UNIVERSIDAD DE SEVILLA

DEPARTAMENTO DE ADMINISTRACION DE EMPRESAS Y MARKETING

DOCTORAL DISSERTATION

"WOMEN ON BOARDS AND FIRM PERFORMANCE: FAULTLINE AND CULTURAL CONTEXT EFFECTS"

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SEVILLA-ESPAÑA 2016

Tesis Doctoral para la Obtención del Grado de Doctor por la Universidad de Sevilla, en CC. Económicas y Empresariales.

Doctoral Dissertation, to obtain the degree of Ph.D. by the University of Seville in Economics and Business.

Gracias a Dios;
Por darme discernimiento suficiente para entender los privilegios y desigualdades de la vida, ayudarme a agradecer en consecuencia y mostrarme caminos para devolver parte de la deuda otorgada. Por permitirme nacer donde he nacido, arropada de amor desde la infancia, que me ha facilitado desarrollar capacidades con las que enfrentarme a la vida. Por todas las oportunidades que he tenido, entre ellas el poder dedicar tiempo a aprender.

Gracias a mi madre;
Por facilitarme ratos de inspiración y descanso.

Gracias a mi marido, Agustín y mis hijos, Victoria, María y Joaquin;
Por ser como sois, por quererme y demostrármelo, por vuestra paciencia en momentos de tensión, por no quejaros las veces que he estado muy ocupada con el Doctorado, por alegraros conmigo de los avances y, por apoyarme siempre. Sois maravillosos, me dais vida para disfrutar de ella y os quiero muchísimo.

Gracias a la comunidad académica;
San Telmo, IESE Business School y la Universidad de Sevilla, por lo que me han aportado, y a todos los que con vuestro cariño y consejos me habéis animado, especialmente a Eduardo Briales por su apoyo puntual y oportuno.

Gracias a mis Directoras de tesis, Carmen y Mª Mar;
Por vuestra constancia y dedicación durante estos años, por enseñarme mucho, por enriquecerme con vuestras aportaciones valiosas, por ayudarme en mi avance, siempre viendo la luz al final del túnel, lo que me daba energía a seguir cuando estaba en la oscuridad, por contestar cada correo inmediatamente, por recibirme cada vez que lo he necesitado, por ser siempre tan amables. Sin vosotras no hubiera llegado a este punto.

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CHAPTER ONE

INTRODUCTION

"Think manager, think male" (Schein and Davidson, 1993)

This devastating title of 1993 still seems to hold true 23 years later. Women around the world are largely under-represented at the highest levels of organizations (Catalyst, 2011; UN Women, 2014), and although the number of women in top positions within business, politics and organizations is increasing, corporate boards seem to be the one last bastion that women are having difficulties reaching (Brammer, Millington and Pavelin, 2007; Hillman, Shropshire and Cannella, 2007).

In some countries politicians and legislators have instituted quotas requiring a certain percentage of women representation (Terjesen, Aguilera and Lorenz, 2014). In 2013, EU Justice Commissioner Viviane Reding requested large publicly held companies in Europe to voluntarily pledge to achieve a 30% level of women directors by 2015. Although some improvements have been recorded, most European countries have not yet fulfilled this request (European Commission, Factsheet WOB, 2014).

In the academic world the interest in gender diversity has been varying over the last five decades, since the issue started to gain volume in the 1970´s (Joshi, Neely, Emrich, Griffiths and George, 2015). Recent corporate scandals, such as Ahold, Enron, Parmalat and Skandia, and the 2008 financial crisis seem to have sparked the interest in corporate governance, renewing the attention to the composition of upper management and to gender diversity on boards and top management teams (TMTs) (Aguilera and Jackson, 2010; Muller-Kahle and Lewellyn, 2011; Bøhren and Strøm, 2010). Just in 2015 two prestigious journals, *Corporate Governance: An International Review* and *Academy of Management Journal* published thematic issues contributing to this discussion (Adams, de Haan, Terjesen and van Ees, 2015; Joshi et al., 2015).

The motivation for this dissertation is inspired by our interest in adding to this discussion, and to the conviction that gender diversity in upper management positions makes a positive contribution to firm´s performance. When analyzing previous research, we find that although some studies report a positive relationship between gender diversity and firm´s financial performance, no all-conclusive results in favor of the business case for women on boards have been proved. Furthermore, diversity, in the

literature, has often been characterized as a "double-edged sword" or a "mixed blessing" (Milliken and Martins, 1996; Williams and O'Reilly, 1998), reporting both positive and negative effects. We believe that if we can move forward in the concept that having more women on the board affects positively the firms´ financial performance, this could be a strong argument for incrementing the ratio of women to boards and to top management positions in companies.

The underlying belief in our work is that women directors differ from their male colleagues in many aspects; in personal and professional characteristics, in perspectives, information, skills, and backgrounds, and in their links and relations to stakeholders and society.

Women offer unique contributions of task relevant information to the board´s processes of information-elaboration and decision-making. Their different expertise, opinions, ideas and viewpoints produce unique information sets, leading to enhanced innovation and creativity (Horwitz, 2005; Michel and Hambrick, 1992; Wiersema and Bantel, 1992). In this way, gender diverse boards will outperform homogeneous boards drawing on a broader range of task-relevant information and knowledge. Furthermore, due to the nature of the boards´ tasks, being those of a complex, strategic, and knowledge-intensive nature, it is likely to believe that this enhanced information-elaboration, creativity, and collaborative decision-making will positively impact final performance (Bowers, Pharmer and Salas, 2000; Jehn, Northcraft and Neale, 1999; van Knippenberg, De Dreu and Homan, 2004a).

Another crucial contribution of women directors is found in their distinct management style and behavior, much more adequate to the needs and the ways of doing in the 21st century. Women exhibit an interactive leadership style that emphasizes inclusion and participation (Rosener, 1995; Pearce and Zahra, 1991), they are more oriented towards interpersonal relationships, they tend to be more democratic and less autocratic, and are more cooperative and collaborative (Eagly and Johnson, 1990; Eagly, Johannesen-Schmidt and van Engen, 2003). They are also more likely to accept other people´s positions and contribute to the solution of conflicts. Hence, when potential for conflict arises, women are more able to avoid them based on their higher sensitivity and ability to resolve interpersonal and task-related disagreements (Huse and Solberg, 2006).

With respect to women´s role in board work and board development, researchers suggests that women have higher expectations of board task performance than their male colleagues (Fondas, 2000). They tend to ask more questions than men (Huse and Solberg, 2006), and add diverse ways of thinking into male-dominated boards (Bilimoria, 2000). Furthermore, women, not being part of the "old-boys network", are less subject to groupthink and add an independent voice to the decision-making processes (Brennan and McCafferty, 1997), leading to better understanding and higher quality decisions (Amason, 1996). We recognize the existence of some studies arguing that a weakness in women´s appointment to top management positions lies in their younger age and their lesser experience in senior management, possibly leading to negative or not as positive as expected effects upon firm performance (Ahern and Dittmar, 2012). However, we argue that in such cases, these effects are not caused by the women´s gender, but by their youth and their lack of experience, a condition that would also be a weakness in the apoointment of young and less experienced men to similar positions.

Research has also found that women's presence in board-rooms lead to a more civilized behavior and higher sensitivity to other perspectives (Fondas and Sassalos, 2000). They tend to be better prepared than men, are more egalitarian and caring in nature (Huse, 2007), and enhance an effective debate on governance issues (Fondas, 2000). They are also more attentive to stakeholders, creating goodwill, and focus top management attention to "soft" issues and concerns (Bilimoria and Huse, 1997). They encourage a larger number of board meetings and have less attendance problems (Adams and Ferreira, 2004).

With respect to board functions, studies have shown that the participation of women on corporate boards benefit the board´s monitoring role in protecting shareholders' interests due to higher control of managers (Watson, Kumar and Michaelsen, 1993; Fondas and Sassalos 2000). Women are particularly valued in the service and strategy function, as providers of strategic input and generators of productive discourse (Bilimoria, 2000). Finally women directors provide differential and important resources and relations to the board, and project an image to society as a "modern" company, complying with good practices and social responsibility.

However, and in spite of the evident contributions of women directors to corporate boards, we also recognize a potential negative side of gender diversity on boards. A possible threats can arise due to the processes of social categorization (Tajfel, 1981; Turner, 1975, 1987; Tajfel, Billing, Bundy and Flament, 1971; Tajfel and Turner, 1986) suggesting that people prefer "similar others" and divide into "in-groups" and "out-groups" disrupting information sharing, communication, coordination and cohesion (Milliken and Martins, 1996; Brewer, 1979; Turner, Hogg, Oakes, Reicher and Wetherell, 1987). Through such processes boards with both men and women can split into male and female subgroups, giving rise to relational conflicts, reduced cohesion and less effective information sharing and decision-making (Jehn et al., 1999; Milliken and Martins, 1996; Tsui, Egan and O'Reilly, 1992). Gender subgroup formation combined with intergroup bias against women provoke distrust, frustration, discomfort, hostility, anxiety and annoyance (Choi and Sy, 2010; Homan, van Knippenberg, van Kleef and De Dreu, 2007; Pearsall, Ellis and Evans, 2008; Pickett and Brewer, 2001; Lipponen, Helkama and Juslin, 2003; Polzer, Crisp, Jarvenpaa and Kim, 2006; Amason and Schweiger, 1997; Amason, 1996; Pelled, 1996). Possible bias on boards may range from subtle social competition for status and prestige, to outright discrimination (Brewer and Brown, 1998) and include unequal status and competitive interdependence between subgroups (Gaertner and Dovidio, 2014). This hinders effective board functioning, causing lack of coordination, cooperation, and cohesion (Brewer, 1995, 1996; LaBianca, Brass and Gray, 1998).

The probability of subgroup division on the board is higher if the board is split into two relatively homogeneous gender subgroups based on board members' alignment along multiple attributes alongside gender; this in research is called faultline division (Bezrukova, Jehn, Zanutto and Thatcher, 2009; Lau and Murnighan, 1998, 2005; Li and Hambrick, 2005). Research has found that board faultlines, based on education level, tenure, functional background and type of directorship, have negative effects on firm financial performance (Kaczmarek, Kimino and Pye, 2012b).

Women on corporate boards are usually minority, and perceive this as a hindrance to their work and their influence on board´s decisions (Ferreira, 2010). This can finally lead to reduced contribution to the board´s information-elaboration and decision-making processes on behalf of the minority group of women directors (Carter, D´Souza,

Simkins and Simpson, 2010). However, as the size of the female group increases, it gains in support, voice and trust, leading to increased contribution to the board. This is the underlying idea of critical mass theory, much discussed in Kanter´s work of 1977, proposing that in a group with majority and minority members, the dominant type (usually men) control the few (usually women), until a certain proportion of representation of women is reached.

In accordance with the above findings in literature we predict that gender diversity on corporate boards is positively related to firm financial performance, and that critical mass of women on boards further enhance this positive relation. At the same time we predict that strong gender-based board faultlines have a negative impact on firm financial performance, and that this negative impact is less pronounced with increased overlapping board tenures or increased chair-boardmembers shared experience.

In this way we integrate into the same model both the positive and the negative effects of diversity, explained by the information-elaboration perspective and the social categorization perspective. We further include three concepts affecting gender diversity and firm´s financial performance; namely women ratio, critical mass and gender faultlines. The model is based on the Categorization-Elaboration Model (CEM) of van Knippenberg et al., (2004a), hence contributing to a holistic, original and realistic discussion on the factors involving gender diversity on corporate boards.

Our empirical study, including 184 public listed firms, is cross-national comparing two countries in Europe; Norway and Spain. These two countries represent radical opposites in terms of women´s participation on boards, in business and in society in general, which allows us to analyze the importance of cultural contexts upon the effects of gender diversity on firm´s performance.

Norway represents a bench-mark for board gender diversity as the country has the highest representation of women on boards in the world. In 2003, Norway passed its controversial quota law, mandating that by 2008, 40% of all public companies´ board directors should be women. The law was backed by the threat of non-compliant firms being closed down. At the expiry of the deadline five years later virtually all companies listed on the Oslo Stock Exchange had complied with the law, resulting in almost 38%

of all board members being female - a quadrupling of the number over this period, going from 6.8% to 38% in 5 years (SSB, 2012).

Spain was the second European country to pass a gender equality act; Ley de Igualdad, 2007, with the objective of increasing women´s participation in all public and private organizations, establishing the objective of achieving 40% women ratio by 2016, a significant jump from the 5% level which prevailed in Spain at that time. The law, a weaker imitation of the Norwegian law, aspirational in nature, has proved to be too ambitious for the Spanish context. The Unified Code of Good Corporate Governance of Listed Companies approved by the CNMV (National Securities Markets Commission) included in its January 2015 update, the objective of reaching 30% female representation by 2020. However, as Spanish corporations follow the "comply or explain principle" an explanation seems to be sufficient justification for maintaining the *status quo*.

Board composition in Norway and Spain report substantial differences in terms of numbers, indicating different realities for the female directors participating on the boards. While in Norway women´s participation is "normalized", in Spain women directors still represent a small minority, still questioned by many. This minority status most likely affects the perception of the ability to effectively influence the male dominant group, reducing in this way women´s contribution to the board´s information-elaboration and decision-making (Konrad, Kramer and Erkut, 2008; Kanter, 1977).

We propose that the cultural context contribute positively to the relationship between gender diversity and firm financial performance in Norway. On the contrary, in Spain, a country with lower gender parity and high male dominance, the cultural context might have penalized this relation, as male board members may not leverage equally on the knowledge, experience and leadership behavior of their female directors. Further to that, our firm financial performance, measured by Tobin´s Q, depend upon investors' confidence in the future earning potentials of the firms, and these investors might not, in the best case, value firms with higher women ratio better than those without women directors.

We strongly argue in favor of increasing the numbers of women on boards, an argument supported by our reporting of positive impact of critical mass upon the relation gender diversity and firm performance. Numbers affect “normalization”, and critical mass will eventually change the perception of women on boards, and turn the earlier minority status into a more balanced and accepted representation of women directors.

We have seen that culture affects numbers and that numbers affect culture. However, numbers are much easier and faster to change than culture…. We believe that if we do not insist on increasing the numbers, but let culture evolve without “help”, we will still have to wait decades, judging from contrasted historical evolution, before women occupy the board seats at the same level as their male colleagues in many board rooms around the world

In order to successfully increase the representation of women on corporate boards we recommend firms to expand their search beyond the traditional talent pools, recruit more women to all levels of management, include female directors on the nomination committees, instore quota requirements and mentoring programs, and promote a general pro-diversity training within their organizations.

This dissertation is structured in seven chapters. Chapter two is a review of the diversity literature, and includes an introduction to why board composition is important and a description of the board´s functions. Chapter three reviews the literature related to women in upper management positions, critical mass theory, social categorization, intergroup bias and gender faultline. Chapter four presents our research model and our hypotheses, chapter five the research design, the methodology, the data collection and the variables, and chapter six report the results. Finally, chapter seven presents the discussion and the final conclusions of our study.

CHAPTER TWO

LITERATURE REVIEW: DIVERSITY

2.1. INTRODUCTION

This chapter starts out by clarifying the functions of the board of directors and elaborate on why the board´s functions are relevant when discussing their composition. The principal argument is that due to the board´s function, which is of a strategic, complex and non-routine nature, members contributing with different backgrounds, ideas and knowledge will contribute positively to the elaboration of task relevant information and decision-making processes. After this introduction to board functions, the chapter goes on reviewing the previous literature on diversity.

2.2. BOARD OF DIRECTORS AND DIVERSITY

The research area of corporate governance englobes studies of Top Management Teams (TMTs) and Board of Directors (BOD), and its principal focus is on how these two governing bodies influence organizational processes and outcomes (Forbes and Milliken, 1999).

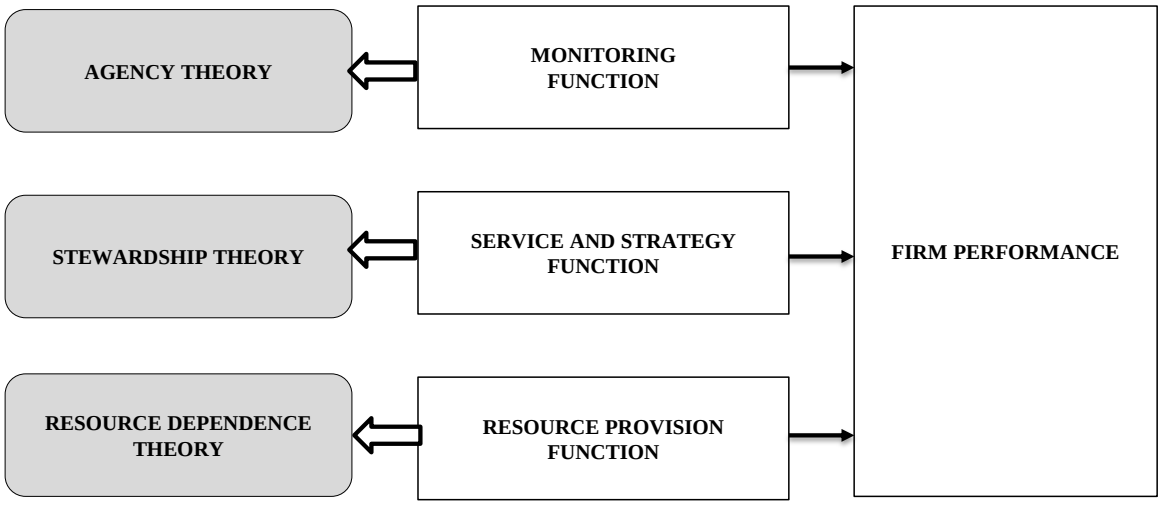
Issues around corporate governance have, over the last few years, seen a growing interest and attention from both business actors as well as from academics (Aguilera and Jackson, 2010). Recent corporate scandals, such as Ahold, Enron, Parmalat and Skandia, and the 2008 financial crisis, have sparked this interest, and increased the academic debate around the board´s functions, responsibilities and composition (Bøhren and Strøm, 2010; Muller-Kahle and Lewellyn, 2011).

However, before further elaborating on the board´s composition, which is the area of interest in this dissertation, it is essential to clarify the principal functions that the boards perform in the organizational context. Only after having clarified the board´s "job description", meaning their principal functions, can we proceed to discuss the knowledge, skills and human capital necessary to perform the board´s collective work.

Recent research in corporate governance shows that the board´s principal functions are founded on three different theoretical perspectives, and should therefore be analyzed separately (Bennet and Robson, 2004).

These three perspectives are (1) Agency theory (Eisenhardt, 1989; Fama and Jensen, 1983; Jensen and Meckling, 1976) arguing in favor of board´s monitoring of top management, (2) Stewardship theory (Donaldson and Davis, 1991) proposing the function of support, guidance and advice, and (3) Resource dependence theory (Pfeffer, 1972) arguing that board members offer crucial access to external networks important for the company´s survival.

Figure 2.1. Board functions and their respective theoretical perspectives



Source: Working paper, Barroso-Castro y Villegas-Periñan (2015)

Agency theory constitutes the fundamental perspective supporting the monitoring function. This theory has its roots in the study of Berle and Means (1932) arguing in favor of a separation between the owners of the company (shareholders) and the management of the company. The agency theory describes the relationship between a principal (shareholders) and the agent of the principal (directors and managers), and define this relationship as a contract regulating the services that the agent should perform on behalf of the principal. This relationship is called “agency”. As each part of the agency is expected to consider the issues from their own point of view, and act in line with their own interests, these might not always align. It can therefore be expected that the agent, in occasions, might act pursuing his or her own benefit, maximizing wealth and power at the expense of the principal (Jensen and Meckling, 1976; Eisenhardt, 1989).

The monitoring function of the board is based on the agency theory, and proposes that the board controls the CEO and the rest of the top management team, making sure that they operate in line with the shareholders' interests (Dalton, Daily, Johnson and Ellstrand, 1999; Johnson, Daily and Ellstrand, 1996; Hermalin and Weisbach, 2003; Gore, Matsunaga and Yeung, 2011). The board of directors has direct influence over the top management team (Boeker and Wiltbank, 2005; Daily and Schwenk, 1996). It is believed that the board of directors can only fulfil this monitoring function when it provides impartial evaluations of the top management team. It is therefore consider that outside directors are more independent (and impartial) than inside directors, and therefore better monitors of shareholders' interest than their insider counterparts.

Subsequent authors within the area of corporate governance have argued that limiting the board´s function to that of control and monitoring the top management might be in the best case insufficient, and that the board can contribute more efficiently through functions aimed at supporting the top management team in their performance. In this line, Ginsberg (1994) argue that the board can better protect shareholders' interests contributing with information and expertise aimed at enhancing understanding, creativity and improved decision-making, than just exercising control over the management team.

Stewardship theory (Donaldson and Davis, 1991; Muth and Donaldson, 1998), nurtured by insights from psychology and sociology, proposed a completely different vision of the roles of the owners, the board and the directors of a company. Based on the assumption that the ownership may be very fragmented, often in the hands of groups of investors seeking different objectives, the role of the managers is that of the guardian protecting the interests of the majority of the owners, pursuing the company´s success and maximizing its final results. In contrast to the agency theory, which expects that managers seek their own opportunistic benefits, this theory argue that managers are committed to the interests of the shareholders and worthy of their trust; managers are believed to seek different types of motivation, not only material and monetary, but also intrinsic motives, such as job enrichment, development, recognition and challenges (Herzberg, Mauser and Snyderman, 1959; McClelland, 1961). This places the board in a completely different role, as they will seek to support and help the committed managers, sharing the common goal of doing what is best for the company and its owners. This

function of the board is called both “the service function” (Johnson et al., 1996; Zona and Zattoni, 2007) and “the strategy function” (Zahra and Pearce, 1989; Pearce and Zahra, 1991) and corresponds to the function of providing the top management with advice, counsel and strategic direction. Under this perspective the board participates not only in the revision of the strategy, but in its formulation, helping and guiding the management in setting objectives and in planning and decision-making. An active board, participating in the strategy direction of the company will, according to various authors subscribing to the stewardship theory, bring multiple benefits to the company and its owners (Zahra and Pearce, 1989; Pearce and Zahra, 1991; Ruigrok, Peck, Tacheva, Greve and Hu, 2006; Judge and Zeithaml, 1992).

1. The management team will show higher commitment to a profound analysis and definition of strategic objectives and plans proposed to the board.
2. The company will better benefit from the board members´ human capital; knowledge, experience and skills.
3. The discussion on strategic issues on the board will bring forward different perspectives and points of view, contributing in this way to more ideas and new opportunities.
4. As the board and the management share common objectives, there might be less power struggles and more collaboration between the two groups.
5. The active participation of the board in the strategy direction of the company seems to be related to improved performance of the company as a whole.

The principal idea behind the resource dependence theory (Hillman, Cannella and Paetzold, 2000; Pfeffer, 1972; Pfeffer and Salancik, 1978; Zahra and Pearce, 1989; Pearce and Zahra, 1991) is that the board constitutes a valuable resource for the company, and that its members can provide the firm with important relations, networks and links to the external environment and to important stakeholders.

A key point of this theory is that organizations are open systems, dependent upon external entities for survival, and that the resulting uncertainties pose significant challenges and costs to the organizations (Pfeffer, 1972). Pfeffer and Salancik (1978) argue that a company should form links with elements of its external environment upon which it depends, in order to reduce dependency and obtain resources.

In their work they suggest that the board´s function of resource provision can be defined by four primary activities that benefit the company:

1. Provision of resources such as information and expertise.
2. Creation of channels of communication with constituents of importance to the firm.
3. Provision of commitments of support from important organizations or teams in the external environment; and
4. Creation of legitimacy for the firm in the external environment. As board members of large corporations are highly visible to societal actors who grant legitimacy (Certo, 2003; Davis and Mizruchi, 1999), they provide channels of communication to external entities in order to gain influence, support, commitment, or favorable access to resources.

According to the resource dependence theory, board directors should be selected in order to maximize access to critical resources. By selecting a director with valuable skills, influence or connections to these external sources of dependency, the firm can reduce dependency and gain valuable resources. As environmental dependencies change, so do the resources needed by organizations and thus the needs for specific types of directors (Hillman et al., 2000). Implicit in this view is the assumption that firms that are better able to deal with environmental uncertainty and interdependence will perform better (Dalton et al., 1999).

Hillman et al., (2000) expanded the four benefits argued by Pfeffer and Salancik (1978) into taxonomy of director types that provide various resources to the firm: insiders, business experts, support specialists and community influentials. Hillman et al.,'s (2000) extension of resource dependence theory suggests that different types of directors will provide different beneficial resources to the firm.

Todays increased globalization, border breaking technology, sophisticated and demanding customers and investors are just some of the critical challenges that boards of directors and their organizations face today. In this complex and uncertain environment it seems crucial to count on competent boards, assuming all three functions described above. Being these functions of a non-routine, complex and strategic nature,

involving “big-picture-issues” rather than day-to-day operational tasks (Stiles and Taylor, 2001; Zahra and Pearce, 1989), the cognitive resource provision of the board becomes very important. Thus, board members contributing with a breadth of resources, including prestige, legitimacy, financing, knowledge and industrial/functional/ geographic business experience will provide valuable advice and counsel crucial for the formulation of strategy and the establishment of long-term priorities for the company (Lorsch and MacIver, 1989).

In order to foster better understanding and dealing with such complex challenges as mentioned above, companies are increasingly turning to the establishment of diverse work-groups, from top management levels (BOD and TMT), throughout the lower levels of the organizations (Devine, Clayton, Philips, Dunford and Melner, 1999). Hackman (1987) define work-groups as a group of individuals who both see themselves, and are seen by others as an independent entity embedded in a larger organization. The work-groups share one or more common goals, interact socially and exist to perform organizationally relevant tasks; being task interdependence among group members a necessary condition. Work-groups operate in an organizational context that influences their functioning, sets boundaries, constrains the group, and influences exchanges with other units in the broader entity (Kozlowski and Bell, 2003).

Embedded in this work-group definition, the board is a work-group, situated at the apex of the organization, in that it acts as a whole and as an inseparable unit, have common goals, social interaction, task interdependence and collective responsibility over certain areas. However, as a work-group, the board of directors have some specific characteristics that are common to most boards, and that condition their collective work situation (Forbes and Milliken, 1999);

1. Boards are typically large groups.
2. Boards have episodic functioning and part-time responsibility.
3. The board members consist typically of a large proportion of outsiders

Due to these characteristics, boards of directors are particularly vulnerable to “process losses”; the interaction difficulties that prevent groups from achieving their full potential (Steiner, 1974). As a conclusion one can derive that boards´ outcome is

heavily dependent on social-psychological processes, like group participation and interaction, information exchange and critical discussion (Milliken and Vollrath, 1991). In order for boards to perform effectively, they must therefore cooperate in the exchange of information, in the evaluation of competing alternatives and reach well-reasoned strategic decisions. This in practice represents a big challenge, as board members have minimal time for quality and quantity interactions.

Having described the principal functions and the nature of board work, and having defined the board as a work-group, we now turn to the question of group composition. Composition is defined in work-group research as the configuration of its members´ attributes (Levine and Moreland, 1990). Work-group composition is found to have a direct impact on organizational outcomes (Carpenter, Geletkanycz and Sanders, 2004; Patzelt, Zu, Knyphausen-Aufseß and Nikol, 2008), as a broader set of perspectives, ideas and viewpoints becomes available for the complex decision-making (Sawyer, Houlette and Yeagley, 2006), and is therefore considered crucial for task elaboration and work processes (Bunderson and Sutcliffe, 2002; Harrison, Price, Gavin and Florey, 2002; van Knippenberg and Schippers, 2007). It therefore seems logical to propose that a board will benefit from having diverse and complementary board members, contributing with different experience, skills and knowledge, as proposed by Finkelstein and Hambrick (1996). In this same line of reasoning, Hambrick and Mason´s upper echelon´s theory (1984) proposes that the background and the attributes of the upper-level managers (understood as TMT and BOD) are directly related to the organization´s outcome, turning therefore the composition of the board into an important antecedent for organizational performance.

Since Hambrick and Mason´s theory in 1984, numerous researchers have been studying board composition and how different diversity attributes of board members affect the board´s processes and decisions, and how this finally has an effect on organizational outcomes (Carpenter et al., 2004; Patzelt et al., 2008).

In our organizational context, diversity refers to the degree to which there are similarities and differences between the members of a work-group (Jackson, Joshi and Erhardt, 2003). Blau (1977: 276) define diversity as “the great number of different statuses among which a population is distributed”, and Williams and O’Reilly (1998)

refer to diversity as the differences between individuals on any attribute that may lead to the perception that another person is different from one self.

Diversity can apply to any attribute of differentiation, however, regardless of the attributes under consideration, the primary question of diversity research has always been how diversity affects performance. In practice, most diversity studies have focused on diversity in gender, age, race, nationality, tenure, and functional and educational background (Milliken and Martins, 1996; van Dijk, van Engen and van Knippenberg, 2009).

As the number of women on boards is slowly increasing, so is the number of studies devoted to board gender research. This dissertation, studying diversity on boards, has a specific focus on gender diversity and its relation to firm performance.

Reviewing the broad diversity literature, one comes to the intriguing conclusion that in spite of the large amount of time and effort that has been dedicated to study diversity effects upon performance, no final conclusion has been reached. Diversity in the literature has often been characterized as a "double-edged sword" or a "mixed blessing" (Milliken and Martins, 1996; Williams and O'Reilly, 1998) as it has not proved to have only positive or only negative effects, but simultaneously can have both. Milliken and Martins (1996) in their comprehensive review of the diversity literature, concluded that diversity appeared to increase the opportunity for creativity, as well as the likelihood that group members will be unsatisfied and fail to identify with the group (Milliken and Martins, 1996).

Two main perspectives contribute to these positive and negative effects of diversity, corresponding to the information/decision-making perspective and the social categorization perspective.

The information/decision-making perspective suggests that diversity on board of directors leads to an increased pool of skills, knowledge and information that enhances overall decision-making (Watson et al., 1993). The social categorization perspective (Tajfel, 1981; Turner, 1975, 1987) suggests that diversity has a negative influence on performance in that people prefer "similar others" and divide into "in-groups" and "out-

groups" disrupting information sharing, communication, coordination and cohesion (Milliken and Martins, 1996). Such negative effects are highly pronounced for gender and race diversity, indicating that these attributes might be victims of deep-rooted bias and stereotypes.

2.3. THEORETICAL FOUNDATIONS OF DIVERSITY

Williams and O'Reilly´s (1998) comprehensive review of the diversity literature of the last 40 years marked a definite starting point for successive diversity research. They identified two main lines of research relating the concepts; (1) the information/decision-making perspective and (2) the social categorization perspective.

These two perspectives relate to the positive and to the negative effects of diversity. The information/decision-making perspective is more related to the cognitive aspects of group-work and emphasizes the positive effects of diversity, in that it argues that an increased pool of skills, knowledge and information enhance overall decision-making (Watson et al., 1993). In contrast, according to the social categorization perspective, (Tajfel, 1981; Turner, 1975, 1987) more related to the social-relational aspects of group-work, diversity is problematic, as it can introduce social divisions that hinder effective teamwork and disruptions to information sharing, communication and cohesion (Milliken and Martins, 1996).

2.3.1. The information/decision-making perspective

The main proposal of the information/decision-making perspective is that diverse work-groups will outperform homogeneous work-groups.

The principal foundation of this argument is that diverse groups are more likely to offer a broader range of task-relevant knowledge, skills and abilities. According to the cognitive resource perspective, it is due to variety by pooling diverse cognitive resources into the group that groups improve performance (Horwitz, 2005: 224). Members who bring different expertise, perspectives and viewpoints relevant to the task at hand, will very likely produce unique information sets, which again will lead to enhanced innovation and creativity (Watson et al., 1993; Michel and Hambrick, 1992;

Wiersema and Bantel, 1992). In this line, Watson and Michaelsen (1988) found that groups performing intellectual tasks perform better when their interaction behavior feature the inclusion of multiple viewpoints and the exchange of positive and negative comments. In the same line, Wanous and Youtz (1986) found that diversity had a positive influence on the quality of group decisions.

Human capital theory (Becker, 1964) examine the role of an individual's accumulative stock of education, skills and experience and proposes that the exposure to diverging and new perspectives leads to a higher level of creativity and innovation, which again benefit final decision-making (Ancona and Caldwell, 1992; Bantel and Jackson, 1989; De Dreu and West, 2001). Diversity and quality decision-making have been a focus of many diversity researchers. Bantel (1993) investigated the relation between the demographics of top management work-groups and their strategic clarity in retail banks. The findings demonstrated that greater education and functional background diversity lead to better strategic decision-making. Simons and Pelled (1999) reported similar results in their study on executive diversity; finding that both education level and cognitive diversity are associated with positive effects on organizational performance.

In this same line, Argote, Gruenfeld and Naquin (2001), Ilgen, (1999) and Hinsz, Tindale and Vollrath (1997), also found that work-groups outperform individuals in terms of the quality of the decisions they reach, when group members differ in respect to the knowledge and expertise they bring to the group.

With respect to the board´s monitoring function, Ararat, Aksu and Cetin (2015) investigated the indirect effects of a board's demographic diversity on firm performance via board monitoring, and found a positive and non-linear relationship between demographic diversity and performance, mediated by the board's monitoring efforts.

These findings seem intuitive from a business point of view and organizations have therefore, to an increasingly higher degree, relied on cross-functional work-groups in their attempts to stimulate innovation, solve problems and make better decisions. Firms have also employed quality circles of cross-functional employees, representing all levels and disciplines in order to develop the organization and to work on complex projects.

As corporations move to more projects and matrix structures, the variety of input and different expertise and backgrounds prove to be increasingly important.

These positive effects of diversity on group performance are more likely to emerge in work-groups performing relatively complex, knowledge-intensive tasks that require information-elaboration, creativity, and collaborative decision-making, and where the exchange of diverse task-related information and perspectives may stimulate a thorough consideration of the task at hand (Bowers et al., 2000; Jehn et al., 1999; van Knippenberg et al., 2004a). It is therefore often argued that diversity is a value for work-groups that perform complex rather than routine tasks (van Knippenberg and Schippers, 2007).

Having defined the functions and the tasks of the board of directors and having concluded that these are of a complex, strategic, and non-routine nature, it is therefore consequent to believe that board members´ diversity in expertise, knowledge and perspectives will benefit the overall board´s decision-making and finally the firm´s performance. Corroborating with this we have seen that the complex issues of today´s environment is placing a premium on having heterogeneous top management team compositions and flexible processes (Barrick, Bradley and Colbert, 2007). Research within this area (TMT) shows that in environments with high velocity and turbulence, heterogeneous TMTs achieve better performance, whereas less heterogeneous TMTs are more successful in stable contexts (Eisenhardt and Schoonhoven, 1990, Hambrick, Cho and Chen, 1996). Similarly, in board research, Hillman and Dalziel (2003) found that diverse board composition and wider breath of human capital affect performance in a positive way (Haynes and Hillman, 2010).

Finally, Pfeffer and Salancik (1978) propose that corporate directors should be selected in order to maximize access to critical resources. By selecting a director with valuable skills, knowledge, experience and influence, the firm reduces dependency and gain valuable resources. Hillman et al.,'s (2000) extension of resource dependence theory suggests that different types of directors will provide different beneficial resources to the firm. As a result, a more diverse board will provide more valuable resources, which would in turn produce better firm performance. In this lies the best arguments for board

diversity, as diverse board members are assumed to produce unique information sets allowing the board to take better decisions.

Innovation has become one of the key strategies of firms for gaining competitive advantage (Hitt, Hoskisson, Johnson and Moesel, 1996), expanding market share (Franko, 1989) and increasing firm performance (Morbey, 1988). Corporate innovation strategies are defined as those strategies that provide new strategic opportunities for the firm to create new services or product lines. Watson et al., (1993) suggest that diversity leads to a greater knowledge base, creativity and innovation, and therefore becomes a competitive advantage. Tuggle, Schnatterly and Johnson, (2010) argue that a board's ability to discuss entrepreneurial issues depends upon the diversity of the board members´ tenure, functional background and industry experience, and Barkema and Shvyrkov (2007) in their study of TMT diversity, found that both diversity in tenure and education background was positively related to strategic innovation and expansion into new geographical territories. This argument is basically founded on the argument that increased diversity promotes more open discussion and create more and better ideas (Barkema and Shvyrkov, 2007). Kim and Rasheed (2014) in their study of corporate boards in the US, found that diversity in tenure and functional background contribute to improved firm performance, as corporations engage in higher levels of unrelated diversification.

2.3.2. The social categorization perspective

As earlier commented, and in contrast to the information/decision-making perspective, the social categorization perspective emphasizes the negative effects of work-group diversity.

The social categorization perspective argues that similarities and differences among people serve as a basis for a categorization of one self and others into different groups. Through this process a group might be divided into different subgroups, and thereby give rise to conflicting inter-subgroup relations. People distinguish between their own in-group ("us"), and one or more out-groups ("them"), and have the tendency to like and trust their in-group members more than the out-group members (Brewer, 1979; Tajfel and Turner, 1986; Turner et al., 1987).

Researchers argue that homogeneous groups develop higher member commitment (Riordan and Shore, 1997; Tsui et al., 1992) higher group cohesion (O'Reilly, Caldwell and Barnett, 1989) fewer relational conflicts (Jehn et al., 1999; Pelled, Eisenhardt and Xin, 1999), and that as a result of this, homogeneous groups will have higher overall performance (Jehn et al., 1999; Simons, Pelled and Smith, 1999).

Social categorization is built upon the conclusions and findings from three previous theories; self-categorization theory, social identity theory and similarity attraction.

Self-categorization theory (Turner, 1975, 1982, 1987) proposes that individuals classify themselves and others into categories on the basis of visible attributes such as gender, age, race and nationality, in order to make predictions about subsequent interactions (Carpenter et al., 2004; Joshi, Liao and Roh, 2011). It implies the self-identification with a particular role and/or social category or group, salient for that particular individual or group of individuals.

This categorization into social groups, based on these salient attributes, serves the purpose of cognitively segmenting the social environment, providing a systematic mean of defining others and one self in the relation to others. A self-categorization subgroup can therefore only exist when individuals' identity with certain groups and categorize themselves as belonging to these particular groups. This will have an effect on the individual's behavior within the in-group and towards the out-group. These categorization groupings (female, young, white....) are used in defining an individual´s social identity (Turner, 1987), thus relating social identity and self-categorization theory.

Social identity theory argues that individuals tend to classify themselves and others based on various social categories, and seek to surround themselves with people who share similar demographic profiles, perspectives, and values (Tajfel, 1978, 1981).

An individual has many different identities that vary in salience and importance (Crisp and Hewstone, 2007) each responding to the different roles he or she plays within society. These identities provide meaning for the self because they relate to specific behavioral expectations with each role and distinguish the different roles from one

another (Hogg, Terry and White, 1995). This phenomenon is referred to by Ashforth and Mael (1989:29) as "an amalgam of identities". Furthermore, each social group to which an individual belongs provides a definition of self, based on the attributes of that given social group, which again underpins his or her self-esteem (Ashforth and Mael, 1989; Hogg and Terry, 2000). Each social group is underpinned by norms and stereotypes of social group membership, which again impact behavior (Hogg et al., 1995; Hogg and Turner, 1987).

The theoretical basis for this multi-dimensionality of social identity stems from Tajfel´s often-quoted definition of social identity as "that part of an individual´s self-concept which derives from his or her knowledge of his or her membership of a social group (or groups) together with the value and emotional significance attached to that membership" (1981: 63).

Social identity provides a conceptual bridge between the individual level and the group levels of analysis; and it is, in other words, a representation of the "group in the individual" and is therefore considered an important variable in research on intergroup relations (Hogg and Abrams, 1988: 17).

Social identity theory is related to relational dissimilarity theory. This approach uses a framework suggesting that individuals compare themselves to other members of their social unit. Individuals can easily compare visible attributes of the members of a group (Harrison, Price and Bell, 1998). These are "given" attributes not chosen by the individuals themselves, they are difficult to change, and they are immediately observable as physical attributes (e.g., gender, age, race and nationality) (Harrison et al., 2002). These visible attributes play an important role as above mentioned, as they often serve as the basis for self-categorization and social identity processes (Harrison et al., 1998; Jehn, Chadwick and Thatcher, 1997; Tsui et al., 1992; Tajfel, 1981).

Other less visible attributes, like tenure, education background and education level can also can serve as attributes for self-categorization and social identity processes (Jehn et al., 1999), however visible attributes are particularly salient (Fiske and Neuberg, 1990) and are thus more likely to exert a strong influence on potential sub-groupings (Lau and Murnighan, 1998).

The self-categorization and social identity theories is complemented by the similarity/attraction perspective (Byrne, 1971; Williams and O'Reilly, 1998), not concerning social groups but interpersonal similarity (primarily in attitudes and values) as determinants of interpersonal attraction (Berscheid and Reis, 1998; Byrne, 1971).

The similarity/attraction perspective arrives at the same basic prediction; that people prefer to work with similar others, and find interaction and communication easier with individuals with similar backgrounds (Byrne, 1971). Similarity is likely to enhance interpersonal attraction, mutual reinforcement and consensual validation. In contrast, individuals tend to apply negative assumptions to those with whom they are dissimilar. Lincoln and Miller (1979) demonstrated that similarity between individuals lead to more frequent communication and a desire to remain in the group.

Network theorists support the similarity/attraction perspective in that they suggest that people with similar visible attributes tend to socialize together (Ibarra, 1993). Furthermore, individuals are likely to form coalitions when they have numerous similarities across a variety of visible attributes as they tend to have pleasure interacting with each other (Byrne, 1971; Stevenson, Pearce and Porter, 1985). The similarity inherent in this type of coalition formation is expected to lead to less conflict within the subgroup, and potentially more conflict between or across subgroups (Hogg, Turner and Davidson, 1990).

Diversity research has typically pointed to the negative effects of social categorization processes dividing a group into two or more subgroups. The similarities and differences among the members of a board serve in this way as a basis for categorization of members into different subgroups. The subgroup members distinguish between their own in-group ("us"), and the other out-group ("them"), and have the tendency to like and trust "us" more than "them" (Brewer, 1979; Tajfel and Turner, 1986; Turner et al., 1987). Through this process a board of directors can become divided into different subgroups, giving rise to relational conflicts, reduced cohesion and less effective information sharing and elaboration/decision-making; so important for boards´ overall performance (Jehn et al., 1999; Milliken and Martins, 1996; Tsui et al., 1992).

The alignment of diversity attributes can result in faultline division between subgroups within the overall group; a process that has proven to affect group processes (e.g., conflict, cohesion), affective outcomes (e.g., satisfaction), and performance outcomes (e.g., decision-making, group performance) (Barkema and Shvyrkov, 2007; Bezrukova et al., 2009; Choi and Sy, 2010; Lau and Murnighan, 2005; Li and Hambrick, 2005; Polzer et al., 2006; Rico, Molleman, Sánchez-Manzanares and van der Vegt, 2007; Sawyer et al., 2006; Thatcher, Jehn and Zanutto, 2003). Faultlines are hypothetical dividing lines that split a group into relatively homogeneous subgroups based on group members' alignment along multiple attributes (Bezrukova et al., 2009; Lau and Murnighan, 1998, 2005; Li and Hambrick, 2005). (Explained under Faultline concept).

Strong faultlines have negative effects on behaviors, finally affecting performance, such as group learning (Jehn and Rupert, 2008; Lau and Murnighan, 2005), information-elaboration (Meyer, Shemla and Schermuly, 2011), group functioning (Molleman, 2005), riskiness of decision-making (Barkema and Shvyrkov, 2007; Rico et al., 2007), creativity (Pearsall et al., 2008), and organizational citizenship behaviors (Choi and Sy, 2010).

Research within boards has found that board faultlines, based on education level, tenure, functional background and type of directorship have negative effects on firm financial performance (Kaczamarek et al., 2012b). Tuggle et al., (2010) found that faultlines based on tenure, functional background and industry experience decrease the attention paid to entrepreneurial issues, and decrease the geographical expansion into new markets.

Table 2.1. Theories supporting the information/decision-making perspective and the social categorization perspectives.

Information/decision-making perspective	**Social categorization perspective**
Cognitive resource perspective	Self categorization theory
Resource dependence theory	Social identity theory
Human capital theory	Similarity attraction paradigm

Source: Prepared by the author

2.4. TYPES OF DIVERSITY AND PERFORMANCE

The main concern for diversity researchers over the years has been to prove the link between diversity of group members and their overall performance. However, in spite of numerous studies, no consistent and all-inclusive conclusion has been made about the link. Furthermore, as mentioned earlier, diversity in the literature has often been characterized as a "double-edged sword" or a "mixed blessing" (Milliken and Martins, 1996; Williams and O'Reilly, 1998) as it has not proved to lead to only positive, or only negative effects, but simultaneously can lead to both. In this line, Milliken and Martins (1996) in their comprehensive review of the diversity literature, concluded that diversity seem to increase the opportunity for creativity, while at the same time increased the likelihood that group members would be unsatisfied and fail to identify with the group. (Milliken and Martins, 1996).

Thus, as it seems to be no clear-cut conclusion about the link between diversity and performance, some researchers propose that the effects upon performance depend upon the type of diversity in question. Consequently, a great deal of effort has been done in classifying diversity attributes into different typologies, proposing different cause-effects relations depending on the typology.

Although there are many typologies defined and used in the literature, there are basically one main distinction differentiating between readily observable visible attributes (e.g., gender, age, race/ethnicity and nationality) that may be less job- or task-related, also called social category diversity, and less easily discernable and more job- or task-related attributes such as differences in education or functional background, also called informational diversity or cognitive diversity (Jehn et al., 1999; Milliken and Martins, 1996; Pelled et al., 1999; Tsui et al., 1992; Harrison et al., 1998).

The main argument is that informational diversity, defined as "differences in knowledge bases and perspectives that members bring to the group" (Jehn et al., 1999: 743), based upon the information/decision-making perspective, has a stronger positive impact on work-group processes and performance (Pelled, 1996; Pelled et al., 1999) than social category diversity. It is also argued that informational diversity is more likely to become salient in work situations (Forbes and Milliken, 1999; Jehn et al., 1999).

Visible and readily detectable diversity attributes, also so-called social category diversity, are considered to lead to social categorization processes, causing negative effects upon group performance (Jehn et al., 1999; Milliken and Martins, 1996; Tsui et al., 1992).

However, and although this reasoning makes intuitive sense, it has not been supported by research. Pelled et al., (1999) argue that informational diversity would be positively related to group performance, whereas social diversity would be negatively related to group performance, but found no proof for either in his research. Bunderson and Sutcliffe (2002) found both positive and negative relationships with respect to team processes and performance for different forms of informational diversity. Other studies report positive effects of social diversity (Bantel and Jackson, 1989) and negative effects of informational diversity (Simons et al., 1999), while again other studies report no relation between typologies of diversity and performance (Dahlin, Weingart and Hinds, 2005; Schippers, Hartog, Koopman and Wienk, 2003; van der Vegt and Bunderson, 2005).

As a final point in this direction, meta-analyses up to date do not support the notion of type of diversity as moderator of the positive versus the negative effects of diversity. In their meta-analysis of 13 studies, Bowers et al., (2000) distinguished gender, personality, attitude and ability diversity and found no reliable relationship between any form of diversity and group performance, while Webber and Donahue (2001), in their meta-analysis of 24 studies distinguishing between highly task-related vs. less task-related diversity found no reliable link for either form of diversity, neither with group performance nor with group cohesiveness.

The actual distinction itself between the different typologies is also under debate. Van Knippenberg et al., (2004a) suggest that research abandon this attempt to explain the effects of diversity through typologies of diversity. The distinction between social category diversity and informational diversity is not as clear as it seems in the first run. Some typologies of diversity are obviously more task-relevant, such as differences in education and functional background. However, social differences that initially do not appear as task-related can also incorporate informational differences and be associated with task-relevant information and perspectives (Cox, Lobel and McLeod, 1991; Tsui

and O'Reilly, 1989). As an example consider the task of developing marketing strategies for specific products for specific market niches. Whether the integrant of the team involved are women or men, or young or old may make a big difference upon the final decision, as their task-relevant perspectives is expected to be different. Social category differences are in this case integrated with informational differences and, as a result, dimensions of diversity that are typically conceptualized as social category diversity (e.g., gender, age) may elicit the positive effects implied in the information/decision-making perspective (Cox et al., 1991). And, on the other hand, what seem to be informational differences can also give rise to social categorization processes (Homan and van Knippenberg, 2003) in that informational differences can be visible through, for instance, differences in dress, (e.g. nurses versus doctors, factory workers versus white collar workers). What seem to appear as clear informational differences may in practice work as social category differences, acting as a basis for social categorization processes.

The conclusion of these findings suggests that the distinction between diversity typologies should not be associated with differential relationships with performance variables, and that it is therefore not possible to link uniquely the negative or the positive effects of diversity to specific subsets of diversity attributes (van Dijk et al., 2009).

Following this same reasoning, van Knippenberg et al., (2004a) propose that all dimensions of diversity may elicit social categorization processes as well as information/decision-making processes, as all dimensions of diversity in principle both provide a basis for differentiation as well as differences in task-relevant information and perspectives. The authors propose a model which makes possible the integration of both perspectives, and allow for all types of diversity to have both positive as well as negative effects upon performance. Their Categorization-Elaboration Model is a complex model that integrate both diversity perspectives (information/decision-making and social categorization) and propose the study of important moderators that affect the relation between diversity and performance (The CEM is explained in more detail later in the chapter).

2.5. DIFFERENT WAYS TO MEASURE DIVERSITY AND ITS THEORETICAL FOUNDATIONS

Although there are different ways to measure diversity, there is one important distinction between the different diversity measures; whether it focuses on separate diversity attributes or the alignment of multiple diversity attributes. In this line, and according to Pham, Metoyer, Bezrukova and Spell (2014), the different diversity measures can be defined as diversity patterns concerning separate attributes and diversity patterns concerning interactions among multiple attributes.

2.5.1. Diversity patterns concerning separate attributes

Group composition research rooted in diversity patterns concerning separate attributes focuses on the degree of diversity of one single attribute within a population at a specific time (Blau, 1977; Milliken and Martins, 1996). They base their predictions of group processes and outcomes upon the distribution of independent diversity attributes (e.g., gender, age, race and tenure), but do not take into account the inter-dependence and the combined effect of multiple diversity attributes among the members.

Even when researchers take into account more than one diversity attribute, combining the effects of various attributes, for example age, gender and race, they use an additive model and aggregate the effects of the single-attribute diversity pattern. Although these aggregate diversity patterns indicate the degree to which a group is different on race *and* gender *and* age, they do not reflect adequately the degree of interdependence between the different diversity attributes.

In order to understand the difference between taking into account singular diversity attributes versus aligned diversity attributes, consider this example:

Imagine two boards of directors with four members on each board:
Board A is composed of two male members with secondary schooling and high board tenure, and two female members with PhD and low tenure.

Board B has one male member with secondary schooling and low tenure, one male member with PhD and high tenure, one female member with PhD and low tenure, and one female member with secondary schooling and high tenure.

In terms of the overall diversity both boards score the same; both consist of two members with secondary schooling, two members with PhD, two females, two males, two members with high tenure and two membes with low tenure. However, the distribution of the diversity attributes differ between board A and B, and it is therefore expected that the group dynamics will differ.

Conceptualization and operationalization of the diversity

Diversity research has typically conceptualized diversity as the distribution of a separate diversity attribute at the group level, and has referred to this distribution as the heterogeneity or the concentration of this given attribute within a given group.

Harrison and Klein (2007) propose three different conceptualizations of diversity; variety, separation, and disparity.

Variety reflects differences in kind or category, primarily in information, knowledge or experience, separation refers to the distribution of attributes based on differences of position or opinion and reflects horizontal distance along a single continuum in a particular attitude or value, and disparity indicates differences in concentration of valued social assets or resources such as pay and status among group members. However, regardless of whether diversity is conceptualized as variety, separation or disparity, the diversity measure focuses on the distribution of separate diversity attributes.

In order to illustrate the different conceptualizations of diversity attributes, consider the attribute of gender, and how this can be conceptualized as variety, separation and dispersion:

- When female and male board members contribute to the board with different information, knowledge, skills, experience, ideas, perspectives and networks, gender can be conceptualized as variety.

- When female and male board members have different opinions or positions with respect to an issue on the board, or stand for different values along a single continuum, gender can be conceptualized as separation.
- When board member´s gender is associated with higher or lower status or power within a board, the attribute of gender can be conceptualized as disparity.

It is important to choose the adequate way of conceptualization, as this will condition the way of operationalization; referring to the way of measuring the diversity concept (Harrison and Klein, 2007). Each of the three conceptualization of diversity (variety, separation and dispersion), is matched with measures that fits the specific diversity concept, what it pretends to measure, and the way it can be done adequately. For example, ratios, percentages and the Blau index are measures that are adequate for measuring diversity as variety, standard deviation and the Euclidian distance are measures adequate for measuring diversity as separation, and the coefficient of variation is a diversity measure used to measure diversity as dispersion. (Tsui et al., 1992; Nielsen, 2010).

When diversity on a demographic attribute is believed to positively benefit team performance as a result of an increased number of perspectives or task-relevant information, diversity is conceptualized as variety (Harrison and Klein, 2007). When in this study we look at the diversity of gender, tenure, education level and education background of board members, it is diversity as variety we intend to measure.

Empirical studies of diversity concerning separate attributes.

Tenure has been a widely used diversity attribute in board research (Kaczamarek et al., 2012b; Tuggle et al., 2010). Tenure can be a source of information as different "generations" within the group may develop different perspectives through different experiences, however, such differences may also feed into subgroupings (van Knippenberg et al., 2004a). Tuggle et al., (2010) found that diversity in board tenure has a positive relationship with the attention paid to entrepreneurial issues.

Functional and education background diversity has also been studied extensively inside and outside the board domain, and is the dimension of diversity most often associated with the informational benefits of diversity (Horwitz and Horwitz, 2007; Joshi and Roh,

2009). However, functional background diversity can also represent a basis for subgroupings (van Knippenberg et al., 2004a). The previously mentioned study of Tuggle et al., (2010) looked at the relation between functional background and the board's ability to discuss entrepreneurial issues and found a positive relation.

Research on board gender diversity is abundant, and many studies argue that women directors on boards have an impact on firm financial performance (Wellalage and Locke, 2013; Ahern and Dittmar, 2012; Bøhren and Strøm, 2010; Adams and Ferreira, 2009; Dezsö and Ross, 2012; Luckerath-Rovers, 2013; Smith, Smith and Verner, 2006; Carter, Simkins and Simpson 2003; Carter et al., 2010; Erhardt, Werbel and Shrader, 2003; Singh, Vinnicombe and Johnson, 2001; Haslam, Ryan, Kulich, Trojanowski and Atkins, 2010; Rose, 2007, Randøy, Oxelheim and Thomsen, 2006). Just as tenure and education-functional background, gender can also be associated with valuable differences in experience, information and perspectives, and form a basis for sub-groupings (van Knippenberg et al., 2004a).

A meta-analysis of the team-performance relationship realized recently (Bell, Villado, Lukasik, Belau and Briggs, 2011) studied a series of diversity attributes separately (functional background, education background, tenure, race, age and gender), conceptualized as variety, separation and disparity, and the effects of these diversity attributes upon team performance, team creativity and innovation. They found that functional background variety has a small positive relationship with general team performance as well as with team creativity and innovation, and that education background variety diversity was related to team creativity and innovation for teams in general, and to team performance for top management teams. They further found that tenure variety diversity (hardly ever conceptualized as such) was unrelated to team performance, although the mean tenure was related to team performance in terms of efficiency. Race and gender variety diversity had small negative relation to team performance, while age diversity had no effect on team performance.

2.5.2. Diversity patterns concerning interactions among multiple attributes

In contrast to the above, the diversity patterns concerning interactions among multiple attributes take into account the simultaneous alignment of multiple diversity attributes across group members. These models base their predictions of processes and performance on the reasoning that the compositional dynamics of multiple attributes has a greater effect on processes than separate individual attributes (Lau and Murnighan, 1998; Thatcher et al., 2003). One such diversity pattern is the faultline model (Lau and Murnighan, 1998), which will be explained in more detail later.

In the organizational, sociological and social psychological literature diversity patterns concerning interactions among multiple attributes has produced four main lines of research; group faultlines (Lau and Murnighan, 1998), factional groups (Hambrick, Li, Xin and Tsu, 2001; Li and Hambrick, 2005), multiform heterogeneity (Blau, 1977) and cross-categorization (Brewer, 2000).

Table 2.2. Four main lines of research on diversity patterns concerning interactions among multiple attributes.

Alignment theories				
Theoretical basis	Group faultlines	Factional groups	Multiform heterogenity	Cross-categorization
Disciplinary foundation	Organizational Behavior	Organizational Behavior	Sociology	Social Psychological
Focal unit	Demographic characteristics	Demographic dimensions	Parameters of social structure	Social identity

Source: Jehn, Bezrukova and Thatcher (2007)

Faultline researchers base their predictions of work-group processes on the argument that the compositional dynamics of multiple attributes and their alignment have a greater effect upon work-group processes and outcomes than separate demographic attributes (Lau and Murnighan, 1998; Thatcher et al., 2003). Faultline theory is probably the alignment theory with highest impact and application in recent diversity research.

“Factional groups are groups where the members are representatives or delegates from a small number (often just two) of social entities, and are aware of, and find salience in

their delegate status" (Li and Hambrick, 2005:794). In order to illustrate what exactly are factional groups, consider the example of a board of a family-owned company, consisting of members from the owner family and members from management (who are not part of the family). On this board two factional groups will exist, as members perceive they are either representatives of the family or of the management, and they are aware of this fact. Another example of factional groups are executive and non-executive directors on the board. Both types of directors come as delegates of specific interest groups, and could therefore be considered as belonging to pre-existing factional groups. In both these cases a pre-existing faultline exists, as the representatives (or delegates) identify with the group they "represent", providing them social identity and categorization. This separates the group into two different factions where a faction is relatively homogeneous, or tightly clustered around its own central tendency (Hambrick et al., 2001; Li and Hambrick, 2005).

The main difference between factional groups and faultlines is that in factional groups the members represent a small number of social entities, and that a pre-existing dividing line already exists between the members of these social entities, based on their salient "delegate status". Factional group theorists (Hambrick et al., 2001; Li and Hambrick, 2005) argue that in factional groups, a compositional split along multiple attributes (e.g., gender, age and tenure) may accentuate managerial coalitions and influence group functioning.

Multiform heterogeneity is rooted in sociological tradition and stresses the importance of focusing on multiple parameters of social structure. This refers to overlapping groups and subgroups generated by different diversity attributes (Blau, 1977). Highly correlated parameters strengthen in-group bonds and reinforce group barriers, whereas low correlation between them indicates the intersection of parameters, and promotes cross-over integration among all members.

The cross-categorization model (Sawyer et al., 2006) refers to situations whereby diversity attributes are not so clearly distinguishable across subgroup, and where the presence of even one similar attribute across all subgroups acts as a mechanism for bridging inter-subgroup differences. As an example consider a board with three younger female directors and five older male directors. There is a clear faultline aligning gender

and age on the board. However, all board members graduated from the same engineering school, and so the education background serve as a bridging attributes for cross-categorization.

It is important to understand the value of the diversity patterns concerning interactions among multiple attributes over and above the diversity patterns concerning separate attributes. If the inclusion of interacting attributes of diversity do not contribute to further understanding on how diversity affects group processes, there would be no reason to complicate the studies with these aligned and complex relations.

The Faultline concept

In 1998, Lau and Murnighan´ s seminal work proposed the concept of faultline to capture multi-attribute categorization. This concept contributes with insights about team diversity in two different ways:

1. They focus on the alignment of multiple attributes and not just on one separate diversity attribute between members of a diverse group, and how this alignment can lead to the formation of subgroups.
2. They propose that these subgroups affect overall group processes.

The ideas behind group faultlines are analogous to geological faults. “Faults” are fractures in the earth's crust which, without external forces, can be dormant for years without being observed from the surface. Following this simile group faultlines are defined as hypothetical dividing lines that split a work-group into relatively homogeneous subgroup based on group members’ alignment along multiple diversity attributes (Bezrukova et al., 2009; Lau and Murnighan, 1998, 2005; Li and Hambrick, 2005).

For the theoretical foundation of faultline theory in explaining the faultlines and the potential of subgroup formation, Lau and Murnighan (1998) used the theoretical dynamics of self-categorization (Turner, 1975, 1987; Turner et al., 1987), social identity (Tajfel, 1986), and similarity attraction (Byrne, 1971). Social categorization, typically based on easily detectable, social category diversity attributes, lead to in-group and out-group categorizations (Webber and Donahue, 2001). Lau and Murnighan (1998)

proposed the concept of faultlines to capture multi-characteristic categorization, which makes the subgroup division stronger, as more attributes are aligned for division. This concept allows predictions about subgroup dynamics that cannot be generated by focusing on lone characteristics describing group heterogeneity.

Consistent with the initial studies on diversity, the first studies of faultlines focused on diversity attributes like tenure, functional background, education background, gender, age, race, and nationality (Lau and Murnighan, 2005; Shaw, 2004; Thatcher et al., 2003). As in dispersion research, some studies distinguished between faultlines based on social category diversity (e.g. race, gender, age) and informational diversity (e.g., function, education background, tenure) (Bezrukova et al., 2009; Molleman, 2005; Zimmermann, 2011).

According to Thatcher and Patel´s (2012) meta-analysis of group faultlines, the most commonly used attributes in faultline composition are age, education background, gender, race, functional background and tenure. One of the issues brought up by this meta-analysis, and which was not defined by Lau and Murnighan (1998), was attribute alignment clarity. Thatcher and Patel (2012) suggest that attribute alignment clarity is the extent to which alignment on a particular attribute is unambiguous, for example what occurs with the attribute of gender; all group members are either male or female.

There are also some studies involving faultlines based on other attributes such as personality characteristics or types (Gratton, Voigt and Erickson, 2007; Molleman, 2005), work location (Gratton et al., 2007; Polzer et al., 2006) and the level of "familiness" in family-owned firms (Minichilli, Corbetta and MacMillan, 2010), however these studies are less frequent.

As faultlines are focused on the simultaneous alignment of different diversity attributes, it is possible to investigate and combine the alignment of different diversity attributes at the same time, being the diversity of a social or informational nature. In spite of the fact that many studies have combined different diversity attributes in faultline studies, no proof has been found of any combination of diversity attributes producing stronger faultline effects than others. As an example of this, consider a faultline based on gender aligned with education background, and a faultline based on gender aligned with age.

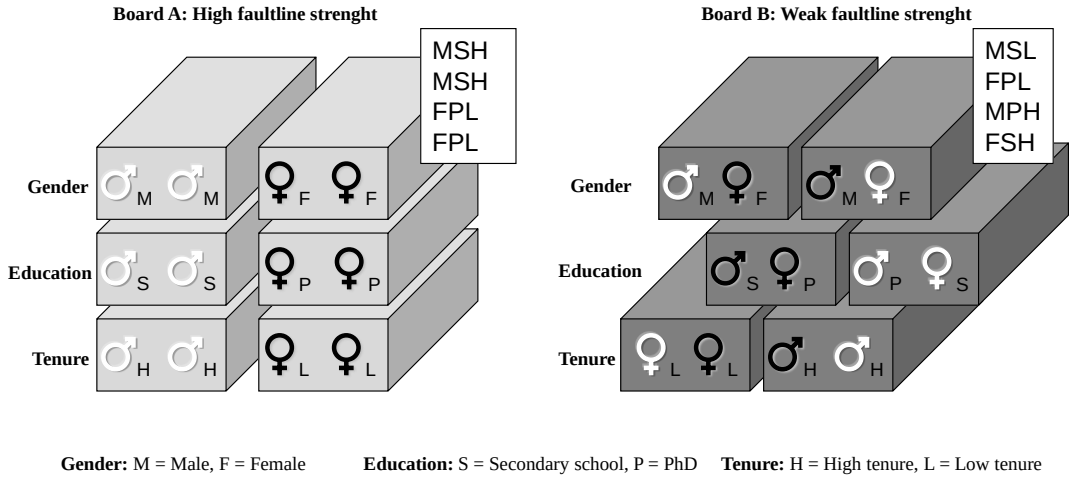
As no conclusion from research report that one faultline produce stronger effects than the other, one cannot draw any conclusions about which combination of diversity attributes creates the stronger faultline effects (Thatcher and Patel, 2012). Although the faultline theory is based on some of the same theoretical foundations as the rest of the diversity literature, the measure of faultlines and its conceptual emphasis on the formation of subgroups enable us to gain a better understanding of the group, its context and the influences on group processes and outcomes.

Let us go back to the previous example of board A and B:
Board A is composed of two male members with secondary schooling and high board tenure, and two female members with PhD and low tenure.
Board B has one male member with secondary schooling and low tenure, one male member with PhD and high tenure, one female member with PhD and low tenure, and one female member with secondary schooling and high tenure.

As seen earlier, in terms of overall diversity and variety, both boards score the same; both boards consist of two members with secondary schooling, two members with PhD, two females, two males, two members with high tenure and two membes with low tenure. However, the distribution of the diversity attributes differ between board A and B.

We can observe that board A has a strong faultline that board B does not have, as the alignment of the diversity attributes of gender, education and tenure on board A create two relatively homogenous subgroups. In order to illustrate this, please see the below figure.

Figure 2.2. Faultline strength.



Source: Thatcher and Patel (2011)

Board members have multiple identity structures (e.g., gender, education, age, tenure); depending on the similarity and the salience of board members' attributes, boards of directors may therefore have many potential faultlines, each of which may activate or increase the potential for particular subgroups. Furthermore, individuals have certain self-concepts and identity motives that lead them to identify with particular groups of people. Gender is considered to be one of the most common trigger for faultline division and subgroup formation (Thatcher and Patel, 2011).

In this dissertation, analyzing gender diverse boards, the potential for gender faultlines will be studied. The attributes included in the study in combination with gender, are tenure, education level (the level of studies achieved) and education background (the mayor of the university degree (in those cases where the board member have university studies)).

Measure of faultlines

Just as diversity can vary within a team, so can its faultlines. In previous research faultlines have either been empirically inferred or created in lab settings. In lab settings, researchers create groups where there is an alignment of attributes based on individual diversity attributes. In these situations, the presence of faultlines is typically inferred through manipulation checks. In field settings, subjects cannot be assigned to groups by researchers; therefore, the measure of faultlines is empirically derived and results may be influenced by how faultlines are operationalized.

Following Lau and Murnighan's (1998, 2005) work, subsequent researchers have focused on developing different ways of measuring faultlines. The empirical approaches can be divided into two principal measures; faultline strength and faultline distance.

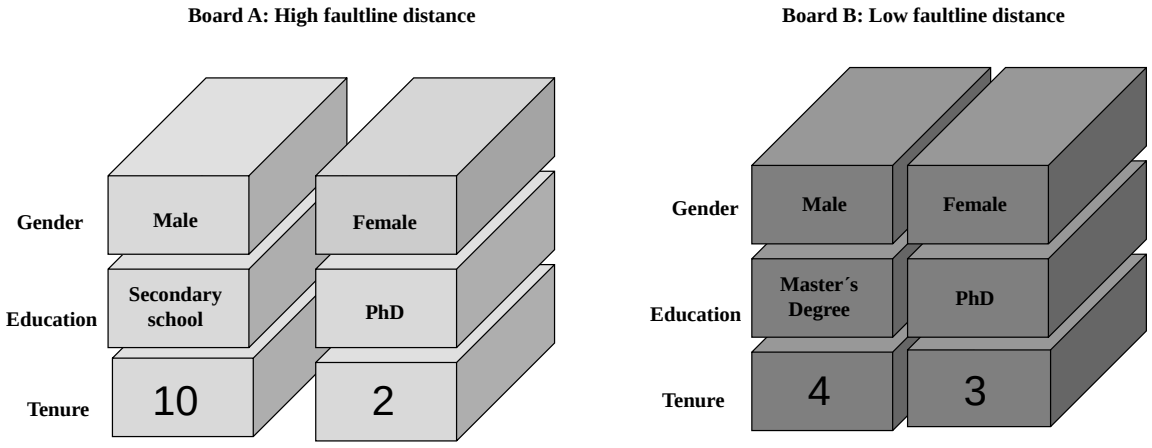
The strength of faultlines is measured by the alignment of diversity attributes, making the faultline stronger when more attributes align themselves in the same way within their subgroup, thereby increasing the homogeneity of the resulting subgroup (Thatcher et al., 2003). As an extreme example, if a team has five young, white, male engineers who have worked for the company for less than a year, and five middle-aged, black, female BBAs who have been with the company for twenty years or more, the group's faultline measure would be extremely strong, because all of the listed attributes are perfectly correlated. The faultlines are weakest when attributes are not aligned and multiple subgroups can form.

The strength of faultlines, then, depends on three compositional factors: (1) the number of individual attributes apparent to team members, (2) their alignment, and, as a consequence, (3) the number of potentially homogenous subgroups.

Faultline distance was not part of Lau and Murnighan´s seminal work of 1998, and it is therefore logical that most faultline studies have focused on measuring faultline strength. However, recent researchers have incorporated the concept of faultline distance when measuring faultlines (Bezrukova et al., 2009; Zanutto, Bezrukova and Jehn, 2010).

Faultline distance is the extent to which subgroups diverge as a result of accumulated differences between subgroups (Bezrukova et al., 2009) and reflects how far apart the subgroups are from each other. Faultline distance can be measured by the Euclidean distance between the two sets of averages. In order to illustrate this, please see below illustration.

Figure 2.3. Faultline distance.



Source: Thatcher and Patel (2011)

Groups may have multiple faultlines that remain dormant until they are activated (Lau and Murnighan, 1998; Pearsall et al., 2008). Dormant faultlines are potential or latent faultlines based on some set of attributes, which differ among members, but are not perceived within the group. Active faultlines are attributes, which exist, and are perceived by members as differentiating them into subgroups based on those sets of attributes.

In order to illustrate the difference between active and dormant faultlines consider the example of a board consisting of eight members; four young women lawyers who are outside directors, three older women lawyers who are inside directors, and five older men engineers who are inside directors. This board has two possible faultline splits; (1) gender combined with education and (2) age combined with outsider/insider status on the board. However, faultline is not activated, as board members are not aware of, or do not find salient the attributes that could stimulate subgrouping. One day the board engages in a hot discussion about an expensive pension policy for the top management of the company. This acts as a faultline trigger creating two different subgroups, one of outside directors and the other of inside directors, and the dormant faultline has become activated.

Faultlines that are dormant may thus become active via a "faultline trigger"; an event or a situation that turns a previously dormant faultline into an active faultline (Rink and Jehn, 2010). A recent multi-country, multi-organization qualitative study by Chrobot-

Mason, Ruderman, Weber and Ernst (2009) found that most faultline triggers could be described as one of the following types; differential treatment, different values, assimilation, insult or humiliating action, or simple contact.

Several empirical measures of faultlines have been proposed over the years, however no agreement on a universal measure has been reached. The different measures can be classified into variance decomposition approaches (Gibson and Vermeulen, 2003; Li and Hambrick, 2005), clustering approaches (Thatcher et al., 2003; Barkema and Shvyrkov, 2007; Bezrukova et al., 2009; Meyer and Glenz, 2013), and cross-classification approaches (Shaw, 2004; Trezzini, 2008; van Knippenberg, Dawson, West and Homan, 2011).

Table 2.3. Authors and faultline measures

Author(s) and Year	**Faultline measurement**
Lau & Murnighan, 1998	Faultline strenght
Thatcher et.al., 2003	Clustering approaches
Barkema & Shvyrkov, 2007	Clustering approaches
Bezrukova et. al., 2009;	Clustering approaches
Meyer & Glenz, 2013	Clustering approaches
Gibson & Vermeulen, 2003	Variance decomposition approaches
Li & Hambrick, 2005	Variance decomposition approaches
Shaw, 2004	Cross-classification approaches
Trezzini, 2008	Cross-classification approaches
van Knippenberg et. al., 2011	Cross-classification approaches

Source: Prepared by the author

The Fau index of Thatcher et al., (2003) is one of the mostly used measure of faultline strength (for dormant faultlines). This index is based on a clustering approach and is used to measure the percentage variance explained by attribute alignment across the strongest group split.

Among the different faultline researchers there is a lack of agreement upon the number of subgroups that can co-exist in a faultline setting. Thatcher et al.,'s (2003) measure approach is designed to maximize faultline strength that exists when there are two subgroups in a group (Lau and Murnighan, 1998). Although much of the prior empirical and experimental work assumes two subgroups, Shaw (2004) and Trezzini (2008)

suggest that there could be multiple subgroups, and their approach allows for the presence of more than two subgroups.

Empirical studies of faultlines

Faultline research focuses on the effects of faultlines upon group performance and other group outcomes such as satisfaction, cohesion and commitment, and predicts that these effects goes beyond those predicted by diversity alone (Thatcher and Patel, 2012). The main proposal of faultline alignment is that, in a diverse group, members split into subgroups, based on social categorization, resulting in perceived "in-group members " and "out-group members", which again influences the overall performance of the group.

Research has shown that strong faultlines influence group performance in a negative way (Homan, Hollenbeck, Humphrey, van Knippenberg, Ilgen and van Kleef, 2008; Jehn and Bezrukova, 2010; Li and Hambrick, 2005; Thatcher et al., 2003; Zanutto et al., 2010). Faultlines are found to cause increased intra-team conflict and group process losses, leading to decreased group performance (Li and Hambrick, 2005). As subgroups become more competitive with one another, time and energy are used to bridge the divisions created by faultlines, and less time and energy is spent on working towards the group's objectives (Li and Hambrick, 2005; Brewer, 1996; Halevy, 2008; Hornsey and Hogg, 1999). In this way communication difficulties prevent necessary knowledge exchange (Halevy, 2008; Lau and Murnighan, 2005; Sawyer et al., 2006).

Lau and Murnighan (2005) found that the effectiveness of communication is dependent on the faultline strength. They wrote that "the key underlying mechanism for these effects is likely to be communication; with strong faultlines, communication between subgroups can generate conflict, scorn, and/or poor performance; with weak faultlines, communication should facilitate performance" (Lau and Murnighan, 2005:646). They warned that exclusivity in subgroup communication fuels the tendency for activated faultlines to result in polarization, but communication between subgroups limits it.

Strong faultlines have been found to have negative effects upon information-elaboration (Meyer et al., 2011), group functioning (Molleman, 2005), riskiness of decision-making (Barkema and Shvyrkov, 2007; Rico et al., 2007), creativity (Pearsall et al., 2008) and group-level organizational citizenship behaviors (Choi and Sy, 2010).

However, most of these findings are drawn from research on student teams and experimental settings (Bezrukova et al., 2009; Homan et al., 2008; Molleman, 2005; Pearsall et al., 2008; Rico et al., 2007; Sawyer et al., 2006). Only recently has faultlines been applied to the studies of TMTs (Barkema and Shvyrkov, 2007; Georgakakis and Ruigrok, 2014; van Knippenberg, Dawson, West and Homan, 2011; Cooper, Patel and Thatcher, 2014) and boards of directors (Tuggle et al., 2010; Kaczamarek et al., 2012b; Veltrop, Hermes, Postma and De Haan, 2015).

As examples of studies on board faultlines, Tuggle et al., (2010) found that boards with strong faultlines, in comparison to board with weak faultlines, presented behavioral disintegration and conflict, prohibiting the board to benefit from the variety of director attributes and perspectives, resulting in less attention to the discussion of entrepreneurial issues. Kaczamarek et al., (2012b) found that faultlines affected negatively the firm´s financial performance, and Veltrop et al., (2015) found that factional faultlines, based on gender, age and factional belonging, resulted in reduced perceived board effectiveness and reduced financial return on investment.

Faultlines predict connection between members of the "in-group" but negative relations towards the members of the "out-group" (Hornsey and Hogg, 2000; Pickett and Brewer, 2001). It is here that faultline division influence the level of information sharing and the internal processes of elaboration and decision-making of the board. Subgroups may engage in power struggles, with the objective of "winning" instead of finding consensus (Westphal and Milton, 2000). And even though all board members have the same responsibility and are equally liable, some groups of board members may have more power than others, affecting inter-group relations (Huse and Solberg, 2006; Huse, Minichilli and Schøning, 2005).

Chrobot-Mason et al., (2009) emphasize that increased salience of subgroup identities on boards makes power struggles and conflict among subgroups more likely to occur. As commented, gender diversity is considered to be one of the most common trigger for faultline division and subgroup formation, due to its faultline clarity and salience (Thatcher and Patel, 2011), thus leading to possible power conflicts between gender subgroups on the board. With faultlines and strong awareness of the "out-group" on the board, individuals tend to assume an even greater "in-group" homogeneity. As a result,

the identification with subgroups becomes more salient for board members than the identification with the board as a whole, to the detriment of the cohesiveness of the board. (Ashforth and Mael, 1989; Hogg and Terry, 2000).

Relative subgroup sizes and/or a disparity in subgroup power generate a variety of group dynamics that affects the likelihood of its members voicing their opinions. Unbeknownst to the members of the powerful subgroups, a seemingly smooth board process may mask considerable relational conflict and disagreements. Larger subgroups tend to reduce the vocalization of minority opinions within the group, and to create infrequent, latent, and covert conflicts that, when they surface, last longer than members of the larger subgroup might expect (Lau and Murnighan, 1998).

Studies investigating the link between faultlines and group satisfaction have found the relationship to be negative (Cronin, Bezrukova, Weingart and Tinsley, 2011; Jehn and Bezrukova, 2010; Rico et al., 2007; Zanutto et al., 2010). This is supported by Thatcher and Patel's (2012) meta-analysis, demonstrating that groups with strong faultlines have lower levels of group satisfaction than groups with weak faultlines. In groups with strong faultlines, members will have pleasant interactions with the members of their own "in-group" (Jehn and Bezrukova, 2010; Stevenson et al., 1985), but experience an increase in conflict and distrust towards the "out-groups" (Choi and Sy, 2010; Greer and Jehn, 2007; Hogg et al., 1990; Homan et al., 2007; Pearsall et al., 2008).

Some studies have investigated the link between faultlines and different types of conflicts (relational, task and process conflicts) and found positive and significant relationships (Bezrukova, Thatcher and Jehn, 2007; Li and Hambrick, 2005; Pearsall et al., 2008; Polzer et al., 2006; Thatcher et al., 2003; Zanutto et al., 2010). Faultline strength is found to be positively correlated with all conflict types, and negatively correlated with group performance and satisfaction Faultline distance also reflects negatively on group performance and satisfaction (Thatcher and Patel, 2012).

Overall, empirical studies on faultlines reflect that faultline strength and distance tend to have negative effects on group outcomes, as corroborated by Thatcher and Patel´s (2012) quantitative aggregation results demonstrating that faultline strength and

faultline distance have significant effects on group outcomes above and beyond the effects of group diversity.

With the objective of further understanding the faultline antecedents and implications, subsequent research on faultlines draw on the categorization-elaboration model (CEM), the optimal distinctiveness theory (ODT), the cross-categorization model and the distance theories (social, psychological and cultural distance). These theories have all been used to emphasize the relevance of intra-subgroup solidarity and inter-subgroup differentiation, crucial to the faultline concept.

Table 2.4. Subsequent theoretical research on faultlines.

Theory or Model	**Description**
Categorization-Elaboration Model	The elaboration of task-relevant information is the primary process underlying the positive effects of diversity. Social categorization processes and intergroup bias undermine these effects.
Optimal distinctiveness theory	Describes the tendency to seek a balance of uniqueness and similarity
Social, psychological, and cultural distance theories	Explain that the degree of distance (or difference) between subgroup has an impact on group outcomes
Cross-categorization model	Cross-categorization refers to a situation whereby diversity attributes that is not clearly distinguishable across subgroups works to reduce the strength of the faultline alignment
Social network and social cohesion	Network theorists suggest that people with similar demographic attributes tend to socialize together

Source: Prepared by the author

2.6. CATEGORIZATION-ELABORATION MODEL (CEM)

Over the years diversity researchers have not been fully able to explain the inconsistent findings of the effects of diversity on work-group performance. They have typically focused on either the information/decision-making processes or the social categorization processes. In an attempt to integrate both the positive as well as the negative effects of

diversity, van Knippenberg et al., (2004a) introduced the Categorization-Elaboration Model (CEM), suggesting that the two processes interact.

The CEM has been chosen for this study for various reasons. The principal reason is that the underlying idea of the CEM, that diversity engenders elaboration of task-relevant information that benefit performance, matches our value-in-gender-diversity-on-boards-proposition. Furthermore, the CEM considers both positive and negative effects of diversity occurring simultaneously, and integrate the two diversity perspectives (information/decision-making and the social categorization), thus representing a more realistic and holistic vision of diversity and its effects. It further introduces a series of moderating factors to the relation diversity-elaboration processes, and the relation diversity-social categorization processes, and demonstrate through this, the very complex reality of work-groups. Finally, intergroup bias, according to CEM, constitute the principal cause for the negative effects of social categorization, an argument that seems interesting when analyzing women on boards.

2.6.1. Theoretical foundation of the CEM

Van Knippenberg et al., (2004a) propose that the primary process underlying the positive effects of diversity on group performance lies in the process of elaboration of task-relevant information, defined in their work as the exchange of information and perspectives, the individual-level processing of the information and perspectives, the process of feeding back the results of this individual-level processing into the group, and the discussion and integration of its implications.

They argue that previous researchers have paid insufficient attention to information processing. For the CEM authors, it is this process that may be engendered by work-group diversity, leading diverse groups to outperform more homogeneous groups. Van Knippenberg et al., (2004a) propose three main moderators of the relationship between diversity and elaboration processes, pretending to explain when diversity is more likely to engender elaboration of task-relevant information and benefit performance. These moderators are task-requirement, task motivation and task ability.

The first moderator of the relation diversity and elaboration processes is task requirement. It is considered that the diversity in member´s composition *per se* is not sufficient to lead to a superior performance. Diversity is related to superior performance in that the exposure to more diverse information and perspectives favor the process of elaboration of task-relevant information, which in turn, leads to more thorough and creative elaboration, problem solving, analysis and decision-making. Complex and non-routine tasks, involving this elaboration processing is expected to invite more elaborate information processing in the first place (Stewart and Barrick, 2000), setting the stage for the potentially positive effects of diversity of information and perspectives. In contrast, there appears little reason to expect that simple and routine tasks (e.g., repetitive production tasks) require extensive information processing and decision-making.

The second moderator of the relation diversity and elaboration processes is group members´ task motivation. Van Knippenberg et al., (2004a) suggest that diversity is more likely to engender elaboration of task-relevant information and benefit performance when group member task motivation is high rather than low.

The third moderator of the relation diversity and elaboration processes is group members´ task ability, and as above the CEM authors suggest that diversity is more likely to engender elaboration of task-relevant information and benefit performance when group members´ task ability is high rather than low (van Knippenberg et al., 2004a).

In previous diversity research, as studies on information/decision-making perspective and social categorization perspective have largely developed along separate lines, little theoretical work has analyzed how the social categorization processes affect the principal value of diversity which comes alive through the elaboration processes. Van Knippenberg et al., (2004a) identify these social categorization processes not only undesirable in themselves, but also disrupting to the valuable processes of elaboration and decision-making integrating in this way both perspectives.

Van Knippenberg et al., (2004a) also argue that diversity research too often has worked from a somewhat oversimplified conceptualization of social categorization. This has led

to a reduced understanding of important moderators of the relation between diversity and social categorization, and between social categorization and its negative consequences upon group processes. The CEM´s focus on moderators is important not only to identify when diversity may be expected to have positive or negative effects, but also because it is informative about the processes underlying work-group diversity (i.e., moderator effects observed may corroborate conclusions about the processes in operation).

Social categorization, as previously explained, is rooted in the theories of social identity (Tajfel, 1986; Ashforth and Mael, 1989; Capozza and Brown, 2000), self-categorization (Turner, 1975, 1987) and similarity-attraction paradigm (Byrne, 1971; Byrne and Neuman, 1992). Diversity research has typically pointed to the negative effects of social categorization processes dividing a group into two or more subgroups, distinguishing between in-groups as "us" and out-groups as "them". However, within one same group there might be many potential bases for such distinction between "us-versus-them", for example men vs. women, old vs. young, inside vs. external, engineers vs. lawyers etc. Not all of these potential categorizations do necessarily make the same sense for an individual in a particular situation, under a particular circumstance.

An important issue in this study, as well as for other faultline studies, is therefore to determine which attributes have more subjective meaning to a board member, or in other words, which attributes are more "salient", meaning more likely to evoke in a board member the view of oneself versus others. This question is important for our understanding of the diversity effects upon the board, as it indicates the probability of the surging of a social categorization process, based upon a certain diversity attribute, considered relevant for the board members.

Building on theory and research in social categorization, Knippenberg et al., (2004) propose that the extent to which a specific diversity attribute make subjective sense to group members, and therefore engender social categorization, is contingent on three moderating factors: comparative fit, normative fit, and cognitive accessibility of the categorization (Oakes, Haslam and Turner, 1994; Turner et al., 1987).

The first moderator upon the relation diversity-social categorization is comparative fit. This refers to the extent to which the social categorization provides a good reflection of similarities and differences between people, and as a consequence of this, yields subgroups with high intragroup similarity and high intergroup differences. The more a categorization results in subgroups with high within-category-similarity and high between-category-differences, the higher is its comparative fit, and the more likely the social categorization is to be salient.

The faultline model pretends to measure this comparative fit by determining the alignment of multiple diversity attributes between group members, thus establishing the intragroup similarity and the intergroup differences interacting in determining the salience of social categorizations (Lau and Murnighan, 1998). When people differ on more than one attribute, differences may either be correlated or unrelated. When differences correlate (all the male members on the board are engineers, while all the female board members are lawyers), social categorization (male engineers vs. female lawyers) is more likely to occur than when differences along the diversity attributes cross-cut each other (engineers and lawyers are equally likely to be either male or female) (Homan and van Knippenberg, 2003).

The second moderator upon the relation diversity-social categorization is normative fit. This refers to the extent to which this categorization makes sense within an individuals' subjective frame of reference; his or her beliefs, expectations, and stereotypes (Turner et al., 1987). The more an individual believes that within a given context differences along a certain diversity attribute are meaningful, the more salient the categorization based upon these differences will be. This is important to understand, as not all diversity attributes have the same importance. Consider as an example the diversity attributes of gender and body length; the first (gender) seems important as societal gender stereotypes tend to give subjective meaning to a gender categorization (Pearsall et al., 2008), while the latter (body length) seems meaningless in most organizational contexts, even though it capture differences between group members equally well as gender; i.e. given similar comparative fit.

In line with this view, van Knippenberg, Haslam and Platow (2007) proposed that the extent to which group identification is affected by diversity on a particular diversity

attribute is contingent on the belief about the extent to which this attribute is relevant to the task at hand (has normative fit). They found that it is not difference *per se* but rather the belief that a difference is meaningful that leads diversity to affect the categorization processes.

The third moderator upon the relation diversity-social categorization is cognitive accessibility. This refers to the readiness with which the categorization comes to mind (men vs. women, old vs young), and the likelihood of the perceiver to use the categorization. Accessibility depends on earlier experience, beliefs and expectations, but also on contextual factors (van Knippenberg and van Ginkel, 2010).

Well-learned social categorizations that people have used throughout their lives, (gender, age and race) should therefore be more accessible than non-obvious categorizations (Fiske, 1998). In this respect, the concept of self-schema supports the cognitive accessibility of categorization. Self-schema is an individual's psychological construction of self. Gender is one of the most commonly used attribute for the definition of self-schemas. Gender self-schemas are developed from childhood and serve as mental models through which information is processed. Female gender self-schemas are largely based on roles, norms, values and beliefs held about women such as homemaker, affiliation to others, nurturance, deference, and abasement (Konrad, Ritchie and Corrigal, 2000).

Self-categorization theory (Turner et al., 1987) proposes that the salience of a social categorization requires that all three components, comparative fit, normative fit and cognitive accessibility exists and interacts; the higher the comparative fit, the normative fit and the cognitive accessibility, the more likely a categorization is to be salient.

In this study, in which gender is the primary diversity attribute, we assume, for the reasons described under normative fit and cognitive accessibility, that gender complies with both, thus fulfilling two of the required moderators of the relation diversity-social categorization. The third moderator, comparative fit, pretending to establish the inter-group similarities and intergroup differences on boards between the female and the male subgroups, is one of the principal objects of this study, and will be analyzed using the faultline model.

Research in intergroup relations suggests that social categorization is the root of problematic intergroup relations. Van Knippenberg et al., (2004a) however, propose that it is not the social categorization in itself that disrupts the elaboration processes. Social categorization merely refers to the perceptual grouping of people (Turner et al., 1987), which is a condition for the formation of subgroups, however not necessarily sufficient to disrupt the group´s elaboration processes. The authors emphasize the importance of distinguishing between the two concepts of social categorization and intergroup bias. They argue that the potentially negative effects of diversity is more linked to intergroup bias between different group members, than to social categorization *per se*. The authors argue that only when there is a subjective reason to respond negatively to different attributes in other members in the group, for example, when different others are believed to pose a threat to effective group functioning or when individuals show more favorable responses to "in-group members" than to "out-group members" (Brewer, 1979) - will social categorization disrupt group functioning.

In order to understand the differentiation between the effects of social categorization and intergroup bias, consider the previous example of dormant versus active faultlines. In a board with twelve members, four are young women lawyers who are outside directors, three are older women lawyers who are inside directors, and five are older men engineers who are inside directors. Thus these diverse board members have various diversity attributes available for perceptual subgrouping of people - that is social categorization - based on gender, age, education and outsider/insider status on the board. However, as long as there is no subjective reason to respond negatively to the different attributes of the other members of the board, there is no disruption of the board´s processes. However the day the board engage in the hot discussion about the expensive pension policy for the top management of the company, an intergroup bias may emerge, as the inside directors feel threatened by the outside directors and vice versa.

Brewer and Brown (1998) and Brown and Gaertner (2001) corroborate this as they point to the importance of distinguishing between the factors underlying social categorization, and the factors underlying intergroup bias. A key question then is under which conditions social categorizations make intergroup bias emerge.

Group memberships reflect on how individuals see the self (social identity). Accordingly, as individuals value a positive and distinctive self-image, group members also value a positive and distinctive group identity (Brewer, 1991; Hogg and Abrams, 1988; Tajfel and Turner, 1986). As a result, intergroup bias is typically inspired by threats or challenges to the value or the distinctiveness of group identity (threats to the individuals' self-views in their group). In the absence of such threats or challenges, social categorization is less likely to result in intergroup bias (Branscombe, Ellemers, Spears and Doosje, 1999).

Threats to the value of identity may take many different forms, but all share the fact that a favorable image of the group is perceived to be challenged. Such challenges may range from subtle social competition for status and prestige, outright derogation or discrimination of the group (Brewer and Brown, 1998), to unequal status of subgroups and competitive interdependence between subgroups (Gaertner and Dovidio, 2014).

Centering on the issues related to women directors on boards of directors, intergroup bias is believed to threaten women directors' appointment to and influence on the board. Such bias may lead to the no-appointment of women to boards (Mateos De Cabo, Gimeno and Escot, 2011), thereby eliminating their potential contribution, and to a token or minority status, reducing women´s contribution and influence once on the board. In this line, society in general has traditionally associated positions of top management (like board members, presidents and CEOs) with stereotypic beliefs about gender, being this a sign of intergroup bias against women. Furthermore, on boards where both women and men are represented, intergroup biases can lead to activated faultlines and the formation of female and male subgroups, which again may lead to disruptive processes affecting the elaboration of task relevant information and finally affect performance.

Following this line of argumentation, the low representation of women directors on board of directors is affected by the theories of social categorization and intergroup bias (Tajfel and Turner, 1986; Ashforth and Mael, 1989; Capozza and Brown, 2000; Turner, 1975, 1987; Byrne, 1971; Byrne and Neuman, 1992), which argue that when board members (mainly men) make decisions about promotions to top management positions and board membership, they are influenced by the salience of their own gender identity,

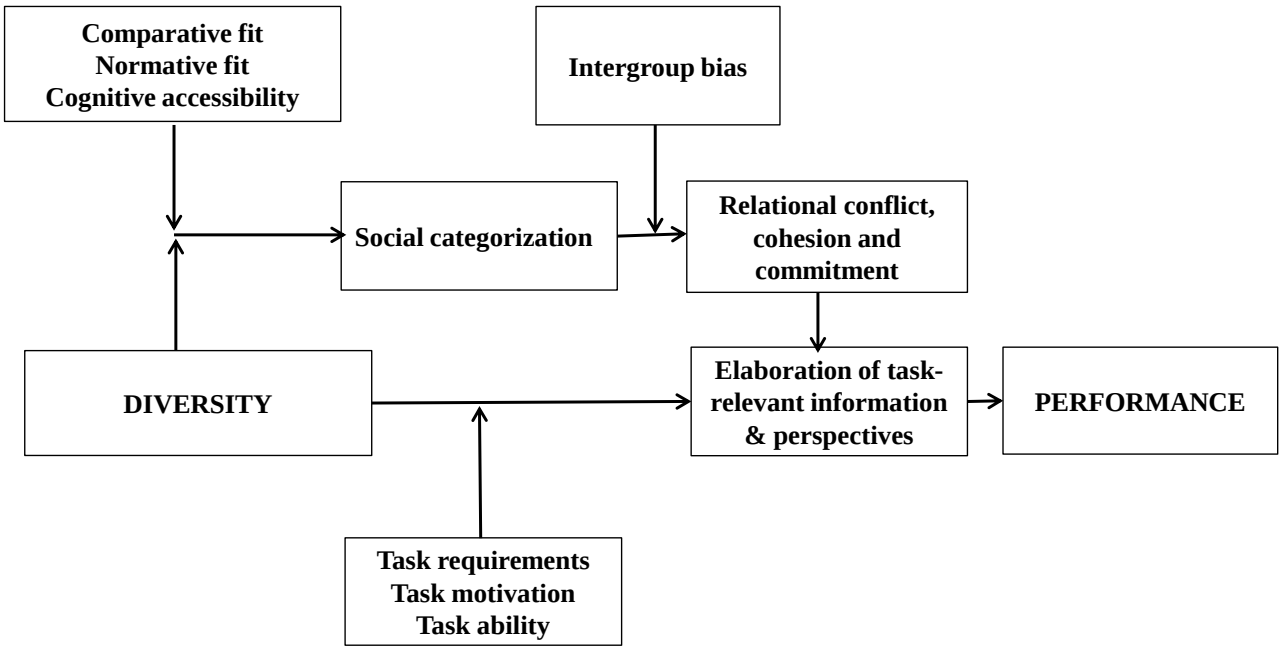
combined with prejudice and bias against women, and tend to “reproduce” the profiles already existing on the board, and favor candidates similar to themselves.

Kanter (1977) in her analysis of a large Fortune 500 corporation, named such a preference "homo-social reproduction", and argued that the primary motivation for this was to minimize uncertainty, and one way of reducing uncertainty in the executive suite is to choose people who are similar to oneself.

Finally, most diversity research has worked from the assumption that the elaboration processes and the social categorization processes are associated with particular typologies of diversity, namely informational diversity and social category diversity, as mentioned earlier in this chapter.

However, van Knippenberg et al., (2004a) propose that diversity research abandon this attempt to explain the effects of diversity by differentiating between typologies of diversity. As seen earlier the distinction between social category diversity and informational diversity is not as clear as it seems in the first run. Social category differences can be integrated with informational differences and, as a result, elicit the positive effects implied in the information/decision-making perspective (Cox et al., 1991), as well as informational differences can give rise to social categorization processes (Homan and van Knippenberg, 2003). Following this reasoning, van Knippenberg et al., (2004a) propose that all dimensions of diversity may elicit social categorization processes as well as information/decision-making processes, as all dimensions of diversity in principle both provide a basis for differentiation and may be associated with differences in task-relevant information and perspectives (van Knippenberg et al., 2004a).

Figure 2.4. The Categorization-Elaboration Model (CEM)



Source: Van Knippenberg et al., (2004a)

The CEM integrates the information/decision-making perspective, represented by the relation:
Diversity - Elaboration of task-relevant information & perspectives - Performance

and the social-categorization perspective, represented by the relation:
Diversity - Social categorization - Intergroup bias - Relational conflict - Elaboration of task-relevant information & perspectives - Performance.

The model also reflects the moderators of the relation *Diversity - Elaboration of task-relevant information & perspectives,* which are Task Requirements, Task Motivation and Task Ability, and the moderators of the relation *Diversity - Social categorization*, which are Comparative fit, Normative fit and Cognitive accessibility.

The CEM is a highly complex model with numerous variables, some of which are very difficult to measure.

2.6.2. Argumentation for a dissertation model based on the CEM

We have built our dissertation model upon the CEM due to various considerations. The first considerations are of a more generic nature, and refers to the general advantages observed in the model:

1. The underlying idea of the CEM is that diversity engenders elaboration of task-relevant information that benefit performance. This underlying idea grants diversity a positive value, which is in line with our fundamental belief that diversity is positive, and our value-in-board-gender-diversity proposition.
2. Further to the underlying idea of diversity as positive, the CEM fully accounts for both negative and positive effects of diversity. In considering these simultaneous positive and negative effects, the CEM offer a much more holistic and credible way than most other diversity models, and a more plausible explanation to the earlier confusing and contracting results of diversity research.
3. The CEM shows respect to previous diversity research developments by including both the information/decision-making and the social categorization perspectives into its model. It adds to earlier developments by showing how these two perspectives are inter-related and interact with each other, and in this way offers a broader understanding of both perspectives.
4. The CEM introduces a series of moderating factors to the relation diversity-elaboration processes, and the relation diversity-social categorization processes, and demonstrate through this the very complex reality of work-groups. This is fully in line with our thinking, as we have both seen and experienced the difficulties of working in diverse teams.

The following considerations are of a more specific nature, and take into account the specific area of study and how the CEM model constitute an adequate base for developing our own model.

5. One of the mayor contributions of the CEM is the focus on the elaboration of task relevant information as the principal process underlying the positive effects of diversity. This is fully in line with our proposition, as we build our model

proposing that women directors on boards contribute to a more efficient elaboration and decision-making process leading to better overall performance.

6. The CEM proposes that both dimensions of diversity (informational- and social category- diversity) can elicit both social categorization processes and information/decision-making processes. We believe that this is a more realistic way to consider the effects of diversity, than the theories proposing classifications in the line of informational diversity affects information/decision-making processes and social category diversity affects social categorization processes. In this dissertation, studying gender diversity on boards, gender would, under restrictive classification, only be of social category contributing to social categorization processes. We do not believe that to be a reflection of reality, as women, contribute with social category as well as informational diversity, such as specific insights, skills and leadership behaviors.
7. One of the CEM moderators of the relation diversity-elaboration of task-relevant information and perspectives is the task requirement. The CEM proposes that diversity in a work-group makes sense when the tasks of the group involves information procession, idea generation and high-quality decision-making. As this reflects the nature of board work, it is likely that board diversity engender elaboration that benefit performance.
8. Intergroup bias, according to CEM, constitute the principal cause for the negative effects of social categorization, an argument that seems interesting when analyzing women on boards, as it has been discussed that women board members suffer from being a minority, from gender stereotyping, from lower status values, and from male dominance; all leading to bias against women.

Based on the above considerations we believe that the application of the CEM to our dissertation model will contribute to a broader and more sophisticated understanding of the information/decision-making processes, the social categorization processes and the intergroup bias related to gender diversity on boards, and their effects on the firm performance.

CHAPTER THREE

LITERATURE REVIEW:

"VALUE-IN-BOARD-GENDER-DIVERSITY PROPOSITION"

3.1. INTRODUCTION

The principal proposition of this dissertation is that women directors add value to corporate boards.

Building on the underlying idea of the CEM, that diversity engender elaboration of task-relevant information that benefit performance, our main argument is that the different viewpoints, opinions, ideas, perspectives, information, knowledge, background, experience and links that women directors bring to the board contribute positively to the boards´ performance, and finally to the overall firm´s results.

Furthermore, as the CEM focuses on the processes of the board; the elaboration- and the decision-making processes, thus emphasizing what goes on inside the boards, we include in our proposal, in addition to women´s diverse knowledge and information, their distinct contribution to the internal work-processes of the board, and their contribution due to their unique leadership style and behavior.

However, recognizing the complexity of group-work with diverse members, we consider that the CEM´s way of taking into account both positive and negative effects of diversity is highly realistic for our proposal. The focus on moderating factors in explaining and recognizing the complex relation between diversity-performance, fully reflect our consent in that we also establish various moderating factors influencing this relation; being those (1) critical mass of women on boards, (2) overlap board tenure and (3) chair-board shared experience.

Due to its faultline clarity and salience, gender diversity is considered to be one of the most common trigger for faultline division and subgroup formation (Thatcher and Patel, 2012), we foresee the possible formation of faultline divisions into female and male subgroups on the board. Our faultline analysis, including the diversity attributes of gender, tenure, education level and education background, builds upon the CEM argument that both informational- and social category- diversity can elicit both social categorization processes and information/decision-making processes. Intergroup bias, according to CEM, is the main contributor to the negative effects of social

categorization and faultlines, and this seems like an interesting issue to explore taking into account women´s scarce participation on boards and their typical minority status.

This chapter includes a review of the literature dedicated to the diverse contribution of women directors to corporate boards. It starts out with an introduction to previous board gender diversity research, and then goes on to review women directors’ contribution to task-relevant information, to the internal processes of the board and to the specific board functions and tasks. Finally, and since women normally are minority on boards, the chapter include a description of the critical mass theory, a relation of the typical intergroup bias that threaten women’s diversity contribution on boards, and a review of the possible effects of gender faultline formation.

3.2. RESEARCH ON BOARD GENDER DIVERSITY

Board diversity is defined as the “variety in the composition of the members of the board” (Milliken and Martins, 1996) and it is broadly accepted that better corporate governance is achievable through broader and different range of experiences, perspectives, ideas and opinions, basically contributed through the diverse composition of the board members (Fondas and Sassalos, 2000).

Within the general board diversity debate, gender diversity is one of the most studied diversity attribute. Research on women directors on corporate boards is situated within this broader literature, and the issues around female board members are getting increased attention (Daily, Certo and Dalton, 1999; Terjesen, Sealy and Singh, 2009; Vinnicombe, Singh, Burke, Bilimoria and Huse, 2008).

However, women directors remain a minority on corporate boards around the world, although in some countries, and in some industries and firms, the proportion of women directors has reached a better proportion (Brammer et al., 2007; Hillman et al., 2007).

Table 3.1. Percentage of Women Directors on European Boards

Country	Percentage of WOB
Belgium	16,7
Denmark	21,9
Finland	29,8
France	29,7
Germany	21,5
Italy	15
Netherlands	25,1
Norway	38
Spain	14,8
Sweeden	26,5
UK	21

Source: European Commision, Factsheet WOB, 2014

Politicians and legislators in some countries have instituted quotas that require boards to include 30–50% of women (Terjesen et al., 2014). In other countries large institutional shareholders and corporate board rating systems seek to pressure companies to add diversity to the boardroom by rating positively diversity measures (e.g., Institutional Shareholder Services; Thirty Percent Coalition) (Hillman, 2015).

Norway was the first country in the world to pass a quota law, mandating that by 2008, 40% of all public companies´ board directors should be women. At the time of this dissertation, the mean ratio of women directors included in our sample was 37.05%.

Spain was the third European country (after Norway and Finland) to order the achievement of 40% women directors' level by 2016, a significant jump from the 5% level which prevailed in Spain at the time of the adoption of the law (2007). However, the law is largely aspirational, and at the time of this dissertation, the mean ratio of women directors included in our sample was 12.65%.

Spanish corporations typically follow the recommendations established in the "Good governance code of listed companies" (CNMV, 2015), and in this code the Recommendation nº 14 states the following:

The board of directors should approve a director selection policy that:

a. Is concrete and verifiable;
b. Ensures that appointment or re-election proposals are based on a prior analysis of the board’s needs; and
c. Favors a diversity of knowledge, experience and gender.

The code indicates that the results of the prior analysis of the board´s needs should be recorded in the nomination committee’s explanatory report, to be published when the general meeting is convened that will ratify the appointment and re-election of each director. Furthermore, the nomination policy should pursue the goal of having at least 30% of total board positions occupied by women directors before the year 2020. The nomination committee should run an annual check on compliance with the nomination policy, and set out its findings in the Annual Corporate Governance Report.

Reviewing previous research on gender diversity on corporate boards we find that such research has focused on:

- The principle characteristics of women directors and their diversity attributes in respect to their male counterpart (Simpson, Carter and D´Souza, 2010; Singh and Vinnicombe, 2004; Virtanen, 2012; Burgess and Tharenou, 2002; Hillman, Cannella and Harris, 2002; Peterson and Philpot, 2007; Høygaard, 2002….)
- The reasons for the low gender diversity on corporate boards (Burke, 1997; Singh and Vinnicombe, 2004….)
- The women ratio on corporate boards in different countries (Burke, 1999; Sheridan and Milgate, 2005; Singh and Vinnicombe, 2004….).
- The predictors for women directors on boards (Burke, 2000; Gregoric, Oxelheim, Randøy and Thomsen, 2009; Hillman et al., 2007….).
- The prerequisites women must fulfill to become a board candidate (Sheridan and Milgate, 2005; Kaczmarek, Kimino and Pye, 2012a ….).
- The impact of female representation on financial firm performance (Hillman, Harris, Cannella and Bellinger, 1998; Erhardt et al., 2003; Adams and Ferreira, 2004; Bilimoria and Wheeler, 2000; Campbell and Minguez-Vera, 2008; Carter et al., 2010; Bøhren and Strøm, 2010……).

Further to this quantitative research, a few studies have addressed qualitative aspects, focusing on women directors’ experiences, their perceptions and their role as board members (Bilimoria and Huse, 1997; Huse and Solberg, 2006). Accumulatively, the research suggests that the percentage of women directors on boards is growing, however, although women representation in top positions within business, politics and in organizations in general is increasing, corporate boards seem to be the one last bastion where women are having difficulties of being included.

3.3. WOMEN DIRECTOR´S CONTRIBUTION TO TASK RELEVANT INFORMATION

When referring to women´s contribution to task relevant information, one typically refers to the different viewpoints, opinions, ideas, perspectives, information, knowledge, background, experience and links women directors bring to the processes of information-elaboration and decision-making on the board.

In this way women board members contribute with task relevant information which is necessary to fully examine complex issues of the board (Hillman et al., 2002). This lead to greater diversity of opinions and to more creative and innovative discussions on the board (Milliken and Martins, 1996; Wiersema and Bantel, 1992). Gender is in this way associated not only with social differences, but also with informational differences, (Cox et al., 1991; Tsui and O’Reilly, 1989).

According to the upper echelon´s theory (Wiersema and Bantel, 1992) gender can also be used as proxies for the more complex psychological dimensions of the directors´ personalities, and is therefore a representation of their cognitive biases, which in its turn, shape how directors understand the environment and its issues, as well as how they take decisions and solve problems, influencing the processes of elaboration with task-relevant information and perspectives.

A potential advantage of gender diverse boards over gender homogeneous boards lies therefore in the greater pool of task-relevant information that the female board members bring to the board, and the larger social networks which gives them better access to information and support for decisions (Ancona and Caldwell, 1992).

Women directors´ board contribution can in this way be classified in personal characteristics, human capital (skills, competences, experience, business knowledge, and vision of industry, stakeholders and the general environment), and social capital (links, networks and relations) (Webber and Donahue, 2001).

Many studies are concerned with the mapping of the specific personal and professional characteristics of women directors, some of these are shown in Table 3.2. These try to demonstrate how women directors differ from their male counterparts. Some general conclusions have been drawn, but more so, specifics depending on the country, the industry and the company itself have been detected.

Generally women directors are younger than male directors, are more independent (outside directors), have a higher level of academic preparation, and have more non-traditional backgrounds compared to their male colleagues (Singh, Terjesen and Vinnicombe, 2008). They are more likely to come from non-business backgrounds (Hillman et al., 2002), they rarely hold executive positions (Ruigrok, Peck and Tacheva, 2007), and those who do are seldom in a financial or an accounting function, but more frequently represent the “soft” managerial issues, such as human resources, corporate social responsibility, marketing, advertisement etc. (Zelechowski and Bilimoria, 2006).

Hence, women directors are likely to bring to the boardroom different backgrounds and experiences which have the potential to stimulate divergent thinking and enrich board decision-making (Burke, 1997).

Table 3.2. Principle characteristics of Women Directors on Corporate Boards

Author(s) Year	Study context	Principal findings
Simpson, et. al. 2010	US S&P's 1500 index	WD are younger than MD (Male Directors) WD are more often outside directors than MD WD are less likely to be CEO of the same company than MD WD serve on the same number of additional boards as MD
Sealy et. al., 2007	UK FTSE 100	WD are younger than MD WD held more multiple-directorships than MD
Singh, et. al. 2008	UK FTSE 100	WD are more likely to have MBA degrees WD are more likely to have international experience
Hillman, et. al. 2002	US Fortune 1000	WD more likely to have non-business background than MD WD are more likely to hold advanced degrees than MD WD more likely to join boards at a faster rate than MD
Burgess & Tharenou 2002	US S&P's 1500 index	WD have higher education level than MD WD are less employed in male-dominated hierarchies WD have more years working with other women WD have less mentor support than MD
Peterson & Philpot 2007	US Fortune 500	Inside WD are to a higher degree one of the founders Inside WD are to a higher degree family member (in the case of family-owned companies) WD are as qualified than MD WD come from various positions of power (public/ private/government, law firms, NGOs and academia)
Virtanen 2012	Finnish listed companies	WD are younger than MD WD consider themselves o be more pro-team than MD WD feel a higher need for more WD on boards
Hojgaard 2002	Danish listed companies	WD have higher education level than MD

Source: Prepared by the author

Women directors` human capital (Becker, 1964) refers to the accumulative stock of education, skills and experience that an individual director bring to his or her organization. These can range from functional knowledge (marketing, finance, accounting, law, operations, IT, strategy etc.), to specific industry knowledge and experience (from industries like telecommunications, consumer goods, utilities, academic institutions, law firms, consulting, banking etc.), to familiarity with a specific event or a firm. Human capital affects what directors pay attention to, and how they frame their decisions (Johnson, Schnatterly and Hill, 2013).

Women´s differential human capital enable women to make a different and valuable impact on strategic decision-making allowing boards to take better decisions (Westphal and Milton, 2000). Bilimoria and Wheeler (2000) and Mattis (2000) propose that women directors help foster competitive advantage by dealing effectively with

diversity. They further see women directors as champions for change because they tend to be younger than their male counterparts, and are more open to relatively newer ideas and approaches to doing business.

Hillman and Dalziel (2003) argue that the composition of the board and their accumulated human capital will affect the ability of the board to perform. The performance argument against board homogeneity is one of unused human capital and, by implication, reduced performance. If a segment of society’s human capital is systematically excluded from board directorships, not because of talent, but because of gender, the company’s board is suboptimal (Burke, 1997; Carver, 2002; Cassell, 2000). According to Burke (2000) there is not enough qualified male CEOs to go around. The continuing reliance on male CEOs results in lower quality men being appointed as the available pool of candidates shrinks. In addition, states Burke (2000), male CEOs serving on boards have indicated a variety of constraints on their ability to contribute, such as lack of expertise, little time for preparation and lack of information. Given this situation, Burke (2000) argues that it is necessary that the selection of board members go beyond the traditional search for male CEOs as candidates, and incorporate women directors to the board. Pfeffer and Salancik (1978) further corroborate this argument in that they propose that corporate directors should be selected in order to maximize access to critical resources, such as skills, knowledge and experience, as well as influence and connections to external sources.

A commonly held assumption of board selectors is that women lack adequate human capital for board positions (Burke 2000). Singh et al., (2008) dispelled this myth in their study of multiple human capital dimensions of new directors of the FTSE3 100 firms in the UK, finding that women are more likely to have MBA degrees and international experience. Studies by other researchers have corroborated these results, finding that women are equally, if not better qualified than men, based on professional background, occupation and directorships, although their tenure on corporate boards is shorter than men´s (Hillman et al., 2002; Burke, 2000; Bilimoria and Piderit, 1994).

Women directors’ combination of human capital assets might differ from traditional male combinations. However, regardless of the reality, several studies reveal that it is the perception of women that often represent a problem; for example, Mattis (2000)

cites a Catalyst 1993 survey in which CEOs told of their fear of appointing women to the board, believing that women were less qualified than men. In another study, CEOs reported concerns for appointing women who currently did not hold a directorship. However, they did not have the same concern when appointing men (Peterson and Philpot, 2007).

Although Heilman and Haynes (2005) present evidence that prior work experience can counteract negative expectations of a woman’s performance, women are, in a male dominated environment (Carli, 1999), presumed to be less competent than men (by both men and women). So in order for a woman to be perceived as having equal ability as her male counterpart, she must provide more evidence of her ability (Biernat and Kobrynowicz, 1997).

Women directors also differ in values from their male counterparts (Selby, 2000). A substantial body of research has revealed gender differences in values and attitudes (Eagly, 2005; Selby, 2000). Research has shown that men and women differ ideologically, especially in terms of women’s greater compassion (Beutel and Marini, 1995), and men’s greater tolerance for ethical lapses (Eagly, Diekman, Johannesen-Schmidt and Koenig, 2004). Franke, Crown and Spake (1997) and Kennedy and Kray (2014) found strong differences in ethical behavior between women and men, and a meta-analysis by Franke et al., (1997) revealed that men were less likely to perceive specific business practices, such as insider trading, as unethical.

Women are not only more ethical, but seem to spend more time going deeper into the issues than men (Knippen, 2014). By spending more time considering decisions, women are better able to foresee the possible consequences (Hillman, 2015). Hence, women directors joining predominantly male boards are likely to bring along different values and attitudes which may result in higher value diversity, thus increasing the level of debate and generation of alternatives in the board room. Such differences may also be crucial for the board’s ability to steer corporate strategy and monitor management. As supporting this view, Adams and Ferreira (2009) found that gender diverse boards are more effective in monitoring management.

Furthermore, from an information/decision-making perspective, diversity in values may bring a number of benefits to decision-making (Huse and Solberg, 2006; Harrison et al., 2002). It helps enhance board decision-making by increasing the number of alternatives considered, the quality of ideas, and the different aspects of the issues at hand.

Hillman et al.,’s (2000) suggest that different types of directors will provide different beneficial resources to the firm. As a result, a more diverse board will provide more valuable resources, which would in turn produce better firm performance. One of the important resources referred to by the authors is women´s social capital; their professional networks, their ties to other firms, their links to the environment, their personal relationships and affiliations, and their social standing (Fondas, 2000; Bilimoria and Wheeler, 2000). This social capital influences the advice that directors offer their corporations, which affects decision-making processes, and impacts the relationships within and outside the board.

Having women directors on corporate boards facilitate the links between corporations and the civil society in ways appropriate for a society that is increasingly diverse, complex and gender sensitive (Sirianni and Friedland, 1995). As “boards traditionally have been viewed as a homogenous group of elites who have similar socioeconomic backgrounds, hold degrees from the same schools, have similar educational and professional training, and, as a result, have very similar views about business practices” (Westphal and Milton. 2000: 366), boards need to modernize and adapt to the larger social context in which they are embedded. Adding women to the board represent such an adaption to the structure of the civil society, taking into account that women represent 50% of the world´s population, and that women now play a role in public administrations, academic institutions, organizations and private companies. Carpenter and Westphal (2001) further corroborate this arguing that boards need to examine how they can build better links reflecting the civil society.

Women board directors serve as external links representing the company outward to external constituents, and serve as a two-way communication channel (Hillman et al., 2007). This idea is corroborated by the stakeholder theory that proposes the need to take into account the wider interests of the different groups of stakeholders as they might favor a higher degree of diversity (Hillman, Keim and Luce, 2001; Carter et al.,

2003). One example is institutional investors who can compel companies to greater diversity (Gillan and Starks, 2000). In this line, Coffey and Fryxell (1991) in their study, found that many institutional investors have policies of investing only in firms with a commitment to gender representation.

Women directors’ social capital allows them to serve as links to other women in- and outside the organization representing their concerns and issues on the board (Mattis, 1993). Where women occupy senior managerial positions, they have been found to focus more than men on the development and mentoring of their subordinates, encouraging them to reach their full potential, and rewarding them for good performance (Eagly et al., 2003).

Another important contribution of women directors in terms of social capital is the link to consumers. It is critical for a firm to understand its culturally diverse customer base (Richard, 2000), and it is believed that a diverse board will better understand and develop corporate strategies for specific and culturally diverse markets (Amason, 1996; Arfken, Bellar and Helms, 2004).

As women play a role in most consumer purchase decisions, scholars suggest that women should be represented on corporate boards of consumer goods as they would better represent the customer base (Wolfman, 2007).

A final social capital many women directors bring to boards is their unique link to family considerations. Women, to a higher degree than men, consider the impact of their professional decisions on families and friends (Mainiero, 1994; Mainiero and Sullivan 2005; Guillaume and Pochic, 2009), demonstrating in this way a higher consciousness for family issues.

A final data on women directors, especially in boards of South European countries, is their family connection with the controlling shareholder. A recent study of publicly traded Italian companies found that 55% of all female board directors were family members, compared to only 20% in the case of the male directors (Bianco, Ciavarella and Signoretti, 2015).

3.4. WOMEN DIRECTORS´ CONTRIBUTION TO THE ELABORATION AND DECISION-MAKING PROCESSES

3.4.1. Women directors´ distinct leadership behavior

Just as women directors contribute with task relevant information, they also contribute with specific and unique leadership behavior. A crucial argument in favor of women directors on corporate boards lies in their distinct female leadership behavior, contributing to more efficient elaboration processes.

However, as an underlying consideration, it must be stated that every woman is as different as every man, and that each and every leader will contribute in his or her own specific way, depending on his or her individual characteristics and circumstances. The argument of “a standard diversity of women leaders” is therefore at least under debate, as there may be larger differences among women and among men, than the differences between some men and women (Arfken et al., 2004; McCabe, Ingram and Dato, 2006; Ruigrok et al., 2007).

Another issue of debate, however not the objective of this study, is whether women directors modify their behaviors to male standards in order to avoid “standing-out” in their leadership style; women learn what to do, and what not to do, in order to become an accepted member of the board. Some studies point in this direction when suggesting that women might act as conformists, and attempt to assimilate in a male-dominated board context, by suppressing any differences in opinions or attitudes (Huse, Nielsen and Hagen, 2009; Rose 2007).

Sheridan and Milgate (2005) argue that women directors contribute unique skills, knowledge, and experience to their boards, but that their feminine attributes may be masked in boardroom cultures that do not allow expressive behaviors. This can lead to the board having female representation, but only masculine behaviors, losing the benefits of gender diversity.

Berdahl and Anderson (2005) proposed that female managers are expected to be more likely to adopt men's preferences in leadership behavior than vice versa, since women

are more able and motivated to do so. Again other studies provide evidence that women do assert in different positions, even on boards where there is one sole woman director (McInerney-Lacombe, Bilimoria and Salipante, 2008).

Behavior refers to actions that are relevant to achieving goals, whereas outcomes are the consequences or results of performance behaviors. The differences in leadership behavior between women and men are to a large extent explained by the individual´s personality traits, motives, skills, and competencies (Yukl and Lepsinger, 2005), and not just by gender. Leadership behaviors will also depend on job characteristics, organizational design, and organizational culture. Organizational culture in turn is embedded in the societal culture, and there is ample evidence that societal culture has an impact on leadership behaviors (Smith, 2006).

However, having stated these underlying considerations, without going into further discussion, the objective here is to explore whether there is an argument in favor of a specific contribution of women directors on corporate boards based on their unique and distinct leadership behavior.

The gender differences perspectives **(**Eagly and Johannesen-Schmidt, 2001; Eagly and Johnson, 1990) which focus on women´s distinct leadership style and behavior, offer an interesting contribution to this discussion.

The gender differences perspective operate at the individual level. However it can also be applied in the context of boards in order to explain how board gender composition affects board effectiveness. It can be expected that boards with higher ratios of women directors will have characteristics and behaviors typically associated with women leaders. Such arguments are in accordance with upper echelons theory, which postulates that individual backgrounds of executives influence strategic choices made by the entire top management team and thus affect team and firm level outcomes (Hambrick and Mason, 1984).

Research on female leadership has identified four aspects in which women seem to have a distinct management behavior than men, and therefore contribute in a different way;

consideration, participative management, effective treatment of conflict and reduced risk-taking.

Consideration and initiating structure

Leadership refers to the abilities of an individual to influence, motivate, and enable others to contribute towards the effectiveness and success of organizations of which they are members (House, Hanges, Javidan, Dorfman and Gupta, 2004). Although leadership can be conceptualized along various dimensions, much of their content can be captured using two constructs, consideration and initiating structure, originated in the Ohio State approach to leadership (Stogdill, 1963, 1977).

Consideration refers to friendly and interpersonal supportive supervisory behavior (Yammarino, Dionne, Chun and Dansereau, 2005). Consideration is described as a leadership behavior that leaders apply to create a supportive environment of warmth, friendliness, and helpfulness. Being approachable, looking out for the welfare of the people, doing little things for subordinates, and giving advance notice of change are characteristics of considerate leadership behavior (House, 1971; Judge, Piccolo and Ilies, 2004).

Initiating structure refers to task oriented and directive behavior (Yammarino et al., 2005). This leadership behavior is demonstrated by an emphasis on assigning tasks, specifying procedures to be followed, clarifying expectations of subordinates, and scheduling work to be done (House, 1971).

These two types of leadership behaviors are particularly relevant for the study of gender as people have stereotypes with respect to male and female leadership behavior (Eagly and Johnson, 1990). Men are perceived to be more forceful, dominant, and motivated to master their environment, and thus more inclined to use the initiating structure leadership behavior. In contrast, women are perceived to be more concerned with others, kinder, more helpful and understanding, and more inclined to use the consideration leadership behavior.

In this same line, however using different terms, Nielsen and Huse (2010b), in their study of the contribution of women on boards described the differences in leadership

style in terms of agentic characteristics and communal characteristics. Agentic characteristics, which include being assertive, ambitious, aggressive, independent, self-confident, daring, and competitive, are ascribed more strongly to men than to women. In work settings, agentic behavior might include speaking assertively, competing for attention, influencing others and making problem-focused suggestions. Communal characteristics, which are more strongly ascribed to women than to men, describe primarily a concern with the welfare of other people and being affectionate, helpful, kind, sympathetic, interpersonally sensitive, nurturing, and gentle.

An explanation for these different behaviors, according to the gender differences perspectives, is that the leadership style of men and women is originated in the socialization processes, where individuals learn to conform to societal expectations about their gender role (Carless, 1998; Fagenson, 1990). Similarly, social role theory (Eagly, 2007) proposes that individuals behave in accordance with societal expectations about their gender role, and that this lead to the gender differences in their leadership behaviors.

Although these stereotypes for men and women are rather strong (Glick, Lameiras, Fiske, Eckes, Masser and Volpato, 2004*)* and stable (Schein, 2007), there is limited support for these stereotypes in actual managerial behavior. In their 1990 review, Eagly and Johnson (1990) were not able to demonstrate the argument that men are more task oriented and that women are more relationship oriented. However, they did find, consistent with stereotype expectations, that women tend to adopt a more democratic or participative style, and a less autocratic or directive style than men. A review of the gender literature in 2000 by van Engen, van der Leeden and Willemsen (2001) confirmed these conclusions.

In their study of gender ratios and male and female leadership, van Emmerik, Wendt and Euwema (2010) proposed the moderating role of gender ratio on the relationship between gender and leadership behaviors. Male managers in organizations with more female managers tended to engage less in initiating structure, whereas women managers’ behavior was not associated with the existing gender ratio in an organization. Thus increasing the proportion of female managers seems to have an impact on perceived male leadership behaviors (less initiating structure by male managers). This

implies that indeed more “feminine leadership behavior” is realized when more women are in managerial positions. With a higher degree of consideration one conclude that this reflects a more “feminine approach”.

Interaction and participation

The unique role of women on boards is often reflected in their highly participative management style (Pearce and Zahra, 1991) and in their more sensitive approach to people compared to their male colleagues (Bradshaw and Wicks, 2000).

Based on surveys and interviews with female leaders, Rosener (1995) found that women exhibit an interactive leadership style that emphasizes inclusion. Specifically, women are found to encourage participation by soliciting input from others, share power and information by keeping open communication channels.

In their study Gardiner and Tiggemann (1999) concluded that female managers are more oriented towards interpersonal leadership than man, however, only in female-dominated industries. Gibson (1995) in a cross-cultural study in four countries, found that in all countries male managers emphasize more goal setting, whereas female managers focus more on interaction and facilitation.

Eagly and Johnson (1990) found that women tended to be more democratic and participative, and less autocratic and directive compared to male leaders. Compared to male leaders, women are less hierarchical, more cooperative and collaborative, and more oriented towards enhancing the others’ self-worth (Eagly et al., 2003; Book, 2000). Such managerial behavior promote the sharing of task-relevant information (Daily, Dalton and Cannella, 2003), a key process underlying the positive effects of diversity (van Knippenberg et al., 2004a). Furthermore, in her most recent meta-study, Eagly (2007) shows small, systematic differences in male and female leadership behaviors; women as more transformational and rewarding, while men use to a higher degree initiating structure, show more laissez-fair leadership, and pay more attention to mistakes made by subordinates.

Finally, in their study in 2013, Bart and McQueen found that female directors were more likely to use a cooperative decision-making approach that results in fair decisions

when competing interests are at stake; in contrast, male directors were more likely to make "decisions using rules, regulations and traditional ways of doing business or getting along" (2013: 97).

Treatment of conflict

Women are more likely to accept others' positions and contribute to the solution of conflicts. Hence, when potential for conflict arises, women may be able to avoid them based on their higher sensitivity and ability to resolve interpersonal and task-related disagreements. However, on the other side, women feel strongly about their underlying values, and are therefore more likely to raise their voice when issues discussed are in conflict with their values (Huse and Solberg, 2006).

Risk-taking

Women are generally considered to be more risk averse than men (Croson and Gneezy, 2009; Niederle and Vesterlund, 2007). However, as the vast literature on gender and risk-taking has produced mixed findings, scholars have suggested that differences in risk propensity between women and men may depend upon the nature of the task involved (Bromiley and Curley, 1992; Maxfield, Sharpiro, Gupta and Hass, 2010) and the context (He, Inman and Mittal, 2007).

Research has found that women are more risk averse than men in areas of physical health and safety (Harrant and Vaillant, 2008; Harris, Jenkins and Glaser, 2006). Studies of risk-taking behavior in investment and insurance decisions found that gender differences are more nuanced and depending on context (Eckel and Grossman, 2008; He et al., 2007; Holt and Laury, 2002).

Bringing a more fine-grained approach to this line of research, some scholars (Fietze, Holst and Tobsch, 2009) have proposed that differences in risk-averseness between women and men might be the result of intolerance towards ambiguity, namely that women are more sensitive to uncertain situations (Fietze, Holst and Tobsch, 2011). Thus, men, compared to women, have a higher tendency to underestimate the probability of negative events occurring (Schubert, Gysler, Brown and Brachinger, 1999). Because executives operate in highly complex, uncertain and competitive environments, how ambiguity is interpreted and acted upon, plays a major role in

strategic decision-making (Plambeck and Weber, 2010). Rost and Osterloh (2010) found that, under conditions of uncertainty, women engaged more in superior information processing than men. If women are more sensitive to ambiguities in the environment and engage in more information processing in such situations, they would be more mindful, deliberate and careful in making strategic decisions that might lead to legal complications for the firm (Sheridan and Milgate, 2005).

With respect to strategic and managerial decision-making, the Davies Report (2011: 9), found that a gender-balanced board is more likely to pay attention to managing and controlling risk. Consistent with this view, Wilson and Altanlar (2009) found that having at least one female director on the board appeared to cut a company’s chances of going bankrupt by 20%, and that having two or three female directors lowered the chances of bankruptcy even further.

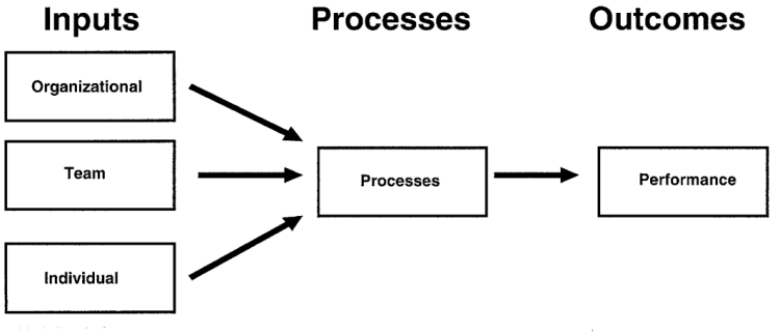
This negative correlation appears to hold well, irrespective of size, sector and ownership, for established companies as well as for newly incorporated companies. Similarly, studies following the 2008 financial crisis also suggest that upper managements with a higher women ratio engaged less in sub-prime loans (Muller-Kahle and Lewellyn, 2011) and relied less on TARP funds (Bansak, Graham and Zebedee, 2011).

3.4.2. Women directors´ distinct contribution to board´s internal work-processes

The contribution of diverse task relevant information and skills (explained under point 3.2 earlier in this chapter) are important inputs for performing board functions, but in itself it is not enough to ensure a better performance. In order for a board to benefit from diversity’s potential, and finally reach superior performance, it must develop effective internal work-processes.

Group effectiveness theory (Cohen and Bailey, 1997; Gladstein, 1984; Hackman, 1987; Pelled, 1996; Williams and O’Reilly, 1998) presents a framework relating inputs, processes and outcomes, where *inputs* refer to individual., team and organizational characteristics, *processes* refers to information-elaboration and decision-making activities, and *outcomes* refers to performance.

Figure 3.1. Input-Process-Outcome Team Effectiveness Framework



Source: Mathieu, Maynard, Rapp and Gilson, 2008

Inputs englobe individual members´ characteristics as personality, values, knowledge and skills (Webber and Donahue, 2001; Harrison et al., 1998), team-level factors like functions, tasks, objectives, structure and influences, and organizational and contextual factors like organizational design and environmental complexity. These inputs together drive work-group processes toward task accomplishment.

Processes describe how inputs are transformed into outcomes (Gist, Locke and Taylor, 1987; Guzzo and Shea, 1992; Hackman, 1983). Good corporate governance is concerned with the processes through which the board fulfills its functions and executes its tasks, and focuses on the development of work systems and practices that ensure good performance (Cadbury Report (CFACG, 1992); Turnbull Report (Turnbull Committee, 1999).

A number of empirical studies have confirmed that board processes are important factors influencing board performance (van der Walt and Ingley, 2003; van Ees, van der Laan and Postma, 2008; Zona and Zattoni, 2007), and most researchers agree that the hypothesized links between composition and outcomes are mediated by these processes (Priem, Lyon and Dess, 1999; Ilgen, Hollenbeck, Johnson and Jundt, 2005).

Historically, group processes were categorized as either “task work” or “team work” (McIntyre and Salas, 1995). Task work refers to the activities (functions) that the board must perform to accomplish the task, whereas teamwork describes the interaction and relations between the board members, including relational conflict management,

cohesion, confidence building, as well as affect-management (McIntyre and Salas, 1995).

Board processes are an important predictor of board effectiveness (Forbes and Milliken, 1999; Petrovic, 2008). Although diversity has demonstrated to have both positive and negative consequences, the consensus seems to be that board discussions and analyses is improved with more women on corporate boards (Burke 1997; Daily et al., 1999; Hillman et al., 2007). The presence of women directors on boards increase board effectiveness through high quality board development activities (Nielsen and Huse, 2010b).

Board development activities refer to activities whose aim is to enhance efficient working systems through the establishment of rules and norms that support the boards' decision-making processes and mechanisms (Demb and Neubauer, 1992; Zahra and Pearce, 1989; Huse, 2007). Such activities are identified as mediators that enhances group productivity (Gist et al., 1987), and are considered key elements for the successful performance of board tasks (Demb and Neubauer, 1992; Zahra and Pearce, 1989).

Women directors on boards contribute to the enhancement of board work through development activities related to board instructions, board evaluation, and board development programs. Prior research suggests that women and men differ in their expectations for their own behavior in organizational settings (Ely, 1995). In this same line, Fondas (2000), found that women directors have higher expectations of board task performance than their male colleagues. As such, women directors are more likely to commit to the development of board practices which will ensure the effective performance of board tasks.

Burgess and Tharenou (2002) found that women directors brought about new ideas and strategic change, and contributed to long-term competitive advantage. They tend to ask more questions than men (Huse and Solberg, 2006), and add diverse ways of thinking into male-dominated boards (Bilimoria, 2000). In this same line, Hillman et al., (2007) found that the participation of women directors on boards generates a wider range of perspectives for information search. Women, not being part of the “old-boys network”,

are less subject to groupthink and add an independent voice to decision-making processes (Brennan and McCafferty, 1997), leading to better understanding and higher quality decisions (Amason, 1996).

In their study Burgess and Tharenou (2002) also found that women executives ensured better board-room behavior, in line with Bilimoria (2000). Fondas and Sassalos (2000) who also found that women’s board-room presence lead to more civilized behavior and sensitivity to other perspectives. Women are more socially oriented (Huse et al., 2009), and their presence light up the board-room atmosphere (Huse and Solberg, 2006).

Finally women tend to be better prepared for board issues than men, and more egalitarian and caring in nature (Huse, 2007). Huse and Solberg (2006) suggest that women directors being less experienced in board work may spend more time preparing for board meetings, trying to understand the nature and logic of board work, devoting more time to board evaluation, and identify areas with potential for improvement. As a result, women directors are likely to enhance board development activities. They enhance the board’s processes and performance in facilitating effective debate on governance issues (Fondas, 2000), and contribute by being more attentive to stakeholders, creating goodwill, and focusing top management attention to “soft” issues and concerns (Bilimoria and Huse, 1997). Boards with a higher representation of women also encouraged a larger number of board meetings (Adams and Ferreira, 2004). These last authors also found that female directors have fewer attendance problems at board meetings, and that boards, with a higher ratio of women directors, tend to have a higher participation in decision-making, which again lead to higher effectiveness (Adams and Ferreira, 2004).

Singh (2008) in her study of gendered boardroom cultures in engineering, high technology and scientific organizations, found that directors with experience of working with women directors found men to be more inclined to have political behavior. This seems to be tempered when women are present, partly because women want to get on with the task at hand rather than “play games.” Other comments were that male-only-groups can get carried away with the big agenda, and miss a lot of the detail that women would pick up on. Male directors confessed that in the presence of women directors, they change their language, become more civilized, and moderate their masculinity.

3.4.3. Board functions and the role of women directors

As earlier included, a corporate board is generally believed to assume the following functions:

1. The monitoring function
2. The service and strategic function
3. The resource provision function

The monitoring function of the board

Studies have shown that the participation of women on corporate boards benefit the board´s monitoring role in protecting shareholders’ interests by better top management control (Watson et al., 1993; Fondas and Sassalos, 2000). Adams and Ferreira (2009) found that women directors are more likely to sit on monitoring committees, are more likely to force CEO departures after poor stock price performance, and are therefore more likely to be tough monitors of CEOs. Corroborating with this, in their study of women´s contribution to corporate boards, Nielsen and Huse (2010b) found a relation between the women ratio and the performance of the board ´s monitoring function.

Izraeli (2000) found that women directors seem to take their role as board directors seriously; preparing conscientiously for meetings and asking more questions, making it less likely for decisions to be nodded through. Women have higher expectations regarding their own responsibilities as directors, and therefore put higher emphasis on these tasks (Fondas and Sassalos, 2000).

Since the recent scandals in corporations (Enron, Arthur Andersen, Lehman Brothers etc….), and the passing of the US Sarbanes–Oxley Act, 2002 and other movements, there has been a call for a higher percentage of outside directors, assumed as being more independent and therefore better monitors of the top management team (Carter et al., 2003). The majority of the women directors are outside directors, hence responding to this call.

The service and strategy function of the board

With respect to the board role of participation or advice to management on strategic issues, several process-focused studies have examined how cognitive processes in upper management decision-making change due to gender diversity. Hillman et al., (2007) showed how gender diversity generated a wider range of perspectives for information search available for strategic decision-making. Directors make decisions that are consistent with their cognitive bases (Hambrick and Mason, 1984), and men and women have different ideas, beliefs, and perspectives (Pelled et al., 1999).

Biggins (1999) stated that the main criterion for selecting board members was to enhance the board´s ability to contribute to strategic direction. The aim of introducing greater diversity into the board is therefore to better balance the skills and attributes that are needed for quality decision-making. Board of directors with more women were more likely to identify criteria for measuring strategy, monitor its implementation, follow conflict of interest guidelines, and adhere to an ethical code of conduct (Brown, Brown and Anastasopoulos, 2002).

Bilimoria (2000) suggests that women are particularly valued as board members for their ability to provide strategic input and generate more productive discourse. Moreover, women directors may ask questions more freely (Bilimoria and Wheeler, 2000). As a result, women are more likely to question the conventional wisdom and speak up when concerned, or in doubt about an issue or a particular managerial decision (Bilimoria and Huse, 1997; Huse and Solberg, 2006). Furthermore, boards with women directors may experience different discussion patterns and increased debate, compared to boards with only men members.

In an empirical study of corporate boards, Pearce and Zahra (1991) found that boards with a higher representation of women, characterized as participative boards, had more debates and disagreements, and were associated with higher perceived and objective firm performance. Letendre (2004) suggests that women board members provoke lively board-room discussions. Their different beliefs, values, and ways to express and communicate their opinions in the board-room, may therefore lead to in-depth and profound debates, and help address simultaneously different aspects of the issues at hand. Women directors with different values are more likely to consider counter-

arguments regarding the decisions to be made, and they are more likely to question the conventional wisdom, and to speak up when concerned or in doubt about an issue or a particular managerial decision (Bilimoria and Huse, 1997; Huse and Solberg, 2006).

Other studies of the behavior of women directors on boards found that women directors, more so than men, were prepared to push the ‘‘tough issues’’ in board discussions. This was also the case on boards with only one woman director, and this was reported by both men and women directors in two recent studies (Konrad et al., 2008; McInerney-Lacombe et al., 2008).

Gender diversity has also been found to facilitate creativity within groups (Hoffman and Maier, 1961; Nemeth, 1986), and as boards are engaged in non-routine problem solving, involving brainstorming and creativity, the questioning of the *status quo* is beneficial for strategic decisions. As women are not part of the “old boys’ network” they may be subject to less groupthinking, and add an independent voice to the decision-making process (Brennan and McCafferty, 1997). In turn, this leads to better understanding and formulation of more diverse product-market strategies and higher quality decisions (Amason, 1996).

According to Welbourne, Cycyota and Ferrante (2007) the presence of women in upper management is positively associated with innovation and problem solving within firms. Bilimoria and Wheeler (2000) saw women directors as champions for change because they tend to be younger than their male counterparts, and they are more open to new ideas and approaches to doing business. Miller and Triana (2009) found a positive relation between board gender diversity and innovation.

In her study of Finish board directors, Virtanen (2012) suggests that as women’s backgrounds are different, women behave differently on boards than men. They focus on questioning the old rules seeking changes rather than consensus (Leblanc and Gillies, 2005; Singh, 2008; Pesonen, Tienari and Vanhala, 2009).

<u>The resource provision function of the board</u>

Based on the resource dependence theory, it is argued that boards are appropriate mechanisms to attract external resources which are critical for the firm's success,

through the contribution of board directors with external networks and links to the environment (Pfeffer and Salancik, 1978), and the participation of women directors provide these differential and important resources to the board.

Their inclusion furthermore project an image to society as a “modern” company, complying with good practices and social responsibility. This in turn build reputation and legitimacy among the different stakeholders of the company. Firms have a desire to have a good relation with its stakeholders, its customers, its labor force and with society in general, and highly visible and observable gender diversity on the board may send signals to the public which may be positively interpreted (Tsui et al., 1992), especially when this demographic characteristic is traditionally under-represented (Catalyst, 2011).

Links and relations to the external environment is improved by corporate charity and philanthropic activities (Brammer and Millington, 2005; Brammer, Millington and Pavelin, 2009). A study of corporate social responsiveness orientation in SandP firms indicates that women directors are more oriented towards discretionary elements of corporate responsibility than men (who are more concerned about economic performance). The growing numbers of women directors on corporate boards have led to increased attention to social responsibility, charitable giving, and community relationships (Stanwick and Stanwick, 1998; Williams, 2003). A study of Fortune 500 firms from 1991–94 also found a link between women on boards and the firm’s charitable support of community and cultural activities (Williams, 2003). It is therefore argued that women directors are more likely to engage in reputation-building activities such as philanthropy and community-out-reach, and therefore more likely to improve a firm’s reputation (Fombrun, 2004).

With respect to the creation of legitimacy Cox et al., (1991) propose that the call for legitimacy has contributed to significant pressure on firms in order to include females on their boards. Legitimacy refers to the social acceptance stemming from adherence to a system’s norms, values and rules (Hirsch and Andrews, 1984). The argument is based upon the belief that society today is concerned about equal opportunities for men and women, and that companies whose boards include women directors, transmit the system´s values, norms and rules, which in turn enhance the legitimacy of their organization. The legitimacy of a firm may therefore improve by its including women to

the board (Daily and Schwenk, 1996; Hambrick and D’Aveni, 1992), thus, all other things being equal., gender diversity on boards adds legitimacy to an organization (Milliken and Martins, 1996). As an example of stakeholders pressure are institutional investors who increasingly scrutinize corporate boardrooms for diversity (Browder, 1995; Singh, 2005).

Another important link represented by women board members is the link to consumers. Board members who better reflect the corporation’s consumer population have a better understanding of the consumers’ needs and behavior, and will therefore make better strategic decisions about the company´s future (Arfken et al., 2004).

From this point of view, scholars suggest that women should be represented on the corporate boards of consumer goods as women play a role in approximately 80% of consumer purchase decisions and, thus, women on the board would better represent the customer base (Wolfman, 2007). Daily et al., (1999) quoted Avon’s CEO as stating, “Having women on the board just makes good sense” (1999: 94).

Women directors’ performance on board committees

Some of the board´s tasks are performed by board committees. These committees perform a specific function within one of the six categories as suggested by Braiotta and Sommer (1987) and Bilimoria and Piderit (1994):

1. The executive and/or strategic planning committees who often act as a surrogate for the full board in moments of crisis, subject to statutory limits or additional restraints imposed upon them by the full board.
2. The nominating committees whose responsibility is to identify individuals qualified to become board members, consistent with the criteria approved by the board. This committee is often also responsible for corporate governance development, and for recommending a set of guidelines applicable to the corporation and for board functioning.
3. The compensation committee whose responsibility is to review and approve corporate goals and objectives relevant to CEO compensation. This committee also evaluates the CEO’s performance, and makes recommendations to the board with respect to non-CEO executive officers compensation.

4. The audit committee whose responsibility is to assists board´s oversight of the company’s financial statements, compliance with legal and regulatory requirements, the independent auditor’s qualifications and independence, and the performance of the company’s internal audit function.
5. The financial committee whose responsibility is to review and recommend financing, dividend, investment, and risk management plans and policies. This committee maintains the relationship with the financial community.
6. The public-policy committee whose responsibility is to review and oversee corporate plans and programs dealing with social issues such as community involvement, employee issues and government regulations, dealing with equal opportunity, the environment, or product safety.

The participation on committees (audit, nomination, and remuneration committee) is likely to strengthen a directors’ identification with the company, with the board, and with their role as a director. In addition, the committees create an opportunity for additional meetings and therefore socialization amongst board members. Participating on committees is recommended as a mean of reducing inter-group-bias as well as in-group favoritism, and out-group discrimination (Ashforth and Mael, 1989; Hogg and Terry, 2000). Women´s participation on board committees can therefore enhance their influence, not only through the actual assistance and decision-making of the committee, but also through the social processes that takes place in the committee´s meetings. Additionally, more female participation on committees can enhance more female directors on the board (Westphal and Milton, 2000). In their study of board committees they demonstrated that a minority board member on a committee was more likely to favor new board members who were similar to her/him.

Most corporate policies are created in board committee meetings (Anderson and Anthony, 1986). Committees, in doing their work, meet separately and make recommendations for approval by the full board. Thus, meaningful policy input comes most frequently from the relevant committee members, rather than from board members who are not on the committee (Anderson and Anthony, 1986; Braiotta and Sommer, 1987). One way to determine the involvement and influence of women directors on boards is therefore to examine committee membership, and compare assignments of male and female directors (Bilimoria and Piderit, 1994).

Table 3.3. Summary of the principle findings relating women directors and boards.

Author(s) and Year	Findings
Women Director´s contribution to task relevant information	
Milliken & Martins (1996); Wiersema& Bantel (1992)	Greater diversity of opinions, leading to more creative and innovative discussions.
Ancona & Caldwell (1992)	Greater pool of task-relevant information, and broader social networks.
Westphal & Milton (2000); Carter et. al, (2003); Fondas (2000)	Different and valuable contributions, leading to better strategic decision-making.
Bilimoria & Wheeler (2000); Mattis (2000)	Enhanced dealing with diversity and change. Greater openness to ideas and approaches.
Beutel & Marini (1995)	Greater compassion with people.
Eagly et al. (2004)	Less tolerance for ethical lapses.
Knippen (2014)	Higher quality decisions due to more preparation time and deeper analysis of issues.
Hillman (2015)	Higher ability to foresee possible problems and consequences.
Adams & Ferreira (2008)	Higher efficiency in monitoring management.
Eagly, Johannesen-Schmidt & van Engen (2003)	Better mentoring of subordinates, and focus on encouragement and reward.
Mattis (1993); Mainiero & Sullivan (2005)	Higher consciousness for women and family issues, representing these issues on the board
Women Directors´ contribution to the elaboration and decision-making process: Women´s distinct Leadership behaviors	
Eagly & Johnson (1990); Nielsen & Huse (2000)	Higher concern for people, more kind behavior, helpful and understanding.
Pearce & Zahra (1991), Eagly & Johnson (1990)	More democratic and participative style of leadership.
Bradshaw & Wick (2000); Huse (2007)	More sensitive approach to people. More egalitarian and caring in nature.
Rosener (1995)	More interactive leadership, inclusion, input, giving information and power-sharing.
Eagly et. al. (2003); Book (2000); Helgesen (1990)	Less hierarchical, more cooperative and collaborative.
Eagly et. al (2003); Rosener (1995)	More oriented towards enhancing others' self-worth. More transformational and rewarding.
Huse & Solberg (2006)	More likely to accept others' positions and contribute to different solutions.
Harrant & Vaillant (2008); Harris, Jenkins & Glaser (2006)	Higher risk averse in areas of physical health and safety.
Fietze et. al. (2011); Littman-Wernli & Schubert (2001)	More sensitive to uncertain situations.
Rost & Osterloh (2010)	Under conditions of uncertainty, higher degree of superior information processing.
Sheridan & Milgate (2005)	More deliberate and careful analysis, being able to avoid legal complications.
Wilson & Altanlar (2009)	Contribute to lower probability of bankruptcy.
Muller-Kahle & Lewellyn (2011); Bansak et. al. (2011).	Less engamement in sub-prime loans and TARP funds.
Women directors´ distinct contribution to board´s internal work-processes	
Ely (1995); Fondas (2000)	Higher engagement in board development activities and board evaluation.
Burgess & Tharenou (2002)	More ideas for strategic change, leading to long-term competitive advantage.
Huse & Solberg (2006)	Higher tendency to ask more questions.
Hillman, Shropshire & Cannella (2007)	Wider range of perspectives for information search.
Brennan & McCafferty (1997)	Lower tendency for group-think, and higher independency in decision-making.
Burgess & Tharenou (2002); Fondas & Sassalos (2000)	Better and more civilized board-room behavior, and sensitivity to different perspectives.
Huse & Solberg (2006)	More orientation towards social issues, and light up the board-room atmosphere.
Huse (2007)	More time for preparing board meetings, and better preparation of board issues.
Fondas (2000)	Enhance effective debate on governance issues.
Bilimoria & Huse (1997)	Higher attention to stakeholders and "soft" issues and concerns.
Adams & Ferreira (2004)	Encourage more board meetings, and have fewer attendance problems.
Adams & Ferreira (2004)	Higher degree of participation in decision-making, and higher effectiveness.
Singh (2008)	Less inclined to have political behavior.
Women directors´ distinct contribution to board functions	
Watson et. al. (1993); Fondas & Sassalos (2000)	Better protection of shareholders' interests by closer top management monitoring.
Adams & Ferreira (2009); Nielsen & Huse (2010)	More likely to be tough monitors of CEOs, and higher attention to the monitoring function.
Fondas & Sassalos (2000)	Higher expectations regarding their own responsibilities as directors.
Hillman, Shropshire & Cannella (2007)	Wider information search for enhanced strategic decision-making.
Bilimoria & Wheeler (2000); Letendre (2004)	Ability to ask questions more freely, and provoke lively board-room discussions.
Bilimoria & Huse (1997); Huse & Solberg (2006)	More likely to question the conventional wisdom and to speak up when concerned
Konrad et. al. (2008); McInerney-Lacombe et. al. (2008).	Better prepared to push ''tough issues'' in board discussions.
Hoffman & Maier (1961); Nemeth (1986)	Better ability to facilitate creativity within groups.
Welbourne, Cycyota & Ferrante (2007)	Enhance innovation and problem solving within firms.
Stanwick & Stanwick (1998); Wang & Coffey (1992)	Higher attention to social responsibility, charitable giving, and community relationships.
Williams (2003)	Higher engagement in firm's charitable support of community and cultural activities.
Fombrun (2004)	More engagement in reputation-building activities, philanthropy and community out-reach.
Sirianni & Friedland (1995)	Represent links between firms and a society that is diverse, complex and gender sensitive.
Gillan & Starks (2000)	Represent links to institutional investors who favor boards with greater diversity.
Mattis (1993), Mainiero & Sullivan (2005)	Represent links to other women in- and outside the organization, and families and family issues

Source: Prepared by the author

3.5. WOMEN DIRECTORS´ CONTRIBUTION TO FIRM´S FINANCIAL PERFORMANCE

Boards exist to perform tasks for the organization they represent, and their function is linked to their organization´s performance (Bommer, Johnson, Rich, Podsakoff and MacKenzie, 1995; Argote and McGrath, 1993; Goodman, 1986).

Thus, board diversity is a particularly interesting case to study, as the influence of the board’s elaboration and decision-making processes can be related to the performance of the organization as a whole (Carpenter et al., 2004; Hambrick and Mason, 1984).

An issue that has attracted the attention of scholars around the world for decades, is the link between board diversity and the firm´s financial performance. Firm financial performance data are particularly attractive due to their unique characteristics; they are easily available and accessible (for firms listed on the national stock exchanges), easy to interpret, objective in nature, comparable across countries, industries and companies, and very relevant for all the stakeholders of the firm.

The impact of women board directors on firm financial performance is one of the most frequently diversity relation studied by academics A variety of financial performance measures has been used, as well as samples from different countries and industries, but no clear and consistent relation has been established; some studies show positive links, others negative links, and others no relation at all. Table 3.4 present a summary of some of the most relevant studies reporting negative, positive and no link between women directors and firm financial performance.

Below is a more detailed presentation of some the studies reporting relations between women directors and firm financial performance. These studies include samples from different countries and industries, over a period of 15 years, and include different firm financial measures. Apart from establishing that ROA and Tobin´s Q are the most related variables to measure women directors´ contribution to firm financial performance, no other consistent conclusion can be drawn.

Erhardt et al., (2003) found evidence of a positive relation between the percentage of women on boards and the return on assets (ROA) and the return on investment (ROI). They argued that as women on boards are associated with higher shareholder value, women should become more prevalent on corporate boards.

Adams and Ferreira (2004) studied the impact of board diversity on investor’s behavior. They found a significant association between the stock market volatility and the proportion of women, in that firms with boards that had a lower fraction of woman tended to have a more volatile stock price. However, in their subsequent study of 2009, the authors reported a negative relation between the proportion of women directors and Tobin’s Q.

Another study finding a positive relationship between the ratio of women directors and financial performance was Carter et al., (2003). This study which was done on Fortune 1000 boards, measuring firm financial performance by the Tobin’s Q.

Krishnan and Park (2005) found a significant positive relationship between the percentage of women on top management teams and organizational performance, measured by the return on sales (ROS) and the return on assets (ROA).

In Spain, Campbell and Minguez-Vera (2008, 2010), investigating the relationship between gender diversity of boards and financial performance found that board gender diversity had a positive effect on firm value measured by the Tobin’s Q, and that adding women to a corporate board had a positive effect on the stock market. However, another Spanish study on gender diversity on boards, found no relation between women on boards and business success (Reguera-Alvarado, Laffarga-Briones and de Fuentes-Ruiz, 2011).

In Turkey, Ararat et al., (2015) found a positive relationship between demographic diversity and performance, mediated by the board’s monitoring efforts. They developed a compound board diversity index (BDI), consisting of the sum of the Blau indexes for gender, age, education level and nationality, and compared this to the firms´ return on equity (ROE).

A study of the University of Michigan Business School examining stock value and earnings growth following initial public offerings (IPO) in the USA, found that IPO were significantly more successful when the companies had senior female executives. That is, having women in top management can result in higher earnings and greater shareholder wealth (Ripley, 2003).

Biggins (1999) argued that although boards are not social agencies and it is not their job to create cultural diversity, companies are discovering that diverse board helps generate better returns for shareholders.

Related to risk and profitability on the stock market, the European Corporate Governance Institute´s study of the board of directors of 1024 publicly traded firms in Europe found that having more women on the board of directors decreased the variability of stock returns. In the same line, Adams and Ferreira (2004, 2009) found a strong negative relation between the variability in stock returns and the proportion of women on the boards.

A series of studies found no link between women directors and firm financial performance; Carter et al., (2010) did not find any significant relationship between gender diversity on boards and financial performance for a sample of major US corporations. Their analysis did not support the business case for inclusion of women directors to corporate boards based on firm financial performance, however, no evidence of any negative effect was found either. They concluded arguing in favor of gender diverse boards, however based on other criteria than financial performance.

For a sample of US companies, Shrader, Blackburn and Iles (1997) found no significant relation between the ratio of female board directors and their companies’ profit margin, ROA, or ROE.

There are also examples of studies showing a negative relation between women directors and firm financial performance; Smith et al., (2006) for a sample of Danish firms, found a negative relation between board gender diversity and gross profits to sales. However, they found no statistically significant relation between board gender diversity and other accounting measures of financial performance. Rose (2007) did not

find any significant relation between board gender diversity and Tobin’s Q for a different sample of Danish firms.

Finally, Bøhren and Strøm (2010), concluded in their study of Norwegian firms that the evidence on gender diversity is scant and conflicting, with studies finding positive, negative and no relationships between gender and firm value.

As we can conclude from the above, the issues around female board participation are getting increased attention by academics (Daily et al., 1999; Terjesen et al., 2009; Vinnicombe et al., 2008). This is accompanied by a strong call for a higher gender balance at corporate boards, coming from politicians and institutions in most European countries. EU Justice Commissioner Viviane Reding requested that large publicly held companies in Europe should voluntarily achieve a 30% level of women on boards by 2015. Although not all countries are fulfilling this request, some improvements have been recorded on the European scene.

Analyzing the above results linking women to firm financial performance, we find that although results are positive, they are not all-conclusive for the business case of women on corporate boards. However, taking into account the qualitative contributions of women on boards, presented in Table 3.3, we believe that it is a question of time before the business case will be confirmed. As society is claiming higher women participation, and as the women ratio on boards is increasing and becoming more “normalized”, we believe that future research will show more positive results.

It is with this belief that we propose a study of the relation between women board directors and firm financial performance, conducted in two different countries, one being Norway a mature country in terms of gender balance where woman’s´ participation on boards has become normalized, and Spain, a country with a much lower female participation at all levels, but with a recent intention to increase the percentage of women on boards. For our study we have selected the performance measure of Tobin´s Q, as this is seen, together with ROA, to be one on the most relevant performance measure in these type of studies.

Table 3.4. Summary of the principle findings relating women directors and firm´s financial performance.

Author(s) Year	Independent variable Gender measure	Dependent variable Performance measure	Modetating variable	Data base	Main result
Wellalage & Locke 2013	Percentage of women Blau index	Tobin´s Q	None	88 listed comp. Sri Lanka	Negative relation
Ahern & Dittmar 2012	Percentage of women	Tobin´s Q	None	248 comp. Norway	Negative relation
He & Huang 2011	Blau index	ROA	None	530 manufactoring comp. USA	Negative relation
Bohren & Strom 2010	Percentage of women	Tobin´s Q, ROA, ROS	None	203 listed comp. Norway	Negative relation
Adams & Ferreira 2009	Percentage of women Dummy	ROA, Tobin´s Q	None	1939 comp. USA	Negative relation
Ararat et. al. 2015	Compound board diversity index, age gender, ed.lev, nation	ROE	Monitoring intensity	100 listed comp. Turkey	Positive relation
Dezso & Ross 2012	Percentage of women Dummy	Tobin´s Q	Innovation-driven strategy	1500 comp. S&P USA	Positive relation
Lindstaedt et al. 2011	Percentage of women	ROA, ROE, Price to book v.	High female ratio B2B companies	160 comp. Germany	Positive relation
Luckerath-Rovers 2011	Percentage of women	ROE, ROS, ROIC	None	99 comp. Netherlands	Positive relation
Campbell & Minguez 2008	Blau, Shannon index Dummy	Tobin´s Q	None	68 comp. Spain	Positive relation
Smith et al. 2006	Percentage of women	Varios economic measures	Women´s level of education	2500 comp. Denmark	Positive relation
Carter et al. 2003	Percentage of women Dummy	ROA, Tobin´s Q	None	638 Fortune 1000 comp. USA	Positive relation
Erhardt et al. 2003	Percentage of women	ROA, ROI	None	112 Fortune 1000 comp. USA	Positive relation
Singh et al. 2001	Percentage of women	Profit, Revenues	None	100 FTSE Comp. UK	Positive relation
Carter et al. 2010	Percentage of women	ROA, Tobin´s Q	None	2563 firm-years observations, USA	Neutral relation
Haslam et al. 2010	Percentage of women Dummy	ROE, ROA Tobin´s Q	None	126 listed comp. UK	Neutral relation Neg. To TQ
Miller & del Carmen 2009	Blau index	ROI, ROS	Innovation	326 Fortune 500 comp. USA	Neutral relation
Rose 2007	Percentage of women	Tobin´s Q	None	100 listed comp. Denmark	Neutral relation
Randoy et al. 2006	Percentage of women	ROA, stock market value	None	458 comp. Scandinavia (N/S/D)	Neutral relation
Shrader et al. 1997	Percentage of women	ROS, ROA, ROI ROE	None	200 comp. USA	Neutral relation

Source: Prepared by the author

3.6. CRITICAL MASS OF WOMEN DIRECTORS ON BOARDS: WOMEN AS MINORITY MEMBERS

Social psychology theory brings the attention to the potential limitation of the contribution of diverse board members when boards have an unbalanced board composition. It predicts that individuals belonging to a majority group have a greater potential to exert a disproportional amount of influence on the group´s decisions (Westphal and Milton, 2000).

Directors from minority groups (like women board members) perceive that their minority status often represent a hindrance to their work as a director (Ferreira, 2010) and perceive that they have a harder time influencing the board´s decisions than members of the majority group.

This situation was seen in Kanter´s (1977) seminar work examining women´s status in a large American corporation. She found that the individuals belonging to a majority group (usually men) seemed to control the individuals belonging to a minority group (usually women). Kanter defined a minority representation of around 15% of a group as a “token” and argued that *“tokens are not treated as individuals, but as representatives for their category”* (Kanter 1977: 208).

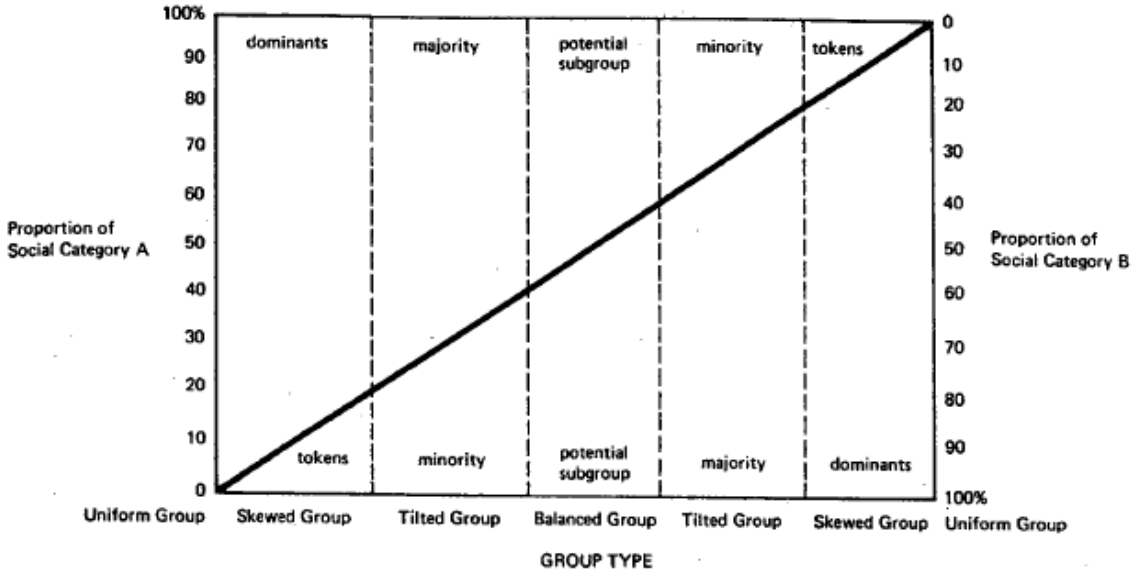
Being a token has three behavioral consequences; visibility, polarization, and assimilation. Visibility implies that tokens find themselves being watched all the time, resulting in perceptions of performance pressure. Polarization implies that the dominant group feels threatened or uncomfortable around tokens, and that they therefore heighten their boundaries by exaggerating both the commonality and the differences of tokens. The majority may thus try to exclude tokens from informal networks where important socialization takes place. Finally, assimilation implies that tokens are forced into stereotypical categories defined by the dominants. Even if there are differences among the members of the minority group, these are not perceived by the majority group. Tokens are thus perceived as representing an entire demographic group. Hence, token-woman are stereotyped by the majority group (Kanter, 1977) and are not seen as they really are. This role is labeled encapsulation; a process that forces tokens into limited and caricatured roles and expectations as to what is a “suitable behavior” for a woman.

Kanter suggests that women minorities in groups are subject to meeting barriers in influencing group decisions. The visibility mechanism in tokenism theory predicts additional performance pressures for women directors (Powell, 1993), and that they, in order to be perceived as having equal ability as their male counterpart, must provide more evidence of their ability (Biernat and Kobrynowicz, 1997).

The influence of minority members in a group therefore depends upon the strength, immediacy and number of its members (Latane, 1981). However, as the size of the female minority group increases, it gains trust, and the majority benefits from the resources they bring to the organization (Kanter, 1977). This is the principal idea behind the critical mass theory proposing that minority members gain in influence as their numbers reach a certain threshold (Konrad et al., 2008).

Most literature on critical mass begins with Kanter´s work of 1977, where she observes that the relative numbers of different people in a group, differences which derive from “*salient master statuses”* like gender, race and ethnicity (Kanter, 1977: 966), are crucial in shaping the interaction dynamics in the group. To theorize these interactions, she constructs four different categories of groups according to their composition; (1) uniform groups, (2) skewed groups, (3) tilted groups and (4) balanced groups. The tipping points between the groups are not clearly defined, and although Kanter suggests a “100:0” for uniform groups, a “perhaps 85:15” for skewed groups, a “perhaps 65:35” for tilted groups, and a “60:40 to 50:50” for balanced groups, her diagram suggest a continuous scale as shown below (Kanter, 1977: 967).

Figure 3.2. Group categories according to composition



Source: Kanter, 1977: 383

- Uniform groups are groups in which all members share the same (visible) characteristic. That is, with respect to gender, all members of the group are either male or female.
- Skewed groups are groups in which one dominant type (males) tend to control the few (females). The dominant group tend to see women first as female, embodying the gender role stereotype, and only later as individuals. This makes it more difficult for the women members to be heard, and importantly, listened to on an equal basis as other group members. A male dominated skewed group consists of 20% or less women.
- Tilted groups are groups with a less extreme distribution. Unlike in skewed groups, minority members can ally and influence the culture of the group. They do not stand for all of their kind, instead they represent a subgroup whose members are to be differentiated from each other in their skills and abilities (Kanter 1977: 209). A male-dominated tilted group have from 20 up to 40% women.
- In a so-called balanced group, majority and minority turn into potential subgroups where gender-based differences become less and less important. The focus turns to the different abilities and skills of men and women (Kanter 1977: 209). A balanced group with respect to gender representation has from 40 up to 60% women.

As argued above, when the size of the minority group increases to the point when it is no longer a token or a small minority, the nature of the relations between the minority and the majority changes qualitatively (Bear, Rahman and Post, 2010; Etzkowitz, Kemelgor, Neuschatz, Uzzi and Alonzo, 1994.). Research has shown that groups that have a more balanced male-to-female ratio in their composition negate the formation of strong in-groups and out-groups, and instead encourage a group-wide sense of loyalty and affect (Kanter, 1977; Konrad et al., 2008). As the number of male and female board members become more balanced it becomes harder to maintain an insider/outsider bias, as men themselves become outsiders to the women, who themselves self-categorize with one another (Kanter, 1977; Pfeffer, 1985; Westphal and Milton, 2000).

The fundamental proposal of the critical mass theory is thus that as boards become more gender balanced, their potential to benefit from diversity is increasing, and that there might be a critical number of women on boards that marks a threshold, resulting in a substantial difference for their effective influence on board processes and performance.

Critical mass theory has over the last twenty years gained wide currency among politicians, media and international organizations as a justification for measures to bring more women into political office (Grey, 2006). Scholars have applied the critical mass theory to legislative and political settings (Childs and Krook, 2008), but few have proposed what exact number represents a critical mass.

Asch’s studies in 1951 and 1955 lead to the definition of a threshold that represent critical mass. He used groups of students who were told that they were participating in a study on visual perception (“vision test”). The Asch experiment demonstrated that when an individual is faced with the unanimous opinion of three people, he or she feels the pressure to conform to the others. Conformity pressure is a well-known group phenomenon, described by Janis (1972) in his study on the development of groupthink. Janis identified three symptoms of groupthink; overestimation of the group, close-mindedness, and pressure towards conformity. A behavioral consequence of pressure towards conformity for the minority is self-censorship, where the minority members of the group feel they have to censor opinions that deviate from the opinions of the majority.

Other studies have also suggested that three could represent the tipping point (critical mass or threshold) that influence the group setting (Konrad et al., 2008; Post, Rahman and Rubow, 2011, Torchia, Calabró and Huse, 2011).

Drawing on the preceding arguments and recent studies of women on corporate boards, Konrad et al., (2008) suggested that the critical mass of women directors on boards is reached when there is “at least three women” on the board. In their study they interviewed thirty-seven women board directors, twelve CEOs, and seven company secretaries. Their study explored three dimensions of numerical representation of women - one woman, two women, and three women. Their results revealed different dynamics when there were one, two, or three women on the board. When there were two women on the board, an impact was demonstrated on the male colleagues, who were less likely to dismiss comments made by a woman, and in the boardroom, where the culture was perceived to be warmer and more open to wider discussions. The real change however occurred when there were three or more women on the board. Women felt more comfortable, supported, less constrained about what the men would think, freer to raise issues, and their interactions became more positive. The dynamics moved from invisibility to conspiracy to “normality”, and the critical mass normalized women’s presence as leaders. It was only at that point that the diversity of the group was not any longer a “woman’s issue” but a group responsibility.

Post et al., (2011) also found that three women on the board seemed to be a critical threshold. Having “at least three women directors” makes boards more heterogeneous, and allows majority-minority interactions and processes to take place thereby enabling the overall board to take high-quality decisions.

As described earlier, studies have shown that heterogeneous groups produce higher quality decisions than homogeneous groups on complex tasks, and generate more innovative solutions (Amason, 1996). Hoffman (1959) and Hoffman and Maier (1961) recognized that pressure for uniformity is an impediment to good problem solving. In particular, minority views can stimulate consideration of the non-obvious; they often detect novel solutions (Nemeth and Wachtler, 1983), use more varied strategies, and think in more original ways (Nemeth and Kwan, 1985). The number of women directors on the board is therefore of significance when evaluating their potential contribution to

the overall board performance. While one female board member may make a positive contribution, companies with three or more women on the board are likely to benefit even more from female contributions.

Konrad et al., ´s study (2008) concluded that once the number of women directors on boards increased to a consistent minority (“at least three women”), the women directors perceived that their ability to effectively influence board processes and performance had increased substantially. The core idea is that, with at least three women directors, it is possible to increase the likelihood that women’s voices and ideas are heard, and that thereby boardroom dynamics change substantially.

In this same line a Canadian study of the boards of private, public, and not-for-profit organizations in 2002 revealed that boards with three or more women were significantly different from the all-male boards (Brown et al., 2002). Three-quarters of the boards with three or more women explicitly identified criteria for measuring strategy, compared to only one half of the all-male boards. 94% of these boards explicitly monitored the implementation of corporate strategy, compared to only two-thirds of the all-male boards (Brown et al., 2002). Furthermore, boards with two or more female directors placed more importance on the use of search consultants than other boards, which is likely to reduce the influence of the “old boys’ network” and increase transparency of board member selection. Boards with three or more women directors were also more likely to have higher levels of board accountability, with formal limits to authority and formal director orientation programs. These boards were also more likely to ensure a more effective communication among the board and its stakeholders. And finally, such boards were significantly more active in promoting performance measures, such as customer satisfaction, employee satisfaction, and gender representation, as well as considering measures of innovation and corporate social responsibility.

Elstad and Ladegard (2012) in their study of 458 women directors on Norwegian corporate boards, with a women ratio ranging from 11 to 100%, found that having two or more woman on the board was a critical limit for increased perceived influence for each woman on the board. They found that an increased women ratio led to higher levels of perceived influence, and higher perceived information sharing.

In a recent study of German boards Joecks, Pull and Vetter (2013), tested Kanter’s predictions and found that critical mass lied in the range of 20–40% women directors. They found evidence for that skewed boards perform worse than uniform boards, and that tilted boards outperform skewed boards. They argue that if there is a “critical mass” of women on boards that is needed in order for female representation to positively affect firm performance, this apparently is reached within tilted boards - just as proposed by Kanter.

Table 3.5. Summary of the principle findings relating critical mass and firm performance.

Author(s) Year	Independent variable Gender measure	Dependent variable Performance measure	Modetating variable	Data base	Main result
Taarn Pedersen 2013	Percentage of women on boards	ROE, ROA, Net profit Tobin´s Q	None	Board of 110 service firms in Japan	Critical mass improve performance
Joecks, et al. 2013	Percentage of women Kanter group classific.	ROE	Critical mass	Board of 151 listed firms in Germany	Critical mass improve performance
Strydom & Yong 2011	Percentage of women on boards	ROE, ROA, Sales Earnings quality	None	3085 firm-year obs. Australia	Critical mass improve performance
Torchia et al. 2011	Percentage of women	Innovation Measured by questionaire	Board strategic tasks	317 firms in Norway	Critical mass related to more innovation
Konrad et al. 2008	Percentage of women on boards	Impact on boards Measured by interviews	Critical mass	50 female directors Fortune 1000 USA	Critical mass improve womens impact on boards
Childs & Krook 2008	Percentage of women in politics	Promoting female issues in politics. Review literature	Critical mass	Review of literature Kanter & Dahlerup	No conclusion
Chestermann & Ross-Smith 2006	Percentage of women in TMT Universities	Appointment of women Measured by interviews	None	50 female, 31 men, 5 Universities, Australia	Critical mass related to more women appointments
Broome et al. 2011	Critical mass of women on boards	Raising women issues Discourse analisis	Critical mass	46 female directors in 118 comp. USA	No link

Source: Prepared by the author

3.7. SOCIAL CATEGORIZATION AND INTERGROUP BIAS BASED ON GENDER

Social categorization processes, with roots in the social identity theory (Tajfel and Turner, 1986), the self-categorization theory (Turner, 1975, 1987), and the similarity-attraction paradigm (Byrne, 1971), explain how similarities and differences among board members serve as a basis for categorization of one self and others into different subgroups. The subgroup members distinguish between their own in-group (“us”), and the other out-group (“them”), and have the tendency to like and trust “us” more than “them” (Brewer, 1979; Tajfel and Turner, 1986; Turner et al., 1987). Through this process a corporate board might be divided into different subgroups that can give rise to conflicting inter-subgroup relations.

Board members have multiple identity structures based on different characteristics (e.g., gender, age, profession, tenure), allowing them to categorize (and form subgroups) in many different ways. It is therefore important to determine which characteristics are more “salient”; meaning more likely to evoke in an individual the view of oneself versus others.

As earlier commented, van Knippenberg et al., (2004a) propose that the extent to which a characteristic engender social categorization is contingent on three factors: comparative fit, normative fit, and cognitive accessibility (Oakes et al., 1994; Turner et al., 1987). With gender, the comparative fit is typically high, as gender represent a visible and readily detectable characteristic, fulfilling the condition of providing a good reflection of similarities and differences between both gender groups. The normative fit of gender is also high as societal gender stereotypes may give subjective meaning (Pearsall et al., 2008), fulfilling the requirement that the characteristic must make sense within an individuals’ subjective frame of reference; beliefs, expectations, and stereotypes (Turner et al., 1987). Finally, cognitive accessibility of gender is also high as the categorization men vs. women very easily comes to mind.

Gender, being a characteristic most people have used for self-categorization throughout their lives (Fiske, 1998) is considered highly salient for social categorization. Gender is furthermore one of the most commonly used characteristic for the definition of self-

schemas (individual’s psychological construction of self) as this schema is developed from childhood and serve as mental models through which information is processed (Konrad et al., 2000).

Having determined that gender is a salient diversity characteristic, one can expect that men and women on corporate boards engage in social categorization. However, the categorization into women and male subgroups on the board only refers to the perceptual grouping of people (Turner et al., 1987), and is not necessarily negative in itself (van Knippenberg et al., 2004a).

It is the potential intergroup bias between the subgroups that leads to conflict, as members show more favorable responses to other “in-group members” than to others categorized as “out-group members” (Brewer, 1979), and in this way impedes boards in taking advantage of the potential benefits of diversity.

As we saw earlier in the chapter on diversity, intergroup bias on corporate board may range from subtle social competition for status and prestige, to outright discrimination (Brewer and Brown, 1998). Such bias can lead to the no-appointment of women to boards (Mateos De Cabo et al., 2011), as well to unequal status of the men and the females on the board (Gaertner and Dovidio, 2014). This may provoke the activation of faultlines, and the formation of female and male subgroups, subgroups which might experience affective and evaluative reactions, leading to conflict and reduced cohesion among group members, finally resulting in reduced performance.

Intergroup bias can lead to women director´s arguments having less influence on board decisions than the men forming part of the dominant group (Miller and Brewer, 1996; Westphal and Milton, 2000). In this way, bias may lead male majority directors to devalue the input of women minorities on the board, thus limiting the potential of women´s contribution to board decision-making. In a study of Norwegian corporate boards, Elstad and Ladegard (2012) found an intergroup bias in the perceptions of women vs. men directors on the boards. The gender of the respondent of the study had an impact on the assessment of women’s contributions to decision-making; with male respondents rating women’s contributions significantly lower than the female respondents did.

One such intergroup bias is found in the social status values (Berger, Ridgeway, Fisek and Norman, 1998; Berger, Wagner and Zelditch, 1985) suggesting that people form expectations about the competence of others, based on status values assigned by the society as a whole (Ridgeway, 1991). In western countries white and men are seen as more able and competent than black and women, and thereby have higher social status value (Berger et al., 1985; Berger et al., 1998; Elsass and Graves, 1997; Ridgeway, 1991).

Board job-holder schemas represent another bias against women directors, in that the perceptions about the attributes a person should have in order to fit as a board member, favor typical male board member characteristics, in terms of personal attributes, backgrounds and experience. Thus, it is not the formal director description, but an often unconscious mental model about the characteristics a director should have that causes the bias (Perry, Davis-Blake and Kulik, 1994). As typically white male hold the majority of board positions, people are more likely to consider white male fitted for these positions. So, even if there is no consciously discrimination against women, a schema in favor of male board directors is unconsciously applied (Fiske and Taylor, 1991). In a study about the perceptions of leadership in Australia, characteristics like heroism, physical and emotional toughness and self-reliance were described as typical leadership attributes (Sinclair, 1998); characteristics more typical of males than of females. This ideology of leadership perpetuates the *status quo* of who “looks like a leader”.

Gender stereotyping is yet another form of intergroup bias, resulting in general lower esteem of women and social barriers for women´s progress (Carli and Eagly, 1999; Elsass and Graves, 1997). Stereotyping is defined as the ascription of the in-group stereotypical characteristics to the self (Biernat, Vescio and Green, 1996; Guimond, Chatard, Martinot, Crisp and Redersdorff, 2006; Turner et al., 1987). Past research on self-stereotyping has demonstrated that people belonging to low status groups or numerical minorities are more likely than majority group members to self-stereotype (Latrofa, Vaes, Cadinu and Carnaghi, 2010), and that women, but not men, engage more often in self-stereotyping regardless of numbers (Latrofa et al., 2010). Women display a higher level of gender in-group identification as gender is a more important “identity maker” for women than for men (Lorenzi-Cioldi, 1991).

Cadinu and Galdi (2012), in order to explain the higher level of self-stereotyping by woman than by men, argue that group membership to minority and low-status groups is more accessible than group membership to high-status groups, and thus concluded that gender group membership was more accessible for women than for men. They further demonstrate that implicit self-categorization is an important mechanism underlying implicit self-stereotyping, and that women show stronger implicit gender self-stereotyping than men, and that this is significantly associated with explicit self-stereotyping, and that the high accessibility of gender group membership lead to stronger self-stereotyping for women than for men, resulting in the fact that both gender self-categorization and gender self-stereotyping were stronger for women than for men. This is consistent with Mullen´s (1991) theory of group salience, which propose that membership to a numerical minority group is highly salient, resulting in a focus on the in-group, which then leads to a prototypical perception of in-group members, including the self. Majority-group members pay less attention to the in-group, thus forming exemplar rather than prototypical representations of in-group members.

These findings point to a possible higher salience of gender for women directors in token or small minority status on the board, or when they feel threatened by intergroup bias, indicating lower status than men. Their natural reaction would be to seek support and esteem in their gender subgroups, feeling strong identification with “us” vs. “them”. This can lead to faultline subgroups, and affect the relation between the subgroups. As argued in earlier chapter under critical mass, research found that groups that have a more balanced male-to-female ratio in their composition negate the formation of strong in-groups and out-groups, and instead encourage a group-wide sense of loyalty and affect (Kanter, 1977; Konrad et al., 2008). As the number of male and female board members become more balanced it becomes harder to maintain an insider/outsider bias, as men themselves become outsiders to the women, who themselves self-categorize with one another (Kanter, 1977; Pfeffer, 1985; Westphal and Milton, 2000).

Most of the inter-group oppression and conflict serve the function of establishing and maintaining particular group-based, hierarchical social systems, where gender is one of the variables establishing the hierarchical difference (Social dominance theory) (Sidanius, 1993; Sidanius and Pratto, 1999). Western societies are characterized by being both patriarchal (Marshall, 1984; Powell, 1993) and white-centric (Essed, 1991;

Hooks, 1989), where positions of power are typically held by males to a disproportionate degree - the more powerful the position, the more likely that the position will be occupied by a male (Sidanius, 1993). Thus, white men seek to preserve their power and authority by consciously discriminating against women and people of color when making promotion decisions for top management positions (Morrison and von Glinow, 1990).

Social dominance orientation (SDO) (Pratto, Sidanius, Stallworth and Malle, 1994) is a scale that intend to measure the degree to which an individual support these hierarchical group-based systems of inequality. Various studies have shown that males produce significantly higher SDO than females (Pratto, Stallworth and Sidanius, 1997; Sidanius, Levin, Liu and Pratto, 2000; Sidanius, Pratto and Bobo, 1994; Sidanius, Pratto and Brief, 1995; Sidanius, Pratto and Rabinowitz, 1994), and that men are therefore more likely to have anti-egalitarian beliefs. The higher SDO of men indicate their preference to perpetuate their dominant position, while the lower SDO of women show their decreased favor for such systems.

The degree of male social dominance vary upon culture, defined as a system of collectively held beliefs and values. Cultural patterns of thinking, feeling and acting are acquired in early childhood because at that time a person is most susceptible to learning and assimilation. These patterns are deeply rooted, and once established within a person´s mind, they are unlikely to change substantially (Hofstede, 2001).

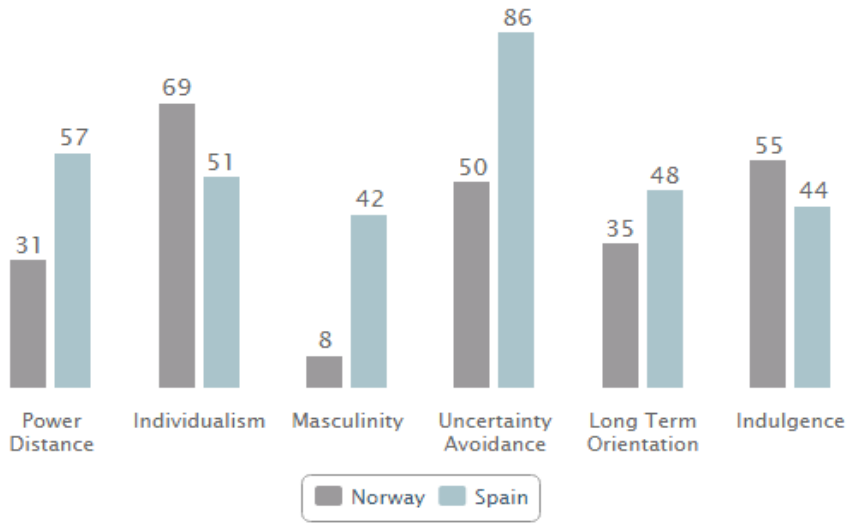
Hofstede (1980) is his study of national cultures, established six cultural dimensions defining cultural tendencies. One of these, the degree of masculinity, may be expected to be related to intergroup bias. A high score on masculinity indicates that the society is driven by traditional masculine work-role models of achievement, competition, control, power and success, and that this is indicative for a high degree of gender differentiation (Hofstede, 1980, 2001; Hofstede and McCrae, 2004). In terms of this national cultural dimension, Spain scores relatively high (42) while Norway scores very low (8).

The cultural dimension of power distance can also impact intergroup bias, in that it deals with the fact that in a certain culture all individuals are not considered equal, and that less powerful members of institutions and organizations within the country expects

that power is distributed unequally. With respect to this dimension Spain´s score is again high (57), indicating that Spain is a hierarchical society, in which organizations are seen as reflecting inherent inequalities and centralization of power. Norway, however, scores low on this dimension (31) indicating a culture of equal rights, decentralized and shared power, importance on participation and consensus, less focus on control, and direct and transparent communication. Intergroup bias favoring power distance between male and female board members, or between majority and minority subgroups, may influence the overall board performance. In spite of the fact that all board members have the same responsibility and are equally liable, male board members seem to have more power than female board members on traditional., male dominated boards (Huse and Solberg, 2006; Huse et al., 2005).

A final cultural dimension that can be expected to influence intergroup bias is the dimension of uncertainty avoidance, which indicate the extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs to avoid this. According to Hofstede (1980), if there is one dimension that clearly defines the Spanish culture it is this dimension, reflected by a score of 86, which indicates a great restistance to change and concern in undefined situations. Having women entering the traditional male dominated board rooms can represent such uncertain and new contexts. Norway scores 50 on this dimension, which does not indicate an exceptionally high preference for uncertainty avoidance.

Figure 3.3. Differences in cultural dimensions between Norway and Spain.



Source: Geert-hofstede.com, 2014

As a closing comments, it can be argued that gender is a salient diversity attribute with a high potential to lead to gender subgroups on boards. Furthermore, it can be concluded that numerous factors in society, like gender schemas and stereotyping, social status values, job-holder schemas and male dominance on boards can lead to intergroup bias.

3.8. FAULTLINE STRENGTH AND THE DISRUPTIVE EFFECTS ON THE ELABORATION PROCESSES OF TASK-RELEVANT INFORMATION

Social categorization combined with intergroup bias generate the bases for faultline division, in that subgroup differentiation between “us” (similar in-group members) and “them” (dissimilar out-group members) is based on the alignment of diversity attributes between subgroups.

Furthermore, as people typically prefer to work with similar others (van Knippenberg et al., 2004a; Williams and O’Reilly, 1998; Brewer and Brown, 1998; Tajfel and Turner, 1986) this can disrupt effective information exchange, constructive debate and collaboration, crucial for the process of elaboration of task relevant information. Consequences of this could be that the board does not consider all relevant information for the complex analysis and decision-making involved in the strategic and non-routine work of the board, thus arriving at less optimal performance than they could have reached without this disruptive influence. Such outcome of board performance is likely to be reflected in the bottom line financial performance of the company (Carpenter et al., 2004; Hambrick and Mason, 1984).

However, this disruption do not always happen, and the key question is therefore to find out when, and under which circumstances a social categorization create faultlines that affect performance. As an answer to this, van Knippenberg et al., (2004a) propose that it is the salience of the social categorizations that drives these subgroup effects.

Categorizations are used to make sense of the world by capturing similarities and differences between people. A diversity attribute is more likely to be more salient when the categorization makes sense to the individual (normative fit), when it easily comes to mind (cognitive fit), and when it provides a good reflection of the similarities and the differences between the members of the two sub groups (comparative fit).

Different diversity attributes have different salience (gender is believed to be highly salient), and may have different effects depending on whether differences on one attribute converge with differences on another attribute, or not. The more diversity attributes that align (e.g. the male members of a board are all engineers and have the highest tenure) the higher the comparative fit of a categorization in terms of these attributes, and the more likely this subgrouping is to be salient.

Lau and Murnighan (1998) proposed the term faultlines to refer to combinations of diversity attributes that may render salient subgroupings. Based on the author´s faultline definition, board faultlines are hypothetical dividing lines that split a board into relatively homogeneous subgroup based on board members’ alignment along multiple diversity attributes (Bezrukova et al., 2009; Lau and Murnighan, 1998, 2005; Li and Hambrick, 2005).

The most commonly used diversity attributes in faultline studies are age, education background, gender, race, functional background and tenure (Thatcher and Patel, 2012). Gender, being a highly salient diversity attribute, plays an important role in faultline research, and is considered one of the most common trigger for faultlines and subgroup formation (Thatcher and Patel, 2012).

When subgroups form, negative processes can arise as the two subgroups become cautious of one another (Li and Hambrick, 2005). Subgroup division combined with intergroup bias, provoke distrust, frustration, discomfort, hostility, and anxiety, leading to relational conflict and annoyance among the individuals of the group (Choi and Sy, 2010; Homan et al., 2007; Pearsall et al., 2008; Pickett and Brewer, 2001; Lipponen et al., 2003; Polzer et al., 2006; Amason and Schweiger, 1997; Amason, 1996; Pelled, 1996). This hinder effective group functioning, causing lack of coordination, cooperation, and cohesion (Brewer, 1995, 1996, LaBianca et al., 1998).

Based upon earlier findings of subgroup dynamics (Lau and Murnighan, 2005), one might therefore expect that when boards experience a strong subdivision, information sharing across the two subgroups may be misinterpreted, so that comments are viewed as criticisms or threats rather than as constructive critiques (Bartel, 2001; Lau and Murnighan, 2005) leading to negative attributions of other subgroup members (Jehn,

1997). This is expected to affect the elaboration and decision-making processes so crucial for the performance of the board (van Knippenberg et al., 2004a). As information processing ability and cohesiveness of the board is reduced, board members spend time and energy focusing on each other and their misunderstandings, conflicts and annoyance, rather than on the task (Forbes and Milliken, 1999; De Dreu and Weingart, 2003). This deplete energy and effort that could be expended towards task completion and consolidation around mutual goals (Amason and Mooney, 1999), and causes boards to arrive at less optimal solutions to problems, less competitive strategic decisions and less innovative policies than they could have reached without this disruptive influence, likely to be reflected in the bottom line financial performance of the company (Carpenter et al., 2004; Hambrick and Mason, 1984).

This study pretend to establish the comparative fit, yielding gender subgroups with high intragroup similarity and high intergroup differences, on boards in Norway and Spain, based on the attributes of gender, tenure, education level and education background. As the objective of this study is to analyze the effects of faultlines between gender subgroups, only companies with two or more women on the board are included, as it requires a minimum of two members to form a subgroup.

We expect to find evidence of the negative consequences of gender faultlines on corporate boards, and through this, contribute to the literature by demonstrating how the concept of faultlines based on the theoretical foundation of the social categorization and intergroup bias, can be used in order to achieve a better understanding of board composition and board performance.

Table 3.6. Summary of the principle findings relating faultlines and firm performance.

Author(s) Year	Faultline measure	Performance measure	Data base	Main result
Veltrop et. al. 2015	Gender, age and factional group affiliation	ROI	318 Pension funds Netherlands	Demographic faultlines in factional groups have negative relation to performance, positively moderated by board reflexion
Georgakakis & Ruigrok 2014	TMT experience based and socio-demographic faultlines	ROA	109 European firms in Germany, Switzer-land, Netherlands, UK	Experienced based faultlines have negative relation to performance, moderated by CEOs background characteristics
Cooper et. al. 2014	TMT Informational faultlines, Fau index	ROA, ROE, TobinsQ	380 Firms listed in S&P 1500 index USA	Informational faultlines affect performance, moderated by dynamism, complexity and munificence of the environment
Hutzschenreuter & Horstkotte 2013	Fau index (Demographic - age and nationality, and task related faultlines - tenure, edu. level and content)	Added product scope´s effect on firm performance (ROA)	61 listed comp. Germany	Faultlines moderate added product scope´s effect on firm performance, in that task related faultlines increase performance when adding product scope, while demographic faultlines decreases it.
Thatcher & Patel 2012	Fau index (Age, gender, race, tenure, function, education level)	Cohesion and task, relationship & process conflict Performance	Meta-analysis of 36 published articles including 39 empirical studies	Demographic faultlines increase conflict, and decrease performance and cohesion. The effect on performance was stronger than the effect on satisfaction.
Kaczmarek et al. 2012	Fau index (Type of directorship, education level, tenure, financial background)	Performance - Tobin´s Q	263, 229, 216 listed comp. UK	Negative relation
van Knippenberg et al. 2011	Faultline index based on two/three dimensions (Gender, tenure and functional background	Performance (Productivity & Profit)	42 mgmt. teams UK	Not all faultlines have the same effect. The moderating effect of shared objectives do not have the same effect on all faultline bases.
Minichilli et al. 2010	Family ratio (Ratio of family members in comp.)	Performance - ROA	500 family controlled comp. Italy	Curvilinear (U-shaped) relation between nº of family members and performance, moderated positively by family CEO
Bezrukova et al. 2010	Demographic based clustering analysis (surface level diversity)	Perceived injustice and psychological distress Measured by questionnaires	57 work groups 36 work groups comp. USA	Group faltlines weakened the positive relationship between inter-personal injustice and psychological distress
Choi & Sy 2009	Shaw (04) faultline index (Gender, age, race, tenure)	Task & relationship conflict. Performance Org. Citizenship (GOCB) Measured by questionnaires	62 work groups comp. USA	Different faultlines have different effects. Both task and relationship conflict had negative relation to performance. Task conflict increased GOCB. Relationship conflict decreased GOCB.
Bezrukova et al. 2009	Fau index (Social category and information-based faultlines)	Performance Team discretionary awards Perceived team perform. (quantitative & qualitative)	76 work groups Fortune 500 comp. USA	Different faultlines have different effects Social category (SC) - negative relation Information-based (IBF) - no relation Team identification moderate IBF
Pearsall et al. 2008	Women ratio (Gender faultline)	Performance (Team creativity) Measured by questionnaires	80 teams University students USA	Negative relation between team creativity and activated gender faultlines
Barkema & Shvyrkov 2007	Tenure and education diversity of TMT	International expansions	2159 expansions of 25 Dutch firms	Negative effects of strong faultlines on expansions requirering TMT comunication, expecially when low TMT overlap tenure
Rico et al. 2007	Educational background diversity	Performance (Score on decision task) Social integration (Questionnaires)	52 teams University students Spain	Weak-faultline teams performed better and reported higher levels of social integration. Team task autonomy moderated the effect
Molleman 2005	Fau index (Gender, age, working personality, abilities)	Cohesion & relational conflict. Measured by questionnaires	99 work groups University students Netherlands	Negative relation on team functioning moderated negatively by team autonomy
Thatcher et al. 2003	Fau index (Gender, age, race, nationality, degree, and work experience)	Task, relational & process conflict, performance & moral, measured by scores & questionnaires	79 work groups University students USA	Curvilinear (U-shaped) relation to process and relationship conflict. No link to task conflict. Curvilinear (inverted U) relation to morale and performance

Source: Prepared by the author

3.9. MODERATING FACTORS UPON FAULTLINES AND ITS DISRUPTIVE EFFECTS ON THE ELABORATION PROCESSES OF TASK-RELEVANT INFORMATION

Various factors have been proposed to moderate the negative effects of social categorization and faultlines upon the elaboration processes of task-relevant information, and two main lines of argumentation stand out as the most frequent used moderators decreasing these negative effects; time and board members attitudes.

One of the moderating factors related to time is the overlap board tenure. Over time, as members get to know each other well, perceived social categories may eventually become blurred (Chatman and Flynn, 2001; Harrison et al., 1998; Pelled et al., 1999). Hence, self-categorization and intergroup biases abate over time as differences in knowledge, views and preferences may be reduced, (Katz, 1982). In their study of TMTs, Barkema and Shvyrkov (2007) explored the formation of subgroups, and how the negative effects of faultlines decreased as TMT members interacted over the years.

Harrison et al., (1998, 2002) advanced in the idea that these negative effects change over time as groups gain experience working together. Higher overlap tenure may lead group members to find out that stereotypes and initial impressions fade away as they get to know each other better, and thus attenuating the effects of social categorization processes (Pettigrew, 1998).

The idea behind this moderating effect is that the overlap tenure helps group members to enhance cooperation and cohesion (Buyl, Boone, Hendriks and Matthyssens, 2011; Carroll and Harrison, 1998).

Another moderator related to time, is chair-board shared experience. The idea behind this moderating variable is similar to that of overlap board tenure, however, it focuses specifically on the overlap tenure of the chair with the rest of the members of the board, and emphasizes the role of the chair as an integrator of the board. Buyl et al., (2011), in their study of CEO-TMT shared experience, found that there were two main reasons why this overlap helped the team in its performance. First, previous studies on elaboration processing have demonstrated that shared team experience allows the team

members to “develop a shared conceptualization of who knows what” inside the team (Brandon and Hollingshead, 2004: 633), and therefore facilitate the assignment of functions and tasks, according to the expertise needed to effectively perform these responsibilities (Hollingshead, 2000). It is therefore believed that a chair, who has this common experience with his/her board members, will have a better understanding of the resources that each subgroup has, which again allows for a more effective management of their tasks.

Related to the discussion of gender diversity on boards, this argument is particularly interesting, as faultlines are argued to have negative effects on boards, basically due to the social categorization processes and the intergroup bias; in this case male bias against women directors, and a chair with a better understanding of each director´s contribution, will thus allow him/her to be above such bias based on gender.

Secondly, previous research on TMT´s argues that social categorization costs can be reduced when directors have been working together over some time (Harrison et al., 2002; Balkundi and Harrison, 2006). Implicitly it assumes that overlap team tenure allows subgroups to resolve conflicts and work better together, and thereby improve their performance. Buyl et al., (2011) found, in the context of TMTs, that the shared experience between the CEO and the other directors, facilitated the bridging of the gaps within the team, resolved self-categorization inclinations, and enhanced interpersonal communication and cohesion. Thus, chairs with shared experience with the board members is therefore believed to be better prepared to reduce the negative effects of social-categorization, intergroup bias and board faultlines. This was demonstrated in a recent study in the context of TMTs by Georgakakis and Ruigrok (2014), who found that CEO-TMT shared team experience positively moderated the negative relationship between faultlines and firm performance. These findings are particularly interesting when discussing gender diversity on boards, as above commented, intergroup bias against women directors constitute the principal hinder for women´s participation, contribution and influence on the board. A chair that reduces these negative effects of intergroup bias on the board, will therefore enhance the diversity contribution of women to the positive elaboration processes of task relevant information on the board.

Related to board members attitudes, pro-diversity beliefs shared among directors is another important moderator of negative faultline effects. Individual beliefs or characteristics such as openness to experience (Homan et al., 2008), and pro-diversity beliefs (Homan et al., 2007; van Dick, van Knippenberg, Haegele, Guillaume and Brodbeck, 2008) has recently been included as moderators in qualitative studies of faultlines. Diversity beliefs can be defined as beliefs about the value of diversity to work-group functioning (van Knippenberg and Haslam, 2003). Several authors have found that people differ in their beliefs and attitudes toward diversity (Meyer and Schermuly, 2012), and that organizational climates and cultures may differ in how they value diversity (Ely and Thomas, 2001). A recent study on diversity climate found that a supportive diversity climate reduces the negative consequences associated with relationship-related faultlines (Chung, Liao, Jackson, Subramony, Colakoglu and Jiang, 2015).

Contingent on such beliefs, diversity may affect the extent to which one’s own board is perceived as being a good board, where "good" may refer to (expectations of) task performance as well as to other aspects of board functioning. Based on these findings, pro-diversity beliefs may lead board members to respond more favorably to women directors and may thus increase the likelihood that the board benefit from their diversity by inviting new information and perspectives from all board members and, thereby, stimulate performance (van Knippenberg et al., 2004a)

Super-ordinate identity is another moderator which fit the category of board member´s attitudes, as it examines group-level propositions such as super-ordinate identities and goals (Bezrukova et al., 2009; Homan et al., 2008; Jehn and Bezrukova, 2010), social information exchange (Jehn and Rupert, 2008), and cognitive integration (Cronin et al., 2011). This is also related to the moderator of shared objectives proposed by van Knippenberg et al., (2011). The existence of a super-ordinate identity or shared overall objectives imply that all board members identify with an overall board identity and mission, and that they are able to set aside in-group differences in order to work together towards these common objectives. Studies have found that greater informational diversity (Homan et al., 2007) and overlapping team tenure (Barkema and Shvyrkov, 2007) help develop super-ordinate identity and thereby may mitigate the negative effects of gender based faultlines on group performance.

Certain leadership characteristics and behavior are other moderators of the negative faultline effects upon the board´s performance. In recent studies a number of leadership-based moderators have been proposed; team leader behavior (Gratton et al., 2007), transformational leadership (Kunze and Bruch, 2010), leadership role structure (Gratton et al., 2007), and CEO diverse career experience (Georgakakis and Ruigrok, 2014). Kunze and Bruch (2010) show that transformational leadership mitigates the negative effects of faultlines. Suggesting a more contingent leadership style to mitigating the negative effects of demographic-based faultlines, Gratton et al., (2007) recommended that leaders use task orientation during the early stages of group formation and relationship orientation in the longer term.

One of the key success factors of diversity management is the real commitment of the senior executives of the organization (Rynes and Rosen, 1995). Nielsen and Huse (2010a) found a negative association between male chairperson and women’s ableness to contribute to the elaboration processes of the board, thus suggesting that the chair´s gender may play an important role for the integration and the participation of all board members in the elaboration-decision-making processes.

Context variables can also moderate the negative effects of faultlines upon performance. The context of the board and the context that surrounds the board, may affect the extent to which a faultline influences outcomes. Board size, evenness of subgroup size, and number of subgroup are important for the study of faultlines. Strong faultlines require homogeneity of subgroup (Lau and Murnighan, 1998). When the overall group is very large, it is unlikely that subgroup will be homogeneous across multiple attributes (Hart and van Vugt, 2006). Thatcher and Patel (2011) found that group size had an inverted-U effect on faultline strength, confirming that large groups are unlikely to have strong faultlines.

Another characteristic that will influence faultline strength and distance is the extent to which a faultline creates subgroups of even size. Subgroups with an uneven number of members could have an imbalance in relative distribution of power, resources, and abilities (Lau and Murnighan, 1998). Shaw (2004) and Trezzini (2008) argued that it is important to investigate the number of subgroup that exist within the overall group, as

higher numbers of subgroup are likely to lead to weaker faultlines (Lau and Murnighan, 1998).

The context variable of the country in which a firm is embedded can also constitute an important contextual variable. Many factors vary substantially from country to country; from the general economy affecting firm performance, to legislation regulating board composition for listed companies, to the national culture with respect to women and equality between gender. Masculinity, defined earlier as the degree a society reinforces traditional masculine work-role models of male achievement, control, and power (Hofstede, 1980, 2001; Hofstede and McCrae, 2004), as well as the degree of male social dominance vary upon culture, and are indicatives for a high degree of gender differentiation in the society. These beliefs form part of cultural patterns of thinking (Hofstede, 2001).

CHAPTER FOUR

RESEARCH MODEL AND HYPOTHESES

4.1. INTRODUCTION

This chapter present the model that will be used in the study, and the hypotheses established for this dissertation.

4.2. RESEARCH MODEL

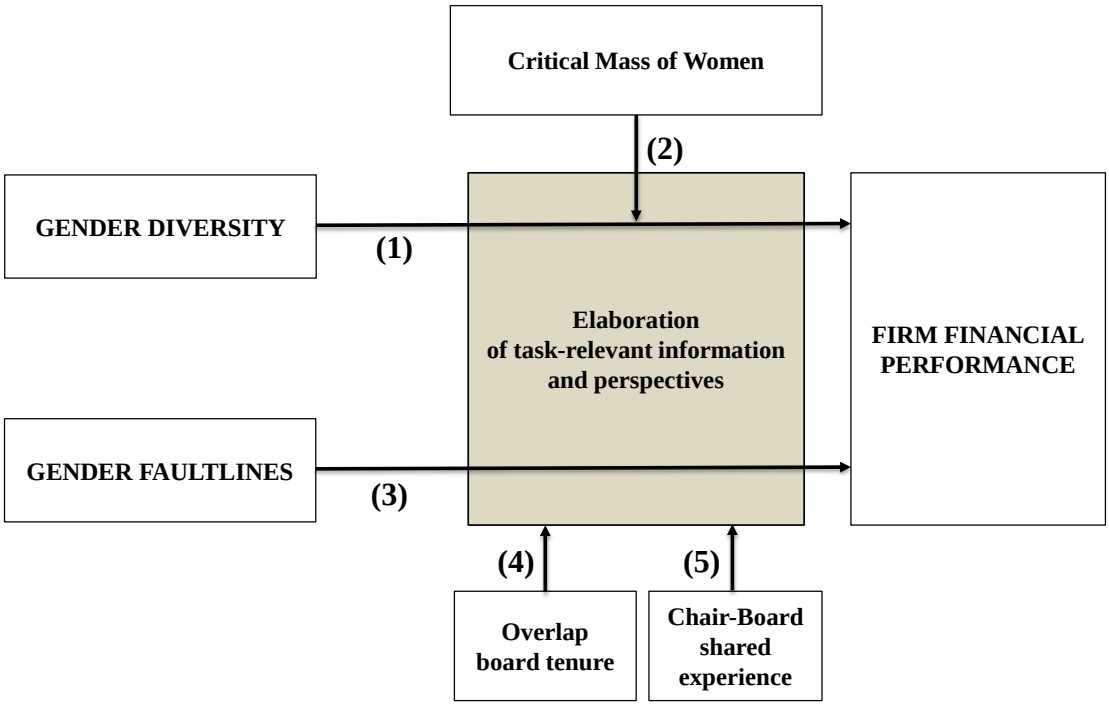
Based on the Categorization-Elaboration Model (CEM) of van Knippenberg et al., (2004a) and the information/decision-making perspective of diversity, the principal proposition of this study is that gender diversity on corporate boards contribute positively to firms financial performance, due to women´s distinct task-relevant information, behavior and skills for the elaboration/decision-making processes, contributing to improved effective performance of the board´s processes, and improved firm financial performance.

This positive contribution of women directors will be further accentuated in a positive way by having a critical mass of women directors on the board.

However, due to social categorization dynamics and intergroup bias, faultlines can form gender subgroups on the board, disrupting the positive exchange of information and constructive debate, thereby reducing the positive effects of the gender diversity on the board, and consequently affect firm financial performance in a negative way.

Overlapping board members' tenure and chair-board shared experience will reduce the negative effects of the social categorization and intergroup bias, and therefore reduce the negative effects of gender faultlines upon firm financial performance.

Figure 4.1. Research model based upon CEM.



Source: Prepared by the author.

4.3. HYPOTHESES FOR THE STUDY

(1) The contribution of women directors and firm financial performance

The "value-in-diversity hypothesis" proposes that diversity is beneficial for organizations, and that diversity ultimately will improve organizational performance (Cox et al., 1991). The principal foundation for this argument is that by pooling various cognitive resources into the group, the variety of task-relevant knowledge, skills and perspectives available for constructive debate, elaboration and decision-making will increase the group performance (Horwitz, 2005).

According to the Categorization-Elaboration model used in our study, the positive effects of diverse board members upon firm performance lies in the elaboration processes of the board (van Knippenberg et al., 2004a). Building on the conceptualization of groups as information processors (Hinsz et al., 1997), elaboration is defined as the individual-level processing of information and perspectives, the exchange and the feeding back the results of this individual-level processing into the group, and the discussion and integration of its implications. It is in this elaboration

process engendered by board diversity that diverse boards have the possibility to outperform more homogeneous boards.

Taking into account that gender is associated not only with social differences, but also with informational differences, (Cox et al., 1991; Tsui and O'Reilly, 1989), having both women and men directors participating actively in the elaboration processes, will enrich the processes through the generation of a wider range of perspectives and information (Hillman et al., 2007), and enhance constructive debate and exchange of ideas.

Women on boards are found to ask more questions than men (Huse and Solberg, 2006), they ask the questions more freely (Bilimoria and Wheeler, 2000), and they add diverse ways of thinking into a traditionally male-dominated board (Bilimoria, 2000). As they are not part of the "old-boys network", they are less subject to groupthink, and add an independent voice to decision-making processes (Brennan and McCafferty, 1997). As a result of all of this, women are more likely to question the conventional wisdom and speak up when concerned, or in doubt about an issue or a particular managerial decision (Bilimoria and Huse, 1997; Huse and Solberg, 2006).

In an empirical study of corporate boards, Pearce and Zahra (1991) found that boards with a higher representation of women had more debates and disagreements. Gender diverse boards versus all male boards experience different discussion patterns and increased debate (Huse, 2007) as women provoke lively board-room discussions (Letendre, 2004). Their different beliefs, values and ways to express and communicate their opinions in the board-room lead to in-depth and profound discussions, and help address simultaneously different aspects of the issues at hand.

Women directors with different values are in this way more likely to consider counter-arguments regarding the decisions to be made, and they are more likely to question the conventional wisdom and to speak up when concerned, or in doubt about an issue or a particular managerial decision. They also seem to be more prepared than their male colleagues to push the ''tough issues'' in board discussions (Bilimoria and Huse, 1997; Huse and Solberg, 2006).

Gender diversity has also been found to facilitate creativity within groups (Hoffman and Maier, 1961; Nemeth, 1986), and as boards are engaged in non-routine problem solving, involving brainstorming and creativity, the questioning of the *status quo* is beneficial for strategic decisions. As women board members bring different expertise, perspectives, resources and viewpoints they will very likely produce unique information sets, which again lead to enhanced innovation and creativity (Watson et al., 1993; Michel and Hambrick, 1992; Wiersema and Bantel, 1992).

The board of directors is the most influential actor determining strategy direction and decision-making of the organization (Finkelstein and Hambrick, 1996). In this way, women are particularly valued as board members for their ability to provide strategic input and generate more productive discourse (Bilimoria, 2000). They bring new ideas and strategic change, contribute to long-term competitive advantage (Burgess and Tharenou, 2002), and their participation on the board is positively related to innovation and problem solving (Welbourne et al., 2007). Women are furthermore better prepared for board discussions than men (Huse, 2007), leading to better understanding and higher quality decisions (Amason, 1996).

It is in this line that we propose that women´s distinct contribution to the earlier described service and strategy functions of the board, in providing top management with advice, counsel and strategic direction, will enhance firm performance, as the company will better benefit from the board members´ human capital and the enhanced board discussion on strategic issues, that can bring forward different perspectives and points of view, contributing to more ideas and new opportunities for the firm (Johnson et al., 1996; Zona and Zattoni, 2007; Zahra and Pearce, 1989; Pearce and Zahra, 1991). Having women on boards will also enhance the board´s resource function, as women directors provide the firm with distinct and important resources such as information and expertise, relations, networks and links to the external environment and to important stakeholders (Hillman et al., 2000; Pfeffer, 1972; Pfeffer and Salancik, 1978).

H1: Gender diversity on corporate boards is positively related to firm performance.

(2) Critical mass of women directors and firm financial performance

The fundamental proposal of the critical mass theory is that as boards are becoming more gender balanced, their potential to benefit from gender diversity is increasing. Critical mass researchers have been trying to determine whether there is a critical number of women on corporate boards that would mark a substantial difference with respect to their positive influence on board processes and performance.

Konrad et al., (2008) came up with a proposal suggesting that critical mass is reached when there is "at least three women" on the board. Their results revealed different dynamics when there were one, two, or three women on the board. When there were two women on the board, an impact was demonstrated on the male colleagues, who were less likely to dismiss comments made by a woman, and in the boardroom, where the culture was perceived to be warmer and more open to wider discussions. The real change however occurred when there were three or more women on the board, "normalizing" women´s participation, and increasing the likelihood that women's voices and ideas were heard in the boardroom, and thereby changing the boardroom dynamics substantially. In this way women´s contribution to the service and strategy function of the board, is enhanced with a higher women ratio on the board.

In a study of corporate women in Norway, Elstad and Ladegard (2012) propose that having two or more woman on the board represent an increased perceived influence among the women. Joecks et al., (2013) in their study of German listed companies found that if a "critical mass" of women on boards is needed in order for female representation to positively affect firm performance, this was reached with tilted boards, defined as boards with above 20% women participation.

Post et al., (2011) found that having three women on the board seemed to be a critical threshold. Having "at least three women directors" makes boards more heterogeneous, allowing majority-minority interactions and processes to take place, thereby enabling the overall board to take high-quality decisions.

Pressure for uniformity is an impediment to good problem solving (Hoffman and Maier, 1961). Minority views have proved to stimulate consideration of the non-obvious; novel

solutions (Nemeth and Wachtler, 1983), use more varied strategies, and think in more original ways (Nemeth and Kwan, 1985). Therefore, the number of women board directors is important when evaluating their potential contribution to the overall board performance; while one female board member may make a positive contribution, companies with two, three or more women on the board are likely to benefit more from female contributions, thus the hypotheses is:

H2: Critical mass of women directors on corporate boards moderate positively the relation between women on boards and firm financial performance

(3) Gender faultlines on corporate boards and firm financial performance

The extent to which differences between group members engender social categorization resulting in faultlines is contingent on three factors as earlier explained; normative fit, comparative fit and cognitive accessibility of the categorization. High comparative fit, high normative fit, and cognitive accessibility yields subgroups with high intragroup similarity and high intergroup differences, forming subgroups with strong faultlines (Homan et al., 2008; Homan et al., 2007; van Knippenberg et al., 2011). The attribute of gender fulfills all three factors, and is, due to its faultline clarity and salience, considered to be one of the most common trigger for faultline division and subgroup formation (Thatcher and Patel, 2012). One can therefore expect that if there are two or more women on the board, a gender faultlines may emerge forming two gender subgroups.

When subgroups form on the basis of faultlines, negative processes are likely to arise as the two sides become wary of one another (Li and Hambrick, 2005). Because of the categorization processes combined with intergroup biases, subgroups are likely to experience distrust, frustration, discomfort, hostility, and anxiety (Choi and Sy, 2010; Homan et al., 2007; Pearsall et al., 2008; Pickett and Brewer, 2001; Lipponen et al., 2003; Polzer et al., 2006), resulting in increased relational conflict, reduced group cohesion and increased process losses, all leading to decreased board performance (Li and Hambrick, 2005). Board performance is related to the performance of the organization as a whole (Carpenter et al., 2004; Hambrick and Mason, 1984), and it is in this way that faultlines are argued to affect overall firm financial performance.

Intergroup biases has proved to be a factor disrupting group communication and cohesion. Intergroup biases lead board members to perceive their "in-group members" as more valid sources of information than the "out-group members". Likewise they place a higher degree of trust in their "in-group members" than in their "out-group members" (Brewer, 1979; Turner et al., 1987). As a consequence of this, information and arguments from the "in-group members" are more likely to be considered and valued than the information and the arguments coming from the "out-group members" (van Knippenberg, 1999; Clark and Maass, 1988). Two important intergroup bias in the board context are (1) the belief that women are less competent than men (assumed by both men and women in male dominated contexts) (Carli, 1999), and the fact that board selectors assume that women lack adequate human capital for board positions (Burke, 2000).

The elaboration and decision-making processes of the board are the primary processes underlying the positive effects of diversity. In order for these processes to contribute positively to firm performance, it is necessary that boards assure an effective sharing of ideas, opinions and perspectives from diverse others, oriented towards the integration of different contributions and constructive debate, with the final objective of reaching better decisions. It is here that the elaboration/decision-making processes can be disrupted by intergroup bias and faultlines inhibiting such sharing of ideas, integration and constructive debate.

Faultlines are operationalized by an index measuring the comparative fit though the correlation of the different diversity attributes across the board members, and yield a measurement of the extent to which the categorization yields subgroups with high intragroup similarity and high intergroup differences (Thatcher et al., 2003).

The idea of this study is to analyze the two gender subgroups on the board, establishing the degree of alignment of gender with other diversity attributes, such as tenure, education level and education background, and to see how this degree of alignment (faultline strength) affect firm financial performance.

H3: Strong gender-based board faultlines have a negative impact on firm performance

(4) Overlap board tenure and the effect upon faultlines

Based on social categorization research, it can be argued that social categorization processes and intergroup bias on a board lead to subgroupings and low overall board cohesion and high relational conflict (Brewer, 1991). However, intergroup bias and relational conflict may abate over time as differences in knowledge, views, and preferences may be reduced, especially when boards interact over a period of months or years (Katz, 1982; Harrison et al., 1998, 2002).

Board members typically stay on a board for many years (in our sample the average board tenure is 6 years), and it is expected that the time a boards has spent working together serves as an "equalizer" that enable socialization of its members (Finkelstein and Hambrick, 1996). Socialization over time produce convergence as dissimilar members re-categorize themselves into "in-group members" (Pelled et al., 1999; Qin, 2007). Higher overlap board tenure may therefore lead members to find out that stereotypes and initial impressions fade away as they get to know each other better, and thus attenuating the effects of social categorization processes (Pettigrew, 1998), which again diminished the negative effects resulting from strong faultlines (Barkema and Shvyrkov, 2007).

Corroborating with this Michel and Hambrick (1992) argue that "similarity of schemata among team members, developed via long tenures, can be expected to enhance cohesion as managers adopt common repertoires based on theories, beliefs, and attributions arising from past experiences" (1992: 17). Thus, shared tenure on an organization's board can create shared frames of reference and shared experiences (Wiersema and Bantel, 1992) and therefore reduce negative faultline effects and relational conflict.

Overlap board tenure result in board level mutual knowledge of the skills, limitations, and idiosyncratic habits of each board member, enabling the board to function and make decisions effectively as a group (Kor, 2003). Collaborative behavior is a valuable group skill that develops over time and has previously been identified in the literature on work-groups and top management teams (Kor, 2003, 2006). The time directors have spent working together results in positive relationship dynamics within the board, enhancing team cooperation and cohesion (Buyl et al., 2011; Carroll and Harrison,

1998). Longer overlap board tenure facilitates the development of "shared mental models" (Cannon-Bowers, Salas and Converse, 1993) and "mutual knowledge" (Cramton, 2001) about who on the board knows what, and how best to seek and share information for important decisions from and with other board members.

H4: The negative relationship between strong gender-based board faultlines and firm performance is less pronounced when overlapping board members tenure increases.

(5) Chair-board shared experience and the effect upon faultlines

The idea behind the moderating variable of chair-board shared experience is similar to the idea behind the overlap board tenure, and is based upon the same theoretical argumentation.

However, it focuses specifically on the overlap tenure of the chair with the rest of the members of the board, and how this leads to reduced negative effects upon performance; a chairman with common experience with a large part of the board has a better understanding of the knowledge and the information residing in each board member, male and female (Georgakakis and Ruigrok, 2014), allowing for a better allocation of tasks and responsibilities according to the skills and knowledge required for the task, and in this way ensuring a better elaboration process, finally enhancing overall firm performance (Hollingshead, 2000).

Chair-board shared experience facilitates the chairman to "bridge the gaps between board subgroups", resolve social categorizations and intergroup biases, and enhance interpersonal communication and integration among board members (Buyl et al., 2011: 157). Thus, chairmen possessing shared experience with other board members are better equipped to reduce the social categorization processes, and thus reduce the negative effects of faultlines.

H5: The negative relationship between strong gender-based board faultlines and firm performance is less pronounced when chair-board members' shared experience increase.

CHAPTER FIVE

RESEARCH

5.1. RESEARCH DESIGN

The initial research proposal was to advance in the knowledge about gender diversity on corporate boards, in respect to what goes on inside these boards; often referred to as the "black box". Following the suggestion that information about gender related board-room dynamics and how these affect women´s contribution to boards are best obtained through in-depth interviews (Burke and Mattis, 2000), a methodology based on personal interviews seemed to be the most appropriate. However, after having done some initial attempts at contacting Norwegian and Spanish female board members requesting agenda for interviews, we became aware of the difficulties of getting access to these women and their time constraints. Our concern that these difficulties would lead to poor numerical results in terms of number of interviews, and therefore questionable validity of our conclusions, led us to reconsider the research design.

The definite research proposal was to advance in the knowledge about women directors on boards and their relation to firms´ performance, focusing on secondary data on board member´s attributes and firms´ financial performance. Firms´ financial performance is argued to be related directly to the board´s activities (Carpenter et al., 2004; Hambrick and Mason, 1984). This is public information, and therefore readily accessible, and has previously been the focus of interest of many diversity researchers, thus making it possible to do comparative analysis. The Tobin´s Q measurement of firm value was decided as the measure for firms´ performance, and the information needed for its calculation was found on databases (in Spain SABI), the Madrid and the Oslo Stock Exchanges and in the company´s annual reports.

Most data on board composition were obtained from companies´ corporate governance reports, annual reports, corporate websites (Ruigrok et al., 2007), and direct contact with the CFO and/or the Director of Investors Relations of the companies. Where information was missing, business biographies were consulted (Hillman et al., 2002; Wiersema and Bantel, 1992).

The study include all companies with statuary domicile in Norway and Spain, listed permanently during the time period of the three years of our study, 2012, 2013 and 2014, on the Oslo Stock Exchange in Norway, and on the Madrid Stock Exchange

(Mercado continuo) in Spain. The final number of companies included is 184, out of which 95 are Norwegian firms, and 89 are Spanish firms. The total number of board members included is 1528, out of which 658 are members of Norwegian boards, and 870 are members of Spanish boards. The number of women on Norwegian boards is 245, while the number of women on Spanish boards is 114.

The reason for proposing a comparative analysis between these two European countries, Norway and Spain, representing two very different cultures, one from Northern Europe and one from Southern Europe, with radical differences with respect to women´s participation in public life, was that both countries represent a bench-mark in terms of legislation of women participation on boards.

Norway is the country with the highest representation of women directors on their boards in the world. In 2003, Norway passed its controversial quota law, mandating that by 2008, all boards of public limited liability companies should comprise a minimum of 40% of each gender. Spain, following the Norwegian model, was the third European country (after Norway and Finland) to pass a law with the objective of increasing women´s participation in all public and private organizations. The Gender Equality Act (Ley de Igualdad) was approved by the Spanish Parliament in March 2007; however it is a weaker imitation of the Norwegian model. The passing of the law in Spain generated an open debate about gender equality (Minguez-Vera and Martin, 2011).

When the Norwegian government first announced this gender quota law in 2002, the stated objectives were to balance participation of both gender on boards in order to reach a fairer society with higher gender equality, increase the population from which boards recruited their directors, and make a better use of untapped female talent (Grosvold, Brammer and Rayton, 2007). The law was very specific about the numbers, detailing the following representations; on a board of two or three members both gender should be represented; on a board of four or five members there should be at least two representatives of each gender; on a board of six to eight members there should be at least three representatives of each gender; on a board of nine members there should be at least four representatives of each gender; and boards with more than nine members should have 40% of each gender (Ahern and Dittmar, 2012). The law applied to all public limited liability companies except those firms where one gender was less than

20% of the workforce. A further restriction was that the quota should be applied separately to each group of board members, being those employee-elected or shareholder elected; in Norway employees of firms with more than 200 employees have the right to elect one-third of the board. The law, which was implemented with resistance from business leaders, was backed by the threat of non-compliant firms being closed down. At the expiry of the deadline, five years later, virtually all companies listed on the Oslo Stock Exchange had complied with the law, resulting in almost 38% of the board members being women - a quadrupling of the number over this period, going from 6.8% to 38% in 5 years (SSB, 2012). However, some companies, resisting compliance, decided to delist from the Oslo Stock Exchange and/or to change their domicile to another country.

Spain´s Gender Equality Act (Ley de Igualdad) has the objective of achieving a 40% women ratio by 2016, a significant jump from the 5% level which prevailed in Spain at the time of the adoption of the law (2007). It establishes that 40% of all candidates filed on political party ballots must be women, and encourages greater female employment by giving preferential treatment to companies with a higher women ratio when bidding for government contracts. It also recommends Spanish listed companies to reach a 40% female board representation by 2016, an objective that has proved to be too ambitious for the Spanish situation. The Spanish law, in comparison to the Norwegian law that established severe penalties, is largely aspirational, as it recommends, but do not require the fulfilment of the law.

Spanish corporations follow the “comply or explain principle” of the recommendations established by the “Good governance code of listed companies”. In its latest update approved in January 2015 by the CNMV (National Securities Markets Commission), paragraph 14 specify the recommended objective of reaching 30% female representation on corporate boards in Spain by 2020.

5.2 RESEARCH DESCRIPTION

The objective of this research is to analyze whether boards of directors with a diverse composition, specifically with respect to women directors, are able to benefit from diverse task-relevant information and incorporate this into their elaboration and

decision-making processes, improving the overall company performance. The presence of a critical mass of women on the board is suggested to moderate positively this impact on firm performance, improving the performance with a higher women ratio. The existence of gender faultlines, resulting from social categorization and intergroup bias is suggested to negatively impact the firms´ performance, in that performance decrease as faultlines are stronger. The final objective of this study is to advance in our understanding of the dynamics of gender diversity on boards of directors.

The principal proposal in line with the Categorization-Elaboration Model (van Knippenberg et al., 2004a), is that women directors offer unique and different task-relevant information and perspectives, as well skills and competences for enhanced elaboration and decision-making, and in this way contribute to improved firm performance.

Increasing the women ratio on the board will positively influence their contribution and finally the firm´s performance, as it is expected that having more than one women on the board will positively enhance their contribution, and change the perception of "strangeness" of women's board participation, thus making it easier for them to be heard, being taken into account, and influence the board´s decision.

Social categorization, intergroup bias and faultline division is expected to disrupt the effective exchange of ideas and perspectives, as well as influence negatively the internal board processes of elaboration and decision-making, thereby reducing the positive effects of diversity, and contribute to decreased firm performance. These negative effects can be reduced by socialization over time, erasing initial differences and social categorizations, taken into account in this study through the moderators of overlap board tenure and chair-board shared experience.

The conceptual analysis concerns fundamental principles underlying the contribution of diversity, and is aimed to speak to the broad diversity research. The study focuses on attributes that are relevant for board diversity research, as well for general group diversity research. The main attributes included in previous diversity research are gender, age, tenure and ethnicity (van Knippenberg et al., 2011; Thatcher et al., 2003; Tsui et al., 1992). However, informational attributes like education level and education

background have also received much attention from researchers, thus making abundant reference material and previous results available for study (Curseu, Raab and Han, 2012; Virtanen 2012; Hillman et al., 2002; Kaczmarek et al., 2012b; Wiersema and Bantel, 1992; Ruigrok et al., 2007).

In this study the following four diversity attributes were chosen as object of study; gender, tenure, education level and education background.

The decision of including tenure instead of age is due to the fact that these two attributes are often highly correlated, which makes it inconvenient to include both in the same study (i.e. in order to achieve a certain tenure it requires time (age), although low tenure does not necessarily imply low age) (van Knippenberg et al., 2011). Tenure was therefore decided instead of age, as this attributes seemed more relevant for boards (Ruigrok et al., 2007; Tuggle et al., 2010; Kaczmarek et al., 2012b).

The reason for including education level and education background is two-fold; first, these data are typically available in firms´ annual reports, web pages and executive directories and bibliographies. Secondly, as our objective is to study board directors´ diversity contribution to firms´ performance, these job-related, informational diversity attributes seemed particularly relevant.

Ethnicity was left out of the study, as there are virtually no members from ethnic minorities on the boards in Norway and Spain.

5.3. METHODOLOGY

5.3.1. Selection and description of the sample and the national context

The decision was taken to study listed companies, basically due to the fact that most research on board diversity is focused on such samples, and also due to the fact this this facilitate the information collection. Listed companies are subject to certain legislation and good practice norms, requiring publication of financial data and information on board composition in their corporate governance reports.

The starting point was to establish the firms that had been present, on a permanent bases, on the Madrid Stock Exchange (Mercado Continuo) and the Oslo Stock Exchange (Oslo Børs), during the period from the 1st of January 2012 till the 31st of December 2014. In the Spanish case, 112 companies fulfilled this requirement, while in the Norwegian case 165 companies were detected. Only companies with a statuary domicile in Norway and Spain were included in the sample, because there are large differences in diversity between countries, and using companies with a statuary domicile in another country could affect the results (Luckerath-Rovers and van Zanten, 2008). These companies, with statuary domicile outside of Norway and Spain were therefore excluded. In line with previous research (Beverley and Shireenjit, 2009; De Andrés, Azofra and López, 2005; Fernández-Méndez and Arrondo-García, 2007) financial institutions were also excluded because of the special nature and management of these companies.

After these corrections, the final sample was 184 firms, of which 89 were Spanish and 95 Norwegian.

Table 5.1. Establishment of the Norwegian sample.

Description	**Nº**
Number of firms permanently on the Norwegian Stock Exchange during 2012, 2013 and 2014:	165
Number of firms with statuary domiciliation outside of Norway (excluded):	45
Number of financial institutions (excluded)	25
Number of Norwegian firms included in the study:	95

Source: Prepared by the author

Table 5.2. Establishment of the Spanish sample.

Description	**Nº**
Number of firms permanently on the Spanish Stock Exchange during 2012, 2013 and 2014:	112
Number of firms with statuary domiciliation outside of Spain (excluded):	8
Number of financial institutions (excluded)	15
Number of Spanish firms included in the study:	89

Source: Prepared by the author

Boards in Norway and Spain have similar responsibilities. In both countries they are responsible for making sure that the companies are run in a responsible way (monitoring

function), for offering support, guidance and strategic advice and direction to the top management team (service and strategy function), and for offering crucial access to external networks important for the company´s survival (resource provision function). The boards also have the formal responsibility of signing the reported accounts and audit materials (Norsk anbefaling eierstyring og selskapsledelse, 2014: 23–27, and Good governance code of listed companies, CNMV, 2015).

Tables 5.3 and 5.4 list the Norwegian and the Spanish firms included in the study.

Hypothesis 1 and 2 were tested upon the Global sample (184 firms) as well as upon the two subsets, Norway and Spain. Hypothesis 3, 4, and 5, which refers to gender faultlines were tested upon the faultline sample, where only firms with two or more women board directors were included. The reason for excluding the firms with zero or one women director is that gender subgroups cannot form on the basis of just one member (Thatcher et al., 2003, Kaczmarek et al., 2012b). The faultline sample was therefore reduced to 117 firms, out of which 32 were Spanish and 85 were Norwegian firms.

Table 5.3. Norwegian firms listed on the Oslo Stock Exchange (Oslo Børs), 2012-2014.

Norwegian firms listed on the Oslo Stock Exchange (Oslo Børs) 2012-2014	
1 AF Gruppen	49 Nordic Semiconductors
2 Aker	50 Norsk Hydro
3 Aker Solutions	51 Norske Skogindustrier
4 AKVA Group	52 Norway Royal Salmon
5 Atea Group	53 Norwegian Air Shuttle
6 Austevoll Seafood	54 Norwegian Energy Company
7 Belships	55 Norwegian Property
8 Bergen Group	56 Oceanteam Shipping
9 Bionor Pharma	57 Olav Thon Eiendomsselskap
10 Biotec Pharmacon	58 Opera Software
11 Birdstep Technology	59 Orkla
12 Blom	60 Petroleum Geo Services
13 Bonheur	61 Photocure
14 Bouvet group	62 Polaris Media
15 Byggma	63 Protector Forsikring
16 Data Respons	64 PSI Group
17 Det Norske Oljeselskap	65 Q-Free
18 DiaGenic/Nel	66 Rocksource
19 DNO International	67 SalMar
20 DOF	68 Scana Industrier
21 Dolphin Group	69 Schibsted
22 Eidesvik Offshore	70 Sevan Marine
23 Ekornes	71 Siem
24 Electromagnetic Geoservices	72 Skiens Aktiemølle
25 Eltek	73 Solstad Offshore
26 EVRY	74 Solvang
27 Farstad Shipping	75 Statoil
28 Fred. Olsen Energy	76 Storebrand
29 GC Rieber Shipping	77 Telenor
30 Gjensidige	78 Telio Holding
31 Goodtech	79 TGS
32 Grieg Seafood	80 Tide
33 Gyldendal	81 Tomra Systems
34 Hafslund group	82 TTS Group
35 Havila Shipping	83 Veidekke
36 Hexagon Composites	84 Wilh. Wilhelmsen Holding
37 Hurtigruten	85 Wilson
38 I.M. Skaugen	86 Yara International
39 InterOil Exploration and Production	87 Arendals Fossekompani
40 Intex Resources	88 Borgestad
41 Itera	89 Kværner
42 Kitron	90 Reach Subsea
43 Kongsberg A.Holding	91 Selvaag Bolig
44 Kongsberg Group	92 Spectrum
45 Lerøy Seafood Group	93 Storm Real Estate
46 Marine Harvest	94 Wilh. Wilhelmsen
47 Medistim	95 Borregaard
48 Navamedic	

Source: Prepared by the author

Table 5.4. Spanish firms listed on the Madrid Stock Exchange, 2012-2014.

Spanish firms listed on the Madrid Stock Exchange (Mercado Continuo) 2012-2014	
1 Abengoa	46 Iberpapel Gestion
2 Abertis	47 Indra Sistemas
3 Acciona	48 Industria de Diseño Textil
4 Acerinox	49 Inmobiliaria Colonial
5 Acs	50 Inmobiliaria del Sur
6 Adolfo Domínguez	51 International Consolidated Airlines Group
7 Adveo Group Internacional	52 Inypsa
8 Almirall	53 Jazztel
9 Amadeus It Holding	54 Laboratorios Farmacéuticos Rovi
10 Amper	55 Lingotes Especiales
11 Atresmedia	56 Mapfre
12 Azkoyen	57 Mediaset España Comunicación
13 Barón de Ley	58 Meliá Hoteles
14 Biosearch	59 Miquel y Costas
15 Bodegas Riojanas	60 Montebalito
16 Cementos Portland Valderrivas	61 Natra
17 Cie Automotive	62 NH Hotel Group
18 Clínica Baviera	63 Nicolás Correa
19 Codere	64 Obrascon Huarte Lain
20 Compañía vinícola del Norte de España	65 Papeles y Cartones de Europa
21 Construcciones y Auxiliar ferrocarriles	66 Prim
22 Deoleo	67 Promotora de Informaciones
23 Día	68 Prosegur
24 Duro Felguera	69 Quabit Inmobiliaria
25 Ebro Foods	70 Realia Business
26 Elecnor	71 Red Eléctrica Corporación
27 Enagás	72 Renta Corporación Real Estate
28 Ence Energía y Celulosa	73 Repsol
29 Endesa	74 Sacyr
30 Ercros	75 Solaría Energía y Medio Ambiente
31 Faes Farma	76 Sotogrande
32 Ferrovial	77 Técnicas Reunidas
33 Fersa Energías Renovables	78 Technocom Telecomunicaciones y Energía
34 Fluidra	79 Telefónica
35 Fomento de Construcciones y Contratas	80 Testa Inmuebles en Renta
36 Funespaña	81 Tubacex
37 Gamesa Corporación Tecnológica	82 Tubos Reunidos
38 Gas Natural SDG	83 Uralita (Coemac)
39 General de Alquiler de Maquinaria	84 Urbas Grupo Financiero
40 Grifols	85 Vidrala
41 Grupo Catalana Occidente	86 Viscofan
42 Grupo Empresarial San José	87 Vocento
43 Grupo Ezentis	88 Zardoya Otis
44 Grupo Tavex	89 Zeltia
45 Iberdrola	

Source: Prepared by the author

Comparing the Norwegian and the Spanish firms and their boards one can observe certain differences as seen in Table 5.5.

Table 5.5. Information on the total sample of firms and the boards included in the study.

Description of the sample (184 firms)		**Number of observations**	**Norwegian Firms**	**Spanish Firms**
Sample Information				
Number of Firms		184	95	89
Number of Board Members		1528	658	870
Number of Women on Board		359	245	114
Company information				
Firm Size		184	2.792	15.920
Firm Age		184	56	47
Board Size		184	7	10
Industry		184	95	89
	Oil, Gas and Energy	18,48%	26,32%	10,11%
	Construction, Basic Materials, Manufacturing….	25,54%	21,05%	30,34%
	Consumer goods	18,48%	11,58%	25,84%
	Consumer services	15,76%	16,84%	14,60%
	Finance and Real Estate	8,70%	6,32%	11,23%
	Telecommunications and Technology	13,04%	17,89%	7,88%
Gender diversity		184	95	89
Number of Firms (0 WOB)		31	1	30
%		16,83%	1,05%	33,70%
Number of Firms (1 WOB)		36	9	27
%		19,55%	9,47%	30,33%
Number of Firms (2 WOB)		51	33	18
%		27,76%	34,73%	20,23%
Number of Firms (>2 WOB)		66	52	14
%		35,86%	54,75%	15,74%
Uniform Boards (only male BM)		31	1	30
%		16,83%	1,05%	33,70%
Skewed Boards (1% to 20% WOB)		42	6	36
%		22,82%	6,33%	40,45%
Tilted Boards (from 20 to 40% WOB)		81	59	22
%		44,02%	62,11%	24,73%
Balanced Boards (from 40 to 60% WOB)		30	29	1
%		16,31%	30,51%	1,12%
Tenure diversity		1528	658	870
	Low Tenure (0 to 4 years)	41,30%	58,95%	22,47%
	Medium Tenure (from 4 to 8 years)	41,30%	34,73%	48,31%
	High Tenure (more than 8 years)	17,40%	6,32%	29,22%
	Average Tenure	5,63	3,86	6,98
Education Level diversity		1528	658	870
	No information available	7,46%	0,47%	12,76%
	Secondary/Vocational schooling	7,07%	14,39%	1,49%
	University Degree	34,88%	31,17%	37,70%
	Post Graduate/Master	41,75%	47,27%	37,59%
	PhD	8,84%	6,70%	10,46%
Education Background diversity		1528	658	870
	No information available	7,46%	0,47%	12,76%
	Secondary/Vocational schooling	7,07%	14,39%	1,49%
	University Degree in Business and Law	56,15%	52,90%	58,63%
	University Degree in Humanities	2,42%	2,43%	2,31%
	University Degree in Science	25,33%	29,05%	22,54%
	Other University Degrees	1,57%	0,76%	2,18%

Source: Prepared by the author

Table 5.6. Information on the firms and the boards included in the faultline study.

Description of the faultline sample (117 firms)		Number of observations	Norwegian Firms	Spanish Firms
Number of Firms with WOB > 2		117	85	32
Number of Board Members		947	615	332
Number of Women on Board		323	236	87
Tenure diversity	Low Tenure (0 to 4 years)	56,41%	62,35%	40,62%
	Medium Tenure (4 to 8 years)	35,90%	32,91%	43,75%
	High Tenure (More than 8 years)	7,69%	4,74%	15,63%
Education Level diversity	No information available	1,47%	0,32%	3,61%
	Secondary/Vocational schooling	10,56%	14,60%	3,01%
	University Degree	34,44%	30,40%	38,55%
	Post Graduate/Master	45,08%	47,15%	41,26%
	PhD	8,45%	7,53%	13,57%
Education Background diversity	No information available	1,47%	0,32%	3,61%
	Secondary/Vocational schooling	10,56%	14,60%	3,01%
	University Degree in Business and Law	58,08%	52,35%	68,67%
	University Degree in Humanities	3,27%	3,08%	3,61%
	University Degree in Science	25,45%	29,11%	18,67%
	Other University Degrees	1,17%	0,54%	2,43%

Source: Prepared by the author

From the above tables, we can see that Norwegian boards are generally smaller than Spanish boards, averaging 7 board members in the Norwegian sample, and 10 board members in the Spanish sample.

The Spanish firms are much bigger than the Norwegian firms, averaging 15.920 employees in the Spanish sample, versus 2.792 employees in the Norwegian sample.

Rotation of board members is higher in Norway than in Spain, being the average tenure on Norwegian boards 3.86 years, and on Spanish boards 6.98 years.

The participation of women directors constitute another important difference, being women to a lesser degree represented on Spanish boards (Carrasco, Laffarga and Ruiz-Barbadillo, 2011). In our study the average women ratio on Spanish boards is 12.65%, and on Norwegian boards 37.05%.

Another important difference between Norwegian and Spanish boards lies in the origin of their board members. In Norway, executive directors are recommended to stay out of the boardroom. According to the “Guide of best Practices” for companies listed on the

Oslo Stock Exchange, neither the CEO nor any other member of the executive management team should be a member of the board (Norsk anbefaling for eierstyring og selskapsledelse, 2014). However, representatives from the employees are required to form part of the board; they have the right to elect up to one third of the board members, or minimum two members, depending on the size of the organization.

In Norway, in addition to the corporate boards, it is recommended for companies with more than 200 employees, to constitute a corporate assembly. This assembly, whose members are elected at the annual general meeting, represent a broad cross-section of the company´s shareholders and stakeholders. Having an assembly is not mandatory, and an agreement between the firm and the employees/unions can be reached about waiving its existence. In this case the employees are entitled to have one additional board member, over and above the one-third they are entitled to by the Norwegian Public Limited Liability Companies Act (Allmenaksjeloven, section 6-3 and section 6-35).

In Spain boards have a mix of executive directors and external directors. The external board members are typically of three different origins; (1) Independent board members – elected due to their personal and professional profile with no relation to the firm nor to the shareholders, (2) Reference shareholders – external board members with a significant number of shares, or external board members serving as representatives for other mayor shareholders ("dominicales") and (3) Other externals – for example the previous CEO who after retirement is elected to the board; thus no longer being part of the company, however, maintaining a strong link to the organization.

Another characteristic of Spanish boards is duality. This concept refers to the cases where the CEO of the company is at the same time the Chairman of the board. Guides of best board practices recommend duality to be avoided, as the independence of the board is reduced when the firm´s CEO is at the same time the board´s Chair.

Due to these differences in the board compositions of the Norwegian and the Spanish boards, this study does not take into account the origins of the board members, although we fully understand that this is another source of diversity, as well as a ground for faultline formation.

Finally, the above mentioned employee representation on Norwegian boards can explain the higher percentage of members with Secondary/Vocational schooling in the Norwegian sample than in the Spanish sample (14.39% versus 1.49%).

The national context in which the Norwegian and the Spanish boards are embedded.

Boards are embedded in organizations, which again are embedded in countries. Nationality is a super ordinate construct that include both formal and informal factors affecting companies and boards (Nielsen and Nielsen, 2012). In order to facilitate a better understanding of the national context in which Norwegian and Spanish boards are embedded, two such national factors are described below; the national economy and the cultural setting. Although these two factors are not included in the study, a control variable is included coding the country.

With respect to the national economy, the two countries differ greatly in their GDP. Norway, in 2012, had a GDP per-capita of $99,461.55, and was ranked as the second-wealthiest country in the world in terms of monetary value (International Monetary Fund). Spain´s GPD per-capita, in 2012, was $29,288.68 (International Monetary Fund).

The unemployment rate in Norway, in 2012, was 3.22% (International Monetary Fund). The hourly productivity level, as well as the average hourly wages are among the highest in the world. The average monthly earnings for all men in Norway, in 2012, was 5.161 euros, while the corresponding earnings for women was 4.460 euros; 86% of male salaries. Average monthly earnings for senior officials was 7.287 euros, excluding overtime pay (SSB, 2012).

In Spain the unemployment rate in 2012 was 25%, and the hourly productivity rate situated Spain among the three less productive countries in Europe. The average monthly earnings for all men in Spain, in 2012, was 2.149 euros, while the corresponding earnings for women was 1.628 euros; 76% of male salaries. Executives and managers constituted the occupational group with the highest average monthly wage of 4.430 euros, more than twice the average annual wages (INI, 2012).

A country´s national culture, defined as a system of collectively held beliefs and values, is another important context variable when referring to gender diversity and boards. As described earlier cultural patterns of thinking, feeling and acting are acquired in early childhood because at that time a person is most susceptible to learning and assimilation. These patterns are deeply rooted, and once established within a person´s mind, they are unlikely to substantially change through subsequent experiences (Hofstede, 2001).

The institutional environment of the country in which a person has spent the majority of his or her formative year's influence how people deal with others, how they decipher the environment, and how they act. Growing up in a country with a particular configuration of formal and informal institutions will therefore have an impact on individual´s thinking and acting (Nielsen and Nielsen, 2012).

The literature on cross-cultural management has shown that certain aspects of national culture have a pervasive influence on management behavior, and that this can be helpful in understanding issues related to top management teams and board of directors (Hofstede, 2001; House et al., 2004; Wendt, Euwema and van Emmerik, 2009; Brodbeck, Frese, Akerblom, Audia, Bakacsi and Bendova, 2000; Gerstner and Day, 1994; Hofstede, 2001; House et al., 2004).

Gender equality vary from country to country, and this is the reason why national culture is relevant when studying issues related to gender. It plays a major role in managerial perceptions of gender, and is an important antecedent for women´s representation on corporate boards (Carrasco, Francoeur, Labelle, Laffarga and Ruiz-Barbadillo, 2015). Culturally and legally-oriented national institutional systems count for over half of the variation of women´s ratio on corporate boards found in a study across 38 countries (Grosvold and Brammer, 2011).

The degree to which women have achieved positions of power reflects substantial differences between countries. Terjesen et al., ´s study of 43 countries (2009) revealed that countries with a higher representation of women on boards were more likely to have women in senior management.

The Gender Parity Index, measured by the World Economic Forum, is a measure of each country´s gender equity in terms of economic participation, educational attainment, health, survival and political empowerment. This national measure gives an indication of the gender equity per country.

From Hofstede´s national cultural framework (explained in chapter 3) there are two dimensions that particularly seem relevant when relating national culture and gender equality; (1) power distance and (2) masculinity (Hofstede, 1980, 2001).

With respect to these two dimensions, Norway scores low on power distance and very low on masculinity. A low power distance clearly characterizes the Norwegians style; hierarchy for convenience only, emphasis on equal rights, accessibility of superiors, management as facilitators and decentralized power. Norway is the second most feminine society (after Sweden). This means that the "softer" aspects of its culture are valued and encouraged such as leveling with others, dialog, consensus, cooperation and sympathy for the underdog. An effective manager is a supportive one, and decision-making is achieved through involvement (Hofstede and McCrae, 2004).

Looking at the Spanish case, one finds that Spain score relatively high on power distance, pointing to Spain as a hierarchical society. This means that people accept a hierarchical order in which everyone has his/her place, and which needs no further justification. (Hofstede and McCrae, 2004). Spain´s medium score on masculinity points to a relatively masculine culture.

A recent meta-analysis on women's representation on corporate boards in 32 countries used these two dimensions of Hofstede´s cultural framework, and found that countries with a higher power distance and a higher masculinity index reported lower representation of women on boards (Carrasco et al., 2015).

Table 5.7. Comparisons of WOB, gender parity and Hofstede´s index of masculinity and power distance.

Country	Percentage of WOB	Country	Gender parity score	Country	Hofstede´s index of Masculinity	Country	Hofstede´s index of Power distance
Norway	38	Norway	0,8403	Sweeden	5	Denmark	18
Finland	29,8	Finland	0,8286	Norway	8	Norway	31
France	29,7	Sweeden	0,8159	Netherlands	14	Sweeden	31
Sweeden	26,5	Denmark	0,7777	Denmark	16	Finland	33
Netherlands	25,1	Netherlands	0,7659	Finland	26	Germany	35
Denmark	21,9	Germany	0,7629	Spain	42	UK	35
Germany	21,5	UK	0,7433	France	43	Netherlands	38
UK	21	Spain	0,7266	Germany	66	Italy	50
Italy	15	France	0,6984	UK	66	Spain	57
Spain	14,8	Italy	0,6729	Italy	70	France	68

Source: European Commision, Factsheet WOB, 2014
The World Economic Forum´s Global Gender Gap
http://geert-hofstede.com/

Due to these demonstrated differences at the country level; the national economy and the culture, as well as the above reported differences between firms and boards of the two countries, we find it interesting to, apart from the analysis on the Global sample, report the results of the two subsets of the two country samples, and include a comparative analysis.

5.3.2. Data collection

Having defined the scope and the time frame of our study to include the 184 firms permanently present on the Madrid and Oslo Stock Exchanges, during the time period from the 1st of January 2012, till the 31st of December 2014, we proceeded to collect the relevant information on each individual firm, the individual board members as of 31st of December 2012, and the financial performance of each firm for the study period (2012-2014).

Table 5.8. is a summary of the variables included in the study, their means and the sources of information for our data collection.

Table 5.8. Variables, means and sources for the information included in the study.

Variables in the samples	Mean Global	Mean Norway	Mean Spain	Source of information
Dependent variable				
Tobin´s Q 2014	1,44	1,47	1,40	Stock Exchanges, Data base (SABI) and Annual Reports
Independent variables				
Women Ratio	25,25	37,05	12,65	Data base (SABI), Annual Reports, Corporate web sites, Direct
Gender Faultline	0,43	0,43	0,41	Data base (SABI), Annual Reports, Corporate web sites, Direct
Control variables				
Tobin´s Q 2012	1,35	1,43	1,26	Stock Exchanges, Data base (SABI) and Annual Reports
Firm Size	9166	2838	15920	Stock Exchanges, Data base (SABI) and Annual Reports
Firm Age	51,25	55,22	47	Stock Exchanges, Data base (SABI) and Annual Reports
Board Size	8,33	6,97	10	Stock Exchanges, Data base (SABI) and Annual Reports
Industries				Stock Exchanges, Data base (SABI) and Annual Reports
Moderating variables				
Critical Mass 20%				Data base (SABI), Annual Reports, Corporate web sites, Direct
Overlap Board Tenure	3,21	2,58	4,85	Data base (SABI), Annual Reports, Corporate web sites, Direct
Chair-Board Shared Ex.	3,04	2,37	4,80	Data base (SABI), Annual Reports, Corporate web sites, Direct

Source: Prepared by the author

Information on the firms

The general information about the companies; their size, their age and the industry they belong to, was taken from the company´s web pages, their annual reports, and information and classifications on the Madrid and the Oslo Stock Exchange.

Information on the board members

We searched all boards as of 31st of January 2012, identifying the names of each board member. The final sample yielded 1.528 board members; 658 representing directors of Norwegian boards, and 870 representing directors of Spanish boards. The information we include about each board director was his or her gender, tenure, education level and education background (further explained below under “Variables of the study”.

The information on the individual Spanish directors was extracted from the National Securities Market Commission - CNMV - the official body entrusted with safeguarding the transparency of the Spanish Stock Exchange. Listed on this site one find the individual firms´ Annual Corporate Governance Reports. Chapter B in these reports provides information on the composition of the board, indicating the name of each individual board member, his or her position on the board, and the year of their first appointment. The origin of the directors, whether executive or non-executive (and within non-executive directors, whether independent, reference shareholders or other externals) is also reported, although for this study we do not use this information.

Education level and education background is not a required information by the CNMV, and these data proved to be more difficult and time-consuming to obtain. The sources consulted for this fine-grained data collection were corporate web sites, direct contact with the CFO and Investor Relations, and business bibliographies.

The information on the individual Norwegian board members were easier to obtain; typically each firm´s web site had good files on board members, with information on gender, directors' board tenure, and education level and education background. However in some cases when this information was missing, the fine-grained data collection included direct contact with the CFO and Investor Relations, and business bibliographies.

Information on firms´ performance

The data collection included the search for the financial results of the year 2014, thereby letting two years pass in order to measure the impact of the board members´ decisions in year 2012 upon firm´s financial performance. We controlled too for the financial results of 2012.

For the Spanish companies, the data on market capitalization was gathered from Madrid Stock Exchange (www.bolsamadrid.es), while the information on assets and liabilities was taken from the firm´s annual reports and from the "El Sistema de Analysis de Balances Ibéricos" (SABI). This database provides up-to-date economic and financial information on all listed Spanish companies.

For the Norwegian companies the gathering of the financial data proved to be more complicated that in the Spanish case. While the data on market capitalization was provided by the Oslo Stock Exchange, the data on assets and liabilities had to be collected one by one, from the firms´ annual reports of 2012 and 2014. The only public and free source of information on Norwegian listed companies' financial performance is to be found in these reports, published on their web sites, and registered on the Oslo Stock Exchange. No common free-access data base is available in Norway, which made it necessary to create our own data base for this study.

5.4. THE VARIABLES OF THE STUDY

The variables of the study, their means and the sources of information are defined in Table 5.8. above. In this section we include more information about each variable and how each is measured.

5.4.1. Dependent variable

Board composition plays an important role for the firm's reputation among investors, and is therefore argued to have a greater impact on stock-based rather than for accounting-based measures of firm performance (Haslam et al., 2010; Oxelheim and Randøy, 2003).

Based on this, we decided upon the stock-based performance measure of Tobin´s Q as our dependent variable. The Tobin´s Q is considered a forward-looking and holistic performance measure, taking into account both stakeholders´ perceptions of the firm´s value, and accounting data like assets and liabilities. It has been used frequently in similar research, and has been found, in some studies, to be positively related to gender diversity (Dezsö and Ross, 2012; Campbell and Minguez-Vera, 2008; Carter et al., 2003).

For the calculation of Tobin´s Q, we followed Kaplan and Zingales´ work (1997), defining the ratio as the sum of the market value of stock (market capitalization) and the book value of debt, divided by the book value of total assets, (i.e. so that the book value of total assets proxies for their replacement value (Campbell and Minguez-Vera, 2008; Rose, 2007).

$$\frac{\text{Market capitalization + Book value of Debt}}{\text{Book value of Assets}}$$

In this way, the Tobin's Q is a proxy estimate of investor perceptions and confidence as to how efficiently firms make use of their assets for a given accounting period (Gompers, Ishii and Metrick, 2003). If Tobin's Q is greater than one, then the market value of the shareholders and creditors investment is greater than the amortized

historical cost of the assets. Tobin´s Q is a continuous variable, which can take any numerical value based on the calculation formula of Kaplan and Zingales (1997).
We employed a two-year lag between predictors and the performance measure by using the stock data and the accounting data related to 2014 (2012+2), allowing for the time it takes for board composition to influence firm performance

5.4.2. Independent variables

Gender diversity

Gender diversity is measured as the percentage of female board members over the total number of board members - women ratio - , a measure majorly used in previous gender research (Wellalage and Locke, 2013; Ahern and Dittmar, 2012; Bøhren and Strøm, 2010; Adams and Ferreira, 2009; Dezsö and Ross, 2012; Luckerath-Rovers, 2013; Smith et al., 2006; Carter et al., 2003, 2010; Erhardt et al., 2003; Singh et al., 2001; Haslam et al., 2010; Rose, 2007).

Gender diversity is a continuous variable, and its values can be from 0 to 100.

Gender faultline

We establish each board´s gender faultline, using an index that measure the degree of alignment of the directors´ diversity attributes with the gender subgroup. The three diversity attributes selected for this index are tenure, education level and education background, as we believe these diversity attributes are particularly relevant for board work. Thus alongside gender, we measure the alignment of tenure, education level and education background.

Gender is generally considered a social category attribute, while tenure, education level and education background are considered informational diversity attributes. Some faultline researchers have distinguished between faultlines based on social category attributes (e.g., race, gender and age), and informational attributes (e.g., function, education and tenure) (Bezrukova et al., 2009; Molleman, 2005; Zimmermann, 2011). The original research by Lau and Murnighan (1998), which was later followed up by subsequent researchers, show however that it is possible to simultaneously investigate

the alignment of both social and informational category attributes (Bezrukova et al., 2009; Thatcher et al., 2003; Thatcher and Patel, 2012; Rico et al., 2007).

In this work we argue, following van Knippenberg et al., (2004a), that the frontier between social category and informational faultlines is not so clear, as any diversity attribute can at the same time give rise to both informational as well as social differences. Consider for example gender; throughout this study we propose the distinct contribution of women directors on boards, based on their informational contribution of task relevant information and skills.

The empirical approaches to measure faultlines have broadly focused on two aspects; (1) faultline strength and (2) faultline distance. Faultline strength measures the degree of alignment among group members across several attributes (Thatcher et al., 2003), while faultline distance is the extent to which subgroups diverge as a result of accumulated differences between subgroups (Bezrukova et al., 2009). Our study is focused on faultline strength, measuring the degree of alignment across the four selected diversity attributes.

Research has come up with different measures of faultlines as reported in table 5.9.

Table 5.9. Different ways to measure faultlines and their advantages and disadvantages.

Author(s)	Advantages	Disadvantages
Thatcher et. al. (Fau Index)	Widely used measure Consistent and accepted results	Limits number of subgroups to two Results depend on scales of measures
Meyer & Glenz (ASW)	Most extended method when it is necessary to analyze more than two subgroups for each group. Consistent and widely used results	Large group samples required
Shaw et. al. (FLS)	Simultaneously measures inter and intra-subgroup heterogeneity.	Results are biased when distributions are skewed. Less used (and accepted) measure
Trezzini (PMD)	Can measure several attributes of faultlines such as inter-subgroup disparity, number of homogeneous subgroups, and degree of subgroups evenness. Test alignment of attributes	Biased by group size. Does not measure width. Less used measure.

Source: Prepared by the author

Thatcher et al´s Fau Index (2003) calculate the faultline strength (how a group splits into subgroups) assuming the existence of two subgroups, representing in this way the initial idea of Lau and Murnighan (1998) of maximizing the faultline strength when there are two subgroups (Lau and Murnighan, 1998). The index is flexible enough to accommodate both continuous and categorical attributes, and is based upon a clustering approach measuring the percentage variance explained by attribute alignment across the strongest group split. This index is the most frequently applied in the diversity literature (Thatcher and Patel, 2012) and represents a reliable measure of subgroup formation (Meyer and Glenz, 2013). The measure of Meyer and Glenz (2013) particularize subgroup numbers to the most useful number for each group, and could therefore include many subgroups within one board. The measure suggested by Shaw (2004) and Trezzini (2008) do not include any advantage to the previous listed measures, however both have some disadvantages that could affect this study. In the measure suggested by Shaw (2004) the results could be biased if the distribution is skewed, and in the measure suggested by Trezzini (2008), the results are biased by group size, which could affect the study due to the different sizes of the boards.

Taking this into account, and considering the particularity to this study, pretending to measure two "fixed" subgroups, the male and the female subgroup on the board, we consider that the Fau Index (Thatcher et al., 2003) is the most applicable for this study.

The Fau Index formula is expressed as:

$$Fau_g = \left(\frac{\sum_{j=1}^{p} \sum_{k=1}^{2} n_k^g \left(\bar{x}_{\bullet jk} - \bar{x}_{\bullet j\bullet} \right)^2}{\sum_{j=1}^{p} \sum_{k=1}^{2} \sum_{i=1}^{n_k^g} \left(x_{ijk} - \bar{x}_{\bullet j\bullet} \right)^2} \right) \qquad g = 1, 2, \ldots S,$$

A board contain a total of n members who are measured on p characteristics.
A faultline can split this board into two subgroups in a total of $S = 2n–1 – 1$ ways.
x_{ijk} denotes the value of the j^{th} characteristic of the i^{th} member of subgroup k
$x_{\bullet j\bullet}$ denotes the overall group mean of characteristic j
$x_{\bullet jk}$ denotes the mean of characteristic j in subgroup k
n^g_k denotes the number of members of the k^{th} subgroup (k=1, 2) under split g

As in Thatcher et al.,´s study (2003), we only consider board splits in which each subgroup has at least two members (e.g., not allowing subgroups of size one), based on the argument that a subgroups with only one person do not really constitute a group. This is also in accordance with the study of Kaczmarek et al., (2012b) considering only group splits in which the size of each sub-group has at al least two members.

This has a great impact on our study, as the bases for the subgroup division is gender, and hence only boards with two or more women directors could be included in this study. In the Norwegian sample of 95 firms, 85 fulfilled the requirement, while in the Spanish sample, only 32 out of 89 firms fulfilled the requirement, thus reducing the sample available for the faultline study to 117 firms.

For the calculation of faultline strength (Fau Index), we used a software developed by Meyer and Glenz (2013) recommended and facilitated by the authors.

The Fau index is a continuous variable that gives values between zero and one, with larger values indicating stronger faultlines. A value of zero means that there is no alignment between the attributes included in the sample, being the board members totally heterogeneous. A value of one means that the board is split into two homogeneous subgroups with perfect alignment between in-members of each subgroup.

As earlier explained, we pre-established the two gender subgroups, and calculated the faultline strength of the alignment of the other three attributes (tenure, education level and education background) to these two subgroups.

We will now comment on each of the three diversity attributes, which besides gender, make up the alignment measured by our faultline index.

Director´s tenure on the board

The director' tenure refers to the number of years the director has participated on the board, from his or her first year of appointment, to the year of our study (2012). As an example, if a director was appointed in year 2011, the tenure is one (2012-2011). Differences in directors' tenure may give rise to subgroupings as similarity in time of board appointment may facilitate both attraction and interaction (O'Reilly et al., 1989).

Tenure can also be associated with status or authority within a board, giving rise to social categorization and intergroup bias.

Tenure is of a continuous nature, and can take any value from zero and upwards. As this variable is used for the calculation of the faultline index, it becomes necessary to classify tenure values into artificial categorizations, leading to a certain loss of measure validity. However, artificial categorizations, based typically on the standard deviation or the mean tenure of the directors, is quite frequent in the diversity research including tenure as a diversity attribute (Hambrick et al., 1996; Barkema and Shvyrkov, 2007; Tuggle et al., 2010; Bao, Fainshmidt, Nair and Vracheva, 2012). Wiersema and Bantel´s study (1992) used as a cut-off point for low tenure, the mean tenure for the sample minus one standard deviation, classifying tenure into two categories, low and high tenure.

In our study, in order to establish the categorizations of the tenure attribute of the Norwegian and Spanish board members, we calculated the means, the standard deviations (Hambrick et al., 1996) and the percentiles for both countries separately, and over the Global sample.

Table 5.10. Mean, standard deviation and percentiles of board members' tenure in the overall Global sample.

Tenure	**%**	**Global sample**	**Spain**	**Norway**
Total board members		1528	870	658
Mean		5,61	6,93	3,86
Standard deviation		7,09	8,18	4,42
Percentiles	25	1,00	2,00	1,00
	50	4,00	5,00	3,00
	75	7,00	10,00	5,00

Source: Prepared by the author

The following three tenure groups were established:

1 – Low tenure: From 0 to < 4 years

2 – Medium tenure: From 4 to 8 years

3 – High tenure: More than 8 years

Director´s education level and education background

Differences in directors' education level, defined as board members' highest educational achievement, and directors' education background, defined as board members' curriculum of study (Curseu et al., 2012), may give rise to faultlines, as similarity in education may facilitate identification and attraction between members (Lau and Murnigham, 1998; Pelled, 1996)

Directors´ education level

Education level has been coded in many different ways in different studies. Curseu et al., (2012) coded five levels, using "primary school" as the lowest level, and "PhD" as the highest level of academic achievement. Virtanen (2012) in her study of Finnish Board members used five levels; "PhD, Master´s Degrees, Engineering graduate, polytechnic education, Vocational education and other education", thus mixing education level and content. Hillman et al., (2002) coded four categories in their study of board member´s education level, namely; "Some College, Under-graduate degree, Master's degree, and PhD degree". Ruigrok et al., (2007) in their study of board composition of Swiss companies, measured educational level according to four categories; "Less than Bachelor's degree, Less than Master's degree, Less than Doctorate (including Master's and other postgraduate degrees) and PhD degrees". Finally, Kaczmarek et al., (2012b) in their study of board faultlines, defined five categories classified as "School/Vocational., Bachelor, Master, MBA and PhD".

We follow Kaczmarek et al., ´s (2012b) coding of educational levels of board members. However, we include Master and MBA in the same classification of Postgraduate Master Degrees, following the criteria of the Declaration of Bologna (1999) adapting an overall EU system of two educational cycles at the University level, "Undergraduate studies" and "Graduate studies" corresponding to Bachelor and Masters Degrees, and classify;

0 – No information available
1 – School/Vocational
2 – Bachelor (University undergraduate studies)
3 – Postgraduate Masters Degrees
4 – PhD

Directors´ education background

In Ruigrok et al., ´s (2007) study of board directors' education background, four categories were used; business studies, technical studies, law studies and other studies. For our faultline analysis, we follow this coding, but include a category for the disciplines of Humanities, and include Law as part of business and management studies. We categorize as follows:

0 – No information available
1 – School/Vocational
2 – Business and management studies (including administration, management and law)
3 – Humanities
4 – Technical studies (including science and engineering)
5 – Other studies

An important decision with respect to this categorization was taken; when assigning Education background category for board members with Post-graduate, Masters, or PhD degrees, it was done following the criteria of their Undergraduate University degree (e.g. an Engineer with an MBA degree, is recorded in this variable as a 4 corresponding to University degree in Technical studies. His or her MBA degree is reflected and taken into account in the variable Education level as a "3", corresponding to Postgraduate Masters Degrees.

5.4.3. Moderating variables

Critical mass

Most studies on critical mass begin with Kanter´s seminal work of 1977 on women working in a male-dominated Fortune 500 firm, and how the women ratio affects process interaction. In her analysis, Kanter established four categories of gender composition of work-groups: (1) uniform groups where all members were male, (2) skewed groups with a women ratio of 20% or less, (3) tilted groups with a women ratio from 20 to 40%, and (4) balanced groups with a women ratio of 40 to 60%.

We follow Kanter´s (1977) classification in our establishment of the critical mass measure of women directors, fixing the threshold to a specific women ratio on the board (>20%), instead of an exact number of women directors.

Many studies however, fix the critical mass threshold to an exact number of women on the board, following the Asch experiments of 1951 and 1955, proposing that critical mass is reached with the exact number of three people. Konrad et al., (2008) corroborated this by suggested that the critical mass of women directors on boards is reached when there is "at least three women" on the board. Post et al., (2011) also found that three women on the board seemed to be a critical threshold.

Elstad and Ladegard (2012) in their study of 458 women directors on Norwegian corporate boards, with a women ratio ranging from 11 to 100%, found that having two or more woman on the board was a critical limit for increased perceived influence for each woman on the board.

For our study however, we believe that the percentage of women directors on boards is a more relevant measure than a fixed number of women, due to the fact that board sizes vary substantially across the sample, having a minimum of two and a maximum of eighteen members. As an example, consider a board of four members (quite usual in Norway) with two female and two male directors. According to the above proposal of a critical mass threshold of three women, these boards would not fulfill the critical mass criteria, in spite of having a women ratio of 50%.

We propose a critical mass measure based on women ratio, following Kanter´s (1977) categories of group composition, and most recently used in Joecks et al., ´s study of German boards (2013). These authors found that skewed boards performed worse than uniform boards, and that tilted boards performed better than skewed boards, thus confirming Kanter´s proposal of reaching a critical mass with tilted boards.

According to this, four categories of gender composition on boards were defined:

1. Uniform boards - Board with only male board members.
2. Skewed boards – Boards with up to 20% women directors.

3. Tilted boards - Board with >20 and up to 40% women directors.
4. Balanced boards - Board with > 40 and up to 60% women directors.

The moderating variable of critical mass is a dichotomous variable (dummy variable) used to distinguish different treatment groups. We have assigned a 0 value to all the firms that have uniform or skewed boards, indicating a women ratio of 0 to 20%. To the firms with tilted or balanced boards, indicating a women ratio above 20%, the value of 1 was assigned.

Critical mass is considered obtained from tilted boards (from 20%) and upwards.

Overlap board tenure

With this variable we measure the time the board members have been together (overlapped) on the board, as a proxy for their social interaction over a time span. This measure has been used both in board context (Tian, Haleblian and Rajagopalan, 2011), as well as in TMT research (Barkema and Shvyrkov, 2007; Kor, 2006; Carroll and Harrison, 1998; Harris and McMaham, 2008).

Overlap board tenure is calculated by summing up pairwise overlaps in terms of board tenure for all possible pairs on the board, and dividing it by the number of pairs of the board, indicating an average overlap tenure of board members.

Below is an example of how this calculation is done for a board with four members and the following tenures:

Board member 1	5 years tenure
Board member 2	2 years tenure
Board member 3	4 years tenure
Board member 4	4 years tenure

Table 5.11. Board members, tenure, overlap board tenure and total overlap.

Board members	Tenure	Overlap with board member 1	Overlap with board member 2	Overlap with board member 3	Overlap with board member 4	Total Overlap
1	5		2	4	4	10
2	2			2	2	4
3	4				4	4
4	4					
						18
The overlap tenure is:		18/6 = 3				

Source: Prepared by the author

The overlap board tenure is a continuous variable which can take any value from zero and upwards. In our samples the mean Norwegian overlap board tenure reported 2.58 years, while the Spanish overlap board tenure was 4.85 years.

Chair-board shared experience

Chair-board shared experience, is based on the same argument; the positive impact on the board ´s performance of the overlap board tenure, emphasizing the role of the chair as an integrator of the board. This moderator was previous used by Georgakakis and Ruigrok in their study of TMTs (2014).

The chair-board shared experience is calculated in a similar way as the overlap board tenure, summing up the overlapping tenures between the chair and each of the other board members, and finally dividing the sum between the total numbers of pairs generated.

Below is an example of how this calculation is done for a board with four members and the following tenures:

Chair 1	10 year tenure
Board member 2	5 years tenure
Board member 3	2 years tenure
Board member 4	4 years tenure

Table 5.12. Chair, board members, tenure and Chair-board shared experience.

Board members	Tenure	Overlap with board members
Chair	10	
2	5	5
3	2	2
4	4	4
		11
The Chair-Board shared experience is:		11/3 = 3,67

Source: Prepared by the author

The chair-board shared experience is a continuous variable which can take any value from zero and upwards. In our samples the mean Norwegian chair-board shared experience reported 2.37 years, while the Spanish chair-board shared experience was 4.80 years, similar to those of the overlap board tenure.

5.4.4. Control variables

As variables for control, typically used by previous research on corporate governance using financial data as outcomes, variables related to the company, to the board, to the industry and to the context are considered.

Control variables related to the company.

Past firm performance is a common predictor for future performance (Geletkanycz and Boyd, 2011; Tian et al., 2011; Tuggle et al., 2010). Geletkanycz and Boyd (2011) point out that its inclusion as a control variable also helps to mitigate concerns over model misspecification; to the extent that when unobserved factors impact a firm's future performance, prior performance should at least partly capture them. Moreover, poor firm performance may lead the board to take a more active role (Stiles and Taylor, 2001; Westphal and Fredrickson, 2001).

Past firm performance for the accounting year 2012 was measured by the stock-based measure of Tobin's Q. Tobin´s Q is a continuous variable, which can take any numerical value based on the calculation formula of Kaplan and Zingales (1997).

Firm size has been suggested by scholars to be related to the firm´s performance, and has therefore been included as a control factor in previous board research (De Andrés et al., 2005; Gabrielsson and Winlund, 2000; Ruigrok et al., 2006). It is measured by the logarithm of the firm's total number of employees in the study's reference year (He and Huang, 2011; Judge and Zeithaml, 1992). Firm size is a continuous variable that can take any numerical value.

Firm age has also been seen as influencing the level of firm resources, its growth potential and its performance (Beverley and Shireenjit, 2009; Kor and Sundaramurthy, 2009). It is measured as the number of years since the firm's founding until the end of 2012.

Firm age is a continuous variable that can take any numerical value.

Control variables related to the board.

Group size is often used as a control variable in faultline research (Barkema and Shvyrkov, 2007; Bezrukova, Spell and Perry, 2010; Li and Hambrick, 2005), as it seems that when size increases, members' liking for the teams decreases (Klein, Diaz Granados, Salas, Le, Burke, Lyons and Goodwin, 2009) thus, members in large teams seek out similar team members (Hamilton, Puntoni and Tavassoli, 2010), resulting in the creation of subgroups. Large boards could therefore have a higher probability of faultline subgroupings.

Board size is a continuous variable that indicate the number of board members on a board and can take any numerical value from one and upwards.

Control variable related to the industry.

A number of studies suggest that industry is significant in explaining the representation or the under-representation of women on corporate boards (Fryxell and Lerner, 1989; Harrigan, 1981). Some studies present correlations between a particular industry and an increased number of women on the boards, for example retail, finance, media, banking, and health care (Fryxell and Lerner, 1989; Brammer et al., 2007; Hillman et al., 2007). Harrigan (1981) found that women directors were more prevalent in industries that produce women´s products. Burgess and Tharenou (2002) found that women executive

directors were more likely to be employed in higher occupational types, the public sector, and in larger organizations. Brammer et al., (2007) suggested that industry´s proximity to consumers plays a more significant role in board diversity than does industry workforce.

The sample used in this study includes firms from a variety of industries. A control variable is introduced in order to account for any specific industry trends in the results. For the classification of the Spanish and the Norwegian companies the code that was used was the code established for the Spanish stock market and the financial systems operator BME (Bolsas y Mercados Españoles):

1. Oil, Gas and Energy
2. Construction, Manufacturing, Basic materials, and Engineering
3. Consumer Goods
4. Consumer Services
5. Finance and Real Estate (in our study only Real Estate companies)
6. Telecommunications and Technology

For the control variable related to the industries, dummy variables were used to distinguish the different groups. Each time we checked for one industry, that specific industry was assigned the value of 1, while all the others were assigned the value of 0. In that way, six industry variables were tested.

Control variable related to the country.

Finally, as we perform the analysis and report the results for the Global sample, the Norwegian sample and the Spanish sample, the country is a final control variable.

CHAPTER SIX

RESULTS

6.1. INTRODUCTION TO THE STATISTICAL ANALYSIS

In this chapter, we present the empirical results of our investigation of the relationship between board of director diversity and firm performance. We test our hypotheses of a positive effect of women directors on boards on firm financial performance, while controlling for some of the idiosyncratic and unobservable factors that may simultaneously affect a company's performance and make its work environment more or less congenial to women directors. Our analysis is conducted over the Global sample, as well as over each of the two country samples separately (Norway and Spain), and the results are reported correspondingly for these three separate samples.

To test the effect of women on boards upon firm financial performance we measured gender diversity as the percentage of women directors over the total number of board members and the firm´s Tobin´s Q. We tested for positive moderating effects of this relationship by a critical mass of above 20% women on boards. Further, we analyzed the effects of gender faultlines on boards, created on the bases of alignment of the diversity characteristics of gender, tenure, and education level and education background upon firm performance measured by Tobin´s Q, a relationship we predicted negative. Finally we tested for a positive moderation of this negative relationship by overlap board tenure and chair-board shared experience.

In this chapter we first present the description of the variables included in the study, the testing of the principle assumptions for using linear regression, and the correlations for the Global sample and for the two subsets samples. Then we present an analysis on reverse causalty and endogeneity, and finally the regression analysis for the women on board study and the gender faultline study, for the three samples.

6.2. ANALYSIS AND RESULTS

We start our analysis presenting the descriptive statistics of all the variables included in the study.

The below tables, 6.1, 6.2 and 6.3, contains these descriptive statistics for the Global sample, the Norwegian sample and the Spanish sample.

Table 6.1. Descriptive analysis of the variables included in the study (Global sample).

Variables (Global sample)	Min.	Max.	Mean	Standard deviation
Dependent variable				
Tobin´s Q 2014	0,43	8,28	1,44	1,01
Independent variables				
Women Ratio	0	60	25,25	16,33
Gender Faultline	0,18	0,88	0,43	0,13
Control variables				
Tobin´s Q 2012	0,43	7,95	1,35	0,93
Firm Size	6	272598	9216	28745
Firm Age	2	358	51,25	52,42
Board Size	2	18	8,33	2,97
Oil, gas, energy	0	1		
Construction, basic materials, engineering…	0	1		
Goods	0	1		
Services	0	1		
Real Estate	0	1		
Telecom, Technology	0	1		
Moderating variables				
Critical Mass 20%	0	1		
Overlap Board Tenure	0	14,67	3,21	2,67
Chair-Board Shared Experience	0	12,67	3,04	2,33

Source: prepared by the author

Table 6.2. Descriptive analysis of the variables of the study (Norwegian sample).

Variables (Norwegian sample)	Min.	Max.	Mean	Standard deviation
Dependent variable				
Tobin´s Q 2014	,64	8,28	1,47	1,10
Independent variables				
Women Ratio	0	60	37,05	9,62
Gender Faultline	,18	,78	0,43	0,12
Control variables				
Tobin´s Q 2012	,66	5,61	1,43	0,86
Firm Size	6	25667	2868	5152
Firm Age	2	358	55,22	66,39
Board Size	2	11	6,97	2,04
Oil, gas, energy	0	1		
Construction, basic materials, engineering…	0	1		
Goods	0	1		
Services	0	1		
Real Estate	0	1		
Telecom, Technology	0	1		
Moderating variables				
Critical Mass 20%	0	1		
Overlap Board Tenure	0	14,67	2,58	2,17
Chair-Board Shared Experience	0	10,90	2,37	1,66

Source: prepared by the author

Table 6.3. Descriptive analysis of the variables of the study (Spanish sample).

Variables (Spanish sample)	Min.	Max	Mean	Standard deviation
Dependent variable				
Tobin´s Q 2014	0,43	6,00	1,40	0,90
Independent variables				
Women Ratio	0	56	12,65	12,04
Gender Faultline	0,24	0,88	0,41	0,14
Control variables				
Tobin´s Q 2012	0,43	7,95	1,26	1,01
Firm Size	11	272598	15920	39907
Firm Age	3	148	47	31
Board Size	4	18	10	3
Oil, gas, energy	0	1		
Construction, basic materials, engineering…	0	1		
Goods	0	1		
Services	0	1		
Real Estate	0	1		
Telecom, Technology	0	1		
Moderating variables				
Critical Mass 20%	0	1		
Overlap Board Tenure	0	13,00	4,85	3,15
Chair-Board Shared Experience	0,73	12,67	4,80	2,90

Source: prepared by the author

As linear regression is based on assumptions that condition and justify its use, before proceeding with the regression analysis, we check for the following assumptions:

1. That there is a linear and additive relationship between the dependent variable of Tobin´s Q 2014 and the independent variables.
2. That the variables are normally distributed.
3. That the residuals are independent and not auto correlated.
4. That the variance of the residuals is the same across all levels (Homoscedasticy).
5. That there is no or little multicollinearity between the variables.
6. That the data used in the study contribute to the most reliable prediction of the expected relation between the variables.

Our first step will be to check whether the relationship between the dependent variable Tobin´s Q 2014 and the independent variables constitute a linear relationship.

A good way to check for a linear and additive relationship is by a scatter plot, obtaining a visual representation of the residuals, their concentration and their dispersion.

As the regression model is run in sequences (Model 1 to 4), some of the analysis below indicate the results of the corresponding model. Model 1 is the baseline model including all the control variables, Model 2 tests the principal relationship including the control variables and the independent variable, and Model 4 includes the moderation.

Figure 6.1. Scatter plot of the relationship Tobin´s Q 2014 and Women ratio (Global sample).

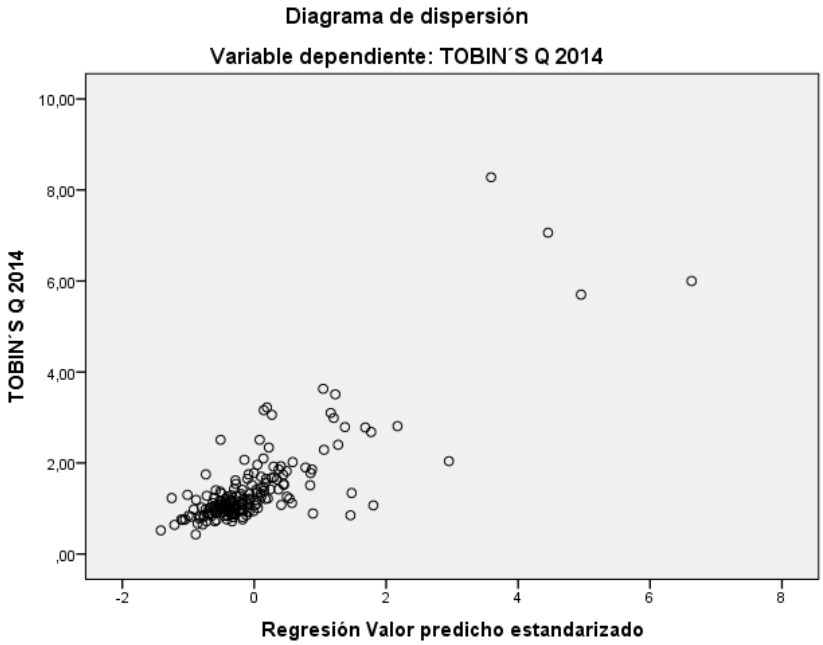


Figure 6.2. Scatter plot of the relationship Tobin´s Q 2014 and Women ratio (Norwegian sample).

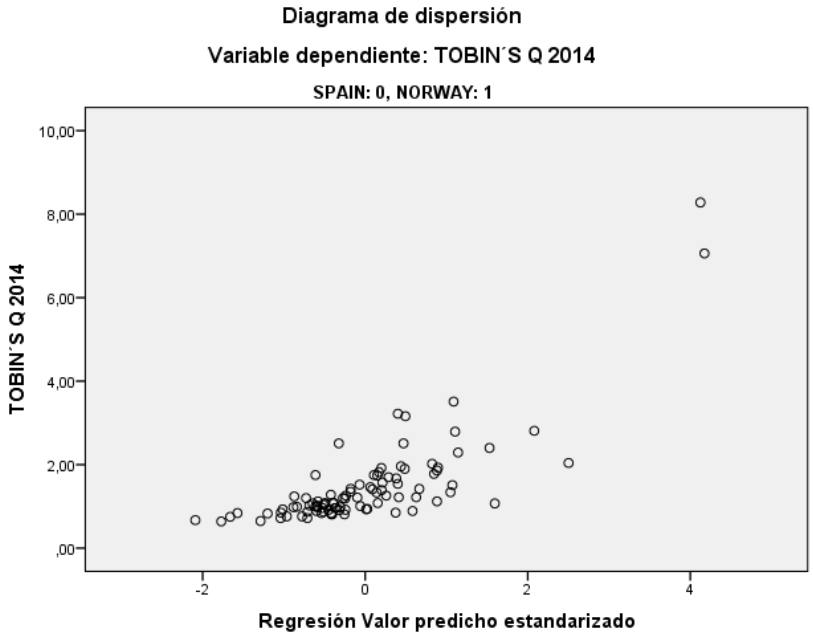


Figure 6.3. Scatter plot of the relationship Tobin´s Q 2014 and Women ratio (Spanish sample).

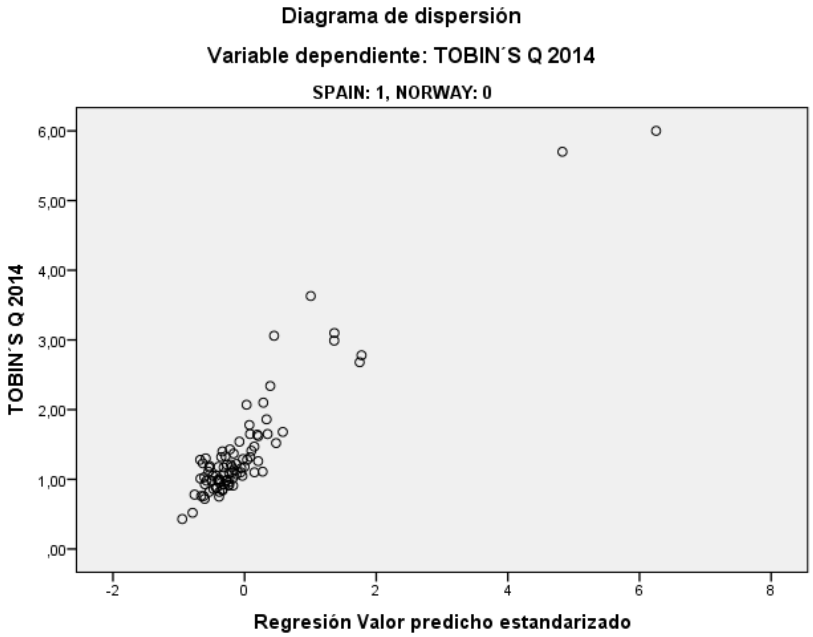


Figure 6.4. Scatter plot of the relationship Tobin´s Q 2014 and Faultline (Global sample).

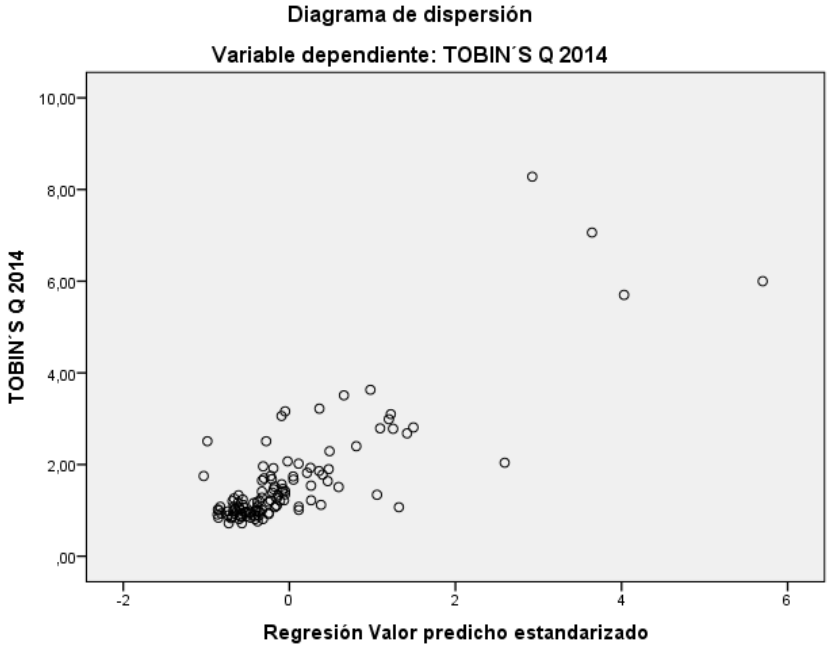


Figure 6.5. Scatter plot of the relationship Tobin´s Q 2014 and Faultline (Norwegian sample).

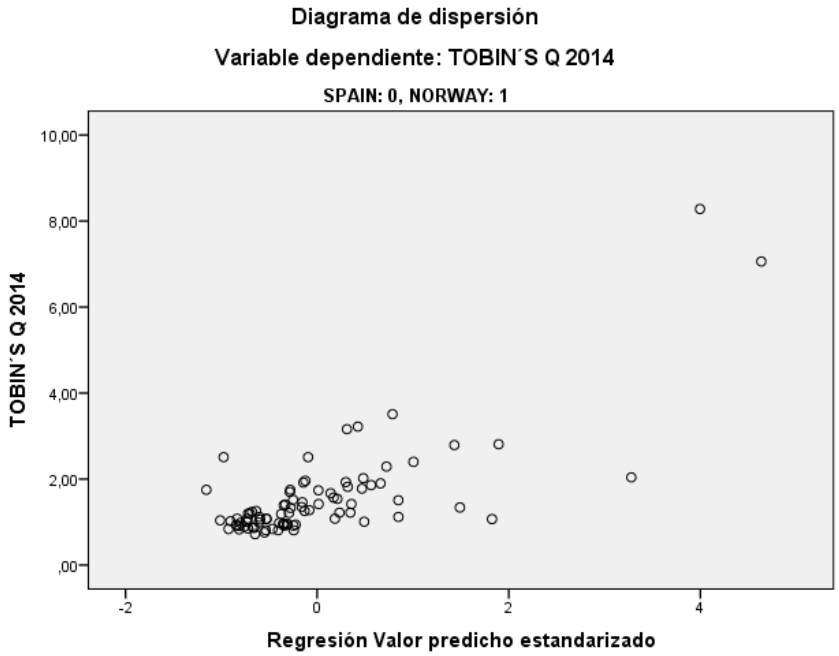
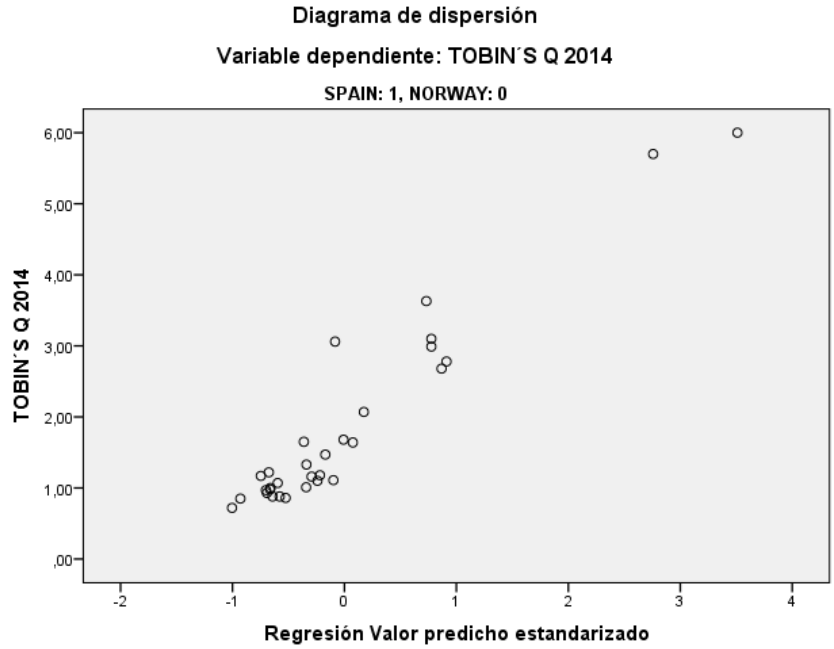


Figure 6.6. Scatter plot of the relationship Tobin´s Q 2014 and Faultline (Spanish sample)



Linear regression is sensitive to outlier effects, and just by visualizing the above scatter plots, four values of the Tobin´s Q 2014 seems to represent outliers that could possibly distort our predictions.

This leads us to an analysis of the variables in order to check for normal distribution. The information obtained from the above descriptive analysis of the variables (tables 6.1, 6.2 and 6.3) can give us a first impression, as it contains information on the minimum, maximum and mean values, as well as the standard deviation of all variables included in the study. By a quick visual check of these data, we find that in all three samples, the maximum value of Tobin´s Q 2014 is higher than the general rule of three times its standard deviation (In the Global and the Norwegian sample the maximum value for Tobin´s Q 2014 was 8.28 versus the standard deviation of 1.10, and in the Spanish sample the maximum Tobin´s Q 2014 was 6.0 versus the standard deviation of 0.90).

In addition to this first check, we run a case analysis available within the SPSS in order to establish the residuals that are further away from its mean than three times its standard deviation.

Table 6.4. Case analysis of the variables

Cases	Standardized Residuals	Tobin´s Q 2014	Predicted value	Residual value
10	5,365	7,06	1,890	5,170
49	6,498	8,28	2,019	6,261
143	4,486	5,70	1,377	4,323
183	4,740	6,00	1,432	4,568

Source: prepared by the author

This analysis confirms the dispersion detected in the scatter plots and in the descriptive analysis of the variables, and points towards four cases (companies) with abnormal high Tobin´s Q. After having verified the original data and the calculation of the Tobin´s Q 2014, in order to check for human errors, we conclude that the data are correct. Whether and how these four values affect in a significant way the overall relationship between Tobin´s Q 2014 and the independent variables, and thereby influencing our results, will be discussed later in this chapter.

Our next step in checking the principal assumptions calls for an analysis of the residuals and their independence. The Durbin-Watson statistics is generally used to detect the presence of auto correlation between residuals. The results of this statistics present a

value from 0 to 4, where the value of 2 indicates independence between residuals. Values below 2 indicate a positive auto correlation and values above 2 indicate a negative auto correlation. Generally one can assume that the residuals are independent when the Durbin-Watson takes a value between 1.5 and 2.5.

Table 6.5. Durbin-Watson statistics of the relationships Tobin´s Q 2014 and Women ratio, and Tobin's 2014 and Faultline (all three samples).

Relationship	**Durbin-Watson**
Woman ratio and Tobin´s Q 2014	
Global sample	1,864
Norwegian sample	1,688
Spanish sample	1,967
Faultline and Tobin´s Q 2014	
Global sample	1,899
Norwegian sample	1,775
Spanish sample	2,397

Source: prepared by the author

As all values of the Durbin-Watson are between 1.5 and 2.5 we can assume that the residuals are independent.

Our next step is to check for the assumption that the variance of the residuals is the same across all levels of the predicted values (homoscedasticity), and therefore independent from the values of the predictions. This assumption can be checked by visual examination of a scatter plot of the standardized residuals as a function of standardized predicted values. The results should not show any pattern or relation between the values. In case of marked patterns (heteroscedasticity) the results usually lead to serious distortion.

Figure 6.7. Scatter plot of the standardized residuals as a function of standardized predicted values in the relationship between Tobin´s Q 2014 and Women ratio (Global sample)

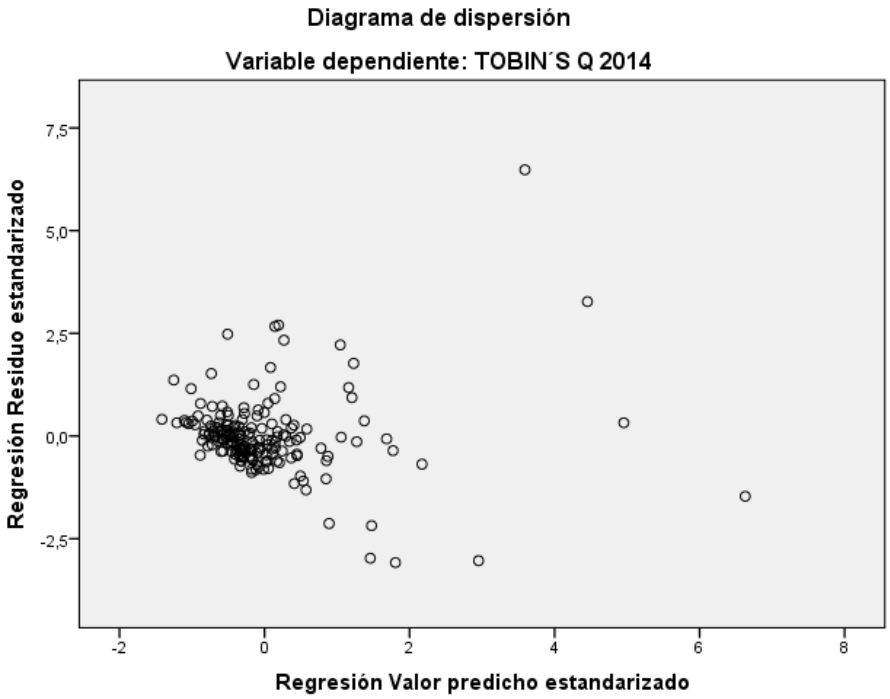
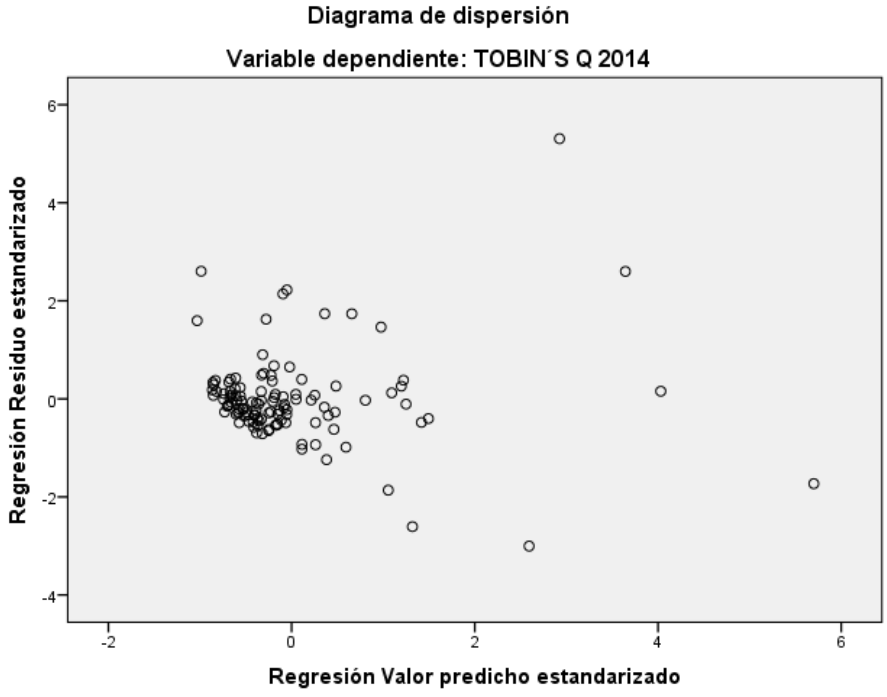


Figure 6.8. Scatter plot of the standardized residuals as a function of standardized predicted values in the relationship between Tobin´s Q 2014 and Faultline (Global sample)



From the scatter plot it seems that the residuals are independent from the predicted values, as the point cloud does not project any significant pattern. One observation however is that as the values of the residuals increase, the dispersion also seems to increase; implying that the lower value residuals are closer to the mean are more concentrated than the higher value residuals.

Our next step is to check for multicollinearity between the variables. Multicollinearity occurs when the independent variables are not independent from each other. Multicollinearity might be tested with four central criteria; tolerance, variance inflation factor (VIF), condition index and correlation matrix.

Tolerance measures the influence of one independent variable on all the other independent variables, and is defined as $T=1-R^2$ When $T<0.1$ there might be multicollinearity in the data and with $T<0.01$ there certainly is.

The VIF is defined as 1/T. If VIF>10 there is an indication that multicollinearity could be present. A VIF>100 confirm that there certainly is multicollinearity in the sample.

The condition index is calculated using a factor analysis on the independent variables. Values of 10-30 indicate a mediocre multicollinearity in the linear regression variables, while values >30 indicate strong multicollinearity.

Table 6.6. Tolerance, VIF and Condition index of the regression analysis of Tobin´s Q 2014 and Women ratio (all three samples).

	Min. Tolerance	**Max. VIF**	**Max. Condition index**
Global sample			
Model 1	0,073	13,651	25,713
Model 2	0,073	13,671	27,886
Norwegian sample			
Model 1	0,078	12,788	24,830
Model 2	0,078	12,803	27,782
Spanish sample			
Model 1	0,046	21,759	30,864
Model 2	0,046	21,798	32,825

Source: prepared by the author

Table 6.7. Tolerance, VIF and Condition index of the regression analysis of Tobin´s Q 2014 and Faultline (all three samples).

	Min. Tolerance	Max. VIF	Max. Condition index
Global sample			
Model 1	0,104	9,581	21,612
Model 2	0,104	9,593	25,523
Norwegian sample			
Model 1	0,088	11,398	24,393
Model 2	0,087	11,504	28,773
Spanish sample			
Model 1	0,082	12,201	21,138
Model 2	0,076	13,141	30,123

Source: prepared by the author

The above values for minimum tolerance and maximum VIF indicate low levels of multicollinearity. The maximum condition index, in Model 2 in the Global and the Norwegian sample, and in Model 1 and 2 in the Spanish sample is close to 30, a limit value indicating mediocre multicollinearity. Taking all values into account we consider that no serious multicollinearity between the independent variables is existing.

Tables 6.8, 6.9 and 6.10 contain the correlations between the variables in the Global sample, the Norwegian sample and the Spanish sample.

Table 6.8. Correlations between the variables (Global sample).

Nº	Variables		1	2	3	4	5	6	6	8	9	10	11	12	13	14
1	TOBIN´S Q 2014	Correlación de Pearson	1													
		Sig. (bilateral)														
2	WOMEN RATIO	Correlación de Pearson	,297**	1												
		Sig. (bilateral)	,000													
3	CRITICAL MASS 20%	Correlación de Pearson	,237**	,865**	1											
		Sig. (bilateral)	,001	,000												
4	FAULTLINE	Correlación de Pearson	,141	,112	,121	1										
		Sig. (bilateral)	,130	,231	,194											
5	TOBIN´S Q 2012	Correlación de Pearson	,791**	,261**	,255**	,100	1									
		Sig. (bilateral)	,000	,000	,001	,284										
6	FIRM SIZE	Correlación de Pearson	,045	-,127	-,088	-,154	,067	1								
		Sig. (bilateral)	,547	,086	,234	,098	,368									
7	FIRM AGE	Correlación de Pearson	-,016	,030	,095	-,067	-,059	,063	1							
		Sig. (bilateral)	,827	,689	,202	,475	,425	,396								
8	BOARD SIZE	Correlación de Pearson	-,037	-,355**	-,292**	-,387**	-,124	,419**	,168*	1						
		Sig. (bilateral)	,616	,000	,000	,000	,094	,000	,023							
9	OIL, GAS, ENERGY	Correlación de Pearson	-,147*	,118	,110	,028	-,037	-,073	-,134	-,143	1					
		Sig. (bilateral)	,048	,110	,137	,761	,624	,327	,070	,053						
10	CONSTRUCTION, ENGENEERING	Correlación de Pearson	-,009	-,082	-,047	-,039	-,046	,083	,062	,162*	-,279**	1				
		Sig. (bilateral)	,900	,270	,529	,675	,534	,264	,405	,028	,000					
11	GOODS	Correlación de Pearson	,078	-,134	-,118	-,106	,030	-,049	,052	-,030	-,227**	-,279**	1			
		Sig. (bilateral)	,295	,070	,111	,255	,683	,505	,482	,690	,002	,000				
12	SERVICES	Correlación de Pearson	-,002	,004	,025	-,107	-,050	,035	,144	,123	-,206**	-,253**	-,206**	1		
		Sig. (bilateral)	,976	,953	,737	,251	,502	,634	,051	,097	,005	,001	,005			
13	REAL ESTATE	Correlación de Pearson	-,115	-,117	-,097	,261**	-,116	-,095	-,021	-,074	-,147*	-,181*	-,147*	-,133	1	
		Sig. (bilateral)	,122	,113	,189	,004	,118	,198	,777	,321	,047	,014	,047	,071		
14	TELECOM, TECHNOLOGY	Correlación de Pearson	,158*	,224**	,125	,029	,187*	,081	-,073	-,031	-,197**	-,137	-,197**	-,179*	-,128	1
		Sig. (bilateral)	,033	,002	,090	,754	,011	,276	,322	,678	,007	,063	,007	,015	,083	

* $p < 0.05$.

** $p < 0.01$.

Source: Prepared by the author

Table 6.9. Correlations between the variables (Norwegian sample).

Nº	Variables		1	2	3	4	5	6	6	8	9	10	11	12	13	14
1	TOBIN´S Q 2014	Correlación de Pearson	1													
		Sig. (bilateral)														
2	WOMEN RATIO	Correlación de Pearson	,517**	1												
		Sig. (bilateral)	,000													
3	CRITICAL MASS 20%	Correlación de Pearson	,190	,599**	1											
		Sig. (bilateral)	,066	,000												
4	FAULTLINE	Correlación de Pearson	,062	,082	.[d]	1										
		Sig. (bilateral)	,574	,456	0,000											
5	TOBIN´S Q 2012	Correlación de Pearson	,703**	,339**	,081	,019	1									
		Sig. (bilateral)	,000	,001	,434	,859										
6	FIRM SIZE	Correlación de Pearson	-,089	-,123	,136	-,128	-,103	1								
		Sig. (bilateral)	,390	,234	,187	,244	,319									
7	FIRM AGE	Correlación de Pearson	-,021	-,078	,125	-,081	-,107	,337**	1							
		Sig. (bilateral)	,838	,452	,228	,460	,301	,001								
8	BOARD SIZE	Correlación de Pearson	-,032	-,062	,253*	-,396**	-,169	,439**	,332**	1						
		Sig. (bilateral)	,761	,550	,013	,000	,101	,000	,001							
9	OIL, GAS, ENERGY	Correlación de Pearson	-,161	-,008	-,106	,051	-,019	-,005	-,192	-,202*	1					
		Sig. (bilateral)	,120	,937	,307	,644	,854	,961	,062	,049						
10	CONSTRUCTION, ENGENEERING	Correlación de Pearson	,066	-,132	,146	-,005	-,092	,201	,092	,275**	-,309**	1				
		Sig. (bilateral)	,524	,201	,159	,961	,378	,050	,373	,007	,002					
11	GOODS	Correlación de Pearson	,005	,087	,102	-,167	-,085	,006	,078	,054	-,216*	-,187	1			
		Sig. (bilateral)	,958	,400	,325	,126	,410	,952	,453	,602	,035	,070				
12	SERVICES	Correlación de Pearson	-,052	-,146	-,088	-,002	-,079	,011	,244*	,076	-,269**	-,232*	-,163	1		
		Sig. (bilateral)	,619	,157	,394	,988	,449	,918	,017	,463	,008	,023	,115			
13	REAL ESTATE	Correlación de Pearson	-,122	-,006	,073	,229*	-,112	-,124	-,022	-,124	-,155	-,134	-,094	-,117	1	
		Sig. (bilateral)	,239	,954	,481	,035	,280	,233	,829	,233	,133	,195	,365	,259		
14	TELECOM, TECHNOLOGY	Correlación de Pearson	,199	,214*	-,060	-,039	,293**	-,070	-,110	-,031	-,299**	-,129	-,181	-,225*	-,130	1
		Sig. (bilateral)	,053	,037	,561	,725	,004	,503	,290	,765	,003	,212	,079	,028	,210	

* $p < 0.05$.

** $p < 0.01$.

Source: Prepared by the author

Table 6.10. Correlations between the variables (Spanish sample).

Nº	Variables		1	2	3	4	5	6	6	8	9	10	11	12	13	14
1	TOBIN´S Q 2014	Correlación de Pearson	1													
		Sig. (bilateral)														
2	WOMEN RATIO	Correlación de Pearson	,316**	1												
		Sig. (bilateral)	,003													
3	CRITICAL MASS 20%	Correlación de Pearson	,428**	,790**	1											
		Sig. (bilateral)	,000	,000												
4	FAULTLINE	Correlación de Pearson	,334	,039	,140	1										
		Sig. (bilateral)	,066	,832	,443											
5	TOBIN´S Q 2012	Correlación de Pearson	,919**	,263*	,388**	,233	1									
		Sig. (bilateral)	,000	,014	,000	,207										
6	FIRM SIZE	Correlación de Pearson	,104	,103	,113	-,177	,135	1								
		Sig. (bilateral)	,338	,336	,290	,332	,214									
7	FIRM AGE	Correlación de Pearson	-,014	,004	-,016	-,082	-,005	,105	1							
		Sig. (bilateral)	,896	,969	,885	,657	,966	,326								
8	BOARD SIZE	Correlación de Pearson	-,020	,038	-,013	-,441*	-,049	,402**	,187	1						
		Sig. (bilateral)	,854	,722	,904	,011	,654	,000	,079							
9	OIL, GAS, ENERGY	Correlación de Pearson	-,152	-,127	-,011	-,112	-,111	-,047	-,036	,095	1					
		Sig. (bilateral)	,160	,235	,920	,543	,308	,663	,736	,375						
10	CONSTRUCTION, ENGENEERING	Correlación de Pearson	-,092	,095	-,021	-,071	,007	,058	,046	,038	-,221*	1				
		Sig. (bilateral)	,398	,377	,843	,699	,950	,587	,672	,727	,037					
11	GOODS	Correlación de Pearson	,169	-,045	-,026	,030	,138	-,121	,076	-,232*	-,198	-,390**	1			
		Sig. (bilateral)	,117	,675	,810	,869	,201	,257	,479	,028	,063	,000				
12	SERVICES	Correlación de Pearson	,065	,078	,070	-,322	-,028	,064	-,077	,223*	-,139	-,273**	-,244*	1		
		Sig. (bilateral)	,551	,465	,515	,072	,799	,554	,472	,035	,195	,010	,021			
13	REAL ESTATE	Correlación de Pearson	-,109	-,126	-,114	,342	-,107	-,140	-,005	-,136	-,119	-,235*	-,210*	-,147	1	
		Sig. (bilateral)	,313	,238	,288	,055	,323	,190	,965	,204	,265	,027	,048	,169		
14	TELECOM, TECHNOLOGY	Correlación de Pearson	,073	,117	,103	,183	,038	,228*	-,020	,136	-,105	-,122	-,186	-,130	-,112	1
		Sig. (bilateral)	,503	,273	,337	,317	,725	,032	,849	,205	,326	,255	,082	,225	,297	

* $p < 0.05$.

** $p < 0.01$.

Source: Prepared by the author

In the correlation matrix for the Global sample (Table 6.8.) it is worth noting the negative correlation between women ratio and board size (-.355**). This finding is contrary to previous research, proposing that as board size gets bigger, the women ratio grows. One possible explanation for this finding is that as women ratio is strongly correlated to the country samples, with Norway having a mean women ratio of 37.05%, and being Norwegian boards smaller than Spanish boards, (7 compared to 10 board members).

This is demonstrated in the two separate country samples (Table 6.9. and Table 6.10.) where no correlation between women ratio and board size is reported, neither in the Norwegian, nor the Spanish sample.

After having tested for the principal assumptions for using a linear regression model, and having come to the conclusion that this model is appropriate for testing our hypotheses, we now turn to the previous results of the case analysis in Table 6.4, detecting four outlier values of our dependent variable Tobin´s Q 2014. What we need to establish is whether the reliability of our predictions are better served with the data included in the Global sample of 184 firms, or on the contrary, our predictions are more reliable with a sample of 180 firm, eliminating the 4 outlier values of Tobin´s Q 2014.

In order to test for this, we run two different regression analyses; one for the 184 firms and one for the 180 firms. This analysis was done for the three relationships below, and for all three samples separately.

(1) Women ratio and Tobin´s Q with moderator critical mass 20%
(2) Faultline and Tobin´s Q with moderator overlap board tenure and
(3) Faultline and Tobin´s Q with moderator chair-board shared experience

Below we present the values of R, R-squared, Adjusted R-squared, Standard error, F-statistics and its p-value for these analyses.

Table 6.11. Comparing Tobin´s Q 2014 and Women ratio analysis for the two samples of 184 and 180 firms.

	R		R-squared		Adjusted R-squared		Standard error		F-statistics		P-value	
Sample	**184**	***180***	**184**	***180***	**184**	***180***	**184**	***180***	**184**	***180***	**184**	***180***
Global sample												
Model 1	0,804	*0,629*	0,646	*0,395*	0,626	*0,359*	0,616	*0,480*	31,232	*10,909*	0,000	*0,000*
Model 2	0,816	*0,659*	0,665	*0,434*	0,644	*0,396*	0,601	*0,466*	30,726	*11,556*	0,000	*0,000*
Norwegian sample												
Model 1	0,733	*0,531*	0,538	*0,282*	0,483	*0,194*	0,790	*0,547*	9,779	*3,219*	0,000	*0,002*
Model 2	0,796	*0,712*	0,634	*0,506*	0,585	*0,439*	0,707	*0,456*	13,054	*7,552*	0,000	*0,000*
Spanish sample												
Model 1	0,931	*0,862*	0,866	*0,743*	0,849	*0,709*	0,350	*0,319*	49,194	*21,422*	0,000	*0,000*
Model 2	0,934	*0,864*	0,872	*0,747*	0,853	*0,709*	0,345	*0,319*	46,488	*19,588*	0,000	*0,000*

Source: prepared by the author

Table 6.12. Comparing Tobin´s Q 2014 and Faultline analysis for the two samples of 184 and 180 firms.

	R		R-squared		Adjusted R-squared		Standard error		F-statistics		P-value	
Sample	**184**	***180***	**184**	***180***	**184**	***180***	**184**	***180***	**184**	***180***	**184**	***180***
Global sample												
Model 1	0,818	*0,646*	0,668	*0,418*	0,637	*0,359*	0,721	*0,541*	20,962	*7,172*	0,000	*0,000*
Model 2	0,823	*0,650*	0,677	*0,425*	0,643	*0,361*	0,715	*0,540*	19,639	*6,649*	0,000	*0,000*
Norwegian sample												
Model 1	0,765	*0,592*	0,586	*0,351*	0,529	*0,259*	0,781	*0,525*	10,312	*3,837*	0,000	*0,000*
Model 2	0,770	*0,600*	0,592	*0,360*	0,530	*0,259*	0,780	*0,525*	9,509	*3,578*	0,000	*0,001*
Spanish sample												
Model 1	0,949	*0,878*	0,901	*0,771*	0,851	*0,643*	0,518	*0,500*	18,173	*6,044*	0,000	*0,001*
Model 2	0,958	*0,893*	0,918	*0,798*	0,870	*0,668*	0,484	*0,482*	19,247	*6,117*	0,000	*0,001*

Source: prepared by the author

Comparing these values, we find that R, R-squared and adjusted R-squared is higher for the sample of the 184 firms than the sample of the 180 firms. However the standard error is also higher for this sample. We therefore believe that our model gain in reliability by eliminating from the regression analysis the 4 firms presenting outlier values of Tobin´s Q 2014, working from then onwards with the sample of 180 firms.

The following figures 6.9, 6.10 and 6.11 include new scatter plots of the relationship Tobin´s Q 2014 and women ratio for the sample of 180 firms.

Figure 6.9. Scatter plot of the relationship Tobin´s Q 2014 and Women ratio for the sample of 180 firms (Global sample).

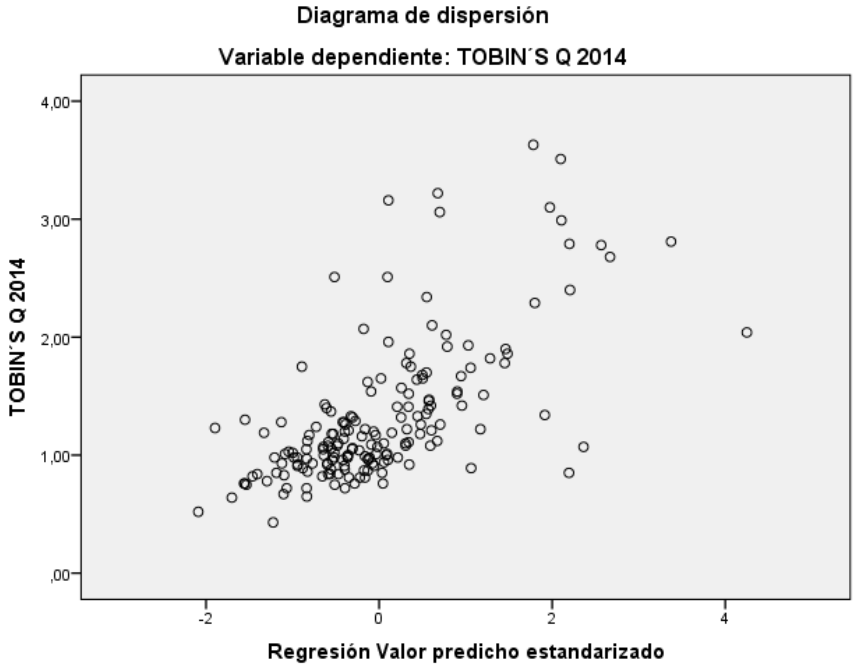


Figure 6.10. Scatter plot of the relationship Tobin´s Q 2014 and Women ratio for the sample of 180 firms (Norwegian sample).

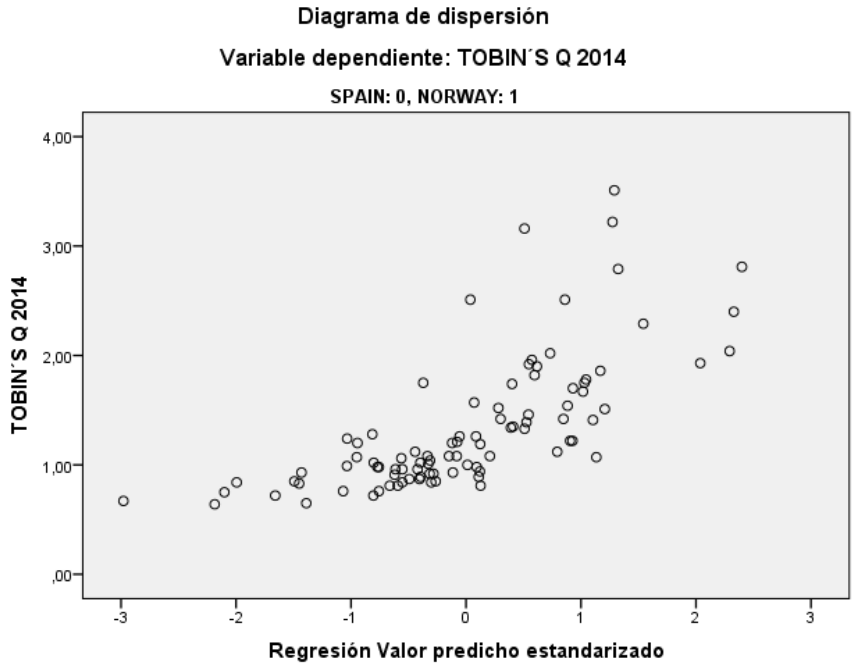
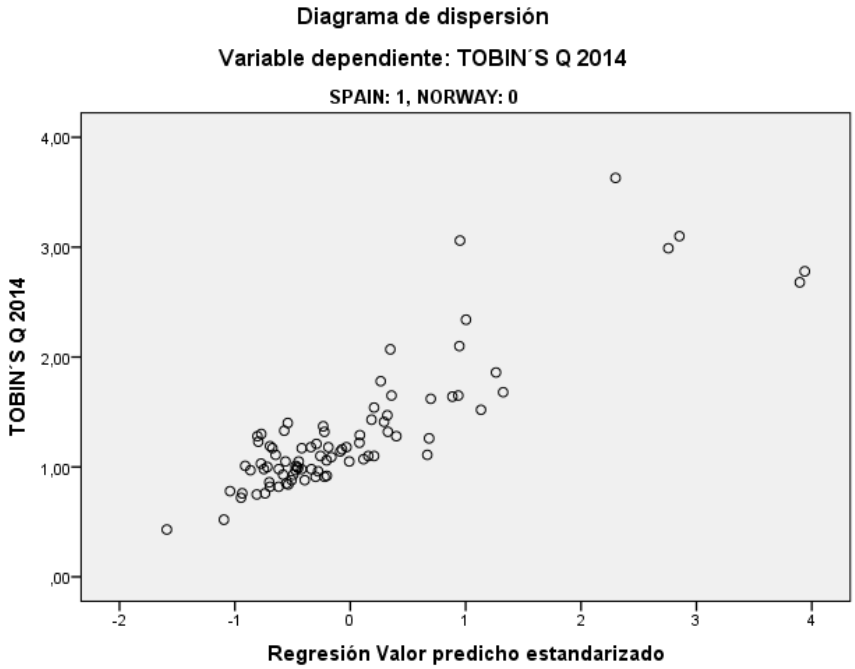


Figure 6.11. Scatter plot of the relationship Tobin´s Q 2014 and Women ratio for the sample of 180 firms (Spanish sample).



The following figures 6.12, 6.13 and 6.14 include new scatter plots of the relationship Tobin´s Q 2014 and Faultline for the sample of 180 firms.

Figure 6.12. Scatter plot of the relationship Tobin´s Q 2014 and Faultline for the sample of 180 firms (Global sample).

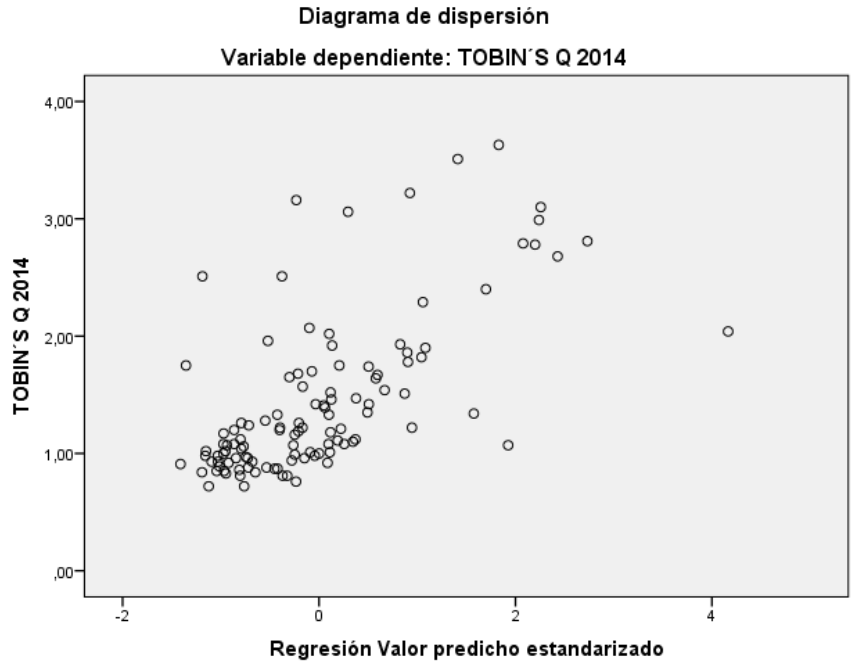


Figure 6.13. Scatter plot of the relationship Tobin´s Q 2014 and Faultline for the sample of 180 firms (Norwegian sample).

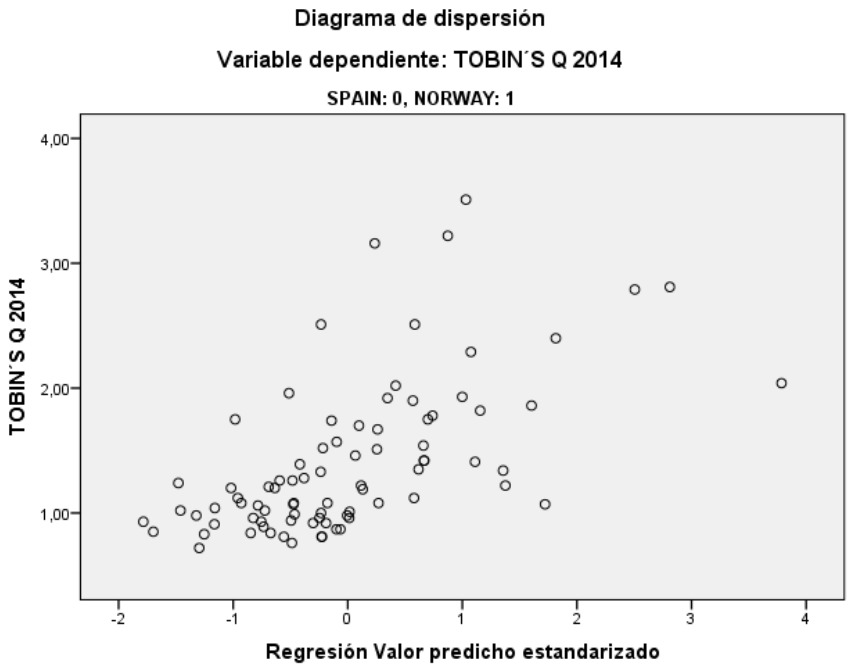
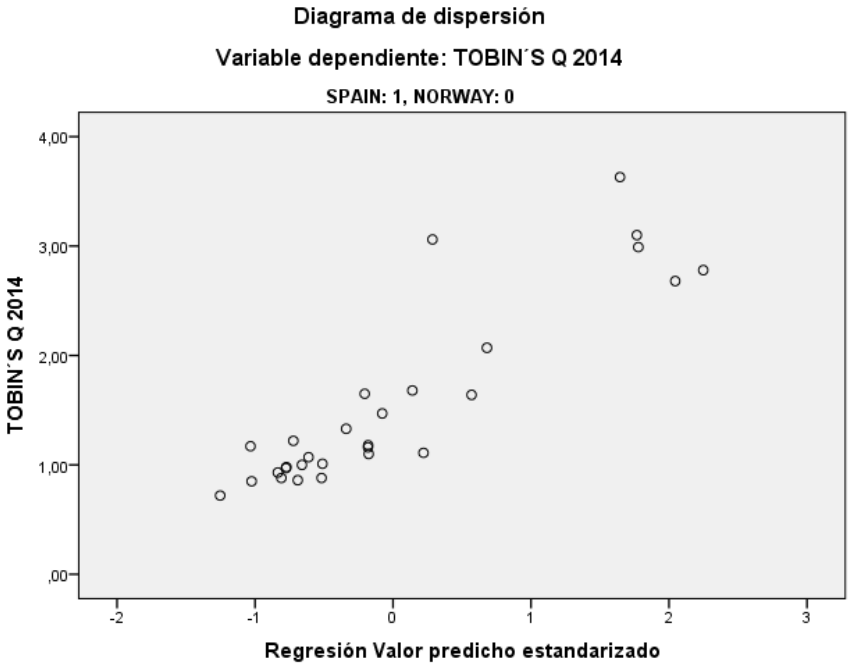


Figure 6.14. Scatter plot of the relationship Tobin´s Q 2014 and Faultline for the sample of 180 firms (Spanish sample).



Based on a visual analysis of the scatter plots for the sample of 180 firms we confirm that the dispersion detected in the scatter plots for the sample of 184 firms is now

reduced; the points on the scatter plot are now more concentrated, contributing to a more representative, and a more reliable sample. With outliers we run the risk of extreme values influencing the overall results, projecting a wrong picture of the relation we study. We therefore believe that our model will gain in reliability and predictability by eliminating from the regression analysis the 4 firms presenting outlier values of Tobin´s Q 2014, working from then onwards with the sample of 180 firms.

Reverse causality and endogeneity

Endogeneity is a major methodological concern for many areas of management research relying on regression analysis to draw causal inference (Addallah, Goergen and O'Sullivan, 2015). One of these areas is Corporate Governance (Wintoki, Linck and Netter, 2012). Thus, although there is extensive research on the relationship between board composition and firm performance, the possible endogenous nature of the boards limit our understanding of many of the basic issues involved (Adams, Hermalin and Weisbach, 2010). As such, literature state that one aspect that complicate the empirical analysis of boards of directors is that many of the variables might be determined endogenously (Hermalin and Weisbach, 2003; Boone, Field, Karpoff, and Raheja, 2007; De Andrés and Vallelado, 2008; Linck, Netter, and Yang, 2008; Johnson et al., 2013; Kwon and Adler, 2014), meaning that the board composition is not exogenously determined but rather is affected by prior decisions and firm characteristics that in turn affect board decisions (Johnson et al., 2013).

The potential for endogeneity between the variables relating to board composition and firm performance could be due to the effect of simultaneity, inverse causality or the omission of important possible variables (Hermalin and Weisbach, 1998, 2003). With regard to the first issue, inverse casualty, it should be remembered that firm performance is, among other aspects, the result of the actions of its governing bodies and this in turn is a factor that could potentially influence the choice of future components of these governing bodies (self-selection). In other words, firms may, depending on an improvement or decline in their results, select the composition of their board. With respect to this issue, our theoretical model proposes that gender diversity improves firm´s financial performance. However, there are also theoretical reasons for believing that improved financial performance can lead to higher gender diversity on boards. The scarcity of women with experience in senior managerial positions (Hillman

et al., 2002) may allow highly solicited women to select more successful firms (Farrell and Hersch, 2005), and more successful firms may be more likely to respond to the pressure to conform to legitimacy norms of gender diversity (Meyer and Rowan, 1977). The literature suggests two procedures for analyzing the effect of simultaneity: the use of exogenous "instrumental" variables or the inclusion of "lag effects" as instruments. In the second option, panel data should be used. However, even when they are available, carefully chosen strictly exogenous instruments remain the "gold standard" for consistently identifying the effect of an explanatory variable on a dependent variable (Wintoki et al., 2012).

The second issue, regarding non-observable heterogeneity that arise from the omission of certain explanatory variables from the model (Kor and Sundaramurthy, 2009; Kim and Lim, 2010), is critical when specifying the model. Obviously, the first step in trying to avoid this situation is to carry out an exhaustive literature review, in order to include all the variables that support the concept that is being studied. For this reason, and following a thorough review of prior studies, our study includes the set of control variables that have been analyzed in the summary above, which take into account board composition, the characteristics of the firm and the sector in which it is operating. In response to this point, we would point out that one source of endogeneity that is often ignored arises from the possibility that current values of governance variables are a function of past firm performance (Wintoki et al., 2012). We have therefore included this variable in our study as a control variable (Geletkanycz and Boyd, 2011). This procedure comes with the understanding that "at a practical level, it is unlikely that any single study is completely free of endogeneity issues and we therefore argue that the initial consideration should be sought in careful theory construction" (Chenhall and Moers, 2007: 192).

Taking into account the preceding paragraph, our research could suffer problems arising from endogeneity because of the inverse causality, that is, if it is the companies with better performance that attract more female directors, instead of the proposed relationship in our research (Ahern and Dittmar, 2012). The possible presence of this situation could create a bias which would make it difficult to interpret the relationship between the dependent and the independent variables. To reject or initially confirm the endogeneity in our data, we analyzed both for the Global sample and for each of the two

subsamples, if our variable women ratio correlated with the error of the initial regression between our dependent variable Tobin´s Q and independent women ratio. The results show that this correlation is only significant in the Norwegian sample (0.431*). Therefore, neither the Global nor the Spanish samples are subject to a correlation between the dependent variable and the error term raised by the endogeneity of data.

Therefore, as described in previous paragraphs, the option that should be implemented in our study is that of including instrumentals variables. Instruments variables are used to explain a variable suspect of being endogenous, and which are exogenous with respect to the main equation. The major challenge with this option is to find valid instruments. A good instrument should correlate with the key independent variable, but not with the main equation dependent variable.

Smith et al., (2006) used this method in their study of the relation between female directors (CEO´s and board directors) and firm value. Their major challenge was to identify a valid instrumental variable. The authors tested various variables related to firm characteristics. Finally they used as an instrument the average length of education of the spouses of the other CEOs in the firm. This method was also used by Ahern and Dittmar (2012) in their study of the impact on firm valuation of quotas of female representation on Norwegian firms after the passing of the law in 2003. The authors used the pre quota variation in female board representation across firms as an instrument to capture exogenous variation in mandated changes in the proportion of female board members over time.

Taking as a reference the contributions of this last research (Ahern and Dittmar, 2012), and in order to correct the possible endogeneity of our data (Stevenson, 2010), we propose that the legal requirement in Norway regarding incorporating women to the corporate board is an exogenous factor with respect to the composition of the board. Following this line of argument, firms incorporate women directors not due to the firm´s better or worse performance, but due to compliance with the law. This fact allows us to consider that the ratio of women directors on the board before the full implementation of the law, constitute a good instrumental variable that helps us explain the ratio of women on the board in the period chosen for our research.

As stated earlier in our study, the Norwegian quota law was passed in 2003, foreseeing its full implementation in 2008. Due to this, we choose to include the women ratio of Norwegian boards in 2008 as an instrumental variable for the corresponding women ratio in 2012 (the year of our studio).

We started out checking the correlation between the instrumental variable and our independent variable. The correlation between women ratio 2008 and women ratio 2012 amounted to 0.705**; as well as the decrease of the correlation between the instrumental variable and the dependent variable. Subsequently, following indications of the literature, we carried out the Hausman test (1978). To do this, we simply regressed the women ratio 2012 variable using the women ratio 2008 in our Model 1. The model exhibited significant explanatory power with an adjusted R-squared of 49.7% (p value <0.000). Therefore, and in the following sections we will include the OLS residuals obtained from the equation of this base model (Model 1) as an additional explicative variable in the rest of the models of the study. If the results report that the residuals (λ) of Model 1 are not significant in any of the models proposed, then we suggest that the results of our model for the Norwegian sample are not affected by endogeneity.

Hypothesis tests

Having checked for the principal assumptions that condition and justify the use of a linear regression model, and having found that (1) there is a certain linear and additive relationship between the dependent variable of Tobin´s Q 2014 and the independent variables, (2) that the variables are sufficiently normally distributed in order not to distort the results, (3) that the residuals are independent, (4) that the variance of the residuals is the same across all levels, and (5) that there is little multicollinearity between the variables, and having included an instrumental variable in order to check for endogeneity in the Norwegian sample, we proceed to apply hierarchical regression analysis to test our hypotheses.

Fifteen different analyses were run as indicated below in Table 6.13.

Table 6.13. Analysis, hypotheses, relations and samples.

Analysis	Hypothesis	Relation	Moderation	Sample
1	1	WR and Tobin´s Q 2014		Global
2	1	WR and Tobin´s Q 2014		Norwegian
3	1	WR and Tobin´s Q 2014		Spanish
4	2	WR and Tobin´s Q 2014	Critical Mass 20%	Global
5	2	WR and Tobin´s Q 2014	Critical Mass 20%	Norwegian
6	2	WR and Tobin´s Q 2014	Critical Mass 20%	Spanish
7	3	Faultline and Tobin´s Q 2014		Global
8	3	Faultline and Tobin´s Q 2014		Norwegian
9	3	Faultline and Tobin´s Q 2014		Spanish
10	4	Faultline and Tobin´s Q 2014	Overlap Board Tenure	Global
11	4	Faultline and Tobin´s Q 2014	Overlap Board Tenure	Norwegian
12	4	Faultline and Tobin´s Q 2014	Overlap Board Tenure	Spanish
13	5	Faultline and Tobin´s Q 2014	Chair-Board Shared Experience	Global
14	5	Faultline and Tobin´s Q 2014	Chair-Board Shared Experience	Norwegian
15	5	Faultline and Tobin´s Q 2014	Chair-Board Shared Experience	Spanish

Source: Prepared by the author

For each analysis a control model and various test models were developed. Model 1 is always the baseline model including all control variables, reporting the results of a fixed effects regression of Tobin's Q 2014 on the control variables included (Tobin´s Q 2012, firm size, firm age, board size and the six industries coded in the sample).

The test models (2, 3 and 4) are compared to the control model to assess the contribution of the independent variables and the moderating variables, following the suggested technique of Cohen and Cohen (1983).

The following three regression analysis presented in Table 6.14, 6.15, and 6.16 (Global sample, Norwegian sample and Spanish sample) are used to test Hypotheses 1:
H1: Gender diversity on Corporate Boards is positively related to firm performance.

Table 6.14. Regression analysis, Hypothesis 1, Relation between Tobin´s Q 2014 and Women ratio (Global sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
1	(Constante)	,841	,339		2,480	,014
	TOBIN´S Q 2012	,569	,067	,551	8,448	,000
	FIRM SIZE	-1,543E-06	,000	-,072	-1,060	,291
	FIRM AGE	,000	,001	,044	,703	,483
	BOARD SIZE	,021	,014	,107	1,534	,127
	OIL, GAS, ENERGY	-,606	,320	-,399	-1,892	,060
	CONSTRUCTION, ENGENEERING	-,461	,305	-,333	-1,511	,133
	GOODS	-,277	,324	-,178	-,853	,395
	SERVICES	-,325	,327	-,201	-,995	,321
	REAL ESTATE	-,529	,336	-,253	-1,574	,117
	TELECOM, TECHNOLOGY	-,264	,290	-,156	-,910	,364
	R-squared	*,395*				
	Adjusted R-squared	*,359*				
	Standard error	*,480*				
	F-statistics	*10,909*	*(p-value=0,000)*			
2	(Constante)	,645	,334		1,931	,055
	TOBIN´S Q 2012	,514	,067	,498	7,641	,000
	FIRM SIZE	-1,497E-06	,000	-,070	-1,059	,291
	FIRM AGE	,000	,001	,016	,268	,789
	BOARD SIZE	,037	,014	,184	2,571	,011
	OIL, GAS, ENERGY	-,691	,312	-,454	-2,215	,028
	CONSTRUCTION, ENGENEERING	-,517	,297	-,373	-1,742	,083
	GOODS	-,291	,315	-,187	-,926	,356
	SERVICES	-,396	,318	-,245	-1,245	,215
	REAL ESTATE	-,541	,326	-,259	-1,660	,099
	TELECOM, TECHNOLOGY	-,369	,283	-,218	-1,301	,195
	WOMEN RATIO	,008	,003	,229	3,361	,001
	R-squared	*,434*				
	Adjusted R-squared	*,396*				
	Standard error	*,466*				
	F-statistics	*11,556*	*(p-value=0,000)*			

Dependent variable: TOBIN´S Q 2014

Source: Prepared by the author

Hypothesis 1 suggests that there is a positive relationship between women ratio and Tobin´s Q 2014. In Model 2, the estimated coefficient of women ratio was statistically significant ($p<0.01$) with a positive sign (beta=0.229). This result support Hypothesis 1 in the Global sample.

Table 6.15. Regression analysis, Hypothesis 1, Relation between Tobin´s Q 2014 and Women ratio (Norwegian sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
1	(Constante)	1,384	,450		3,078	,003
	TOBIN´S Q 2012	,302	,081	,333	3,714	,000
	FIRM SIZE	,000	,000	,000	,005	,996
	FIRM AGE	,001	,001	,121	1,301	,197
	BOARD SIZE	,013	,029	,043	,446	,657
	OIL, GAS, ENERGY	-,719	,396	-,526	-1,814	,073
	CONSTRUCTION, ENGENEERING	-,600	,377	-,399	-1,591	,115
	GOODS	-,403	,416	-,215	-,970	,335
	SERVICES	-,498	,410	-,311	-1,214	,228
	REAL ESTATE	-1,027	,435	-,416	-2,363	,021
	TELECOM, TECHNOLOGY	-,465	,361	-,303	-1,287	,202
	STANDARDIZED RESIDUALS	,280	,053	,458	5,242	,000
	R-squared	*,464*				
	Adjusted R-squared	*,391*				
	Standard error	*,475*				
	F-statistics	*6,370*	*(p-value=0,000)*			
2	(Constante)	,649	,488		1,330	,187
	TOBIN´S Q 2012	,274	,078	,302	3,519	,001
	FIRM SIZE	,000	,000	,004	,046	,963
	FIRM AGE	,001	,001	,110	1,245	,217
	BOARD SIZE	,004	,027	,014	,152	,879
	OIL, GAS, ENERGY	-,792	,377	-,580	-2,100	,039
	CONSTRUCTION, ENGENEERING	-,549	,359	-,365	-1,530	,130
	GOODS	-,531	,397	-,283	-1,336	,185
	SERVICES	-,542	,390	-,338	-1,388	,169
	REAL ESTATE	-1,004	,413	-,407	-2,430	,017
	TELECOM, TECHNOLOGY	-,536	,344	-,349	-1,558	,123
	STANDARDIZED RESIDUALS	,117	,073	,191	1,608	,112
	WOMEN RATIO	,024	,008	,371	3,114	,003
	R-squared	*,522*				
	Adjusted R-squared	*,450*				
	Standard error	*,452*				
	F-statistics	*7,274*	*(p-value=0,000)*			

Dependent variable: TOBIN´S Q 2014

Source: Prepared by the author

Hypothesis 1 suggests that there is a positive relationship between women ratio and Tobin´s Q 2014. In Model 2, the estimated coefficient of women ratio was statistically significant ($p<0.001$) with a positive sign (beta=0.371). The coefficient for the standardized residuals included in the model 1 and 2 reported not significant ($p=0.112$), thus no endogeneity seems to affect the results reported in the Norwegian sample. This result support Hypothesis 1 in the Norwegian sample.

Table 6.16. Regression analysis, Hypothesis 1, Relation between Tobin´s Q 2014 and Women ratio (Spanish sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
1	(Constante)	,152	,376		,404	,687
	TOBIN´S Q 2012	1,116	,088	,818	12,736	,000
	FIRM SIZE	-1,162E-06	,000	-,077	-1,126	,264
	FIRM AGE	,001	,001	,040	,637	,526
	BOARD SIZE	,007	,013	,035	,502	,617
	OIL, GAS, ENERGY	-,285	,377	-,149	-,755	,453
	CONSTRUCTION, ENGENEERING	-,254	,352	-,197	-,723	,472
	GOODS	-,193	,363	-,142	-,532	,596
	SERVICES	-,026	,370	-,016	-,070	,944
	REAL ESTATE	-,188	,372	-,103	-,505	,615
	TELECOM, TECHNOLOGY	-,111	,332	-,055	-,333	,740
	R-squared	*,743*				
	Adjusted R-squared	*,709*				
	Standard error	*,319*				
	F-statistics	*21,422*	*(p-value=0,000)*			
2	(Constante)	,164	,376		,435	,665
	TOBIN´S Q 2012	1,084	,093	,794	11,663	,000
	FIRM SIZE	-1,206E-06	,000	-,080	-1,169	,246
	FIRM AGE	,001	,001	,037	,591	,556
	BOARD SIZE	,007	,013	,038	,538	,592
	OIL, GAS, ENERGY	-,295	,377	-,155	-,783	,436
	CONSTRUCTION, ENGENEERING	-,282	,352	-,219	-,800	,426
	GOODS	-,199	,363	-,146	-,549	,584
	SERVICES	-,050	,371	-,031	-,136	,892
	REAL ESTATE	-,198	,372	-,108	-,531	,597
	TELECOM, TECHNOLOGY	-,131	,333	-,065	-,395	,694
	WOMEN RATIO	,003	,003	,067	1,031	,306
	R-squared	*,747*				
	Adjusted R-squared	*,709*				
	Standard error	*,319*				
	F-statistics	*19,588*	*(p-value=0,000)*			

Dependent variable: TOBIN´S Q 2014

Source: Prepared by the author

Hypothesis 1 suggests that there is a positive relationship between women ratio and Tobin´s Q 2014. In Model 2, the estimated coefficient of women ratio was not statistically significant (p=0.306) with a beta of 0.067. This result does not support Hypothesis 1 in the Spanish sample.

We believe that one reason why the Spanish results did not confirm the positive relation found between women ratio and Tobin´s Q in the Norwegian and the Global sample, might be found in the high percentage (29.90%) of Spanish boards with only one women director; and the possible reduced effects of being a "token" on the board (Kanter, 1977).

The next three regression analysis presented in Table 6.17, 6.18, and 6.19 (Global sample, Norwegian sample and Spanish sample) are used to test Hypotheses 2:

H2: Critical mass of Women Directors on Corporate Boards moderate positively the relation between Women on Boards and Firm Financial Performance

Table 6.17. Regression analysis, Hypothesis 2, Relation between Tobin´s Q 2014 and Women ratio, moderated by Critical mass 20% (Global sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
3	(Constante)	,637	,334		1,905	,059
	TOBIN´S Q 2012	,515	,067	,499	7,653	,000
	FIRM SIZE	-1,506E-06	,000	-,070	-1,065	,288
	FIRM AGE	,000	,001	,024	,388	,698
	BOARD SIZE	,037	,014	,185	2,587	,011
	OIL, GAS, ENERGY	-,700	,312	-,460	-2,242	,026
	CONSTRUCTION, ENGENEERING	-,524	,297	-,378	-1,765	,079
	GOODS	-,306	,315	-,197	-,972	,332
	SERVICES	-,405	,318	-,250	-1,273	,205
	REAL ESTATE	-,550	,326	-,263	-1,686	,094
	TELECOM, TECHNOLOGY	-,390	,284	-,230	-1,371	,172
	WOMEN RATIO	,012	,005	,329	2,597	,010
	CRITICAL MASS 20%	-,139	,147	-,114	-,940	,349
	R-squared	*,437*				
	Adjusted R-squared	*,396*				
	Standard error	*,466*				
	F-statistics	*10,659*	*(p-value=0,000)*			
4	(Constante)	,648	,331		1,957	,052
	TOBIN´S Q 2012	,522	,067	,505	7,815	,000
	FIRM SIZE	-1,475E-06	,000	-,069	-1,054	,294
	FIRM AGE	,000	,001	,019	,308	,759
	BOARD SIZE	,039	,014	,194	2,735	,007
	OIL, GAS, ENERGY	-,650	,310	-,428	-2,098	,037
	CONSTRUCTION, ENGENEERING	-,450	,296	-,325	-1,522	,130
	GOODS	-,243	,313	-,156	-,775	,439
	SERVICES	-,331	,317	-,204	-1,043	,299
	REAL ESTATE	-,491	,324	-,235	-1,514	,132
	TELECOM, TECHNOLOGY	-,360	,282	-,213	-1,275	,204
	WOMEN RATIO	,001	,007	,022	,112	,911
	CRITICAL MASS 20%	-,513	,232	-,423	-2,214	,028
	WOMAN RATIO x CRITICAL MASS 20%	,019	,009	,615	2,080	,039
	R-squared	*0,451*				
	Adjusted R-squared	*0,408*				
	Standard error	*0,461*				
	F-statistics	*10,37*	*(p-value=0,000)*			

Dependent variable: TOBIN´S Q 2014

Source: Prepared by the author

Hypothesis 2 suggests that the positive relationship between women ratio and Tobin´s Q 2014 is moderated positively by critical mass 20%. In Model 4, the estimated coefficient of women ratio x critical mass 20% was statistically significant ($p<0.05$) with a positive sign (beta=0.615). This result support Hypothesis 2 in the Global sample.

Table 6.18. Regression analysis, Hypothesis 2, Relation between Tobin´s Q 2014 and Women ratio, moderated by Critical mass 20% (Norwegian sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
3	(Constante)	,616	,490		1,259	,212
	TOBIN´S Q 2012	,279	,078	,307	3,577	,001
	FIRM SIZE	,000	,000	,012	,134	,894
	FIRM AGE	,001	,001	,114	1,286	,202
	BOARD SIZE	,011	,028	,037	,382	,703
	OIL, GAS, ENERGY	-,809	,378	-,592	-2,142	,035
	CONSTRUCTION, ENGENEERING	-,520	,360	-,346	-1,444	,153
	GOODS	-,538	,397	-,287	-1,354	,179
	SERVICES	-,554	,391	-,345	-1,420	,160
	REAL ESTATE	-,974	,414	-,395	-2,352	,021
	TELECOM, TECHNOLOGY	-,575	,346	-,375	-1,661	,101
	STANDARDIZED RESIDUALS	,103	,074	,169	1,391	,168
	WOMEN RATIO	,030	,010	,467	3,038	,003
	CRITICAL MASS 20%	-,265	,268	-,116	-,988	,326
	R-squared	*,528*				
	Adjusted R-squared	*,450*				
	Standard error	*,452*				
	F-statistics	*6,787*	*(p-value=0,000)*			
4	(Constante)	1,079	,631		1,710	,091
	TOBIN´S Q 2012	,275	,078	,303	3,534	,001
	FIRM SIZE	,000	,000	,014	,149	,882
	FIRM AGE	,001	,001	,124	1,395	,167
	BOARD SIZE	,013	,028	,043	,445	,657
	OIL, GAS, ENERGY	-,818	,377	-,599	-2,170	,033
	CONSTRUCTION, ENGENEERING	-,525	,359	-,349	-1,462	,148
	GOODS	-,565	,397	-,301	-1,422	,159
	SERVICES	-,603	,392	-,375	-1,537	,128
	REAL ESTATE	-,982	,413	-,398	-2,376	,020
	TELECOM, TECHNOLOGY	-,597	,346	-,389	-1,726	,088
	STANDARDIZED RESIDUALS	,093	,075	,152	1,247	,216
	WOMEN RATIO	,003	,026	,043	,108	,914
	CRITICAL MASS 20%	-,850	,572	-,370	-1,487	,141
	WOMAN RATIO x CRITICAL MASS 20%	,031	,027	,630	1,158	,251
	R-squared	*,536*				
	Adjusted R-squared	*,452*				
	Standard error	*,451*				
	F-statistics	*6,425*	*(p-value=0,000)*			

Dependent variable: TOBIN´S Q 2014

Source: Prepared by the author

Hypothesis 2 suggests that the positive relationship between women ratio and Tobin´s Q 2014 is moderated positively by critical mass 20%. In Model 4, the estimated coefficient of women ratio x critical mass 20% was not statistically significant (p=0.251). This result did not support Hypothesis 2 in the Norwegian sample.

Table 6.19. Regression analysis, Hypothesis 2, Relation between Tobin´s Q 2014 and Women ratio, moderated by Critical mass 20% (Spanish sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
3	(Constante)	,150	,380		,395	,694
	TOBIN´S Q 2012	1,079	,094	,791	11,438	,000
	FIRM SIZE	-1,215E-06	,000	-,080	-1,170	,246
	FIRM AGE	,001	,001	,036	,570	,570
	BOARD SIZE	,007	,013	,040	,560	,577
	OIL, GAS, ENERGY	-,280	,381	-,147	-,735	,465
	CONSTRUCTION, ENGENEERING	-,256	,361	-,199	-,711	,480
	GOODS	-,174	,371	-,128	-,469	,641
	SERVICES	-,029	,377	-,018	-,077	,939
	REAL ESTATE	-,174	,379	-,096	-,460	,647
	TELECOM, TECHNOLOGY	-,112	,338	-,056	-,333	,740
	WOMEN RATIO	,002	,005	,036	,355	,723
	CRITICAL MASS 20%	,057	,145	,040	,392	,696
	R-squared	*,747*				
	Adjusted R-squared	*,705*				
	Standard error	*,321*				
	F-statistics	*17,760*	*(p-value=0,000)*			
4	(Constante)	,109	,387		,281	,780
	TOBIN´S Q 2012	1,091	,097	,800	11,292	,000
	FIRM SIZE	-1,205E-06	,000	-,080	-1,156	,252
	FIRM AGE	,001	,001	,027	,420	,676
	BOARD SIZE	,008	,013	,043	,599	,551
	OIL, GAS, ENERGY	-,241	,387	-,126	-,621	,537
	CONSTRUCTION, ENGENEERING	-,215	,368	-,167	-,584	,561
	GOODS	-,122	,381	-,090	-,321	,749
	SERVICES	,023	,387	,014	,060	,952
	REAL ESTATE	-,125	,388	-,068	-,321	,749
	TELECOM, TECHNOLOGY	-,079	,343	-,039	-,230	,819
	WOMEN RATIO	,000	,006	-,007	-,061	,952
	CRITICAL MASS 20%	-,129	,323	-,090	-,401	,690
	WOMAN RATIO x CRITICAL MASS 20%	,008	,012	,169	,647	,520
	R-squared	*,749*				
	Adjusted R-squared	*,703*				
	Standard error	*,322*				
	F-statistics	*16,294*	*(p-value=0,000)*			

Dependent variable: TOBIN´S Q 2014

Source: Prepared by the author

Hypothesis 2 suggests that the positive relationship between women ratio and Tobin´s Q 2014 is moderated positively by critical mass 20%. In Model 4, the estimated

coefficient of women ratio x critical mass 20% was not statistically significant (p=0.520). This result did not support Hypothesis 2 in the Spanish sample.

According to the results in the Global sample a critical mass of 20% women on boards moderate positively the relationship between women ratio and Tobin´s Q 2014. Although this proved statistically significant in the Global sample, it was not confirmed in the two separate country samples.

In order understand the reason for these not-coinciding results, we suggest a closer look at the percentages of women directors on the boards of each of the three samples.

In the Global sample of 180 firms the mean women ratio is 25.09%, and the mean board size is 8.35 members, thus being 2.1 women per board an average representation in terms of numbers. In the Norwegian sample of 93 firms, with a mean women ratio of 36.7%, and a mean board size of 6.98 members, 2.56 women per board is the average female representation in terms of numbers. In the Spanish sample, with a mean women ratio of 12.5%, and a mean board size of 9.83 members, 1.27 women on boards is the average female representation in terms of numbers.

As the mean women ratio in the Norwegian sample is far above the critical mass ratio, (36.7% versus 20%), it can be expected that the critical mass moderator does not explain the relationship between women ratio and Tobin´s Q 2014, above that which is explained by the independent variable of women ratio independently. In the Spanish sample the majority of the firms (76%) were below the critical point of 20% women on boards, making the sample for above 20% small and vulnerable for casualty effects.

In the Global sample, combining the results from the Norwegian and the Spanish samples, Hypothesis 1 was supported and a positive relationship between women ratio and Tobin´s Q was confirmed. With a more balanced representation of firms “on both sides” of the critical point of 20%, and a mean women ratio of 25.09%, this sample offer us a better possibility to check the moderating impact of the critical mass point of 20% upon the relationship women ratio and Tobin´s Q.

However, concluding that the critical mass of 20% of women on boards moderate the relationship between women ratio and Tobin´s Q must be done with certain caution, as the moderator variable of critical mass 20% has a certain correlation by itself to the dependent variable Tobin´s Q as seen in the correlation matrix.

The next three regression analysis presented in Table 6.20, 6.21, and 6.22 (Global sample, Norwegian sample and Spanish sample) are used to test Hypotheses 3:
H3: Strong gender-based board faultlines have a negative impact on firm performance

Table 6.20. Regression analysis, Hypothesis 3, Relation between Tobin´s Q 2014 and Faultline (Global sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
1	(Constante)	1,122	,423		2,652	,009
	TOBIN´S Q 2012	,543	,088	,516	6,201	,000
	FIRM SIZE	-2,785E-06	,000	-,074	-,890	,376
	FIRM AGE	,000	,001	,018	,228	,820
	BOARD SIZE	,022	,024	,079	,903	,368
	OIL, GAS, ENERGY	-,780	,382	-,477	-2,044	,044
	CONSTRUCTION, ENGENEERING	-,661	,360	-,427	-1,836	,069
	GOODS	-,391	,394	-,204	-,991	,324
	SERVICES	-,475	,392	-,272	-1,212	,229
	REAL ESTATE	-,732	,422	-,265	-1,735	,086
	TELECOM, TECHNOLOGY	-,276	,336	-,155	-,821	,413
	R-squared	*,418*				
	Adjusted R-squared	*,359*				
	Standard error	*,541*				
	F-statistics	*7,172*	*(p-value=0,000)*			
2	(Constante)	,835	,495		1,687	,095
	TOBIN´S Q 2012	,542	,087	,515	6,201	,000
	FIRM SIZE	-2,719E-06	,000	-,072	-,870	,387
	FIRM AGE	,000	,001	,014	,171	,864
	BOARD SIZE	,031	,025	,114	1,232	,221
	OIL, GAS, ENERGY	-,785	,381	-,481	-2,060	,042
	CONSTRUCTION, ENGENEERING	-,667	,360	-,431	-1,854	,067
	GOODS	-,377	,394	-,197	-,958	,340
	SERVICES	-,472	,392	-,270	-1,205	,231
	REAL ESTATE	-,803	,426	-,290	-1,884	,063
	TELECOM, TECHNOLOGY	-,290	,336	-,162	-,863	,390
	FAULTLINE	,517	,464	,097	1,115	,267
	R-squared	*,425*				
	Adjusted R-squared	*,361*				
	Standard error	*,540*				
	F-statistics	*6,649*	*(p-value=0,000)*			

Dependent variable: TOBIN´S Q 2014
Source: Prepared by the author

Hypothesis 3 suggests that there is a negative relationship between Faultline and Tobin´s Q 2014, in that the higher the Faultline, the lower the Tobin´s Q 2014. In Model 3, the estimated coefficient of Faultline was not statistically significant (p=0.267). This result did not support Hypothesis 3 in the Global sample.

Apart from not being significant, the results proved contrary to our hypothesis, predicting a positive instead of a negative relation between Faultline and Tobin´s Q. The possible reasons for these contradictory findings will be discussed later in this section.

Table 6.21. Regression analysis, Hypothesis 3, Relation between Tobin´s Q 2014 and Faultline (Norwegian sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
1	(Constante)	1,648	,503		3,277	,002
	TOBIN´S Q 2012	,322	,093	,346	3,477	,001
	FIRM SIZE	,000	,000	-,005	-,043	,966
	FIRM AGE	,001	,001	,131	1,278	,206
	BOARD SIZE	-,014	,034	-,046	-,415	,679
	OIL, GAS, ENERGY	-,816	,420	-,587	-1,944	,056
	CONSTRUCTION, ENGENEERING	-,645	,395	-,440	-1,633	,107
	GOODS	-,506	,437	-,285	-1,158	,251
	SERVICES	-,581	,435	-,361	-1,337	,185
	REAL ESTATE	-1,098	,463	-,433	-2,370	,021
	TELECOM, TECHNOLOGY	-,439	,376	-,280	-1,168	,247
	STANDARDIZED RESIDUALS	,212	,065	,336	3,265	,002
	R-squared	*,437*				
	Adjusted R-squared	*,348*				
	Standard error	*,493*				
	F-statistics	*4,931*	*(p-value=0,000)*			
2	(Constante)	1,848	,610		3,029	,003
	TOBIN´S Q 2012	,314	,094	,337	3,336	,001
	FIRM SIZE	-1,767E-07	,000	-,002	-,015	,988
	FIRM AGE	,001	,001	,135	1,308	,195
	BOARD SIZE	-,024	,038	-,079	-,633	,529
	OIL, GAS, ENERGY	-,794	,423	-,572	-1,876	,065
	CONSTRUCTION, ENGENEERING	-,621	,399	-,424	-1,557	,124
	GOODS	-,502	,439	-,282	-1,143	,257
	SERVICES	-,558	,439	-,346	-1,271	,208
	REAL ESTATE	-1,043	,475	-,412	-2,197	,031
	TELECOM, TECHNOLOGY	-,414	,380	-,264	-1,089	,280
	STANDARDIZED RESIDUALS	,207	,066	,327	3,128	,003
	FAULTLINE	-,326	,557	-,063	-,584	,561
	R-squared	*,439*				
	Adjusted R-squared	*,342*				
	Standard error	*,495*				
	F-statistics	*4,506*	*(p-value=0,000)*			

Dependent variable: TOBIN´S Q 2014

Source: Prepared by the author

Hypothesis 3 suggests that there is a negative relationship between Faultline and Tobin´s Q 2014, in that the higher the Faultline, the lower the Tobin´s Q 2014. In Model 3, the estimated coefficient of Faultline was not statistically significant (p=0.561). This result did not support Hypothesis 3 in the Norwegian sample. The results did not prove significant, but the direction of the relationship was in line with our prediction; that the higher the Faultline, the lower the Tobin´s Q.

Table 6.22. Regression analysis, Hypothesis 3, Relation between Tobin´s Q 2014 and Faultline (Spanish sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
1	(Constante)	,293	,780		,375	,712
	TOBIN´S Q 2012	1,042	,185	,764	5,627	,000
	FIRM SIZE	-3,736E-06	,000	-,141	-1,165	,259
	FIRM AGE	,003	,004	,126	,906	,377
	BOARD SIZE	,021	,064	,049	,331	,744
	OIL, GAS, ENERGY	-,564	,822	-,209	-,685	,502
	CONSTRUCTION, ENGENEERING	-,655	,677	-,379	-,968	,346
	GOODS	-,363	,710	-,167	-,511	,616
	SERVICES	-,173	,723	-,085	-,239	,814
	REAL ESTATE	-,207	,756	-,064	-,274	,787
	TELECOM, TECHNOLOGY	-,119	,609	-,050	-,196	,847
	R-squared	*,771*				
	Adjusted R-squared	*,643*				
	Standard error	*,500*				
	F-statistics	*6,044*	*(p-value=0,001)*			
2	(Constante)	-,594	,950		-,625	,540
	TOBIN´S Q 2012	,917	,196	,672	4,669	,000
	FIRM SIZE	-3,370E-06	,000	-,127	-1,086	,293
	FIRM AGE	,003	,004	,096	,707	,489
	BOARD SIZE	,054	,065	,125	,826	,420
	OIL, GAS, ENERGY	-,408	,800	-,151	-,510	,617
	CONSTRUCTION, ENGENEERING	-,464	,665	-,268	-,698	,495
	GOODS	-,090	,708	-,042	-,128	,900
	SERVICES	,135	,726	,067	,186	,855
	REAL ESTATE	-,256	,730	-,079	-,350	,730
	TELECOM, TECHNOLOGY	-,069	,588	-,029	-,117	,908
	FAULTLINE	1,354	,885	,241	1,530	,145
	R-squared	*0,798*				
	Adjusted R-squared	*0,668*				
	Standard error	*0,482*				
	F-statistics	*6,117*	*(p-value=0,001)*			

Dependent variable: TOBIN´S Q 2014
Source: Prepared by the author

Hypothesis 3 suggests that there is a negative relationship between Faultline and Tobin´s Q 2014, in that the higher the Faultline, the lower the Tobin´s Q 2014. In

Model 3, the estimated coefficient of Faultline was not statistically significant (p=0.145). This result did not support Hypothesis 3 in the Spanish sample. As in the Global sample, the results of the Spanish sample proved contrary to our hypothesis, predicting a positive instead of a negative relationship. Although the relationship did not prove significant, it is interesting to see which reasons can be behind these contrary results.

Relevant for this analysis is the fact that the faultline study only includes boards with two or more women directors. Faultline indicate the degree to which the two gender subgroups have in-group similarities and out-group differences. A positive relationship between Faultline and Tobin´s Q will therefore indicate that the higher the in-group similarity (and out-group difference), the higher the Tobin´s Q. This is contradictory to our proposal, as we predicted that a higher Faultline would lead to lower firm performance.

A possible explanation, apart from causes not included in our model, can be found in the reality of having two or more women present on the same board. As proposed by Kanter (1977) tilted and balanced boards, in comparison to uniform and skewed boards, will have different internal dynamics, experiencing increased women´s influence upon information-elaboration and decision-making. As internal similarity within the female in-group increase (higher faultline), so will their in-group cohesion, support and in-sub-group esteem. In this way, faultline will lead to stronger bonding and cohesion within the female in-group, which again is believed to lead to higher participation in the board´s information-elaboration and decision-making, and finally improved firm performance.

In the Norwegian sample, no relationship between Faultline and Tobin´s Q is reported. The reality of women on boards of Norwegian firms is quite different from those on Spanish boards. The mean women ratio of Norwegian boards is 37.05%, and 89.4% of all boards are tilted and balanced. This indicate that women´s participation on boards´ information-elaboration and decision-making processes is quite “normalized” and expected, and therefore in lesser need of in-group support from other female colleagues. Thus higher similarities between the women board directors (higher faultline) do not necessarily have any differential impact on firm performance.

With respect to the Global sample, being a combination of the Spanish and the Norwegian samples, the results are similar to the Spanish results, however with a lower impact of Faultline on Tobin´s Q.

As no relationship between Faultline and Tobin´s Q 2014 was proved significant, the analysis of the two moderators of this relationship (1) Overlap Board Tenure and (2) Chair-board shared experience seems irrelevant. However, we include the next three regression analysis presented in Table 6.23, 6.24, and 6.25 (Global sample, Norwegian sample and Spanish sample) used to test Hypotheses 4:

H4: The negative relationship between strong gender-based board faultlines and firm performance is less pronounced when overlapping board members tenure increases.

Table 6.23. Regression analysis, Hypothesis 4, Relation between Tobin´s Q 2014 and Faultline, moderated by Overlap board tenure (Global sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
3	(Constante)	,835	,498		1,679	,096
	TOBIN´S Q 2012	,542	,088	,515	6,168	,000
	FIRM SIZE	-2,685E-06	,000	-,071	-,814	,418
	FIRM AGE	,000	,001	,013	,167	,868
	BOARD SIZE	,031	,026	,115	1,224	,224
	OIL, GAS, ENERGY	-,784	,384	-,480	-2,043	,044
	CONSTRUCTION, ENGENEERING	-,666	,362	-,430	-1,837	,069
	GOODS	-,376	,399	-,196	-,941	,349
	SERVICES	-,471	,397	-,269	-1,187	,238
	REAL ESTATE	-,801	,432	-,289	-1,854	,067
	TELECOM, TECHNOLOGY	-,290	,338	-,162	-,857	,394
	FAULTLINE	,517	,466	,097	1,110	,270
	OVERLAP BOARD TENURE	-,001	,023	-,003	-,034	,973
	R-squared	*,425*				
	Adjusted R-squared	*,354*				
	Standard error	*,543*				
	F-statistics	*6,033*	*(p-value=0,000)*			
4	(Constante)	,724	,506		1,432	,155
	TOBIN´S Q 2012	,537	,088	,510	6,107	,000
	FIRM SIZE	-4,220E-06	,000	-,111	-1,190	,237
	FIRM AGE	,000	,001	,015	,190	,850
	BOARD SIZE	,027	,026	,100	1,056	,294
	OIL, GAS, ENERGY	-,875	,391	-,535	-2,237	,028
	CONSTRUCTION, ENGENEERING	-,786	,376	-,508	-2,090	,039
	GOODS	-,495	,411	-,258	-1,203	,232
	SERVICES	-,582	,407	-,332	-1,429	,156
	REAL ESTATE	-,935	,446	-,338	-2,096	,039
	TELECOM, TECHNOLOGY	-,393	,349	-,220	-1,127	,262
	FAULTLINE	1,104	,685	,207	1,611	,110
	OVERLAP BOARD TENURE	,111	,098	,404	1,126	,263
	FAULTLINE x OVERLAP	-,247	,212	-,411	-1,166	,246
	R-squared	*,433*				
	Adjusted R-squared	*,357*				
	Standard error	*,542*				
	F-statistics	*5,694*	*(p-value=0,000)*			

Dependent variable: TOBIN´S Q 2014

Source: Prepared by the author

Table 6.24. Regression analysis, Hypothesis 4, Relation between Tobin´s Q 2014 and Faultline, moderated by Overlap board tenure (Norwegian sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
3	(Constante)	1,895	,614		3,084	,003
	TOBIN´S Q 2012	,315	,094	,339	3,339	,001
	FIRM SIZE	-1,154E-06	,000	-,010	-,097	,923
	FIRM AGE	,001	,001	,134	1,299	,198
	BOARD SIZE	-,026	,038	-,084	-,667	,507
	OIL, GAS, ENERGY	-,786	,425	-,566	-1,851	,068
	CONSTRUCTION, ENGENEERING	-,617	,400	-,421	-1,544	,127
	GOODS	-,474	,442	-,266	-1,072	,287
	SERVICES	-,532	,441	-,330	-1,207	,232
	REAL ESTATE	-1,010	,478	-,399	-2,114	,038
	TELECOM, TECHNOLOGY	-,420	,381	-,268	-1,101	,275
	STANDARDIZED RESIDUALS	,203	,066	,321	3,048	,003
	FAULTLINE	-,306	,559	-,059	-,547	,586
	OVERLAP BOARD TENURE	-,021	,027	-,077	-,801	,426
	R-squared	*,445*				
	Adjusted R-squared	*,338*				
	Standard error	*,496*				
	F-statistics	*4,187*	*(p-value=0,000)*			
4	(Constante)	1,880	,679		2,767	,007
	TOBIN´S Q 2012	,315	,096	,338	3,296	,002
	FIRM SIZE	-1,257E-06	,000	-,011	-,103	,918
	FIRM AGE	,001	,001	,133	1,272	,208
	BOARD SIZE	-,025	,039	-,083	-,649	,518
	OIL, GAS, ENERGY	-,787	,428	-,567	-1,838	,071
	CONSTRUCTION, ENGENEERING	-,621	,409	-,424	-1,519	,133
	GOODS	-,479	,455	-,269	-1,053	,296
	SERVICES	-,535	,447	-,332	-1,197	,236
	REAL ESTATE	-1,013	,484	-,400	-2,095	,040
	TELECOM, TECHNOLOGY	-,423	,388	-,270	-1,090	,280
	STANDARDIZED RESIDUALS	,202	,067	,320	3,011	,004
	FAULTLINE	-,270	,860	-,052	-,314	,754
	OVERLAP BOARD TENURE	-,012	,166	-,045	-,075	,940
	FAULTLINE x OVERLAP	-,018	,333	-,034	-,055	,957
	R-squared	*,445*				
	Adjusted R-squared	*,329*				
	Standard error	*,500*				
	F-statistics	*3,831*	*(p-value=0,000)*			

Dependent variable: TOBIN´S Q 2014

Source: Prepared by the author

Table 6.25. Regression analysis, Hypothesis 4, Relation between Tobin´s Q 2014 and Faultline, moderated by Overlap board tenure (Spanish sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
3	(Constante)	-,585	,914		-,639	,532
	TOBIN´S Q 2012	,885	,190	,648	4,650	,000
	FIRM SIZE	-5,738E-06	,000	-,216	-1,708	,107
	FIRM AGE	,002	,004	,069	,526	,606
	BOARD SIZE	,038	,063	,088	,598	,559
	OIL, GAS, ENERGY	-,403	,770	-,149	-,523	,608
	CONSTRUCTION, ENGENEERING	-,570	,643	-,329	-,885	,389
	GOODS	-,208	,685	-,095	-,303	,766
	SERVICES	,039	,701	,019	,056	,956
	REAL ESTATE	-,431	,711	-,133	-,605	,553
	TELECOM, TECHNOLOGY	-,168	,570	-,071	-,295	,772
	FAULTLINE	1,606	,867	,286	1,851	,083
	OVERLAP BOARD TENURE	,063	,041	,207	1,537	,144
	R-squared	*,824*				
	Adjusted R-squared	*,692*				
	Standard error	*,464*				
	F-statistics	*6,253*	*(p-value=0,001)*			
4	(Constante)	-,524	,937		-,559	,584
	TOBIN´S Q 2012	,897	,195	,657	4,600	,000
	FIRM SIZE	-6,407E-06	,000	-,241	-1,785	,095
	FIRM AGE	,002	,004	,082	,602	,556
	BOARD SIZE	,021	,070	,049	,303	,766
	OIL, GAS, ENERGY	-,553	,821	-,205	-,674	,511
	CONSTRUCTION, ENGENEERING	-,768	,730	-,444	-1,053	,309
	GOODS	-,381	,752	-,175	-,506	,620
	SERVICES	-,160	,783	-,079	-,204	,841
	REAL ESTATE	-,712	,854	-,219	-,833	,418
	TELECOM, TECHNOLOGY	-,285	,611	-,120	-,467	,647
	FAULTLINE	2,273	1,390	,405	1,636	,123
	OVERLAP BOARD TENURE	,168	,173	,547	,971	,347
	FAULTLINE x OVERLAP	-,267	,429	-,316	-,623	,543
	R-squared	*,829*				
	Adjusted R-squared	*,680*				
	Standard error	*,473*				
	F-statistics	*5,581*	*(p-value=0,001)*			

Dependent variable: TOBIN´S Q 2014

Source: Prepared by the author

The results did not support Hypothesis 4 in any of the three samples.

The next three regression analysis presented in Table 6.26, 6.27, and 6.28 (Global sample, Norwegian sample and Spanish sample) used to test Hypotheses 5:

H5: The negative relationship between strong gender-based board faultlines and firm performance is less pronounced when chair-board members' shared experience increase.

Table 6.26. Regression analysis, Hypothesis 5, Relation between Tobin´s Q 2014 and Faultline, moderated by Chair-board shared experience (Global sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
3	(Constante)	,838	,495		1,694	,093
	TOBIN´S Q 2012	,533	,088	,507	6,077	,000
	FIRM SIZE	-3,592E-06	,000	-,095	-1,110	,270
	FIRM AGE	,000	,001	,020	,245	,807
	BOARD SIZE	,029	,025	,106	1,142	,256
	OIL, GAS, ENERGY	-,819	,382	-,501	-2,141	,035
	CONSTRUCTION, ENGENEERING	-,698	,361	-,451	-1,935	,056
	GOODS	-,455	,401	-,238	-1,136	,259
	SERVICES	-,524	,395	-,299	-1,326	,188
	REAL ESTATE	-,862	,430	-,312	-2,006	,048
	TELECOM, TECHNOLOGY	-,308	,336	-,172	-,915	,362
	FAULTLINE	,498	,464	,094	1,074	,285
	CHAIR-BOARD SHARED EX	,027	,026	,087	1,038	,302
	R-squared	*,431*				
	Adjusted R-squared	*,361*				
	Standard error	*,540*				
	F-statistics	*6,189*	*(p-value=0,000)*			
4	(Constante)	,875	,527		1,661	,100
	TOBIN´S Q 2012	,533	,088	,507	6,046	,000
	FIRM SIZE	-3,333E-06	,000	-,088	-,960	,339
	FIRM AGE	,000	,001	,020	,246	,806
	BOARD SIZE	,029	,026	,106	1,129	,262
	OIL, GAS, ENERGY	-,801	,393	-,490	-2,037	,044
	CONSTRUCTION, ENGENEERING	-,675	,379	-,436	-1,782	,078
	GOODS	-,434	,415	-,227	-1,044	,299
	SERVICES	-,503	,409	-,287	-1,231	,221
	REAL ESTATE	-,839	,446	-,303	-1,882	,063
	TELECOM, TECHNOLOGY	-,286	,353	-,160	-,812	,419
	FAULTLINE	,370	,759	,070	,488	,627
	CHAIR-BOARD SHARED EX	,004	,112	,014	,038	,970
	FAULTLINE x CHAIR-BOARD SHARED	,051	,238	,077	,213	,832
	R-squared	*,431*				
	Adjusted R-squared	*,355*				
	Standard error	*,542*				
	F-statistics	*5,661*	*(P-value=0,000)*			

Dependent variable: TOBIN´S Q 2014

Source: Prepared by the author

Table 6.27. Regression analysis, Hypothesis 5, Relation between Tobin´s Q 2014 and Faultline, moderated by Chair-board shared experience (Norwegian sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
3	(Constante)	1,929	,623		3,096	,003
	TOBIN´S Q 2012	,314	,095	,337	3,318	,001
	FIRM SIZE	-1,220E-06	,000	-,011	-,102	,919
	FIRM AGE	,001	,001	,141	1,359	,179
	BOARD SIZE	-,027	,039	-,089	-,703	,485
	OIL, GAS, ENERGY	-,782	,425	-,563	-1,838	,070
	CONSTRUCTION, ENGENEERING	-,623	,400	-,425	-1,556	,124
	GOODS	-,485	,441	-,273	-1,098	,276
	SERVICES	-,539	,441	-,335	-1,223	,226
	REAL ESTATE	-1,021	,478	-,403	-2,139	,036
	TELECOM, TECHNOLOGY	-,420	,382	-,268	-1,099	,276
	STANDARDIZED RESIDUALS	,203	,067	,321	3,054	,003
	FAULTLINE	-,346	,560	-,067	-,618	,539
	CHAIR-BOARD SHARED EX	-,025	,035	-,068	-,702	,485
	R-squared	*,443*				
	Adjusted R-squared	*,337*				
	Standard error	*,497*				
	F-statistics	4,167	*(p-value=0,001)*			
4	(Constante)	1,914	,697		2,746	,008
	TOBIN´S Q 2012	,314	,095	,337	3,290	,002
	FIRM SIZE	-1,243E-06	,000	-,011	-,103	,918
	FIRM AGE	,001	,001	,140	1,309	,195
	BOARD SIZE	-,027	,039	-,089	-,694	,490
	OIL, GAS, ENERGY	-,782	,429	-,563	-1,825	,072
	CONSTRUCTION, ENGENEERING	-,625	,405	-,427	-1,542	,128
	GOODS	-,488	,449	-,274	-1,087	,281
	SERVICES	-,540	,445	-,335	-1,215	,229
	REAL ESTATE	-1,023	,482	-,404	-2,121	,038
	TELECOM, TECHNOLOGY	-,423	,389	-,269	-1,087	,281
	STANDARDIZED RESUDUALS	,203	,067	,321	3,026	,004
	FAULTLINE	-,312	,893	-,060	-,350	,728
	CHAIR-BOARD SHARED EX	-,016	,183	-,043	-,086	,932
	FAULTLINE x CHAIR-BOARD SHARED	-,018	,373	-,026	-,050	,961
	R-squared	*,443*				
	Adjusted R-squared	*,327*				
	Standard error	*,500*				
	F-statistics	*3,813*	*(p-value=0,000)*			

Dependent variable: TOBIN´S Q 2014

Source: Prepared by the author

Table 6.28. Regression analysis, Hypothesis 5, Relation between Tobin´s Q 2014 and Faultline, moderated by Chair-board shared experience (Spanish sample).

		Non-standardized coefficients		Estandardized coefficients		
Model		**B**	**Standard error**	**Beta**	**t**	**P-value**
3	(Constante)	-,650	,851		-,764	,456
	TOBIN´S Q 2012	,853	,178	,625	4,791	,000
	FIRM SIZE	-6,215E-06	,000	-,234	-2,043	,058
	FIRM AGE	,002	,003	,074	,607	,552
	BOARD SIZE	,086	,060	,200	1,433	,171
	OIL, GAS, ENERGY	-,840	,741	-,311	-1,134	,273
	CONSTRUCTION, ENGENEERING	-,982	,637	-,568	-1,543	,142
	GOODS	-,890	,724	-,409	-1,230	,237
	SERVICES	-,420	,694	-,207	-,605	,553
	REAL ESTATE	-,839	,701	-,259	-1,196	,249
	TELECOM, TECHNOLOGY	-,552	,567	-,232	-,973	,345
	FAULTLINE	1,442	,793	,257	1,818	,088
	CHAIR-BOARD SHARED EX	,096	,042	,300	2,286	,036
	R-squared	*,848*				
	Adjusted R-squared	*,734*				
	Standard error	*,431*				
	F-statistics	*7,436*	*(p-value=0,000)*			
4	(Constante)	-,682	,916		-,745	,468
	TOBIN´S Q 2012	,851	,185	,623	4,600	,000
	FIRM SIZE	-6,391E-06	,000	-,241	-1,860	,083
	FIRM AGE	,002	,003	,077	,601	,557
	BOARD SIZE	,086	,062	,200	1,385	,186
	OIL, GAS, ENERGY	-,876	,815	-,324	-1,074	,300
	CONSTRUCTION, ENGENEERING	-1,031	,761	-,596	-1,355	,195
	GOODS	-,924	,795	-,425	-1,163	,263
	SERVICES	-,458	,779	-,226	-,589	,565
	REAL ESTATE	-,888	,823	-,274	-1,079	,298
	TELECOM, TECHNOLOGY	-,584	,637	-,245	-,916	,374
	FAULTLINE	1,615	1,600	,288	1,009	,329
	CHAIR-BOARD SHARED EX	,118	,176	,367	,670	,513
	FAULTLINE x CHAIR-BOARD SHARED	-,049	,388	-,073	-,126	,901
	R-squared	*,848*				
	Adjusted R-squared	*,716*				
	Standard error	*,445*				
	F-statistics	*6,443*	*(p-value=0,001)*			

Dependent variable: TOBIN´S Q 2014

Source: Prepared by the author

The results did not support Hypothesis 5 in any of the three samples.

CHAPTER SEVEN

DISCUSSION AND CONCLUSIONS

7.1. INTRODUCTION

A board´s composition, defined as the configuration of its members´ attributes (Levine and Moreland, 1990), is considered crucial for the board´s information-elaboration and decision-making (Bunderson and Sutcliffe, 2002; Harrison et al., 2002; van Knippenberg and Schippers, 2007). Diverse and complementary members contribute with differential experience, skills and knowledge (Finkelstein and Hambrick, 1996), offering different ideas, viewpoints and perspectives, thus benefitting the complex decision-making (Sawyer et al., 2006).

Within the general board diversity research, gender diversity is one of the most debated diversity aspects. Although research has concluded that women directors add a distinct and positive contribution to the boards, no consistent and all-inclusive relation between women directors and firm financial performance has been established. Different studies have come up with different conclusions; positive link, negative link and no link whatsoever. As an interesting observation; an all-inclusive consistent relation between men directors (male gender) and firm financial performance has neither been confirmed by research.

In this dissertation we developed a theoretical model to test the impact of gender diversity and gender faultlines upon Tobin´s Q. We studied these relations under a new perspective, using the CEM as the underlying model, foreseeing and integrating both positive and negative consequences of gender diversity, based on the simultaneous effects of the information/decision-making perspective and the social categorization perspective.

We tested our proposals using data from a comprehensive sample of public Norwegian and Spanish firms, and found a statistically significant positive relationship between women ratio and Tobin's Q, in both the Global and the Norwegian sample, moderated by a critical mass of women on boards in the overall Global sample. With respect to our proposals regarding gender faultlines and its moderators, we found no relation to Tobin´s Q. Below is a summary of the hypotheses and the results as reported for all three samples.

Table 7.1. Summary of Hypotheses and Results.

Hypothesis	Independent variable	Dependent variable	Hypothetical relationship	FINDINGS		
				Global sample	Norwegian sample	Spanish sample
1	Women Ratio	Tobin´s Q 2014	Positive	Positive	Positive	No relation
2	Women Ratio x Critical Mass	Tobin´s Q 2014	Significant moderation	Significant moderation	No moderation	No moderation
3	Faultlines	Tobin´s Q 2014	Negative	No relation	No relation	No relation
4	Faultlines x Overlap Board tenure	Tobin´s Q 2014	Significant moderation	No moderation	No moderation	No moderation
5	Faultlines x Chair-Board Shared Ex.	Tobin´s Q 2014	Significant moderation	No moderation	No moderation	No moderation

Source: Prepared by the author

7.2. WHY IS GENDER DIVERSITY ON BOARDS SO IMPORTANT?

"Fifteen years into the 21st century, gender equality appears to be the forefront of the global humanitarian agenda" (Joshi et al., 2015: 1459).

In accordance with international laws and conventions declaring that *"men and women have the same right to employment opportunities, promotion, and equal treatment in respect of work for equal value"*, most societies establish gender equality as an objective for its institutional settings; political., institutional and private organizations, as for the leadership of these organizations.

An issue around women in top management is getting increased attention, both in research as well as in practice (Daily et al 1999; Dalton and Dalton, 2010; Terjesen et al., 2009; Vinnicombe et al., 2008). In 2014, United Nations recognized that women´s equal right to education and employment is not only a "women´s issue" but a human right issue (UN Women, 2014).

Women represent approximately half of the world´s population, and 50% of the total human capital available. However they are largely under-represented at the highest levels of organizations (Catalyst, 2011; UN Women, 2014).

On general terms it is considered unethical to exclude certain groups from elite positions on the basis of gender or other individual traits or characteristics unrelated to their ability (Carver, 2002; Garratt, 1997; Singh et al., 2001; Terjesen and Singh, 2008). In spite of this, women remain a small minority on most corporate boards around the world, and seem not to get the same access to directorships as men (Brammer et al.,

2007; Hillman et al., 2007). In some countries, politicians and legislators, in order to improve the board gender diversity, have instituted quotas that require boards to include 30–50% women representatives (Terjesen et al., 2014). In other countries large institutional shareholders and board rating systems seek to pressure companies to add diversity to the boardroom by rating positively diversity measures (Institutional Shareholder Services (Hillman, 2015).

In 2013 EU Justice Commissioner Viviane Reding requested that large publicly held companies in Europe to voluntarily pledge to achieve a 30% level of women on boards by 2015, and although not all countries have fulfilled this request, some improvements have been recorded on the European scene.

Figure 7.1. Representation of women and men on the boards of 610 large listed companies in the EU, Oct. 2013.

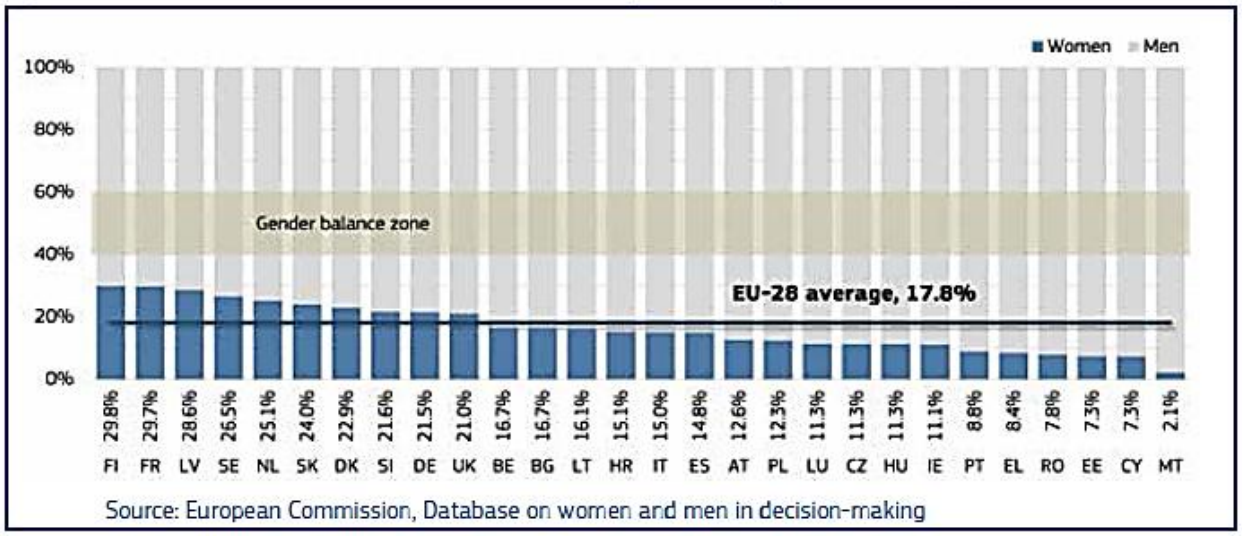
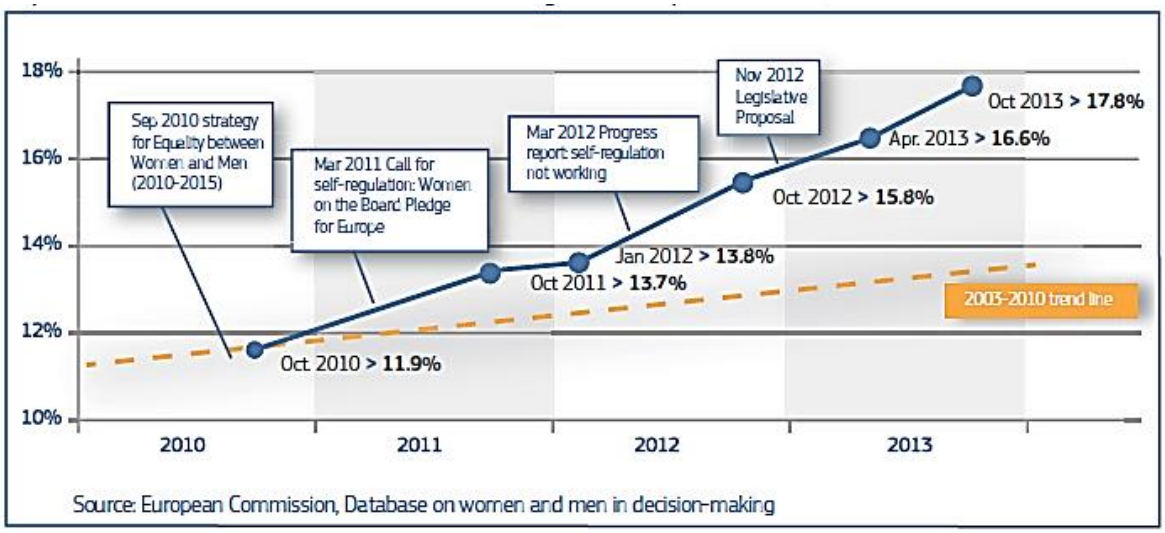


Figure 7.2. Representation of women and men on the boards of large listed companies in the EU, Oct. 2010 to Oct. 2013.



Promoting gender diversity and achieving a better gender balance on corporate boards is thus of utmost importance as it signal that society fully accepts women in all spheres of public life.

Complementary to these ethical issues concerning gender balance and equal rights, there are also other reasons why gender diversity on boards is so important; having female directors in top positions has proven crucial for facilitating and promoting other women´s employment opportunities, promotion, and equal treatment at work.

Women directors are important role-models and are seen as positive examples for other women, inside and outside the organization (Bernardi, Bosco and Vassill, 2006; Thomson, Graham and Lloyd, 2005). They signal that career growth opportunities are available for women, and consequently contribute to the attraction and the retention of female talent (Sealy and Singh, 2006, 2010). On the contrary; the absence of women in top management and board positions may penalize the firms from acquiring and retaining the best female talent (Daily et al., 1999). In this way female directors function as champions for change on women's issues of recruitment, retention and advancement (Milliken and Martins, 1996), and carry symbolic value about upwardly mobility (Bilimoria and Wheeler, 2000; Burke, 2000).

The consequences of having female board members was seen in Bilimoria´s study (2006) exploring the relationship between the presence of women on board and the presence of women at multiple levels in the company. She found a positive relationship between women board members and the number of women officers; the number of women officers holding line jobs; the presence of a critical mass of women officers; the number of women officers with high-ranking or "clout" titles; and the number of women among the top corporate earners. These findings are in line with her earlier proposal that women on boards contribute to increased retention of women employees in the firm (Bilimoria, 2000).

Researchers agree that the presence of women on boards communicate that, whatever barriers to advancement of women may exist in society, the culture of that specific firm is friendly to women and committed to female advancement at all levels (Bilimoria, 2000, 2006; Daily et al., 2003). Where women occupy senior managerial positions, they have been found to focus more than men on the development and mentoring of their subordinates, both men and women; encouraging them to reach their full potential and rewarding them for good performance (Eagly et al., 2003).

They are further seen as a signal that women´s concerns will be heard in the organization (Mattis, 1993). Thus, a woman has a good reason to believe that the presence of women in top management positions is a critical factor for her likely promotion in the company, and adjust her commitment and motivation accordingly. In this line Powell (1999) found that women directors contribute to higher motivation in female employees, as they see a better reflection of themselves at the board level.

There are also important reasons for having women on board based on business and client criteria. When exploring the relationship between women on boards and stakeholder´s representation the word "market reciprocity" becomes relevant. This term implies that companies who sell goods and services to the public send positive signals to the consumers who might purchase their products. It is argued that board members who better reflect the corporation's consumer population have a better understanding of the consumers' needs and behavior, and will therefore make better strategic decisions about the company´s future (Arfken et al., 2004).

From this point of view, women should be represented on the corporate boards of consumer goods as women play a role in 80% of all consumer purchase decisions and, thus, women on the board would better represent the customer base (Wolfman, 2007).

"Women have insight into our customers that no man—no matter how bright, no matter how hardworking— can match. That's important when 85% of all consumer buying decisions made in our stores are made by women" (Natividad, 2005: 13, citing Larry Johnston, CEO of Albertsons grocery chain).

Researchers have also noted that the growing numbers of women directors have led to increased attention to corporate social responsibility, such as charitable giving and community relationships (Stanwick and Stanwick, 1998; Williams, 2003; Fombrun, 2004). Corroborating with this, Williams' (2003) study of Fortune 500 firms from 1991 to 94 found a link between women on boards and the firm's charitable support of community and cultural activities.

Based on all of these reasons, we believe that the issue elected for our dissertation is of utmost importance, as gender diversity on boards benefits not only the organization they represent, but society in general, consumers, charitable organizations and other women striving for equal opportunities and just treatment in their daily work.

7.3. WHAT ARE THE THEORETICAL CONTRIBUTIONS OF OUR STUDY?

This dissertation pretends to makes three main theoretical contributions:

1. We built our dissertation model upon the CEM as we consider this model to represent a holistic view of the effects of diversity. We believe that in this way we contribute to the general gender diversity debate, including both the positive and the negative effects of having women directors on the board. Our theoretical model is complex, as it incorporates various moderating factors, but at the same time it contributes to understand the complex reality of board work.
2. By integrating into the same model the concepts of gender diversity, critical mass and gender faultlines at the board level, we believe that we contribute to an original and realistic discussion of the factors involving gender diversity on

corporate boards. Our results emphasize the importance of "numbers" – how critical numbers of women directors enhance their effective influence on boards.

3. Our study is cross-national., comparing two countries in Europe; Norway and Spain. These two countries represent radical opposites in terms of women´s participation on boards, in business and in society in general. Our comparative study contributes to the discussion on the importance of cultural contextual conditions upon the effect of gender diversity on firm´s performance.

1. A model built on the CEM

The underlying idea of this dissertation, in line with the CEM, is the recognition of diversity as a value-added factor for teams who deal with complex analysis and decision-making. We start out reviewing previous findings related to diversity, and the specific functions of the board of directors. Our conclusion is that diversity on boards is positive, principally due to the board´s processes of information-elaboration and decision-making.

We present the Categorization-Elaboration Model (van Knippenberg et al 2004a); the model upon which we have built our study. We believe that by using this model, we contribute to a more holistic and credible elaboration on the effects of diversity upon performance, as we consider the simultaneous positive and negative effects of diversity. We include in our model both the information/decision-making and the social categorization perspectives, and in this way add to earlier developments by showing how these two perspectives are inter-related and interact with each other on the board level.

A further theoretical contribution, in line with the CEM, is the fact that we do not classify gender only as a social category diversity attribute, but also as an informational diversity attribute, due to the fact that women contribute with specific insights, skills and leadership behaviors, on the basis of their gender. In this same line, we do not restrict social category diversity to give rise only to social categorization processes, nor informational diversity to give rise only to information/decision-making processes, but consider that both types of diversity can give rise to both processes.

We believe that the application of the CEM to our dissertation model will contribute to a broader and more sophisticated understanding of the information/decision-making processes, the social categorization processes and the intergroup bias, related to gender diversity on boards, and their effects on the firm performance.

2. Integrating gender diversity, critical mass and gender faultlines.

The underlying belief in our study is that women are different from men, thus their contribution to the board is different, specific and unique. We present the different contributions of women directors structured in the following way: (1) women director´s contribution to task relevant information, (2) women directors´ distinct leadership style and behavior, (3) women directors´ distinct contribution to board´s internal work-processes, (4) women directors and board functions and (5) women directors and their contribution to firm´s financial performance.

We elaborate on critical mass theory, proposing that critical mass of women directors on corporate boards moderate positively the relationship between women on boards and firm financial performance.

We also elaborate on gender faultlines, based on social categorization and intergroup bias, and predict that faultline strength will affect firm financial performance in a negative way. Most previous faultline studies are laboratory studies. Presenting a faultline study based on gender faultlines on corporate boards of two countries is another important contribution of our study.

Integrating gender diversity, critical mass and gender faultlines, three important aspects of diversity, specific but interrelated, we believe is an important and unique theoretical contribution of this dissertation.

3. Cross-national empirical study integrating data from Norway and Spain

For the empirical study we draw upon a novel data set covering two different European countries, Norway and Spain, representing two opposites in terms of participation of women in society in general., The study include a global and a comparative analysis of listed firms using data from 95 listed firms on the Oslo Stock Exchange, and 89 listed firms from the Madrid Stock Exchange (Mercado continuo), with a total number of

1528 board members, the data on women ratio, critical mass and gender faultline were tested towards the performance measure of Tobin´s Q 2014.

We believe that an interesting theoretical contribution of our study lies in the prediction of the importance of the cultural context when studying gender diversity. National culture has proved to play a major role in managerial perceptions of gender, and is believed be an important antecedent for women´s representation on corporate boards (Carrasco et al., 2015; Terjesen et al., 2009). We believe that cultural context not only influence the representation of women directors, but also their effective influence on the board, as well as the perceptions of the firm on behalf of external agents, such as investors, consumers, customers, media, potential employees and the public in general.

7.4. IN WHICH WAYS DO OUR EMPIRICAL RESULTS SUPPORT OUR THEORETICAL PROPOSALS?

Previous studies relating women directors and firm´s financial performance have reported positive links, negative links and no links. So far no all-conclusive proof has been found in favor of the "pure" business case for women directors on boards.

Our empirical motivation comes from our interest in contributing to the conviction that women on boards contribute to firm´s performance in a positive way. In Europe, although women over the last decades have gained more in-pass in public administration and politics, the proportion of women who reach top positions in private corporations is still low. If it can be proven statistically that having more women on boards affects positively the firms´ financial performance, this could be a strong argument for incrementing the ratio of women to the board and to overall management in companies.

Our empirical results supported two of our theoretical proposals, namely the positive relationship between gender diversity and firm financial performance, and the positive moderation of critical mass upon the relationship between gender diversity and firm financial performance. The last was only demonstrated over the overall Global sample.

Our first hypothesis predicted that gender diversity on corporate boards was positively related to firm performance.

In our empirical study we found that the women ratio, in both the Global as well as in the Norwegian sample, was positively related to Tobin´s Q. The relationship between these two variables, in the Global sample, was indicated by a beta of 0.229, and in the Norwegian sample, by a beta of 0.371. This relationship was not confirmed for the Spanish sample; although the relation was positive, it was not statistically significant.

Observing these results we ask: "Why does an increased women ratio in Norway lead to a higher Tobin´s Q, while in Spain no?"

We believe that one possible explanation can be found in the interplay between the number of women on the board, and the national culture of the country.

We propose that the actual number of women on each board is of utmost importance for their effective influence on board decisions, and therefore firm´s financial performance. We have previously seen that on boards with an unbalanced gender composition, women perceive that their minority status makes it harder for them to influence the board´s decisions, thereby resulting in a reduced contribution on their behalf (Ferreira, 2010; Carter et al., 2010; Westphal and Milton, 2000). As the size of the female group increases to the point when it is no longer a token minority, the nature of the relations between the two gender groups changes qualitatively (Bear et al., 2010; Etzkowitz et al., 1994), and the board benefits from the contributions of its female members (Kanter, 1977).

The board compositions in Norway and Spain show substantial differences in terms of numbers, as confirmed by the data obtained for both samples. The mean women ratio in Norway is 37.05%, only 1% have no women directors, and 9.47% have one woman on the board. The remaining 89.53% have two or more female directors. When comparing this to same ratios in the Spanish sample, we see a completely different reality; 33% of all Spanish boards have no women directors, 30% have only one woman director, and the mean women ratio is 12.64% (Table 5.5, Table 6.2 and Table 6.3).

These differences in the factual presence of women on boards indicate differences in the reality women face as board members. In Norway women´s participation on boards is "normalized", balanced in terms of numbers, and politically, legally and publicly supported. It is reasonable to believe that this influence their perceptions on their ability to effectively influence board processes and performance, as proposed by Konrad et al., (2008). On the contrary, in Spain women on boards represent a small minority and their presence is still questioned by many. This minority status will most likely affect their perception on their ability to effectively influence the dominant male group of board members, which again reduce their contribution (Konrad et al., 2008; Kanter, 1977). Furthermore, as the women directors do not "fit" the stereotypic expectations in Spain for the male-dominated board position, they might meet bias, and although they display high levels of performance, their efforts may be discounted (Eagly and Karau, 1991).

Furthermore, we believe that it is reasonable to assume that the 30% of the Spanish boards with token representation of women do not contribute to our predicted positive relationship between women on boards and Tobin´s Q. Similar to our assumption, Carter et al., (2003) in their study of female board members in the US decided to exclude all firms with a token representation of women in order to discover the true relationship between women directors and Tobin´s Q.

The small numbers of women on Spanish boards; their minority status and token representation, are possible contributors to the not-confirmed hypothesis of positive relation between women and firm financial performance.

Initially we proposed as reasons an interplay between numbers and cultural contexts; we believe that contributing to the explanation why women ratio in Norway leads to higher Tobin´s Q, while in Spain not, can be found in the cultural context of the two countries.

Previous research has proven that national-cultural context is an important antecedent for women´s appointment to boards (Carrasco et al., 2015; Grosvold and Brammer, 2011). Further to affecting the appointment of women to boards, we believe that the cultural context also affect women´s effectiveness once they are members of the board.

We have earlier commented that boards are nested within a national context with common values and beliefs concerning gender. The Norwegian culture, as indicated in Table 5.7, project a cultural context where gender parity is high and male dominance is low. Women in countries with high gender parity, like Norway, are more likely to possess the right human capital required for board positions (Wright, Baxter and Birkelund, 1995). Furthermore, boards in countries with high gender parity are more likely to leverage on the knowledge, experience and leadership behavior that female directors bring to the board, thus allowing them to influence and contribute to firm´s financial performance. We believe that this cultural reality has contributed to the positive relationship between women ratio and Tobin´s Q in Norway. Spain, with a culture of lower gender parity and high male dominance, do not have the same receptiveness towards women´s participation on boards, and might not leverage equally on the knowledge, experience and leadership behavior of their female directors, thus leading to a reduced use of the female human capital.

Furthermore, we also believe that this cultural reality affects external agents such as customers, banks and investors, in that these in Norway are more likely to have higher expectations to firms with higher women ratio, than their counterparts in Spain. Our indicator of firm financial performance is the Tobin´s Q; a proxy estimate of investor perceptions and confidence as to how efficiently firms make use of their assets for a given accounting period (Gompers et al., 2003). It is therefore likely to expect that investors in Norway have more confidence in the future earning potentials of companies with a higher women ratio, than investors in Spain, where an increased women ratio does not inspire the same confidence in investors. It therefore seems that the legitimacy of female directors is questioned in some cultural contexts more than in others.

This is in line with a recent meta-analysis incorporating studies from 35 different countries, finding that female board representation is more positively related to firm financial performance in contexts with greater gender parity (Post and Byron, 2015). In their study they found that, although the relationship between women on boards and market performance was near zero, the relationship was positive in countries with greater gender parity and negative in countries with lower gender parity. In countries where gender parity was highest, like in Norway and Sweden, the women ratio was positively related to market performance.

Our second hypothesis predicted that a critical mass of women directors on corporate boards would moderate positively the relation between women on boards and firm financial performance

This hypothesis was confirmed in the overall Global sample, indicated by a beta of 0.615, but not in the two separate country samples.

We believe that this confirm our proposal that the actual number of women directors on the board is of utmost importance for their effective influence on firm performance; as the size of the female group increases to the point when it is no longer a token minority, the nature of the relations between the two gender groups changes qualitatively (Bear et al., 2010; Etzkowitz et al., 1994), and the board benefits from the contributions of its female members (Kanter, 1977).

An interesting question is why critical mass do not moderate the relationship between women ratio and Tobin´s Q in the two separate country samples. In the Spanish sample the answer is easy; as the principal relationship was not confirmed, no moderation is possible. Furthermore, the distribution of the women ratio in the sample is distributed in a way that the critical mass of 20% has no sense: 66 of the 89 firms (74%) is in the women ratio percentage below the critical point of 20%, and only 23 firms (26%) is situated above the critical point of 20%, making this sample very small and vulnerable.

In the Norwegian sample, something similar happens, but contrary to the Spanish sample: 88 of the 95 firms (93%) is in the women ratio percentage above the critical point of 20%, and only 7 firms (7%) is situated below the critical point of 20%.

It is with the Global sample, which is bigger and more equally distributed in terms of women ratio, that we see the moderation confirmed. In this sample 73 of the 184 firms (40%) is in the women ratio percentage below the critical point of 20%, and 112 firms (60%) is situated above the critical point of 20%. Looking at the mean women ratio of this sample we see that it is 25.25%, thus close to the critical point of 20%. The Global sample, offering sufficient reports both below and above the critical point, is the only sample which makes it possible to compare and appreciate differences in firm´s financial performance between women ratios below and above this critical point.

7.5. WHICH RESULTS DID NOT CONFIRM OUR THEORETICAL PROPOSALS?

Our third hypothesis predicted that strong gender-based board faultlines would have a negative impact on firm performance due to social categorization and intergroup biases. This would ultimately result in increased relational conflict, reduced board cohesion and increased process losses, ultimately leading to decreased board performance (Li and Hambrick, 2005).

Based on our results we cannot confirm this predicted relationship between faultlines and firm performance. In the Norwegian sample however, although not statistically significance, the negative beta of -0.063 confirmed the negative direction of the relationship, indicating that the higher the faultline, the lower the Tobin's Q. This is in line with our predictions that as gender-groups are more similar with their in-group members, and more different from their out-group members, a faultline can form dividing the board into two gender sub-groups, affecting cohesion, information exchange and relations in a negative way.

The Global and the Spanish sample did not confirm these predictions. Contrary to our hypothesis, although not statistically significant, the beta indicated a positive direction of the relationship between gender faultlines and Tobin´s Q. We find this interesting to analyze, in spite of the fact that the results were not statistically significant.

Four articles propose that faultlines have positive effects (Gibson and Vermeulen, 2003; Bezrukova et al., 2010; Hart and Van Vugt, 2006; Philips, Mannix, Neale and Gruenfeld, 2001). Two of these articles (Gibson and Vermeulen, 2003 and Bezrukova et al., 2010) seem relevant to our discussion.

Gibson and Vermeulen (2003) relate faultlines with high levels of cooperation within subgroups. They found that there were reasons to believe that homogeneous subgroups, within the overall big group, could have a positive impact on the overall group´s performance, due to their function as supportive "cohorts" within the overall group (Asch, 1952, 1956). A cohort consists of people with a similar background and similar perspectives on things (Walsh, 1988). Asch proposed that within cohorts a rich exchange of information and constructive debate take place, and that without cohorts,

different perspectives would not be incorporated into the overall group's decision-making.

Based on this, and taking into account the earlier debate on gender parity and male dominance in Spain, we believe that when two or more women directors form a female subgroup within the board, sharing similar tenure, education level and education background, this serve as a stimuli and support for each of the women directors to express her opinion, and for it to be taken into account in the overall board decision-making. Forming part of a subgroup, they feel that they have at least one in-group member who is likely to share their point of view, and/or to show support and understanding, and even though the majority may still disagree with their point of view, the board will be more receptive (from group research; Asch, 1952 and 1956; Stasser, Taylor and Hanna, 1989; Crott and Werner, 1994). In this way subgroups strengthen members' self-efficacy (Bandura, 1997), and stimulates them to act upon and express their opinion. This has also proved to enhance the accuracy and quality of their input (Zarnoth and Sniezek, 1997), hence improving the overall board performance.

Earlier research points to a higher salience of gender for women directors in token or minority status on the board, and in situations where they feel bias and discrimination (Mullen, 1991; Cadinu and Galdi, 2012). Their natural reaction is to seek support and esteem in their gender subgroup. In this line, Bezrukova et al., ´s study (2010) show that strong faultlines may help subgroup members cope with perceived injustice, and proposed that faultline subgroups may operate as networks in providing self-help; reducing interpersonal biases, stereotyping and discrimination.

Based on this we have reason to believe, that in the Spanish sample, stronger faultlines contribute positively to women´s assertive way to influence board decisions, derived from their subgroup support, esteem and confidence, and that this is the reason why the direction of the relationship between gender faultlines and Tobin´s Q is positive.

Our fourth and fifth hypothesis predicted that board overlap tenure and chair-board shared experience would moderate the negative relationship between Faultlines and Tobin´s Q. However, as no such relationship was demonstrated, there is no sense in discussing the moderations.

7.6. WHAT ARE THE IMPLICATIONS FOR CORPORATE BOARDS?

We recommend firms to expand their searches beyond the traditional talent pools, with the objective of appointing more women directors and gain in gender diversity. Not only do our results confirm the business case for women on boards; a sufficient reason in itself for promoting gender diversity, but also do our review of previous research confirms that there are great benefits in the incorporation of women, both for the internal board work, and for the relations with customers, investors and prospective employees.

We proposed that the actual numbers of women on boards have an impact on the relationship between gender diversity and firm´s financial performance. A firm that do not believe in gender diversity, might decide to have a token women on the board, just for complying with recommended "good board practices". However, this could lead to a "self- fulfilling-prophecy" - a negative circle- where tokens have less influence, make less contribution to the board´s decisions, and contribute less to the firm´s performance. This confirms the initial bias that women on boards do not improve firm performance.

We believe however that a positive circle is possible; by appointing more women to board positions (above critical mass), women´s influence on boards increases and so do their contribution and impact on firm´s financial performance. Earlier we saw that having female board members have positive consequences on the presence of women at multiple levels in the company. Bilimoria (2006) found a positive relationship between women board members and the number of women officers; the number of women officers holding line jobs; the presence of a critical mass of women officers; the number of women officers with high-ranking; and the number of women among the top corporate earners.

This is in line with our argument of an interplay between numbers and culture: a country with higher gender parity have higher women ratios, and higher women ratios influence culture (on medium or long term). However, as numbers are faster to change than culture, we suggest that companies start with increasing the numbers of women on corporate boards. In this respect, we recommend two main lines of actions.

The first verses around the implementation of policies that assure women´s access to corporate boards, and the second focuses on the development of board members´ positive integration of diverse members, thus avoiding negative circles and bias against women.

Promoting policies that assure women´s access to corporate boards

The fundamental reason why women are not getting access to boards is found in the tradition of how board members are nominated; board members have traditionally been chosen from the ranks of existing CEOs (Gutner, 2001). Since most CEOs are men, they engage in homosocial reproduction, selecting others similar to themselves. Executive directors (EDs) and non-executive directors (NEDs) are appointed in different ways. EDs gain their position through normal career progression, typically rising to the position of CEO or CFO. NEDs are appointed by an invitation from the board chairman or the nominating committee (Burgess and Tharenou, 2002). For nominations to board positions, directors recommend and sponsor colleagues like themselves, whom they know are likely to fit the existing mold. Authors like Pfeffer and Salancik (1978) and Ibarra, (1993) have recognized this tendency, and call it "homophily."

Thus, one important way to increase the percentage of women directors on boards, is by including woman directors in the nominating committee, and by increasing the ratio of women directors on boards to a critical mass of at least 20%.

Four main measures have seemed to have contributed to the increased ratio of women on corporate boards where they have occurred around the world (Branson, 2012):

1. Quota laws and pledge programs
2. Mentoring programs
3. Investor pressure
4. Mandatory disclosure requirements of stock exchanges

Quota laws and pledge programs can be efficient in improving women´s percentage on the boards. As earlier commented, Norway was the first nation to adopt a quota law in

2003, ordering full compliance by 2008, and setting the level at 40% of women representation on corporate boards.

Mentoring programs where a former or present senior manager is assigned to a younger female manager with the objective of helping, counseling, guiding and orienting the mentee in her career path up through the organization, is another policy that can help women on their way to the board. Astute observers however, criticize mentoring programs on several grounds; mentors may disappear, be transferred to another location, or be the victim of downsizing. Furthermore, many mentors have been perceived to be over-protective of younger female managers, leading to the "office uncle" or "plastic bubble" phenomena in which mentors seek to shield mentees from obstacles, and roadblocks rather than working through them.

Cox and Nkomo´s (1991) study showed that the main reason why managerial women leave organizations is the lack of career growth and opportunities, often referred to as the “glass-ceiling”. This is "a barrier so subtle that it is transparent, yet so strong, that it prevents women from moving up in the management hierarchy" (Morrison and von Glinow, 1990: 200). Male directors with conservative opinions about gender-appropriate roles do frequently not offer women the same organizational rewards, such as training and development, nor promotion and pay. These directors have furthermore demonstrated to have expectations towards gender that bias the executive selection (Oakley, 2000).

In some countries groups of institutional investors and other organizations have formed pressure groups in order to the push corporations to increase the percentage of women directors on the board.

Mandatory disclosure requirements established by stock exchanges, include reporting on board composition as part of their agreement with public companies, and require that companies comply or explain, if they do not comply. A significant number of companies opt out of the diversity disclosure by reporting a simple one line disclosure, stating that there is no fixed policy within the company regarding candidate diversity for the board of directors.

Women tend to make career decisions from the standpoint of relationalism; before a decision is made they consider the impact on their family (Mainiero and Sullivan 2005; Guillaume and Pochic, 2009). The difficulty of combining career and family thus offer a threat to the advancement of women into positions of power. A higher position may require relocation, late-day and week-end meetings, frequent travel and office face time; higher earners work more hours than lower earners, and women are more willing than men to sacrifice wages and promotions for parenting (Wood, Corcoran and Courant, 1993). Eliminating these more subtle forms of *"de facto"*, or second generation discrimination could be another action to eliminate barriers for women´s promotion to boards. These forms of second generation discrimination have a disproportionate effect on women as they move up through the ranks of middle and senior management, as persistent insistence on such practices causes women, especially those with children, to opt out of the work force, leading to a depletion of the pool from which women director candidates could be chosen ten years hence.

Companies should also avoid "trophy directors"; women that are serving on four, five, six, or seven boards of directors. This contributes to a small number of very busy women directors, and a total number of women directors significantly smaller than the number of directorships held by women, crowding out other younger, deserving women candidates.

Finally, appointing board members with less traditional views and with clear and manifested pro-diversity beliefs would also help eliminating barriers for women´s inclusion to boards of directors.

<u>Promote the development of board members´ positive integration of diverse members.</u>

To foster the development of board members´ positive integration of diversity, various recommendations are suggested:

1. Chair´s commitment to diversity
2. Diversity training programs and diversity awareness development
3. Board composition planning

This research points to the importance of a careful selection process of directors by the chair and the nomination committees, ensuring improved gender balance and at the same time a board configuration that do not lend itself to strong gender faultlines. It also underlines the role for active leadership on boards, who should be aware of subgroupings possible intergroup bias and the relational conflicts this can create, and make sure that these negative effects do not out-weigh the benefits of diversity. Corporate boards should therefore commit to enhance pro-diversity beliefs among its members. This could be achieved through the chair´s example of showing his or her interest in hearing all members, and incorporate diverse information, ideas and perspectives into the elaboration/decision-making processes. As there is evidence from research that certain styles of leadership can help diverse groups to work effectively together (Kearney and Gebert, 2009), the chair´s pro-diversity beliefs may be an important aspect of the successful management of diversity. Likewise, it seems feasible that leadership can be an effective moderator of the faultline-performance relationship.

Diversity training programs is another alternative to influence and train people in effective team collaboration. However, most diversity training programs have seemed to be limited to making people aware of their stereotypes about other groups, instead of welcoming people´s differences (Karp and Sammour, 2000; Rynes and Rosen, 1995). Homan et al., (2007) argue that it is also important to manage people's feelings about diversity itself (rather than about different others), and to make them aware of the potential value of being a member of a diverse team. It would, therefore, seem worthwhile to extend diversity training programs beyond the focus on stereotypes, and to include a focus on beliefs about, and attitudes toward diversity itself (van Knippenberg et al., 2007).

7.7. WHAT ARE THE PRINCIPAL LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH?

We acknowledge that there are important limitations in this study that need to be addressed, many of which may indicate fruitful avenues for future research.

The first limitation has to do with reverse causality and endogeneity. This is a major methodological concern for management research (Addallah et al., 2015), as previous

research state that one aspect that complicate the empirical analysis of boards is that many of the variables might be determined endogenously (Hermalin and Weisbach, 2003; Boone et al., 2007; De Andrés and Vallelado, 2008; Linck et al., 2008; Johnson et al., 2013; Kwon and Adler, 2014). In our study we include a methodology to verify whether or not our data is affected by endogeneity, but in spite of a negative report, we cannot draw the conclusion that no endogeneity whatsoever is operating.

The second limitation has to do with the validity of the results with respect to other countries. In our study two countries were included, Norway and Spain. Both these countries operate under specific circumstances, Norway, due to the law of 40% gender representation on boards and the required one-third employee elected board representatives, and Spain, being a country immersed in economic crises since 2008. Since these circumstances are specific for our sample, the conclusions drawn might not necessarily be valid for all countries emerged in different circumstances.

Third, the sample is drawn from listed firms in both countries, most of which are relatively large in comparison to the average company size in each country. As the results might not apply to small and medium size firms, we believe that future research could address these issues for small, medium and family-owned companies. However, there are no apparent reasons why the results would differ; it could even be possible that diversity may report larger effects on smaller firms, as individual efforts are more noticeable.

A fourth and important limitation is the lack of information on the mediating processes within the “black box” - the behaviors and the relations between the board members. Due to our research methodology it is impossible to determine these internal dynamics, as the only variables controlled for are the “inputs” (the composition of the board members) and the “outputs” (the financial performance). Advancing in our knowledge about the mediating processes require a different research approach, based on qualitative research, incorporating interviews, questionnaires and/or participant observations. We believe that this is a promising field of research, and very interesting, especially in view of our unexpected findings of a positive relationship between faultline and Tobin´s Q. There is a lot to be learned about subgroup identification, minority support and effective influence within the black box.

Finally, in the CEM model (van Knippenberg et al., 2004a) two additional moderating variables of the relationship between diversity and firm performance were proposed, but not incorporated into our model. These are board tasks motivation and board task ability, and they are expected to affect the information/decision-making processes in that high levels of task motivation and high levels of task ability lead to superior performance in diverse groups. Highly motivated group members are expected to be more ready to interact with fellow group members that they perceive as being different. However, although understanding the importance of motivation, empirical research seldom include motivation as a moderating variable as it requires a highly complex and qualitative approach. In order to test its effects upon organizational performance, it would be necessary to assess board members' motivation, aggregate this to the board level, and to test interactions with dimensions of diversity. Because a lot of different factors may feed into motivation, e.g. leadership (van Knippenberg, D., van Knippenberg, B., De Cremer and Hogg, 2004b), goal-setting (Lock and Latham, 1990), organizational justice (Tyler, 1999), social exchange processes (Rhoades and Eisenberger, 2002) and individual differences in information-processing motivation (De Dreu and Carnevale, 2003) it is difficult to conceptualize the construct.

The second additional moderator, board task ability, is proposed to moderate the relationship between diversity and performance in that high levels of task ability moderate group performance. To test the moderating role of ability one may assess the intelligence, or the level of the work-group´s formal education (Hunter and Schmidt, 1996), aggregate this to the group level, and test interactions between these proxies to ability and diversity. In addition to general cognitive ability, task-specific knowledge, skills, and abilities may be important, as they provide the common ground and shared frame of reference that may help diverse groups in making sense of different information and perspectives. Incorporating these two moderators and explore the complete CEM model could be an interesting, however complex future research project.

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