the directors. In the opinion of Miller and Triana (2009), including professional experience during board investigations is important since the professional experience of directors influences their perception of complex business transactions and hence the overall board effectiveness. Kroll et al. (2008) suggest that knowledge obtained through experience is essential for the success of the board. They argue that directors scrutinize managerial decisions and at the same time they also provide guidance to the senior executives. Directors may be unable to engage themselves in all the business activities due to the limitation of knowledge, on the other hand, experienced directors can involve monitoring and advising activities efficiently to add value to the organisation (Kroll et al., 2008). They examine the association of board observation and director knowledge and their consequence on the acquisition outcome and find that boards consisting of experienced directors give proper advice to make strategic decisions related to the effective acquisition.

Gray et al. (2013) investigate the prior experience of directors as a more direct measure of director's ability to perform monitoring and advising activities, based on hand-collected data

from Australia. Although prior business experience, independence, and knowledge in accounting, finance, and law help t for the execution of directors responsibilities, prior experience can be treated as the most important skill of the directors (Gray & Nowland, 2013). They find that both the number of prior years and a number of current directorships are considered as significant as director experience to the less experienced board.

In Australia, most of the research has been conducted on the monitoring role of the board and the findings of studies regarding the effectiveness of independence of the board have been negative or insignificant (Gray & Nowland, 2013). However, most of the prior studies have evaluated the efficacy of directors in respect of monitoring and advising activities by using the characteristics such as independence, qualification, professional expertise for the organisation performance (Gray & Nowland, 2013).

Even though most studies consider the professional experience of directors to be important, there are conflicting perspectives on the association between financial performance of the organisation and level of directors' professional experience. For instance, Noor and Fadzil (2013) note that professional experience depends on board tenure of the director thus leading to the appointment of older directors which only result in dictatorial tendencies since older directors are more aggressive leading to risky solutions that can undermine the performance of the organisation. This is contrary to the notion that more experienced directors cope better by working as a group since their old age may be a limitation.

In addition, Hassan et al. (2015) argue that professional experience must be relevant to the organisation. For example, adding educators (such as university professors) on the board of an organisation may not yield the expected results since such educators lack the business experience which impairs their comprehension of business intricacies although they have high professional experience in the academic world. Therefore, their relevant professional experience can sway the contribution of the board negatively. Francis et al. (2012) posit that organisations that look for directors who are highly qualified might prefer those who have previously served on different boards since the professional experience of the directors is signalled by multiple appointments. Moreover, strategic leadership is a balance of experience and strategic skills relative to the organisation's needs, with shared commitment and strategic direction to achieve it, and effective processes of strategic management.

For better governance and improved performance, Makhoul et al. (2014) recommend that organisations need directors with the right competencies (professional experience) to contribute effectively in board processes. Hence, the competence of board members requires their attributes and character to be assessed. The reason is that board directors with professional experience can be able to contribute positively to better organisation performance. The argument of Chiang and He (2010) is that with the right professional experience, the board can easily attain its obligations more effectively and efficiently. It is also considered by Ghazali (2010) that effective boards consist of directors with expertise that enable them to provide management with greater professional alternatives and diversified perspectives and this leads to increased performance of the organisation. The importance of professional qualification and experience among directors depends on the fact that they enable the directors to have more skills and in-depth understanding of issues related to the achievement of the organisational objective. Based on the indications of most studies reviewed, it would be expected that having more directors on the board with professional qualification will lead to better performance of the organisation. This discussion proposes the following hypotheses:

H2: Directors' qualification and expertise are positively associated with organisations' financial performance

2.3 Chapter summary

This chapter presents two theoretical perspectives to explain the association of gender diversity and directors' qualification on organisation performance. Agency theory and stewardship theory have been applied to illustrate the importance of gender diversity and directors' qualification on organisation performance. This chapter also includes the previous research related to gender diversity and directors' qualification and their impact on organisation performance. Prior research related to gender diversity and organisation performance provide mixed results such as positive, negative and no association between them. Most of the previous studies provide a positive opinion regarding the association of directors' qualification and organisation performance. Research undertaken in the developed and developing countries have been reviewed and based on a broad review of the literature

and hypotheses have been developed. The next chapter presents research methodology and quantitative approach.

CHAPTER THREE: RESEARCH METHOD

The research methodology used in this study is described in this chapter, including the key variables such as dependent variables, independent variables, and control variables. The chapter is structured as follows. Section 3.1 presents the study design to achieve the objective of the research including the regression model used in the study. Section 3.2 describes the measurement of dependent variables. Section 3.3 demonstrates the independent variables used in the study. Section 3.4 discusses the control variables incorporated in the regression model. Section 3.5 outlines the particulars of data collection process in the study. Finally, Section 3.6 presents summary of the chapter.

3.1 Study design

Whilst there are different types of study designs such as quantitative and qualitative study designs, the choice of a study design depends on the aim of a study and the specific research questions. This study focuses on explaining the impact of gender diversity and directors' expertise and qualification on the performance of organisations and a quantitative approach and techniques is most appropriate to address this aim. In addition, a quantitative design is the most appropriate to attain unbiased conclusions as well as effectively address the research questions. This is based on the fact that quantitative study designs allow an investigator to objectively and systematically investigate concepts then validate and establish relationships among variables that can be generalized to the target population.

A multivariate ordinary least square panel data regression is used to test how gender diversity and directors' qualification affect organisation performance in Australia using data on listed Australian organisations for the period of 5 years between 2010 and 2014. The empirical model used in this study to test the impact of gender diversity and directors' qualification on organisation performance includes a number of control variables for organisation characteristics is as follows:

$$Performance_{i,t} = \alpha + \beta Governance_{i,j,t} + \gamma Controls_{i,t} + \varepsilon_{i,t} \quad (1)$$

The dependent variable, Performance, is the vector of alternative organisation performance variables for organisation i in year t . Organisation performance is measured by Tobin's Q, return on assets (ROA) and return on equity (ROE).

The independent variable, Governance, is the vector of alternative corporate governance variables for director j in organisation i in year t . Gender diversity and directors' qualification are used to measure corporate governance. Various proxies are used for gender diversity and directors' qualification. The proportion of female directors, female director dummy, total number of female directors, female chair, female CEO, female directors in the audit committee, Blau index are considered to measure gender diversity¹. Directors' qualification and expertise are used to measure directors' capabilities.

The independent control variables are organisation characteristics for organisation i in year t . Control variables for organisation characteristics proposed in this study are widely used in the corporate governance literature as potential determinants of organisation performance. Control variables used in all regressions are the natural logarithm of total assets (Fsize), natural logarithm of total number of board of directors (BoardSize), natural logarithm of age of directors (DirAge), natural logarithm of organisation age (OrgAge), growth rate of sales (Growth), the ratio of total liabilities to total assets (Leverage), total independent directors to total directors (IndepenDir), number of board meetings attended to number of board meetings held (Attendance), industry type (IndType), indicator variable if audit organisation is one of big four audit organisations (Big4Audit).

3.2 Dependent variable

Organisation performance is regarded as the dependent variable in this study. According to Arfken et al. (2004), there are a number of possibilities for proxies of organisation performance. However, the main proxies are based on financial accounting information (such as ROE and ROA) and stock market value (Tobin's Q). Tobin's Q is a market based performance measure which determines the value of the organisation assessed by the market. Previous studies in developed countries like the United States have used Tobin's Q to measure performance of organisations to capture the impact of the characteristics of different

¹ Blau Index is the most commonly employed measure for diversity (Blau, 1977).

industry members, such as the higher market capitalization of the financial sector that is also applicable in the case of Australia (Adams & Ferreira, 2009; Güner, Malmendier, & Tate, 2008; Masulis, Wang, & Xie, 2012). Based on the fact that the past performance of a company can be measured accurately using financial accounting information and data, both ROA and ROE are appropriate measures of organisation performance to be used in this study (Sanda, Mikailu, & Garba, 2010). These measures of organisation performance each add to an understanding of the impact of gender diversity and directors' qualification.

3.2.1 Tobin's Q

Tobin's Q is used as a proxy to measure the market based financial performance of the organisation. Tobin's Q measures market value of the organisation as an advanced measure and gives emphasis on the potential future earnings and prospect of the organisation (Kiel & Nicholson, 2003). Previous studies employ this variable to determine market-based financial performance of organisations (Adams & Ferreira, 2009; Campbell & Mínguez-Vera, 2008; Carter, D'Souza, Simkins, & Simpson, 2010; Carter, D'Souza, Simkins, & Simpson, 2007; Gul et al., 2011). Tobin's Q uses risk-adjusted discount rate and reduces misrepresentation of tax law and accounting principles (Wernerfelt & Montgomery, 1988) and can be applied as a substitute of accounting based measures to reduce the exploitation of the accounting methods by the management (Prihatiningtias, 2012). Tobin's Q is calculated as shown in the equation below:

$$Tobin'sQ = \frac{\text{Market Value of Equity} + \text{Book Value of Total Liabilities}}{\text{Total Assets}} \quad (2)$$

The natural logarithm of Tobin's Q is used in this study.

While Tobin's Q is broadly recognised as a determinant used to examine the economic trend from different perspectives and this measure is widely employed in the economic literature (Campbell & Mínguez-Vera, 2008), ROA and ROE are conventional accounting based and corporate performance measures that are widely applied in the accounting literature. Since this is accounting based research, these two variables are also used to measure performance.

3.2.2 Return on assets (ROA)

A number of corporate governance studies employ the ROA to measure organisation performance (Adams & Ferreira, 2009; Bonn, 2004; Francoeur, Labelle, & Sinclair-Desgagné, 2008; Liu et al., 2014; Lückerath-Rovers, 2013). ROA is considered as a proxy for the performance of the organisations. ROA is used to evaluate whether management has utilised the assets efficiently (Bonn et al., 2004). Since management has the possibility to manipulate the given resources derived from agency theory, ROA is a good measure to observe what management has achieved and their capability to utilise the assets of the shareholders (Bathula, 2008). It is defined in this study as the earnings before interest and taxes of organisation i in year t divided by total assets of the organisation i in the same year t . This ratio is calculated as shown in the equation below:

$$ROA = \frac{\text{Earnings before interest and taxes}}{\text{TotalAssets}} \quad (3)$$

3.2.3 Return on equity (ROE)

Prior studies employ ROE to measure organisation performance (Bonn, 2004; Lückerath-Rovers, 2013). ROE is another measure that is adopted in the study as a proxy for the performance of the organisations. ROE is an estimation of profit obtained by the equity resources. ROE can be used to evaluate whether management is utilizing equity resources properly invested by the shareholders to make return, therefore this is treated as an important determinant of organisation performance (Bonn, 2004). In essence, ROE is defined as net income available to common shareholders for the financial period t for an organisation i divided by shareholders' equity in an organisation i in the same period t . In addition, this ratio is calculated as shown in the equation below:

$$ROE = \frac{\text{Net income available to commons hare holder}}{\text{Total Equity}} \quad (4)$$

3.3 Independent variables

Independent variables used in this study include gender diversity, and professional qualification and expertise of directors. The section provides the justification for considering these independent variables.

3.3.1 Gender diversity

This study uses seven proxies for gender diversity. In essence, the study observes the relation of each female board member including female chair, female CEO and female audit committee member with the organisation as the measures of gender diversity. The Blau index is also used to determine gender diversity that considers both the number of gender categories that means male and female and the level of allocation of board members among them (Richard et al., 2004).

3.3.1.1 Female dummy

Female director dummy is used as an indicator variable taking the value of 1 if the director is female and zero otherwise which is extensively applied in the literature (Adams & Ferreira, 2009; Liu et al., 2014; Lückérath-Rovers, 2013; Mínguez-Vera & Martin, 2011; Rose, 2007).

3.3.1.2 Proportion of female directors

The presence of female directors has significant influence on board construction and corporate governance (Adams & Ferreira, 2009) and is used as a proxy for gender diversity in the study. Specifically the proportion of female directors is the number of female directors divided by the number of total directors to measure gender diversity in the boardroom which is broadly used in the literature (Adams & Ferreira, 2009; Bonn, 2004; Bonn et al., 2004; Campbell & Mínguez-Vera, 2008; Lückérath-Rovers, 2013; Rose, 2007).

3.3.1.3 Number of female directors

Most of the boards are usually composed of a major portion of male directors and greater gender diversity directs through the inclusion of female members in the board (Bathula, 2008). Number of total female directors on the board is used as a proxy of gender diversity in the current study.

3.3.1.4 Female chair

The role of female chair is very important as it indicates the level of female integration in the organisations' governance mechanisms. Female chair is served by the female directors who have capability and proficiency and female chair also provide support to the female directors' importance on organisation performance (Liu et al., 2014). Female chair is an indicator variable taking the value of 1 if the chairman of the board is female and zero in the alternative and is used in the literature (Liu et al., 2014).

3.3.1.5 Female CEO

Female CEO has a positive influence on organisation performance and indicates female executive directors' managerial proficiency and competency contribute to favourable organisation performance (Liu et al., 2014). Female CEO is an indicator variable taking the value of 1 if the CEO of the board is female and zero otherwise which is used in the literature (Liu et al., 2014).

3.3.1.6 Female audit committee dummy

Gender diverse boards are strict monitors and female directors are more engaged with monitoring committees such as audit committee that support weak corporate governance and improve organisation value (Adams & Ferreira, 2009). Female audit committee dummy is an indicator variable taking a value of 1 if audit committee member is female and zero otherwise which is used in the prior study (Adams & Ferreira, 2009).

3.3.1.7 Blau index

Blau index is used to examine gender diversity and takes into account both the gender categories of male and female and the level of allocation of board members among them (Mínguez-Vera & Martin, 2011). This feature is not noticeable when female dummy, proportion of female directors or other proxies of gender diversity are used to examine gender diversity in the boardroom. Previous studies have used Blau index to measure the level of

group diversity including gender diversity (Campbell & Mínguez-Vera, 2008; Richard et al., 2004; Sacco & Schmitt, 2005). Hence, Blau index is deemed to be a robust measure to examine gender diversity in the boardroom. Blau index is calculated as shown in the equation below:

$$\text{Blau Index} = 1 - (\text{Proportion of Female Directors})^2 - (\text{Proportion of Male Directors})^2 \quad (5)$$

The maximum value of Blau index is 0.5 when equal proportion of male and female remain in the board. When the value of Blau index is 0, then it is entirely homogenous, on the other hand when the value of Blau index is 0.5 that means gender diversity of the group remains at the highest level.

3.3.2 Directors' professional qualification

Directors' professional qualification has been measured in the fields of financial, accounting, legal, human resource, mining, engineering and other. According to Musteen et al. (2010), having professionally qualified directors increases the effectiveness of board members. Directors' professional qualification is an indicator variable taking the value of 1 if the director has a professional qualification and zero otherwise which is also used in the literature (Yermack, 2006).

This study measures directors' qualification in various ways which are given below:

All qualification is a variable taking a value of 1 if the director has any qualification and zero otherwise. Academic qualification is a variable taking a value of 1, 2, 3, 4 and 0 if the director has the qualification of Bachelor, Masters, Professional, Ph.D. and others respectively. Bachelor is an indicator variable taking a value of 1 if the highest degree of director is Bachelor and zero otherwise. Masters is an indicator variable taking a value of 1 if the highest degree of director is masters and zero otherwise. Professional is an indicator variable taking a value of 1 if the highest degree of director is professional and zero otherwise. PhD is an indicator variable taking a value of 1 if the highest degree of director is PhD and zero otherwise.

Further, financial qualification is an indicator variable taking a value of 1 if the director has financial qualification and zero otherwise. Accounting qualification is an indicator variable taking a value of 1 if the director has accounting qualification and zero otherwise. Legal qualification is an indicator variable taking a value of 1 if the director has a legal qualification and zero otherwise. Human resource qualification is an indicator variable taking a value of 1 if the director has human resource qualification and zero otherwise. Mining qualification is an indicator variable taking a value of 1 if the director has mining qualification and zero otherwise. Engineering qualification is an indicator variable taking a value of 1 if the director has engineering qualification and zero otherwise. Other qualification is an indicator variable taking a value of 1 if the director has other qualification and zero otherwise.

3.3.3 Directors' professional expertise

Directors' professional expertise has been measured in the fields of financial, accounting, legal, human resource, mining, engineering and other. Directors' with professional expertise is very critical for the supervision and direction of management (Kroll et al., 2008). Therefore, professional expertise of directors is regarded as an important element for the board effectiveness (Miller & Triana, 2009). Directors' professional expertise is an indicator variable taking the value of 1 if the director has professional expertise and zero otherwise. All expertise is an indicator variable taking a value of 1 if the director has any expertise and zero otherwise. Financial expertise is an indicator variable taking a value of 1 if the director has financial expertise and zero otherwise.

This study measures directors' professional expertise in various ways which are given below:

Accounting expertise is an indicator variable taking a value of 1 if the director has accounting expertise and zero otherwise. Legal expertise is an indicator variable taking a value of 1 if the director has legal expertise and zero otherwise. Human resource expertise is an indicator variable taking a value of 1 if the director has human resource expertise and zero otherwise. Mining expertise is an indicator variable taking a value of 1 if the director has mining expertise and zero otherwise. Engineering expertise is an indicator variable taking a value of 1 if the director has engineering expertise and zero otherwise. Other expertise is an indicator variable taking a value of 1 if the director has other expertise and zero otherwise.

3.4 Control variables

Control variables are also utilised in the study in addition to independent variables since they are known to impact on the performance of organisations. Control variables for organisation characteristics proposed in this study are widely used in the corporate governance literature. The control variables used in this study are important in the analysis in order to sift out the effects of directors' qualification and expertise, and gender diversity on the performance of organisations.

3.4.1 *Proportion of independent directors*

In the opinion of North (2006), independent directors can be described as a group of directors who are not working in the organisation, hence have no attached material relationship with the organisation. Independent directors must not have interlocked or not related to organisation management, and are not former or current employees of the organisation. Independent directors, therefore, assume the role of unbiased monitoring the actions of the boards. According to Nicholson and Kiel (2004), independent directors are also known as external directors or outside directors. This ratio is expressed as shown in the equation below:

$$\text{Proportion of independent directors} = \text{Total Independent Directors} / \text{Total Directors} \quad (6)$$

3.4.2 *Attendance of directors*

Attendance of directors in the board meetings is the ratio of board meetings attended by the director j in organisation i in year t to total board meetings in organisation i in year t which is used in the literature (Adams & Ferreira, 2009). This ratio is expressed as shown in the equation below:

$$\text{Attendance of directors} = \frac{\text{Number of Board Meetings Attended}}{\text{Number of Board Meetings Held}} \quad (7)$$

This variable is important in the study since it enables the investigation of difference in the behavior of female directors and the possible effects of this on the board attendance in general (Adams & Ferreira, 2009).

3.4.3 Big four audit organisation

Big four audit organisation is used as an indicator variable taking a value of 1 if the audit organisation of the Company is either of Deloitte, Ernst & Young, KPMG and PricewaterhouseCoopers and zero otherwise. Financial statements prepared by big four audit organisations are more reliable.

3.4.4 Industry type

Industry type is used as a dummy variable taking a value of 1 if the organisation is manufacturing and zero otherwise. Prior studies use industry dummy as a determinant of organisation performance (Rose, 2007) and industry classification to examine its influence on board diversity (Kang et al., 2007).

3.4.5 Growth

Sales growth is used as a control variable and calculated as shown below:

$$Growth = \frac{Sales_t - Sales_{t-1}}{Sales_{t-1}} \quad (8)$$

Total sales and the log value of sales have been used as a determinant of organisation performance in the literature (Bonn, 2004; Joh, 2003).

3.4.6 Organisation size

Increased size of the organisation is usually involved with the complicated activities as it tries to carry out its planned role properly. Due to the expansion of the organisation size, it influences board characteristics and also creates shade between board characteristics and organisation performance (Bathula, 2008). Hence, it is used as a control variable to observe the effect of directors' qualification and gender diversity on organisation performance. Organisation size has been also employed as a control variable to determine its effect on organisation performance in the literature (Bonn, 2004; Campbell & Mínguez-Vera, 2008;

Shrader et al., 1997). Organisation size is measured as the natural logarithm of total assets in the study which has been applied in the prior study (Lückerath-Rovers, 2013)

3.4.7 Organisation age

Organisation age is used as a control variable to examine its effect on organisation performance in this study. Organisation age is related to the reflection of different factors in an organisation, for instance, with the growth of the organisation, board also grows to meet the demand of supervision and expertise of board members in different areas and business become more complicated (Bonn et al., 2004). Organisation age is calculated in the following way:

$$\text{Organisation Age} = 2015 - \text{Year of Incorporation of the company} \quad (9)$$

Natural Logarithm of organisation age is used in the study which has been applied in the literature (Liu et al., 2014).

3.4.8 Board size

Board size is an important determinant of organisation performance. In a large board there may be lack of cooperation and interaction, on the contrary a small board may suffer from proficiency, knowledge and suggestion of directors, so extending board size can have favourable and unfavourable impact on a smaller board and larger board respectively (Bonn et al., 2004). Since the variation in board size is likely to have different impact, it has been included as a control variable to examine its association with organisation performance. Board size is used as a control variable in previous research (Kiel & Nicholson, 2003; Kroll et al., 2008; Lückerath-Rovers, 2013; Rose, 2007; Shrader et al., 1997). Board size is measured as the natural logarithm of total board members in an organisation which has been applied previously in the literature (Campbell & Mínguez-Vera, 2008).

3.4.9 Director age

Directors' age is used as a control variable in the current study. The consequence of difference in directors' age has impact on boards. Older managers can utilise their gathered experience from different business areas to get better organisation performance; on the other

hand younger managers are more innovative and capable to promote new ideas to compete with others in the market (Bonn et al., 2004). In Australia, the experience and knowledge of older directors are given importance and priority over the vitality and creativity of younger directors (Kang et al., 2007). Using this variable is important because it affects organisation performance due the variation in directors' age. Directors' age is calculated as shown below:

$$\text{Director Age} = 2015 - \text{Year of Birth of director} \quad (10)$$

Natural Logarithm of Director Age is used in this study.

3.4.10 Leverage

Leverage is employed as a control variable to indicate the proportion of assets that are financed by debt rather than equity. An organisation can arrange necessary funds from external sources like bank or financial institutions to meet the capital adequacy or to extend business activities. But these also raise the interest expense, that has an impact on organisation performance (Christensen et al., 2010). Increased debt levels may create obstacles to new investment decisions and reduce the necessary funds for the practice and retention of good corporate governance mechanisms (Christensen et al., 2010). Therefore, it is important to evaluate the financial strength of the organisations to handle their loan or debt. Leverage is measured as:

$$\text{Leverage} = \frac{\text{Total liabilities}}{\text{Total assets}} \quad (11)$$

3.5 Data

This study uses annual corporate governance and financial data of Australian listed organisations for the period from 2010-2014. Director level annual corporate governance data of Australian organisations is obtained from SIRCA. Financial data has been collected from DataStream. SIRCA data has been matched with DataStream data using Australian Stock Exchange (ASX) Code. The director-year observations with negative ROA and ROE have been deleted. Final dataset contains 18,873 director-year observations for 509 Australian publicly listed organisations.

The SIRCA database contains detailed information on the organisations' corporate governance, their human resource and employees' composition that is collected specifically for administrative purposes, which makes it easier to make use of panel estimators and control for correlation. Further, the information obtained from the SIRCA data set is combined with the financial information, which is obtained from the DataStream database which compiles information from organisations' annual reports and financial statements. In addition, the data set used not only provided information about board characteristics and performance indicators but also allows the researcher to analyse a variety of other control variables such as organisation age, total assets, industry type, organisation growth rate and corporate governance mechanisms such as number of board of directors, their age, ratio of independent directors to total directors and proportion of board meetings attended among others.

3.6 Chapter summary

In this chapter, the research methodology to test the hypotheses and sources of data and collection procedures of data has been described. The measurement of the dependent variables used in the study has been explained. All the independent and control variables included in the research have also been defined and the use of these variables are consistent with the prior literature. In terms of analysis, panel regression is employed to estimate the equation to establish the impact of gender diversity and directors' qualification and expertise on the financial performance of Australian organisations.

CHAPTER FOUR: RESULTS

This chapter is structured as follows. Section 4.1 demonstrates descriptive statistics of dependent, independent and control variables used in the study. Section 4.2 discusses the results of the regression analysis executed to examine the hypotheses developed in Chapter 2. Finally, Section 4.3 provides a summary of the chapter.

4.1 Descriptive statistics

In order to empirically examine the impact of gender diversity and directors' qualification on the organisation performance, this study explores a variety of variables for measuring gender diversity in board of directors and directors' qualification. Table 1 shows the descriptive statistics of this study's data set, including mean, standard deviation, minimum, maximum and the number of observations. The number of observations represents the maximum number for each variable, and due to missing values, this measure varies for each variable.

Based on the results of the dependent variables, the natural logarithm of Tobin's Q has the highest mean score of 0.30 (standard deviation=0.54) with a range of between -2.10 and 4.66; followed by ROE with a mean of 0.24 (standard deviation=2.71) ranging from 0.0002 and 141; and finally the ROA with the lowest mean of 0.13 (standard deviation=0.29), a range of 0.0018 and 16.57. These results show that the fair value of the organisation's stock (Tobin's Q) for the data set is higher than the organisations' ROE and ROA. This can be justified on the ground that since the financial sector, specifically the banking sector is very strong in Australia, market value of the stock would be higher. From the similar point of view, mean score of ROE is almost double that of ROA due to the stable capital market in Australia. Further, the standard deviation for all the dependent variables are higher than their mean values, which implies that the organisations have highly volatile replacement values and their ROA and ROE deviate largely from the expected normal returns.

With regard to the dependent variables, the gender diversification measures, the proportion of female director, female director dummy, total number of female directors, Blau index, female chair, female CEO and female directors in the audit committee have an average value of 0.11, 0.11, 1.48, 0.15, 0.002, 0.003 and 0.03 respectively. On the other hand, all directors'

expertise (measured by the all expertise variable) has a mean score of 0.64 while the directors' qualification variable (measured by all qualification variable) has an average of 0.42. These results indicate that the companies analysed in this study have directors with high qualifications in terms of expertise and academic qualifications. A high mean score (0.19) of professional education indicates that industries require more directors with professional education. Similar to the dependent variables, the standard deviations of all the independent variables, except proportion of female directors, Blau index and directors' all expertise variable are larger than means, which implies that there are high variations among the samples.

Lastly, the control variables show varying results. However, the growth rate of sales has the highest mean of 16.71 and a standard deviation of 481.67 followed by the natural logarithm of total assets with an average of 13.32 (standard deviation=2.37). Following closely are age of directors and organisation age with a mean of 4.11 and 3.45 respectively and standard deviations 0.15 and 0.78 respectively. The total number of board of directors has a mean of 2.56 (standard deviation=0.38) while number of board meetings attended to number of board meetings held has a mean of 0.95 (standard deviation=0.17), then industry type has a mean of 0.56 (standard deviation=0.4959). The indicator variable if the organisation auditor is one of the big four audit organisations has a mean of 0.75 (standard deviation 0.43) and the ratio of total liabilities to total assets, or rather, the organisation leverage has a mean of 0.46 (standard deviation=1.23). Total independent directors to total directors has the least mean of 0.25 (standard deviation=0.13).

A closer analysis of the descriptive statistics of the control variables show that apart from the organisation leverage and sales growth, all other control factors have means that are greater than their standard deviations. This implies that the organisation's leverage and sales growth are highly volatile and widely spread from the normal. Figure 1, 2 and 3 shows average ROA and ROE of the sample organisations decreases over time during the period of 2010-2014 whereas Tobin's Q increases over time. Figure 4, 5 and 6 shows that the appointment of female directors increases over time in the sample Australian organisations during the study period. Figure 7, 8 and 9 shows the gender diversity, directors' qualification and directors' experience in the sample organisations.

Figure 1: Return on assets of Australian organisations

Figure 1 shows the annual average ROA of 509 Australian organisations from 2010 to 2014.

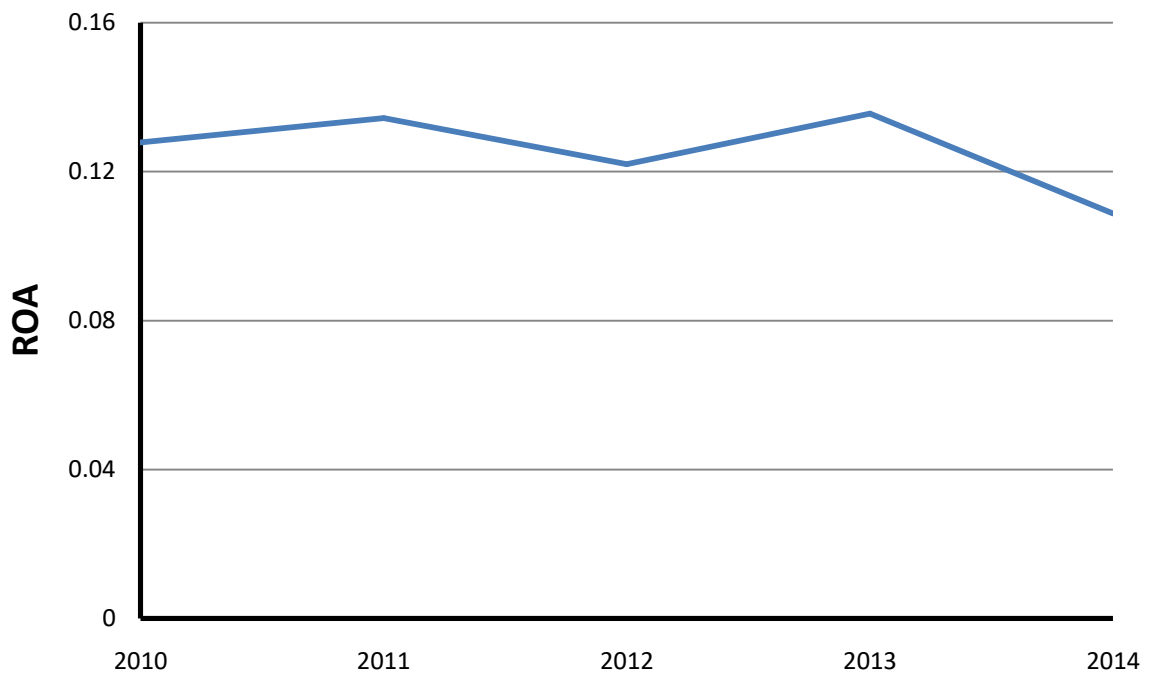


Figure 2: Return on equity of Australian organisations

Figure 2 shows the annual average ROE of 509 Australian organisations from 2010 to 2014.

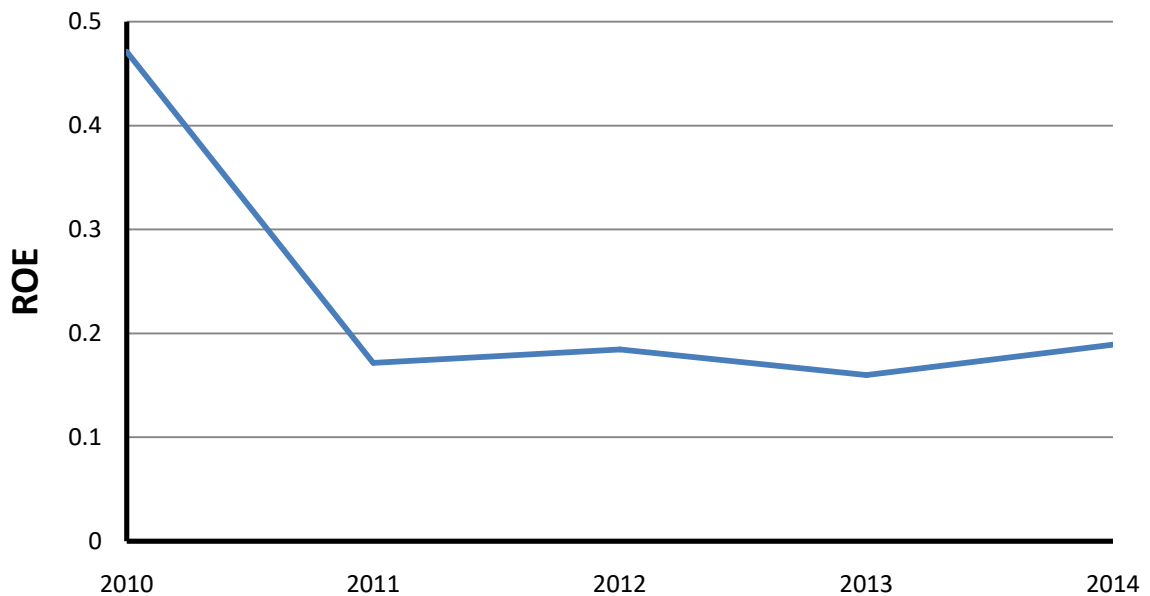


Figure 3: Tobin's Q of Australian organisations

Figure 3 shows the annual average Tobin's Q of 509 Australian organisations from 2010 to 2014.

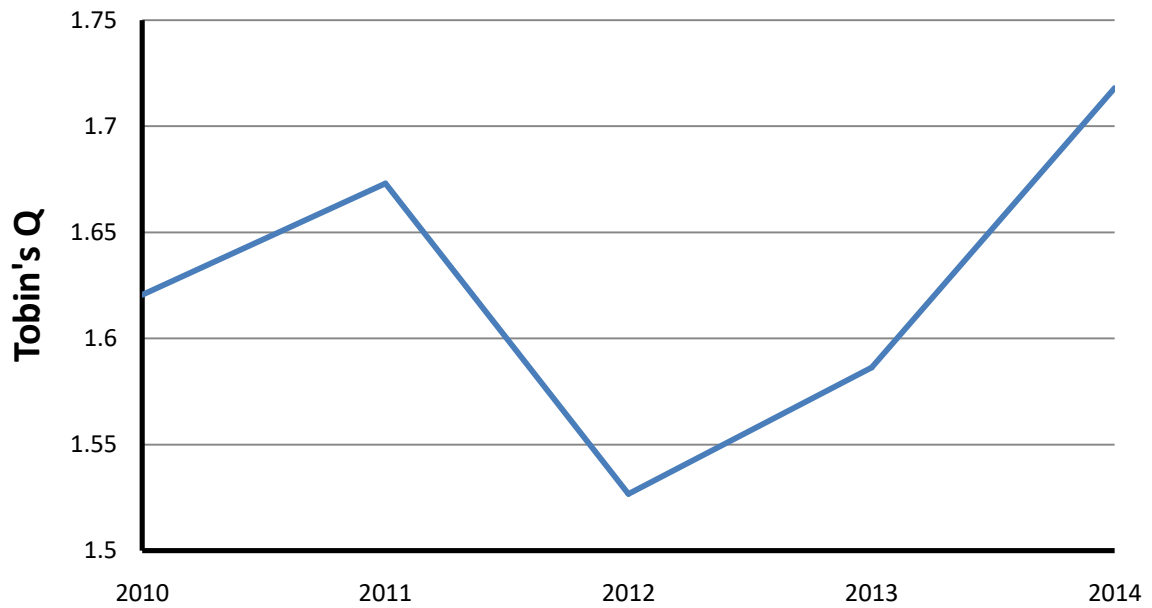


Figure 4: Proportion of female directors of Australian organisations

Figure 4 shows the annual average proportion of female directors of 509 Australian organisations from 2010 to 2014.

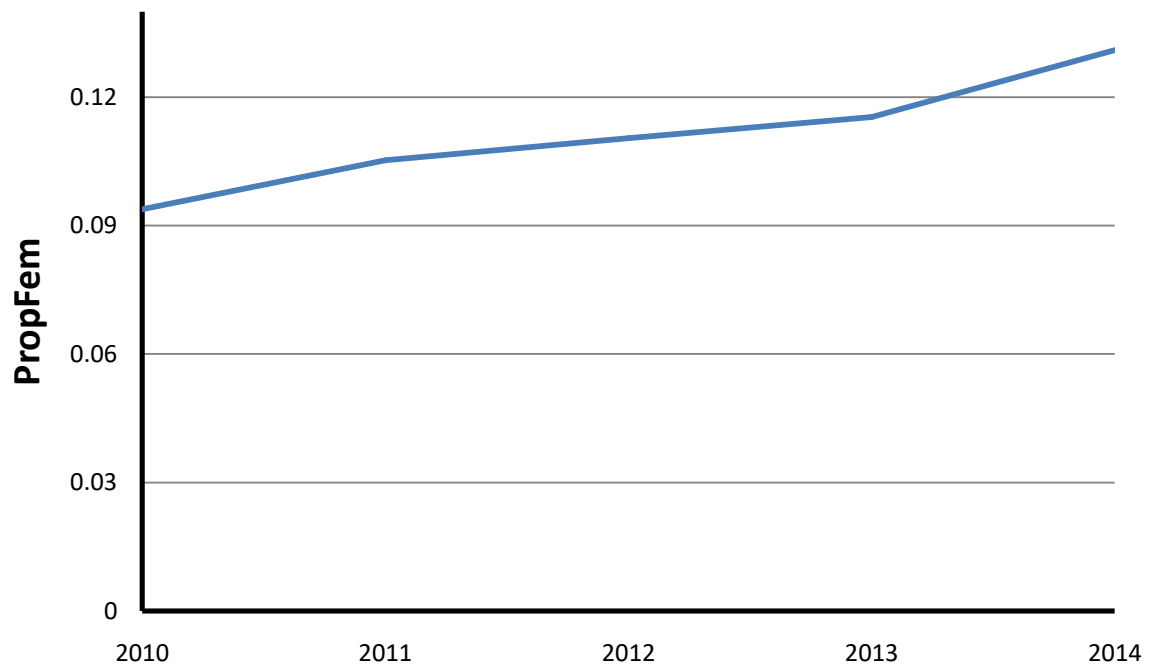


Figure 5: Number of female directors of Australian organisations

Figure 5 shows the annual average number of female directors of 509 Australian organisations from 2010 to 2014.

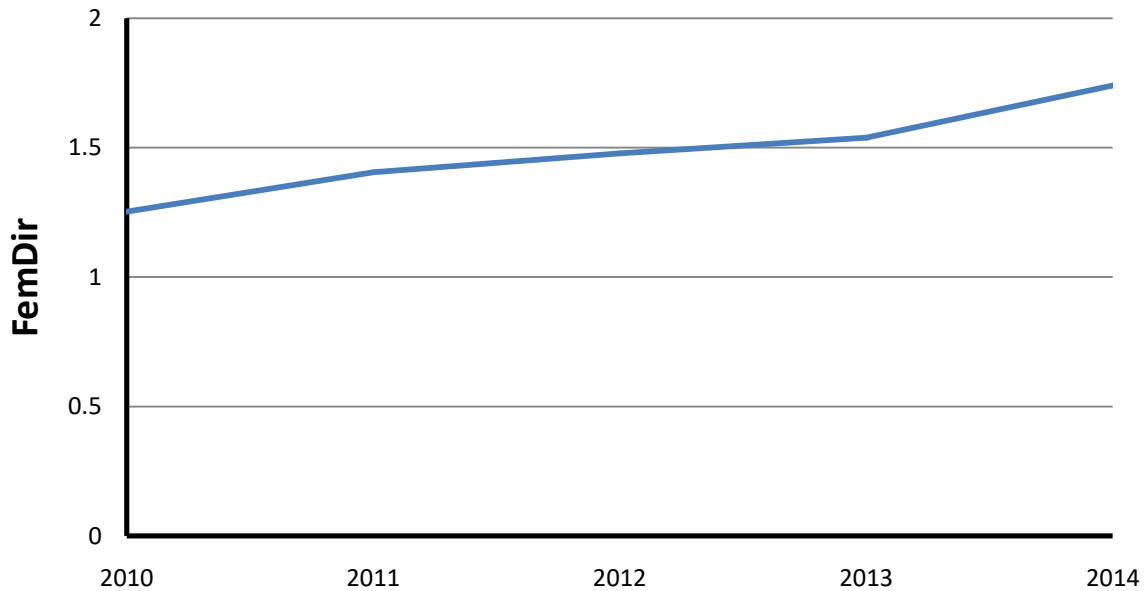


Figure 6: Blau Index of Australian organisations

Figure 6 shows the annual average Blau Index of 509 Australian organisations from 2010 to 2014.

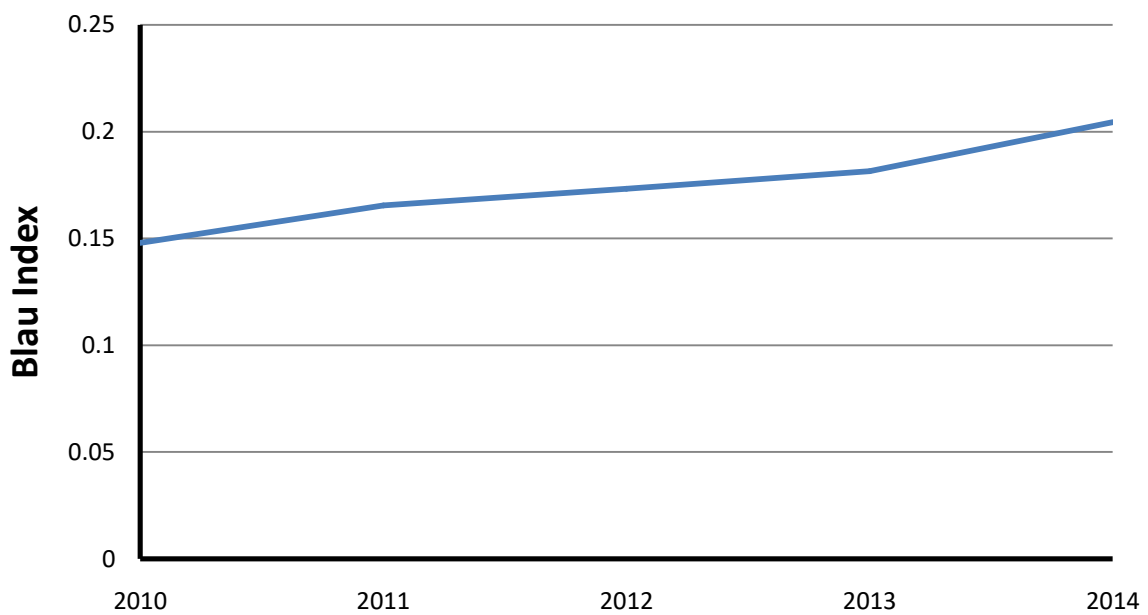


Figure 7: Percentage of female and male directors of Australian organisations

Figure 7 shows the percentage of male and female directors of 509 Australian organisations from 2010 to 2014.

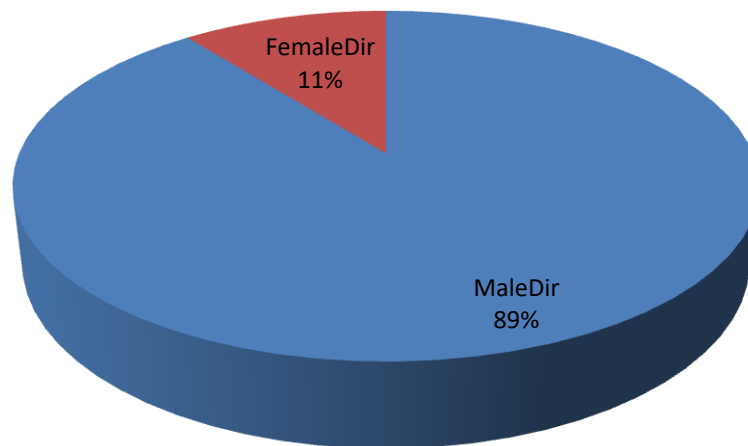


Figure 8: Directors' highest qualification of Australian organisations

Figure 8 shows the directors' highest qualification of 509 Australian organisations from 2010 to 2014.

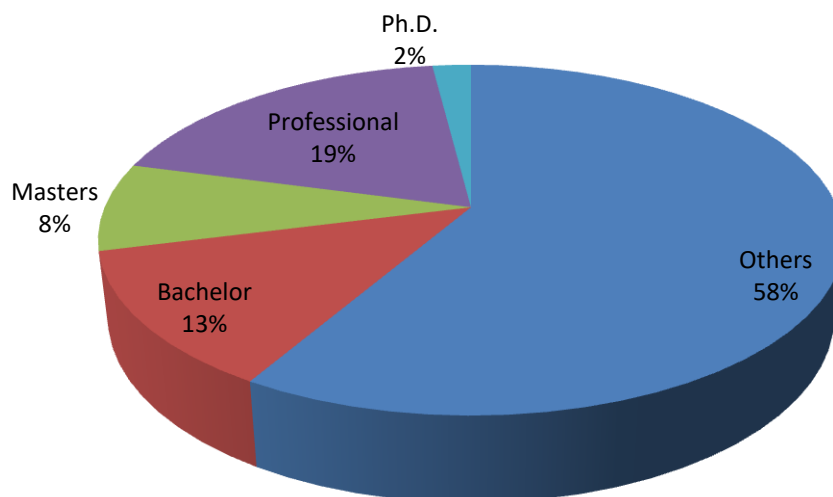


Figure 9: Directors' professional expertise of Australian organisations

Figure 9 shows the directors' professional expertise of 509 Australian organisations from 2010 to 2014.

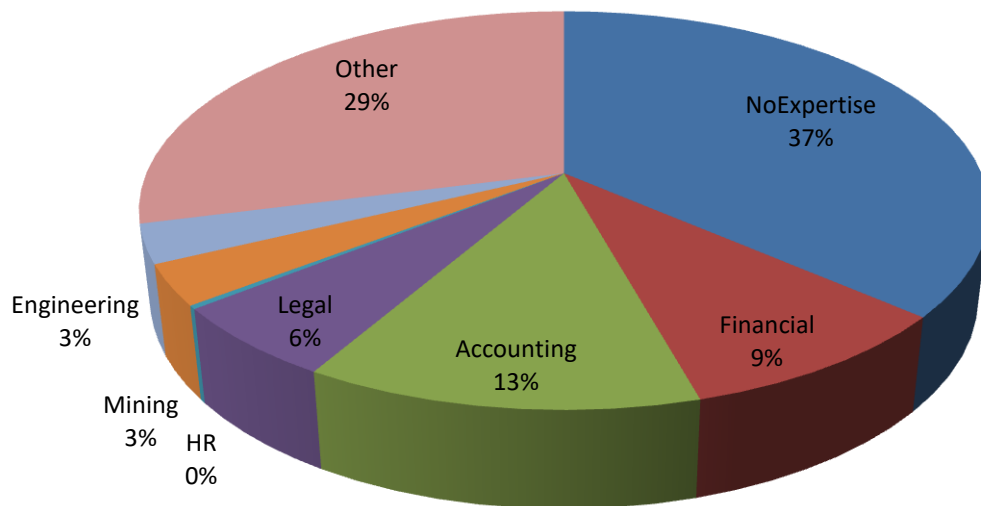


Table 1: Descriptive statistics for dependent, independent and control variables

Table 1 shows summary statistics of 509 Australian public listed organisations from 2010-2014.

Variable	Mean	Std. Dev.	Min	Max	Obs
Dependent Variable					
ROA	0.1258	0.2931	0.0018	16.5714	18,357
ROE	0.2368	2.7116	0.0002	141.0000	18,836
TobinQ	0.3023	0.5424	-2.0973	4.6643	18,473
Independent Variable					
PropFem	0.1109	0.1076	0.0000	0.5714	18,873
FemDum	0.1066	0.3086	0.0000	1.0000	18,873
FemDir	1.4793	1.5430	0.0000	8.0000	18,873
Blau	0.1548	0.1557	0.0000	0.5000	1,733
FemChair	0.0020	0.0442	0.0000	1.0000	18,873
FemCEO	0.0028	0.0529	0.0000	1.0000	18,873
FemAuditCom	0.0261	0.1593	0.0000	1.0000	18,873
AllQual	0.4156	0.4928	0.0000	1.0000	18,873
AllExpertise	0.6359	0.4812	0.0000	1.0000	18,873
AcademicQual	0.9338	1.2630	0.0000	4.0000	18,873
Bachelor	0.1259	0.3317	0.0000	1.0000	18,873
Masters	0.0813	0.2733	0.0000	1.0000	18,873
Professional	0.1884	0.3911	0.0000	1.0000	18,873
PhD	0.0200	0.1401	0.0000	1.0000	18,873
FinancialQual	0.0792	0.2700	0.0000	1.0000	18,873
AccountingQual	0.1280	0.3341	0.0000	1.0000	18,873
LegalQual	0.0502	0.2184	0.0000	1.0000	18,873
HRQual	0.0015	0.0392	0.0000	1.0000	18,873
MiningQual	0.0088	0.0934	0.0000	1.0000	18,873
EngineeringQual	0.0086	0.0925	0.0000	1.0000	18,873
OtherQual	0.1622	0.3687	0.0000	1.0000	18,873
FinancialExpertise	0.1162	0.3205	0.0000	1.0000	18,873
AccountingExpertise	0.1370	0.3439	0.0000	1.0000	18,873
LegalExpertise	0.0638	0.2444	0.0000	1.0000	18,873
HRExpertise	0.0032	0.0568	0.0000	1.0000	18,873
MiningExpertise	0.0357	0.1856	0.0000	1.0000	18,873
EngineeringExpertise	0.0327	0.1778	0.0000	1.0000	18,873
OtherExpertise	0.2902	0.4539	0.0000	1.0000	18,873
Control Variable					
Indtype	0.5637	0.4959	0.0000	1.0000	18,873
Attendance	0.9539	0.1660	0.0000	12.0000	9,518
Big4Audit	0.7496	0.4332	0.0000	1.0000	18,873
Fsize	13.3224	2.3710	4.3438	20.5973	18,825
Leverage	0.4604	1.2272	-0.1603	95.7139	18,825
IndepenDir	0.2457	0.1228	0.0000	0.7500	18,873
BoradSize	2.5625	0.3839	0.0000	3.4012	18,873
Growth	16.7196	481.6726	-13.3222	15607.1700	18,725
DirAge	4.1100	0.1533	3.3673	4.5218	5,792
OrgAge	3.4487	0.7770	0.6931	5.1059	12,528

Table 2 shows the correlation coefficients of the key variables used in this study for 509 Australian public listed organisations from 2010-2014.

The correlation matrix show that the correlation between some variables is positive while for others is negative. For instance, the findings show that the proportion of female directors is positively correlated with ROA (0.01) and Tobin's Q (0.03) but negatively correlated with ROE (-0.01), which implies that a unit increase in the proportion of female directors will lead to 1% increase in ROA, 3% increase in the Tobin's Q and 1% decrease in the ROE. The correlation matrix also shows that the female director dummy is negatively correlated with ROE (-0.01) and ROA (-0.04) but positively correlated with Tobin's Q (0.03). Similarly, the total number of female directors is negatively correlated with ROA (-0.03) and ROE (-0.02) but positively correlated with Tobin's Q (0.06).

The correlation matrix also shows that female chair is positively correlated to ROA (0.03) and Tobin's Q (0.03) but has no correlation with ROE, while the female CEO has no correlation with ROA and ROE but is negatively correlated with Tobin's Q (-0.02). These findings imply that the presence of a female chair would lead to a 3% increase in both the ROA and Tobin's Q while the presence of a female CEO would trigger a 2% decline in the Tobin's Q. These results show that the organisation's ROE is not influenced by the presence of a female chair or female CEO nor is the organisation's ROA value affected by the presence of a female CEO.

Also, the correlation matrix shows that female directors in the audit committee is negatively correlated to ROA (-0.02) and ROE (-0.01) but positively correlated with Tobin Q (0.06). This implies that increasing the number of female directors in the audit committee by one unit will result in a 2% decrease in ROA, 1% decrease in ROE and 6% increase in the organisation's Tobin's Q. The results also show that the directors' expertise has a positive correlation with ROE (0.01) but a negative relationship with ROA (-0.06) and Tobin Q (-0.04) while academic qualification was positively correlated with Tobin Q (0.03), no correlation with ROE and negatively correlated with ROA (-0.01). This indicates that an additional one director with academic qualification will increase stock market value by 3% and one director with expertise will increase ROE by 1%. The correlation coefficients among the variables of this study are not high which indicates that multi-collinearity is not a problem in this study.

Table 2: Correlation matrix for dependent, independent and control variables

Table 2 shows correlation matrix of 509 Australian public listed organisations from 2010-2014.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1 ROA	1.00																									
2 ROE	0.12	1.00																								
3 TobinQ	0.50	0.07	1.00																							
4 PropFem	0.01	-0.01	0.03	1.00																						
5 FemDum	-0.04	-0.01	0.03	0.28	1.00																					
6 FemDir	-0.03	-0.02	0.06	0.89	0.27	1.00																				
7 FemChair	0.03	0.00	0.03	0.08	0.22	0.07	1.00																			
8 FemCEO	0.00	0.00	-0.02	0.03	0.20	0.04	0.06	1.00																		
9 FemAuditCom	-0.02	-0.01	0.06	0.23	0.80	0.22	0.15	-0.02	1.00																	
10 AllQual	0.00	0.00	0.05	0.04	0.03	0.08	0.04	-0.01	0.04	1.00																
11 AllExpertise	-0.06	0.01	-0.04	-0.02	0.02	-0.03	0.02	0.02	0.02	0.33	1.00															
12 AcademicQual	-0.01	0.00	0.03	0.01	0.01	0.05	0.04	0.00	0.04	0.81	0.27	1.00														
13 Bachelor	0.03	-0.02	0.05	0.02	0.02	0.03	0.00	-0.03	0.00	0.38	0.12	-0.15	1.00													
14 Masters	-0.03	0.02	0.00	0.07	0.06	0.10	0.01	0.04	0.04	0.30	0.10	0.18	-0.20	1.00												
15 Professional	0.00	0.00	0.00	-0.05	-0.06	-0.04	0.04	-0.01	-0.02	0.45	0.15	0.72	-0.30	-0.23	1.00											
16 PhD	0.00	-0.01	0.01	0.03	0.05	0.05	-0.01	-0.01	0.06	0.15	0.05	0.39	-0.10	-0.08	-0.12	1.00										
17 Indtype	0.06	-0.04	-0.04	-0.18	-0.08	-0.21	-0.02	-0.05	-0.06	0.03	-0.01	0.04	-0.02	0.03	0.01	0.03	1.00									
18 Attendance	0.02	0.01	0.03	0.08	0.03	0.07	0.03	0.02	0.02	0.05	0.07	0.05	-0.01	0.06	0.03	-0.02	-0.03	1.00								
19 Big4Audit	-0.13	-0.06	0.00	0.25	0.12	0.32	0.02	0.03	0.11	0.07	-0.02	0.09	-0.04	0.08	0.02	0.06	-0.02	0.02	1.00							
20 Fsize	-0.22	-0.07	-0.01	0.36	0.17	0.57	0.02	0.06	0.12	0.09	-0.02	0.09	-0.03	0.14	-0.01	0.08	-0.17	0.04	0.43	1.00						
21 Leverage	-0.28	0.09	0.03	0.19	0.10	0.32	0.00	0.04	0.08	0.06	0.01	0.07	-0.02	0.07	0.01	0.04	-0.32	0.03	0.24	0.56	1.00					
22 IndepenDir	0.00	-0.01	0.08	0.09	0.06	0.15	-0.02	-0.04	0.07	0.04	0.01	0.06	-0.02	0.04	0.01	0.06	0.00	0.02	0.18	0.20	0.05	1.00				
23 BoradSize	-0.13	-0.08	0.10	0.41	0.16	0.62	0.03	0.05	0.12	0.11	-0.06	0.11	-0.01	0.13	0.00	0.08	-0.19	0.00	0.49	0.75	0.45	0.04	1.00			
24 Growth	0.00	0.00	0.02	-0.03	-0.01	-0.03	0.00	0.00	-0.01	-0.02	0.01	-0.01	-0.02	-0.01	0.01	-0.01	0.02	-0.03	-0.06	-0.04	-0.02	-0.03	-0.05	1.00		
25 DirAge	-0.01	-0.03	0.01	0.00	-0.16	0.02	-0.02	-0.04	-0.10	-0.01	-0.04	0.07	-0.09	-0.04	0.10	0.02	0.05	0.00	0.09	0.08	0.01	0.09	0.07	-0.03	1.00	
26 OrgAge	-0.05	-0.06	0.02	0.16	0.04	0.28	0.02	0.04	0.02	0.13	-0.01	0.10	0.02	0.12	0.01	0.04	0.17	0.03	0.24	0.36	0.17	0.04	0.36	0.01	0.09	1.00

4.2 Results

The study undertakes a multiple panel regression analysis between the variables in order to determine the impact of gender diversity and directors' qualification on the organisation performance. Since the organisation performance (dependent variable) is measured using three variables, that are ROA, ROE, and Tobin's Q, the regression analysis for each independent variable is performed while controlling for the organisation characteristics as shown in the subsections below.

4.2.1 Female director and organisation performance

Table 3 reports the results for testing the impact of female directors on organisation performance. The results in table 3 show that an increase in the proportion of female directors improves ROA and the results are statistically significant at 1% level of significance. However, the relation between proportion of female directors with ROE and Tobin's Q are not statistically significant. Female dummy do not affect the organisation performance proxy by ROA, ROE and Tobin's Q. However, an increase in the number of female directors improves organisation performance proxy by ROA and ROE at 1% and 10% level of statistical significance respectively. These results provide evidence that increases in female directors improve organisation performance.

4.2.2 Female chair, CEO and audit committee member and organisation performance

Table 4 reports the results for testing the impact of female chair, CEO and audit committee member on organisation performance. The results show that there exists a positive relationship between female chair and organisation performance, which is statistically significant for ROA and Tobin's Q measures. Further, an increase in female CEO and female audit committee membership improves ROA and Tobin's Q and the results are statistically significant at 1% and 5% level of significance, respectively. Given the statistically significant positive relationships observed in these results, this study concludes that female chair, female CEO and female audit committee member are positively correlated to organisation performance.

Table 3: Female director and organisation performance

Table 3 reports the panel regression results where the dependent variables are the organisation's financial performance measured by ROA, ROE and natural logarithm of Tobin's Q. The independent variables of interest are the gender diversity measured by the ratio of number of female directors divided by number of total directors (PropFem), the indicator variable taking a value of 1 for female director and zero otherwise (FemDum) and number of total female directors (FemDir). Control variables are used to capture organisation characteristics. The sample is based on the annual data of Australian public listed organisations over the period from 2010 to 2014.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	ROA	ROA	ROA	ROE	ROE	ROE	TobinQ	TobinQ	TobinQ
PropFem	0.0531*** (0.0026)			0.8760 (0.3132)			-0.0915 (0.2653)		
FemDum		0.0019 (0.7837)			-0.0206 (0.9511)			0.0674 (0.1103)	
FemDir			0.0038*** (0.0022)			0.1035* (0.0887)			-0.0075 (0.1877)
Indtype	-0.0050 (0.2233)	-0.0063 (0.1268)	-0.0048 (0.2468)	-0.1273 (0.5338)	-0.1520 (0.4549)	-0.1063 (0.6036)	-0.0163 (0.4764)	-0.0131 (0.5663)	-0.0171 (0.4564)
Attendance	0.0087 (0.4243)	0.0098 (0.3684)	0.0088 (0.4192)	0.2539 (0.6386)	0.2787 (0.6061)	0.2405 (0.6563)	0.0066 (0.8907)	0.0038 (0.9364)	0.0068 (0.8871)
Big4Audit	0.0022 (0.6799)	0.0034 (0.5317)	0.0031 (0.5643)	-0.0568 (0.8324)	-0.0424 (0.8744)	-0.0402 (0.8805)	0.0576** (0.0480)	0.0546* (0.0604)	0.0561* (0.0539)
Fsize	-0.0086*** (0.0000)	-0.0084*** (0.0000)	-0.0088*** (0.0000)	-0.2519*** (0.0000)	-0.2469*** (0.0000)	-0.2600*** (0.0000)	-0.0430*** (0.0000)	-0.0443*** (0.0000)	-0.0426*** (0.0000)
Leverage	-0.0625*** (0.0000)	-0.0634*** (0.0000)	-0.0630*** (0.0000)	3.6908*** (0.0000)	3.6669*** (0.0000)	3.6927*** (0.0000)	0.1107** (0.0165)	0.1133** (0.0139)	0.1115** (0.0156)
IndepenDir	0.0448*** (0.0002)	0.0460*** (0.0001)	0.0422*** (0.0005)	0.1529 (0.7995)	0.1818 (0.7627)	0.0687 (0.9096)	0.3223*** (0.0000)	0.3176*** (0.0000)	0.3279*** (0.0000)
BoradSize	0.0182*** (0.0047)	0.0207*** (0.0013)	0.0146** (0.0293)	-0.6199* (0.0545)	-0.5765* (0.0715)	-0.7502** (0.0252)	0.1330*** (0.0000)	0.1277*** (0.0000)	0.1419*** (0.0000)
Growth	-0.0000 (0.6415)	-0.0000 (0.6187)	-0.0000 (0.6060)	-0.0000 (0.8129)	-0.0000 (0.8031)	-0.0000 (0.7981)	0.0000 (0.1818)	0.0000 (0.1723)	0.0000 (0.1761)
DirAge	-0.0020 (0.8778)	-0.0031 (0.8154)	-0.0019 (0.8869)	-0.4932 (0.4565)	-0.5281 (0.4329)	-0.4702 (0.4775)	0.0325 (0.6935)	0.0595 (0.4776)	0.0316 (0.7019)
OrgAge	0.0035 (0.2230)	0.0038 (0.1873)	0.0031 (0.2788)	-0.1162 (0.4114)	-0.1103 (0.4354)	-0.1289 (0.3627)	-0.0031 (0.8424)	-0.0039 (0.8040)	-0.0024 (0.8796)
Constant	0.1740*** (0.0018)	0.1723*** (0.0024)	0.1863*** (0.0008)	5.9552** (0.0334)	5.9711** (0.0351)	6.2999** (0.0247)	0.1919 (0.5787)	0.1027 (0.7691)	0.1669 (0.6296)
R Squared	0.0312	0.0346	0.0302	0.0218	0.0217	0.0218	0.0255	0.0254	0.0254
Observations	3,311	3,311	3,311	3,421	3,421	3,421	3,419	3,419	3,419

P-values presented in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

Table 4: Female chair, CEO and audit committee member and organisation performance

Table 4 reports the panel regression results where the dependent variables are the organisation's financial performance measured by ROA, ROE and natural logarithm of Tobin's Q. The independent variables of interest are the gender diversity measured by the indicator variable taking a value of 1 if the chairman of the board is female and zero otherwise (FemChair), the indicator variable taking a value of 1 if the chief executive officer of the organisation is female and zero otherwise (FemCEO), and the indicator variable taking a value of 1 if the female director is the member of audit committee and zero otherwise (FemAuditCom). Control variables are used to capture organisation characteristics. The sample is based on the annual data of Australian public listed organisations over the period from 2010 to 2014.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	ROA	ROA	ROA	ROE	ROE	ROE	TobinQ	TobinQ	TobinQ
FemChair	0.0361* (0.0918)			0.1168 (0.9138)			0.3223*** (0.0015)		
FemCEO		0.0851*** (0.0022)			0.3099 (0.8248)			-0.0790 (0.5775)	
FemAuditCom			-0.0013 (0.8641)			-0.0158 (0.9655)			0.0847** (0.0297)
Indtype	-0.0062 (0.1290)	-0.0062 (0.1309)	-0.0063 (0.1237)	-0.1512 (0.4568)	-0.1510 (0.4573)	-0.1516 (0.4556)	-0.0141 (0.5354)	-0.0139 (0.5423)	-0.0132 (0.5629)
Attendance	0.0090 (0.4074)	0.0093 (0.3890)	0.0099 (0.3633)	0.2751 (0.6109)	0.2761 (0.6093)	0.2782 (0.6066)	-0.0033 (0.9461)	0.0059 (0.9026)	0.0049 (0.9185)
Big4Audit	0.0032 (0.5558)	0.0030 (0.5751)	0.0034 (0.5227)	-0.0435 (0.8709)	-0.0447 (0.8675)	-0.0426 (0.8738)	0.0537* (0.0646)	0.0569* (0.0507)	0.0542* (0.0624)
Fsize	-0.0083*** (0.0000)	-0.0083*** (0.0000)	-0.0083*** (0.0000)	-0.2470*** (0.0000)	-0.2470*** (0.0000)	-0.2470*** (0.0000)	-0.0428*** (0.0000)	-0.0437*** (0.0000)	-0.0440*** (0.0000)
Leverage	-0.0630*** (0.0000)	-0.0628*** (0.0000)	-0.0634*** (0.0000)	3.6682*** (0.0000)	3.6689*** (0.0000)	3.6667*** (0.0000)	0.1173** (0.0109)	0.1122** (0.0150)	0.1134** (0.0138)
IndepenDir	0.0463*** (0.0001)	0.0475*** (0.0001)	0.0462*** (0.0001)	0.1813 (0.7632)	0.1853 (0.7582)	0.1817 (0.7628)	0.3198*** (0.0000)	0.3191*** (0.0000)	0.3166*** (0.0000)
BoradSize	0.0206*** (0.0013)	0.0203*** (0.0016)	0.0207*** (0.0012)	-0.5778* (0.0707)	-0.5789* (0.0702)	-0.5771* (0.0711)	0.1274*** (0.0000)	0.1299*** (0.0000)	0.1298*** (0.0000)
Growth	-0.0000 (0.6171)	-0.0000 (0.6194)	-0.0000 (0.6172)	-0.0000 (0.8034)	-0.0000 (0.8034)	-0.0000 (0.8032)	0.0000 (0.1760)	0.0000 (0.1774)	0.0000 (0.1726)
DirAge	-0.0034 (0.7982)	-0.0024 (0.8557)	-0.0040 (0.7617)	-0.5191 (0.4329)	-0.5154 (0.4364)	-0.5232 (0.4313)	0.0383 (0.6417)	0.0339 (0.6816)	0.0486 (0.5562)
OrgAge	0.0038 (0.1881)	0.0036 (0.2110)	0.0038 (0.1872)	-0.1103 (0.4350)	-0.1109 (0.4326)	-0.1103 (0.4353)	-0.0033 (0.8320)	-0.0037 (0.8111)	-0.0043 (0.7809)
Constant	0.1733*** (0.0020)	0.1701*** (0.0024)	0.1753*** (0.0018)	5.9400** (0.0339)	5.9272** (0.0343)	5.9532** (0.0340)	0.1778 (0.6064)	0.1968 (0.5693)	0.1412 (0.6830)
R Squared	0.0341	0.0405	0.0348	0.0217	0.0217	0.0217	0.0278	0.0248	0.0245
Observations	3,311	3,311	3,311	3,421	3,421	3,421	3,419	3,419	3,419

P-values presented in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

4.2.3 Blau index and organisation performance

Table 5 reports the results testing the impact of Blau index on organisation performance. The results show that there exists a positive relationship between Blau Index and organisation performance but the results are not statistically significant. This suggests that increasing female representation on the board would help to achieve higher financial outcome. If the organisations keep on increasing more female on board, profit would be also increased. The

Australian Institute of Company Directors have taken a target to include 30% female on board by 2018 and if this is achieved, its far-reaching impact on the financial performance of Australian organisations can be assumed. However, Blau index is negatively associated with Tobin's Q but the result is not statistically significant. The mean score (0.15) of Blau index indicates that on average the proportion of female to male ratio is around 1 : 7 in Australia. The increase in female directors improves organisation performance even if with a lower mean value of Blau index indicates that the appointment of female directors improves the organisation performance. This study finds evidence that gender diversity is positively associated with organisation performance, which supports the hypotheses 1.

4.2.4 Directors' qualification and organisation performance

Table 6-9 reports the results testing the relationship between directors' qualification, expertise and organisation performance. The results in Table 6 show that the indicator variable for all qualification is positively correlated with all the three variables of organisation performance but only has a statistically significant relation with Tobin's Q, which leads to the conclusion that all qualifications is positively related with organisation performance. When regressions for individual measures of qualification are tested, similar results are obtained. For instance, Table 7 reports the results testing the impact of the relationship between academic qualification and organisation performance and finds a positive relationship between all the three measures of organisation performance and a statistically significant relationship with Tobin's Q. Table 8 reports the results testing the relationship between individual academic qualification and organisation performance. Table 8 shows a statistically significant positive relationship between education at the Masters level with ROE and Tobin's Q at 5% level of significance. Moreover, Ph.D. education level is positively related to Tobin's Q at 10% level of significance.

Table 9 reports the results testing the relationship between individual professional qualification and organisation performance. The results from table 9 show that that mining qualification is statistically positively associated with ROA at 1% level of significance. Moreover, increase in directors having legal qualification improve Tobin's Q and the results are statistically significant at 1% level of significance. None of the qualification variables are significantly negatively associated with any of the performance measures. This study finds

evidence that directors' qualification is positively associated with organisation performance, which supports the hypotheses 2.

Table 5: Blau Index and organisation performance

Table 5 reports the panel regression results where the dependent variables are the organisation's financial performance measured by ROA, ROE and natural logarithm of Tobin's Q. The independent variable of interest is the gender diversity measured by the Blau Index (Blau). $\text{Blau Index} = 1 - [(\text{Proportion of Female Directors})^2 + (\text{Proportion of Male Directors})^2]$. Control variables are used to capture organisation characteristics. The sample is based on the annual data of Australian public listed organisations over the period from 2010 to 2014.

	(1)	(2)	(3)
	ROA	ROE	Tobin Q
Blau	0.0338 (0.1909)	0.6313 (0.6103)	-0.1392 (0.1788)
IndType	-0.0204 (0.1103)	-0.7394* (0.0684)	-0.1588*** (0.0096)
Big4Audit	0.0069 (0.5737)	-0.2324 (0.6167)	0.0227 (0.6851)
Fsize	-0.0195*** (0.0000)	-0.1924 (0.1123)	-0.0524*** (0.0002)
Leverage	0.0117 (0.6052)	-0.0088 (0.8765)	0.0445*** (0.0000)
IndepenDir	-0.0030 (0.9083)	0.3119 (0.8188)	0.1412 (0.1724)
BoradSize	0.0112 (0.4025)	-0.3461 (0.5723)	0.1249** (0.0216)
Growth	-0.0000 (0.7118)	-0.0000 (0.9304)	0.0000 (0.3957)
OrgAge	-0.0016 (0.8440)	-0.1979 (0.4612)	0.0048 (0.9064)
Constant	0.3470*** (0.0000)	4.8307*** (0.0004)	0.6092*** (0.0013)
R Squared	0.1731	0.1680	0.0039
Observations	1,080	1,110	1,105

P-values presented in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

Table 6: All qualification and organisation performance

Table 6 reports the panel regression results where the dependent variables are the organisation's financial performance measured by ROA, ROE and natural logarithm of Tobin's Q. The independent variable of interest is the directors' qualification measured by the indicator variable taking a value of 1 if the director has any qualification and zero otherwise (AllQual). Control variables are used to capture organisation characteristics. The sample is based on the annual data of Australian public listed organisations over the period from 2010 to 2014.

	(1)	(2)	(3)
	ROA	ROE	Tobin Q
AllQual	0.0007 (0.8515)	0.1578 (0.4104)	0.0945*** (0.0000)
IndType	-0.0064 (0.1227)	-0.1593 (0.4333)	-0.0199 (0.3834)
Attendance	0.0098 (0.3687)	0.2632 (0.6262)	0.0011 (0.9810)
Big4Audit	0.0034 (0.5269)	-0.0431 (0.8721)	0.0571** (0.0492)
Fsize	-0.0083*** (0.0000)	-0.2464*** (0.0000)	-0.0429*** (0.0000)
Leverage	-0.0635*** (0.0000)	3.6579*** (0.0000)	0.1093** (0.0176)
IndepenDir	0.0460*** (0.0001)	0.1578 (0.7933)	0.3082*** (0.0000)
BoradSize	0.0207*** (0.0013)	-0.5884* (0.0658)	0.1236*** (0.0001)
Growth	-0.0000 (0.6203)	-0.0000 (0.8170)	0.0000 (0.1455)
DirAge	-0.0038 (0.7761)	-0.5086 (0.4421)	0.0400 (0.6272)
OrgAge	0.0038 (0.1922)	-0.1187 (0.4021)	-0.0089 (0.5707)
Constant	0.1743*** (0.0019)	5.8726** (0.0360)	0.1486 (0.6671)
R Squared	0.0346	0.0216	0.0347
Observations	3,311	3,421	3,419

P-values presented in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

Table 7: Academic qualification and organisation performance

Table 7 reports the panel regression results where the dependent variables are the organisation's financial performance measured by ROA, ROE and natural logarithm of Tobin's Q. The independent variable of interest is the directors' qualification measured by the categorical variable taking a value of 1, 2, 3, 4 and 0 if the director has the qualification of Bachelor, Masters, Professional, Ph.D. and others respectively (AcademicQual). Control variables are used to capture organisation characteristics. The sample is based on the annual data of Australian public listed organisations over the period from 2010 to 2014.

	(1)	(2)	(3)
	ROA	ROE	Tobin Q
AcademicQual	0.0001 (0.9492)	0.0654 (0.3561)	0.0288*** (0.0004)
IndType	0.0098 (0.3665)	0.2608 (0.6294)	0.0016 (0.9730)
Attendance	-0.0063 (0.1242)	-0.1647 (0.4186)	-0.0208 (0.3627)
Big4Audit	0.0034 (0.5255)	-0.0492 (0.8543)	0.0525* (0.0709)
Fsize	-0.0084*** (0.0000)	-0.2458*** (0.0000)	-0.0425*** (0.0000)
Leverage	-0.0634*** (0.0000)	3.6529*** (0.0000)	0.1075** (0.0196)
IndepenDir	0.0461*** (0.0001)	0.1549 (0.7970)	0.3105*** (0.0000)
BoradSize	0.0207*** (0.0012)	-0.5903* (0.0650)	0.1249*** (0.0000)
Growth	-0.0000 (0.6179)	-0.0000 (0.8066)	0.0000 (0.1690)
DirAge	-0.0039 (0.7710)	-0.5510 (0.4054)	0.0199 (0.8096)
OrgAge	0.0038 (0.1887)	-0.1148 (0.4167)	-0.0055 (0.7269)
Constant	0.1748*** (0.0019)	6.0536** (0.0307)	0.2347 (0.4968)
R Squared	0.0346	0.0215	0.0314
Observations	3,311	3,421	3,419

P-values presented in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

Table 8: Individual academic qualification and organisation performance

Table 8 reports the panel regression results where the dependent variables are the organisation's financial performance measured by ROA, ROE and natural logarithm of Tobin's Q. The independent variable of interest is the directors' qualification measured by the indicator variable taking a value of 1 if the directors' highest qualification is Bachelor and zero otherwise (Bachelor), indicator variable taking a value of 1 if the directors' highest qualification is Masters and zero otherwise (Masters), indicator variable taking a value of 1 if the directors' highest qualification is Professional and zero otherwise (Professional), and indicator variable taking a value of 1 if the directors' highest qualification is Ph.D. and zero otherwise (Ph.D.). Control variables are used to capture organisation characteristics. The sample is based on the annual data of Australian public listed organisations over the period from 2010 to 2014.

Panel A: Individual academic qualification, return on assets and return on equity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ROA	ROA	ROA	ROA	ROE	ROE	ROE	ROE
Bachelor	0.0008 (0.8592)				-0.1804 (0.4295)			
Masters		0.0012 (0.8236)				0.5553** (0.0439)		
Professional			-0.0008 (0.8449)				-0.0026 (0.9903)	
PhD				0.0015 (0.8802)				0.1177 (0.8053)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R Squared	0.0347	0.0348	0.0347	0.0346	0.0215	0.0216	0.0217	0.0217
N	3,311	3,311	3,311	3,311	3421	3,421	3,421	3,421

Panel B: Individual academic qualification and Tobin's Q

	(9)	(10)	(11)	(12)
Qualifications	Tobin Q	Tobin Q	Tobin Q	Tobin Q
Bachelor	0.0395 (0.1266)			
Masters		0.0690** (0.0306)		
Professional			0.0254 (0.3057)	
PhD				0.0919* (0.0923)
Controls	Yes	Yes	Yes	Yes
R Squared	0.0253	0.0282	0.0243	0.0267
N	3,419	3,419	3,419	3,419

P-values presented in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

Table 9: Individual professional qualification and organisation performance

Table 9 reports the panel regression results where the dependent variables are the organisation's financial performance measured by ROA, ROE and natural logarithm of Tobin's Q. The independent variable of interest is the directors' qualification measured by the indicator variables for directors' financial, accounting, legal, human resources, mining, engineering and other qualifications. Control variables are used to capture organisation characteristics. The sample is based on the annual data of Australian public listed organisations over the period from 2010 to 2014.

Panel A: Individual professional qualification and return on assets

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ROA	ROA	ROA	ROA	ROA	ROA	ROA
FinancialQual	-0.0008 (0.8837)						
AccountingQual		-0.0036 (0.4932)					
LegalQual			0.0053 (0.4326)				
o.HRQual				0.0000 (.)			
MiningQual					0.0554*** (0.0009)		
EngineeringQual						-0.0058 (0.6545)	
OtherQual							-0.0031 (0.4649)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R Squared	0.0346	0.0353	0.0347	0.0346	0.0367	0.0348	0.0347
Observations	3,311	3,311	3,311	3,311	3,311	3,311	3,311

Panel B: Individual professional qualification and return on equity

	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	ROE	ROE	ROE	ROE	ROE	ROE	ROE
FinancialQual	-0.0974 (0.7097)						
AccountingQual		0.0309 (0.9047)					
LegalQual			-0.2220 (0.5133)				
o.HRQual				0.0000 (.)			
MiningQual					0.4816 (0.5480)		
EngineeringQual						-0.0114 (0.9856)	
OtherQual							0.2574 (0.2152)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R Squared	0.0215	0.0216	0.0217	0.0217	0.0216	0.0217	0.0215
Observations	3,421	3,421	3,421	3,421	3,421	3,421	3,421

Panel C: Individual professional qualification and Tobin's Q

	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	Tobin Q	Tobin Q	Tobin Q	Tobin Q	Tobin Q	Tobin Q	Tobin Q
FinancialQual	0.0438 (0.1374)						
AccountingQual		0.0239 (0.4347)					
LegalQual			0.1213*** (0.0018)				
o.HRQual				0.0000 (.)			
MiningQual					0.1131 (0.1812)		
EngineeringQual						-0.0536 (0.4181)	
OtherQual							0.0285 (0.2197)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R Squared	0.0264	0.0234	0.0271	0.0243	0.0252	0.0250	0.0257
Observations	3,419	3,419	3,419	3,419	3,419	3,419	3,419

P-values presented in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

4.2.5 Directors' professional expertise and organisation performance

Table 10-11 reports the results for testing the impact of director's professional expertise on organisation performance. Results from table 10 shows that the indicator variable for all expertise has no statistically significant relation with organisation performance even though it has a negative relationship with ROE and ROA and a positive relationship with Tobin's Q.

However, table 11 shows that that director having mining expertise improves the organisation performance proxy by ROA and the results are statistically significant at 1% level of significance. None of the proxies for directors' expertise is significantly negatively related to organisation performance. Consequently, this study concludes that directors' expertise has positive impact on organisation performance.

Table 10: All professional expertise and organisation performance

Table 10 reports the panel regression results where the dependent variables are the organisation's financial performance measured by ROA, ROE and natural logarithm of Tobin's Q. The independent variable of interest is the directors' professional expertise measured by the indicator variable taking a value of 1 if the director has any professional expertise and zero otherwise (AllExpertise). Control variables are used to capture organisation characteristics. The sample is based on the annual data of Australian public listed companies over the period from 2010 to 2014.

	(1)	(2)	(3)
	ROA	ROE	TobinQ
AllExpertise	-0.0105 (0.1092)	-0.0121 (0.9702)	0.0272 (0.4156)
IndType	-0.0063 (0.1251)	-0.1513 (0.4565)	-0.0144 (0.5294)
Attendance	0.0110 (0.3102)	0.2791 (0.6061)	0.0039 (0.9352)
Big4Audit	0.0032 (0.5552)	-0.0431 (0.8722)	0.0563* (0.0529)
Fsize	-0.0083*** (0.0000)	-0.2471*** (0.0000)	-0.0434*** (0.0000)
Leverage	-0.0634*** (0.0000)	3.6672*** (0.0000)	0.1127** (0.0145)
IndepenDir	0.0462*** (0.0001)	0.1807 (0.7640)	0.3194*** (0.0000)
BoradSize	0.0203*** (0.0015)	-0.5777* (0.0709)	0.1297*** (0.0000)
Growth	-0.0000 (0.6251)	-0.0000 (0.8036)	0.0000 (0.1793)
DirAge	-0.0042 (0.7497)	-0.5211 (0.4312)	0.0362 (0.6604)
OrgAge	0.0037 (0.1917)	-0.1104 (0.4349)	-0.0034 (0.8299)
Constant	0.1857*** (0.0010)	5.9575** (0.0349)	0.1602 (0.6448)
R Squared	0.0324	0.0217	0.0253
Observations	3,311	3,421	3,419

P-values presented in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

Table 11: Individual professional expertise and organisation performance

Table 11 reports the panel regression results where the dependent variables are the organisation's financial performance measured by ROA, ROE and natural logarithm of Tobin's Q. The independent variable of interest is the directors' professional expertise measured by the indicator variables for directors' financial, accounting, legal, human resources, mining, engineering and other professional experiences. Control variables are used to capture organisation characteristics. The sample is based on the annual data of Australian public listed organisations over the period from 2010 to 2014.

Panel A: Individual professional expertise and return on assets

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ROA	ROA	ROA	ROA	ROA	ROA	ROA
FinancialExpertise	-0.0047 (0.3091)						
AccountingExpertise		-0.0044 (0.3871)					
LegalExpertise			-0.0036 (0.5776)				
HRExpertise				-0.0615 (0.3695)			
MiningExpertise					0.0347*** (0.0005)		
EngineeringExpertise						-0.0062 (0.4844)	
OtherExpertise							-0.0045 (0.2296)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R Squared	0.0341	0.0354	0.0348	0.0344	0.0393	0.0345	0.0347
Observations	3,311	3,311	3,311	3,311	3,311	3,311	3,311

Panel B: Individual professional expertise and return on equity

	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	ROE	ROE	ROE	ROE	ROE	ROE	ROE
FinancialExpertise	-0.1166 (0.6117)						
AccountingExpertise		0.0210 (0.9336)					
LegalExpertise			-0.2776 (0.3899)				
HRExpertise				-0.0890 (0.9794)			
MiningExpertise					0.3176 (0.5207)		
EngineeringExpertise						0.4005 (0.3578)	
OtherExpertise							0.0251 (0.8919)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R Squared	0.0215	0.0216	0.0218	0.0217	0.0216	0.0217	0.0217
Observations	3,421	3,421	3,421	3,421	3,421	3,421	3,421

Panel C: Individual professional expertise and Tobin's Q

	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	TobinQ	TobinQ	TobinQ	TobinQ	TobinQ	TobinQ	TobinQ
FinancialExpertise	-0.0047 (0.8556)						
AccountingExpertise		0.0186 (0.5338)					
LegalExpertise			0.0379 (0.3075)				
HRExpertise				-0.3361 (0.4287)			
MiningExpertise					-0.0014 (0.9804)		
EngineeringExpertise						-0.0265 (0.5865)	
OtherExpertise							-0.0130 (0.5376)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R Square	0.0242	0.0243	0.0243	0.0242	0.0243	0.0242	0.0242
Observations	3,419	3,419	3,419	3,419	3,419	3,419	3,419

P-values presented in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

This study finds that increase in organisation size reduces organisation performance measured by Tobin's Q, ROA and ROE respectively and the results are statistically significant. Previous studies also find significant negative association between organisation size and financial performance proxy by Tobin's Q (Campbell & Mínguez-Vera, 2008; Christensen et al., 2010). Leverage has significant positive impact on organisation performance and this is consistent with the prior literature (Christensen et al., 2010). Increase in the board size and proportion of independent directors have significant positive influence on organisation performance examined by Tobin's Q and ROA. These results are consistent with the literature for instance, board size has been found to be positively related to organisation performance measured by Tobin's Q (Kiel & Nicholson, 2003) and an increase in the number of independent directors also help to improve organisation performance (Bonn, 2004; Kiel & Nicholson, 2003). The use of big four audit organisation has significant positive impact on performance proxy by Tobin's Q while industry type is negatively related to organisation performance. The rest of the control variables, that is, attendance, growth, director age and organisation age have no significant influence on organisation performance.

4.3 Chapter summary

This chapter empirically examines and describes the impact of gender diversity and directors' qualification and experience on organisation performance in Australia using a sample of 509 organisations for the period 2010 – 2014. This study finds important evidence that gender diversity, directors' qualification and expertise are positively associated with organisations' financial performance. This indicates that if organisations embrace more female directors and emphasise directors' qualification and experience, it would have a positive impact on financial outcome. These results add value to the existing literature and provide support for further research regarding the impact of gender diversity and directors' professional qualification and expertise, not only in case of organisation's financial performance but also in other areas such as corporate social responsibility in Australia. The next chapter will discuss the results, contributions and implications, limitations and areas for future research.

CHAPTER FIVE: DISCUSSION AND CONCLUSIONS

This chapter is structured as follows. Section 5.1 outlines brief background of the study. Section 5.2 presents the discussions of the study. The contributions and practical implications of the study are explained in Section 5.3 and Section 5.4, respectively. The limitations of the study and prospect of future research are discussed in Section 5.5. Finally, Section 5.6 provides a summary of the chapter.

5.1 Brief background

This study investigates the impact of two crucial diversity features of board members, namely, gender and qualification on the financial performance of organisations in Australia. Gender diversity is treated as an indispensable part of governance reformation attempts around the world due to their significant influence on board construction (Adams & Ferreira, 2009). Directors' professional qualification and expertise is also recognised as an important matter of board diversity, for the achievement of expected organisation performance goals. Although gender and qualification are two imperative parts of board diversity, they have been given less importance in the prior Australian literature. Therefore, this study attempts to examine the influence of gender diversity and directors' qualification on organisation performance in Australia. This study collects corporate governance and financial data of Australian listed organisations from SIRCA and Datastream, respectively for the five years from 2010 – 2014. A panel data regression is applied to test the hypotheses developed in the study.

5.2 Discussions

This study uses organisation performance as the dependent variable, measured by Tobin's Q, ROA and ROE. The independent variable, corporate governance, is measured by gender diversity and directors' professional qualification and expertise. Various proxies for gender diversity such as proportion of female directors, female director dummy, number of female

directors, female chair, female CEO, female audit committee member and Blau index that observes the level of gender diversity in the board are applied in this study. Directors' professional qualification and expertise are also measured in different ways. A panel regression is used to understand the impact of gender diversity and directors' professional qualification and expertise on organisation performance in Australia.

This study finds strong statistical evidence to support both of the hypotheses. For instance, the first hypothesis states that female directors on the board of directors have a positive impact on the organisation's financial performance. This study reveals that an increase in the proportion of female directors increases ROA. Moreover, an increase in the number of female directors has a positive impact on an organisation's ROA and ROE. These findings are consistent with the existing literature that an increase in the proportion of female directors improves organisation performance proxy by Tobin's Q (Bonn, 2004; Bonn et al., 2004). Similarly, Liu et al. (2014) find that the percentage of female directors is positively related to return on sales and ROA. However, Adams et al. (2009) find that an increase in the proportion of female directors reduces an organisation's performance proxy by Tobin' Q and ROA. There is no significant association between female dummy and organisation performance.

The findings of the study show that a female chair has a significant positive association with organisation performance as they help to increase organisation's ROA and Tobin's Q. Similarly, a female CEO also facilitates an increase in an organisation's ROA and the result is statistically significant. Previous research also finds a positive association between female chair and organisation performance, for instance, Lie et al. (2014) state that female chair has significant positive association with organisation performance measured by return on sales and ROA and they have a vital role to ensure female directors' importance on organisation performance. Existing literature finds that female CEO is positively related to organisation performance proxy by ROA and their administrative supremacy and managerial capability help them to maintain a more functional business network in a competitive market which also helps to achieve expected organisation performance (Liu et al., 2014). Moreover, the appointment of a female director on the audit committee provides assistance to improve organisation's performance proxy by Tobin's Q. Adams et al. (2009) finds that female directors are more likely to be appointed on the audit committee and organisations with weak governance would benefit from a gender diverse board due to female directors' strong monitoring capability.

The study shows that Blau index has positive association with ROA and ROE and is negatively related to Tobin's Q but the results are not statistically significant. A positive relationship between female directors and organisation performance, with a lower mean value (0.15) of Blau index indicates that the inclusion of more female directors on the board would achieve higher organisation performance. This study finds evidence to support the first hypotheses that female directors improve organisation performance.

The second hypothesis is also accepted because the findings show a significant positive relation between directors' qualification and expertise with organisation performance. There is positive association between the indicator variable for all qualifications and organisation performance examined by Tobin's Q, ROA and ROE but only significant association with Tobin's Q. In the same way, the study also find that the indicator variable for all academic qualification is positively related to all organisation performance proxies but only significantly related to Tobin's Q. In case of individual academic qualification and organisation performance, directors' education at the Masters level has significant correlation with ROE and Tobin's Q. Moreover, directors' having Ph.D. qualification has significant positive influence to develop organisation's performance proxy by Tobin's Q.

In case of directors' individual professional qualification, statistically significant relation is found between directors' mining qualification and organisation performance determined by ROA. Furthermore, directors' legal qualification is significantly related to organisation performance proxy by Tobin's Q. Previous studies find a strong relationship between directors' qualification and organisation performance (Chiang & He, 2010; Hoque et al., 2013; Ismail et al., 2013; Yermack, 2006). The importance of academic qualification of the directors for the organisation performance has been explained in the prior literature, for instance, directors' educational background helps them to achieve the required professional qualification for the organisational success (Noor & Fadzil, 2013). Moreover, directors having a Ph.D. qualification can provide a vital role in the organisation's policy improvement activities (Poon et al., 2013).

Directors' mining expertise has significant positive influence on organisation performance proxy by ROA at 1% level of significance. None of the proxies of directors' expertise has negative significant association with any of the proxies of organisation performance. Directors' expertise has been emphasised in the existing literature, for instance, Miller and Triana (2009), state that directors' expertise assists to make the board more effective for the

execution of business activities. Directors having expertise can perform supervisory as well as advisory activities efficiently (Kroll et al., 2008) and they can provide guidance to the management from different perspectives that develops organisation performance (Ghazali, 2010).

This study finds evidence to support the second hypothesis that directors' qualification and experience are positively associated with organisation performance.

5.3 Contributions

The study contributes to the existing literature. The results of the research provide insights into the financial performance of Australian organisations based on gender diversity and directors' qualification and expertise. Several studies have investigated the association between gender diversity and organisation performance in North America (Adams & Ferreira, 2009; Carter et al., 2010; Carter et al., 2003; Gul et al., 2011), Europe (Campbell & Mínguez-Vera, 2008; Lückerath-Rovers, 2013), Asia (Ismail et al., 2013; Liu et al., 2014) and Scandinavian countries (Rose, 2007; Smith et al., 2006). However, gender diversity has been the focus of less attention in the Australian literature. Moreover, the existing literature on gender diversity on boards have found mixed results. Similarly, the impact of directors' qualification and expertise on organisation performance has been examined in the prior studies in other countries (Chiang & He, 2010; Fairchild & Li, 2005; Güner et al., 2008; Kroll et al., 2008) while this diversity issue has been less emphasised in the existing study in Australia. Therefore, this study makes important contribution in the existing literature by providing a detailed explanation of the impact of gender diversity and directors' qualification and expertise on the organisation performance in Australia.

The findings of this study also provide a significant of theoretical basis for increased gender diversity and requirements for directors' qualification and expertise. Agency theory and stewardship theory are linked to this research. Agency theory states that the board of directors require proper supervision and act as an internal control of management in performing their responsibility to the organisation (Jensen & Meckling, 1976) and stewardship theory argues that directors are motivated to accomplish their responsibility since their self-respect is

related to the image of the organisation instead of their financial benefit (Davis et al., 1997). Since this research finds positive influence of gender diversity and directors' qualification and expertise on the organisation performance, both agency theory and stewardship theory are deemed to be applicable as an incorporated theoretical framework from the perspective of corporate governance internationally and particularly, in Australian organisations.

5.4 Practical implications

The results of the study have several implications for the policy makers and regulators. There are some apparent implications from the results of the research for the improvement of corporate governance structures in organisations. There is no legal obligation in respect of gender diversity on boards in Australia yet there has been a lot of discussion as to whether this is appropriate. Since this study finds a positive association between gender diversity and organisation performance in Australia, there exists an economic argument for regulation to include a certain proportion of females on boards. Therefore, the findings of this study are helpful for policy makers in deciding whether a quota in respect of gender diversity would be appropriate from the Australian perspective.

There are also clear implications from the positive association of directors' qualification and expertise with organisation performance. Policy regulators or organisations themselves may consider a requirement of minimum qualification to become a director on the board. Additionally, more funds could be allocated for training programs for directors to obtain expertise in particular areas.

The positive influence of gender diversity and directors' qualification and expertise on organisation performance would help organisations achieve performance targets and ensure the board makes the most appropriate decisions.

5.5 Limitations of study and future research

There are some limitations of this research and also some prospects for future research to overcome the limitations. This study uses corporate governance and financial data of

Australian listed organisations for the five years from 2010-2014. Data related to female directors, directors' qualification and expertise and other descriptive features of Australian listed organisations of five years have been examined in the study. The limited data on board elements and a relatively short period of five years might limit a deeper understanding of the impact of board diversity and director qualifications on organization performance. Since the research only includes Australian listed organisations for which some particular data is available, the results may not reflect the relationship based on complete data. Due to the worldwide financial crisis before 2010, this research examines data from 2010-2014. A longer period of study using more data on board elements might provide a more detailed understanding of this research topic. Furthermore, there may be a query of external validity of the research since this study only uses the data of Australian listed organisations.

This study applies a quantitative approach. A combined methodology including an additional qualitative approach, such as interviews with directors, would add to the validity of the results.

There are some recommendations for future research. A future study can consider the influence of female directors and directors' qualification and expertise on social and environmental performance in addition to financial performance of Australian organisations. Besides, a composition of quantitative and qualitative methods may enhance the value of the research. With respect to gender diversity, a comparative study of Australia with other developed countries that have more or less similar economic, social, cultural and political background such as US, UK, Canada, Japan, New Zealand can be done to evaluate the circumstances of gender diversity in Australia from a global perspective. Gender diversity research can also be extended to the developing countries where this issue is less explored.

Further this research could be expanded through a comparative study of the power exercised by female versus male directors and their consequence on organisation performance, decision making and policy development and the variation of remuneration structure between female and male directors and their consequence on organisation performance. These studies would be beneficial to observe the prospects and obstacles for female directors in contributing to the organisation.

It is stated that a smaller portion of directors from engineering and manufacturing background has become a major obstacle in the development of Australian industry (Regnan, 2010). Therefore, a comparative study of directors' qualification and expertise can be done

between engineering and manufacturing sector and other areas to observe the particular circumstances. Besides, a comparative research of directors' qualification and expertise in Australia with that of other developed countries can be extended to evaluate directors' evolution and contribution in the Australian organisations from a global perspective.

5.6 Chapter summary

The objective of the study is to examine the impact of gender diversity and directors' qualification and expertise on the Australian organisations. The results of the study provide significant positive association of female directors and directors' qualification and expertise with the organisation performance based on a study of 509 Australian listed organisations from 2010-2014. There are important contributions and practical implications from the findings of this research. Besides, the limitations of the study and the prospect of future research are also explained in this chapter. It is recommended that gender diversity and directors' qualification and expertise could be associated with social and environmental performance of organisations in addition to financial performance in the future research as well as the application of both quantitative and qualitative approaches.

This research contributes in the current literature by providing a comprehensive understanding regarding the importance of gender diversity and directors' qualification and expertise in Australian organisations. The findings of the research would also provide support to the policy regulators to decide whether enforcing regulation of a quota for female directors and mandatory qualification standard for directors would be appropriate for the organisations in the Australian context.

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Appendix A: Construction of variables

Variable	Construction	Data Source
ROA	Return of Assets = Earnings Before Interest and Taxes/Total Assets	Datastream
ROE	Return on Equity = Net Income/Total Equity	Datastream
TobinQ	Natural Logarithm of Tobin's Q. Tobin's Q = (Market Value of Equity + Book Value of Total Liabilities) / Total Assets	Datastream
PropFem	Total Number of Female Directors / Total Number of Directors	SIRCA
FemDum	Indicator variable taking a value of 1 if director is female and zero otherwise.	SIRCA
FemDir	Total Female Directors	SIRCA
Blau	$1 - [(\text{Proportion of Female Directors})^2 + (\text{Proportion of Male Directors})^2]$	SIRCA
FemChair	Indicator variable taking a value of 1 if chairman of the board is female and zero otherwise.	SIRCA
FemCEO	Indicator variable taking a value of 1 if CEO is female and zero otherwise.	SIRCA
FemAuditCom	Indicator variable taking a value of 1 if audit committee member is female and zero otherwise.	SIRCA
AllQual	Indicator variable taking a value of 1 if the director has any qualification and zero otherwise.	SIRCA
AllExpertise	Indicator variable taking a value of 1 if the director has any experience and zero otherwise.	SIRCA
AcademicQual	Variable taking a value of 1, 2, 3, 4 and 0 if the director has the qualification of Bachelor, Masters, Professional, Ph.D. and others respectively.	SIRCA
Bachelor	Indicator variable taking a value of 1 if the highest degree of director is Bachelor and zero otherwise.	SIRCA
Masters	Indicator variable taking a value of 1 if the highest degree of director is Masters and zero otherwise.	SIRCA
Professional	Indicator variable taking a value of 1 if the highest degree of director is Professional and zero otherwise.	SIRCA
PhD	Indicator variable taking a value of 1 if the highest degree of director is Ph.D. and zero otherwise.	SIRCA
FinancialQual	Indicator variable taking a value of 1 if the director has Financial Qualification and zero otherwise.	SIRCA
AccountingQual	Indicator variable taking a value of 1 if the director has Accounting Qualification and zero otherwise.	SIRCA
LegalQual	Indicator variable taking a value of 1 if the director has Legal Qualification and zero otherwise.	SIRCA
HRQual	Indicator variable taking a value of 1 if the director has HR Qualification and zero otherwise.	SIRCA
MiningQual	Indicator variable taking a value of 1 if the director has Mining Qualification and zero otherwise.	SIRCA
EngineeringQual	Indicator variable taking a value of 1 if the director has Engineering Qualification and zero otherwise.	SIRCA
OtherQual	Indicator variable taking a value of 1 if the director has Other Qualification and zero otherwise.	SIRCA
FinancialExpertise	Indicator variable taking a value of 1 if the director has Financial Expertise and zero otherwise.	SIRCA
AccountingExpertise	Indicator variable taking a value of 1 if the director has Accounting Expertise and zero otherwise.	SIRCA
LegalExpertise	Indicator variable taking a value of 1 if the director has Legal Expertise and zero otherwise.	SIRCA
HRExpertise	Indicator variable taking a value of 1 if the director has HR Expertise and zero otherwise.	SIRCA
MiningExpertise	Indicator variable taking a value of 1 if the director has Mining Expertise and zero otherwise.	SIRCA
EngineeringExpertise	Indicator variable taking a value of 1 if the director has Engineering Expertise and zero otherwise.	SIRCA

OtherExpertise	Indicator variable taking a value of 1 if the director has Other Expertise and zero otherwise.	SIRCA
IndType	Indicator variable taking a value of 1 if the firm is manufacturing and zero otherwise.	Datastream
Attendance	Number of Board Meetings Attended/Number of Board Meetings Held	SIRCA
Big4Audit	Indicator variable taking a value of 1 if the audit firm of the Company is Deloitte, Ernst & Young, KPMG and PricewaterhouseCoopers and zero otherwise.	SIRCA
Fsize	Natural Logarithm of Total Assets	Datastream
Leverage	Total Liabilities/ Total Assets	Datastream
IndepenDir	Total Independent Directors/Total Directors	SIRCA
BoradSize	Natural Logarithm of Number of Total Directors	SIRCA
Growth	$[Sale(t)-Sales(t-1)]/Sales(t-1)$	SIRCA
DirAge	Natural Logarithm of Director Age. Director Age=2015-Year of Birth.	SIRCA
OrgAge	Natural Logarithm of Firm Age. Firm Age=2015-Year of Incorporation.	Datastream
