



**Board Diversity and Performance in the
Extraordinary World of Water Management:
The Role of Task-related Conflict**

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Abstract

This study aims to investigate the relationship between board diversity and firm performance. In addition, the mediating role of task-related conflict is examined. Previous research has theorized the possible mediating role of task-related conflict in the board diversity – firm performance relationship. However, this study is the first to empirically investigate this. The literature suggests that board diversity influences firm performance. Nonetheless, the exact underlying mechanism is not explained. Therefore, scholars have recommended to focus research in board diversity and firm performance on the intervening variables. Consequently, this study answers to this request by investigating the role of task-related conflict.

The setting of this research is the Dutch water management industry, since these authorities have the obligation to be publicly transparent in terms of providing their notes. Moreover, after a period of mergers between authorities, the Dutch water management industry is a particularly interesting case to investigate. For instance, task-related conflict might increase, due to mergers, and influence the board diversity – firm performance relationship. The Dutch water management authorities are examined in a panel data analysis. Board diversity is measured by gender, educational level and industry background. With the support of automated content analysis, task-related conflict can be measured in the most objective way. The firm performance is computed by the costs of the water authority divided by its regional inhabitants.

This research found no significant mediating effect of task-related conflict in the board diversity – firm performance relationship. Moreover, educational level diversity shows no significant relationship with either task-related conflict or performance. In addition, industry background diversity negatively influences firm performance. However, gender diversity shows a positive relationship with both task-related conflict and firm performance. This could indicate that task-related conflict and firm performance are both influenced by board diversity in a similar way. Nevertheless, the mediating role of task-related conflict could not be claimed by this research. Future researchers should attempt to further explore this relationship, since underlying mechanisms are still unexplained. Possibly, other intervening variables can explain the mechanisms that board diversity evokes. Last, this study can recommend the water management authorities to stimulate female representation within the board. Perhaps the water management authorities could focus more on searching and inviting women to run for board positions.

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Introduction

A major challenge for firms is to maximize the effectiveness of groups and teams to meet organizational goals (Thatcher & Patel, 2012). Previous research primarily focused on board composition and outcomes. For instance, scholars have suggested board diversity to influence firm performance, although the results of research are inconclusive (e.g., Forbes & Milliken, 1999; Triana, Miller & Trzebiatowski, 2013; Williams & O'Reilly, 1998). On the one hand, the main assumption in the literature is that variation within demographic characteristics reflects the variety of knowledge (Dahlin, Weingart, & Hinds, 2005; Dougherty, 1992). Subsequently, a diversity in knowledge can increase the number of perspectives on situations, leading to improved decision-making and performance (Hambrick & Mason, 1984; Miller & Triana, 2009). On the other hand, social identity theory explains that diversity may have a negative influence on performance (Ashforth & Mael, 1989), since social identification leads to cooperative behavior. When diversity is strong, i.e. multiple characteristics distinguish the members, the formation of subgroups is more likely (Li & Hambrick, 2005). Particularly, when the communication between those subgroups is hampered, the cognitive resources of the board members are not used to their potential. Eventually, cooperation deteriorates, discussions end in disagreement and performance decreases (Barkema & Shvyrkov, 2007).¹

The literature on the board diversity-firm performance relationship is ambiguous and scholars have proposed to clarify this by studying mediating variables (Johnson, Schnatterly & Hill, 2013; Lawrence, 1997; Miller & Triana, 2009). Although previous research on conflict is inconclusive on its effect on firm performance, scholars theorize that conflict does have a mediating effect. De Dreu and Weingart (2003) argue that conflict has a negative effect on group performance and can only have a positive effect under very specific, yet unknown circumstances. Furthermore, Li and Hambrick (2005) found that strong differences between subgroups in boards provoke conflict. Moreover, the urgency of social cohesion and harmony for the board's performance is highlighted by other scholars (Forbes & Milliken, 1999; Huse, 2005; Westphal & Bednar, 2005). However, others state that conflict can generate discussion and increase performance. Jehn (1995), for instance, argued that conflict can be distinguished between task-related conflict and relationship conflict. Task-related conflict is conceptualized as disagreement between group members, based on task-related

¹ This study assumes the same outcomes for top management teams as for boards of directors, considering the effect of diminished communication between members. Since the decrease of communication and cooperation between team members is assumed to have a negative effect on all types of groups.

issues, due to different opinions or perspectives (Forbes & Milliken, 1999; Jehn, 1995). This kind of conflict produces the beneficial generation of discussion and the evaluation of alternatives. However, relationship conflict stems from social disagreements between group members, leading to stress, frustration and hostility (Jehn, 1995). Where task-related conflict is perceived as a beneficial type of conflict, relationship conflict is considered detrimental to firm performance (Huse, 2007). This study focuses solely on task-related conflict, since the time frame of this research does not allow personal observations for a large number of boards.²

Concluding, task-related conflict within the board of directors is expected to have a mediating effect on the board diversity-firm performance relationship. Therefore, the central question dealt with in this study is: *'What is the influence of board diversity on firm performance and does task-related conflict mediate this relationship?'*. In answering this question, this study contributes to the literature by linking the concepts of board diversity and firm performance by investigating the mediating role of task-related conflict, which is stated to be important in the literature (e.g., Pye & Pettigrew, 2005; Zona & Zattoni, 2007). This mechanism has been theorized by other scholars. Although, to my knowledge, it is not empirically supported yet. For example, Li and Hambrick (2005) investigated differences between subgroups, but not specifically board diversity characteristics. According to Lawrence (1997), it is of utmost importance to examine the mechanisms explaining the relationship between board diversity and firm performance. Previously, scholars have suggested demographic predictors to influence firm performance without explaining the sometimes crucial, theoretical constructs underlying this relationship. Consequently, contradictory findings may arise, as important theoretical mechanisms remain non-empirically validated. Hence, this study contributes to the literature in adding this theoretical construct.

To conduct research on this topic, the general boards of directors of the Dutch water management authorities are investigated. After a period of mergers, the Dutch water management industry offers an interesting case to investigate task-related conflict and its influence on the board diversity - firm performance relationship. Assumably, due to the merger of two different boards task-related conflict may be induced, since discussion may

² A large number of boards have to be observed personally to measure relationship conflict, since it is emotional and thus, cannot be perceived by objective, secondary data. Due to the time frame of this research, it is considered to be beyond the boundaries of possibility. Therefore, this study focuses on the concept of task-related conflict.

arise about how to perform the tasks (Dooley & Zimmerman, 2003). Furthermore, the Dutch government is interested in the diversity within boards, considering ‘De Staat van het Bestuur’, which is a document that provides insights in the trends and recent developments of the different boards of public organizations.

The water management boards typically consist of approximately 30 persons and have more potential for diversity, because of their size (Bantel & Jackson, 1989). In other industries, boards frequently elect their own members, which can confuse the interpretation of the results. For example, when board members are intelligent and elect diverse types of directors to positively influence firm performance, the intelligence of the members could complicate the interpretation of diversity. In this extraordinary case, the members are externally chosen by public elections and thus, this aspect will not lead to complications in the model. Furthermore, several seats are reserved for different stakeholders, since the operations of the water authorities often concern several groups of citizens. Places are established for firm managers, farmers and environmental managers. The allocation of seats happens by the respective group’s organization. For example, the firm managers get appointed by the chamber of commerce. Thus, board diversity arises from the election by external constituencies.

Boards of directors generally carry out two tasks: control and service (Forbes & Milliken, 1999). The control task is best described as the board’s obligation to monitor management. Monitoring management includes the selection and replacement of managers and the supervision of major decisions. The service task consists of advising and counseling the organization and in particular, top management. Considering strategic change, the board of directors has a crucial task in strategic decision-making (Westphal & Bednar, 2005; Westphal & Fredrickson, 2001). For instance, the strategic planning of a company is part of the board’s tasks and responsibilities. According to Forbes and Milliken (1999), the strategic task is included in the control task. This strategic task illustrates the board of directors’ control in major decisions within the firm, and thus on firm performance.

Considering the water management authorities, the board of directors is particularly involved in the control task, as can be seen in Appendix I. Although the board also has a service task to some extent, the largest part of the duties is related to the control task. For instance, monitoring the executed policy and strategy is a typical example of the control task. Therefore, this study’s context can provide results that are primarily explained by the effects

on the control task of the board. For the Dutch water management authorities, this study could bear important insights in the diversity of the board and the mechanism influencing the firm performance.

This study is divided into four different sections. First, in the Conceptual Background and Theory and Hypotheses sections, an extensive literature review on the past literature and findings will be applied, leading to the construction of hypotheses. Second, the Methodology section introduces the data and describes the method of analysis. Third, in the Results section, the research is conducted and the results of the analysis are explained. Last, the implications and limitations of this study are described extensively and advice for future research will be provided in the Discussion and Conclusion section.

Conceptual Background

Diversity in the Board of Directors

In the literature, the relationship between board characteristics and firm performance has been investigated extensively (Williams & O'Reilly, 1998). For instance, Westphal and Bednar (2005) argued that board demographics can affect the strategic persistence of a firm. They state that board diversity can result in a disinclination of expressing strategic concerns, since social cohesion is lower. As a result, strategic persistence of the firm decreases with higher levels of board diversity. However, depending on the context, board diversity may have differing consequences for firm performance (Johnson et al., 2013). Blau (1977, p. 276) described the concept of diversity as: "(...) the great number of different statuses among which a population is distributed". Hence, the more dispersed the statuses (i.e., positions) in the board are, the higher is the level of diversity in the board. Notwithstanding the extensive body of literature on the board diversity and firm performance, the results are ambiguous. Dahlin et al. (2005) even concluded that the diversity effect on firm performance is inconsistent, as different types of diversity have varying effects on firm performance.

The positions within a group can be derived from both demographic and perceptual characteristics. Pfeffer (1983) claimed that demographic characteristics are superior in comparison to perceptual characteristics considering research, because these are easily observable and more reliable (Zona & Zattoni, 2007). For instance, gender, age, race, education and industry background are examples of demographic characteristics. Perceptual characteristics are, for example, knowledge and personality traits (Erhardt, Werbel & Shrader, 2003; Li & Hambrick, 2005; Milliken & Martins, 1996; Zona & Zattoni, 2007). As Milliken and Martins (1996) already suggested, these two types of diversity cannot be seen as mutually exclusive. For instance, racial differences could imply a difference in underlying attributes as values or socio-economic background, but this does not have to be correct necessarily. Even though some differences are not easily observable, these differences can have a crucial impact on the diversity of opinions, perspectives and preferred interaction styles (Milliken & Martins, 1996).

Previously, scholars have examined the relationship between board capital and performance and found that human and social capital can determine the board's performance in the control and service tasks (Certo, 2003; Hillman & Dalziel, 2003). Furthermore, Miller

and Triana (2009) mention that a firm's human and social capital can influence firm outcomes. These types of board capital can underlie specific demographic and perceptual characteristics. For instance, as mentioned in the previous paragraph, race could indicate the socio-economic background of a person. Human capital can be described as an individual's knowledge, skills and experience and can be developed by education and training, for example (Kor & Sundaramurthy, 2009). Social capital consists of the connections and relationships an individual holds, which can support the firm to acquire resources and function effectively (Kor & Sundaramurthy, 2009).

On the one hand, diversity in the board capital is expected to result in dissimilar and unique perspectives within the board (Miller & Triana, 2009). Dahlin et al. (2005) claimed that teams with divergent perspectives possess a broader range of information sources, as the characteristics are perceived as proxies of knowledge and perspectives (Dougherty, 1992). As a result, a consideration of more information and alternatives is expected to improve decision-making, and thus firm performance (Miller & Triana, 2009). On the other hand, heterogeneity (i.e., diversity) within the board may increase the variation in opinions, which results in more disagreement, slower decision-making and eventually the inability to induce strategic change (Triana et al., 2013). A more complete view is provided by Filley, House and Kerr (1976), who summarized the literature on group diversity and performance. They argue that routine problems are best solved by a group with low diversity and novel problem-solving is better dealt with by highly diversified groups. In the context of boards, novel problems are expected to occur more frequently than routine problems. Accordingly, a board with a higher diversity is better able to perform their nonroutine tasks.

Diversity may also provoke social processes within groups, especially by observable types of diversity, since these are visible to other board members (Milliken & Martins, 1996). Previous research of Levine and Moreland (1998) concluded that group membership and demographic characteristics have a strong correlation. Other scholars found that in groups and top management teams, demographic characteristics can lead to stereotyping and categorization, since these are often easily observable (Harrison, Price & Bell, 1998; Pelled, Eisenhardt & Xin, 1999; Watson, Kumar, & Michaelsen, 1993). Assumingly, the social process of stereotyping and categorization will not differ for boards. When stereotyping and categorization within the board exists, directors may feel less attracted to the rest of the group, group cohesion can deteriorate, subsequently limiting group communication and cooperation

(Dahlin et al., 2005; Williams & O'Reilly, 1998). Consequently, cognitive resources may not be utilized to the maximum, directors have more complications in reaching consensus, and firm performance will eventually decrease (Barkema & Shvyrkov, 2007).

Gender

Contrary to educational level and industry background, gender is an easily observable characteristic. Therefore, gender may evoke different social processes within the board, like stereotyping and in-group categorization (Jehn, 1997; Jehn, Northcraft & Neale, 1999; Westphal & Bednar, 2005; Williams & O'Reilly, 1998). Milliken and Martins (1996) also suggested that diversity in easily observable characteristics has a negative effect on group satisfaction and social identification. As a consequence, social cohesion may decrease within the board of directors and eventually firm performance deteriorates.

Nevertheless, Post and Byron (2015) claim that female board representation positively influences the firm's financial performance, which indicates the positive effect of gender diversity. Particularly, female presence in the board was positively associated with the board's control task. Erhardt et al. (2003) also found evidence for a positive effect of gender diversity on firm performance and the control task of the board. They suggested several possible reasons for this effect. First, higher diversity could lead to more conflict and thus, increased discussion. This could benefit the strategic decision-making of the board. Second, the pool of talented directors increases when a firm also looks for female directors. Last, work disadvantages cause women to outperform men. As women can perceive disadvantages at the work floor (Erhardt et al., 2003), they have to perform better than men to be promoted. Consequently, female presence may improve the performance. Hence, the literature has found evidence to believe that gender diversity has a positive impact on firm performance.

Educational Level

Hambrick and Mason (1984) stated that to a certain extent, the educational background of a person indicates an individual's knowledge and skills. Moreover, several scholars claim that educational background is a pure indicator of informational diversity (Dahlin et al., 2005; Williams & O'Reilly, 1998). Therefore, the board diversity in educational level can indicate the variety of knowledge and skills in the board of directors. Cohen and Levinthal (1990) argued that the accumulation of knowledge enables a person to learn or develop problem-solving skills more rapidly. Individually, directors may not possess all the necessary knowledge and skills, yet as a group they may, since the board can gather perspectives,

connections and efforts (Kor & Sundaramurthy, 2009). Consequently, a highly diversified board in terms of educational level provides a strong knowledge base and increases the ability to develop, since the probability of encountering familiar information is higher. Furthermore, the level of education indicates the investment in human capital. Since human capital can influence the fulfillment of the board's control and service task, educational level will presumably have an impact on performance.

Previously, scholars have studied the educational level and prestige of educational institutions to examine the effect on the cognitive values and decision-making of directors (Johnson et al., 2013). Nevertheless, the conclusions of these studies are divergent. For instance, Daily and Dalton (1994) illustrate that educational backgrounds have no impact on firm value, where Kim and Lim (2010) state that it has a positive effect. Johnson et al. (2013) suggest that the variation of results on educational background characteristics may illustrate the presence of fundamental social or cognitive constructs. Furthermore, they advise to further investigate educational background characteristics and the corresponding constructs. Therefore, this study aims to clarify the effect of educational diversity.

Industry Background

The human and social capital that directors possess, partly derive from their industry background. The industry background is important for the control and service tasks of the board and typically consists of tacit knowledge of an industry, experience in certain firm-specific events, access to industry resources and connections with potential partners (Johnson et al., 2013; Kor & Sundaramurthy, 2009). While the experience in specific industries and events adds value to an individual's human capital, social capital is developed by the network that an individual director may have built up. Johnson et al. (2013) state that the industry background can influence the manner in which directors process information and eventually make decisions in the boardroom. For instance, industry-specific knowledge of the board can support the recognition of emerging opportunities in a certain industry. Moreover, the right industry experience can even lead to positive effects on firm performance (Kor & Sundaramurthy, 2009). Furthermore, the connections with other industries can positively influence the amount of resources in the firm (Johnson et al., 2013).

Diversity in the board logically expands the board's industry knowledge, as multiple directors bring more experiences, connections and perspectives to the boardroom. As mentioned in the previous paragraph, the accumulation of this knowledge helps the board to

learn more rapidly and have better problem-solving skills (Cohen & Levinthal, 1990). However, when board diversity is low and directors focus on a field where they have industry experience in, decisions can be biased by the information and resources within the board (Hambrick and Mason, 1984; Miller & Triana, 2009). This highlights the importance of research into board diversity considering industry background.

Concluding, research on heterogeneity proposes that diversity is a double-edged sword, providing large opportunities, yet also great challenges. The opportunities arise from the fact that diverse groups have a higher capacity to analyze a broader set of perspectives and can generate alternatives of higher quality than homogeneous groups (Watson et al., 1993). On the other hand, it is challenging that more diverse groups have a lower probability of being integrated, resulting in higher levels of dissatisfaction (Milliken & Martins, 1996). Apparently, firms should consider both sides of diversity and find the right balance to benefit from it. Moreover, as mentioned before, diversity comes in many forms and can therefore not be definite in its conclusion on one characteristic. In this study, the board characteristics educational level and industry background are considered to examine the role of diversity for perceptual characteristics, since these represent a diversity in skills and knowledge (Milliken & Martins, 1996). Furthermore, gender diversity is examined, since demographic characteristics may have a different type of influence on firm performance. For example, in evoking social processes within the board of directors.

Theory and Hypotheses

Board Diversity and Task-related Conflict

Since boards encounter ambiguous and complex problems, directors are likely to have different perspectives and opinions on these problems, leading to disagreements (Forbes & Milliken, 1999). Although the literature is inconclusive on the effect of conflict, its role seems unequivocal. On the one hand, De Dreu and Weingart (2003) state that conflict deteriorates group satisfaction, hinders information exchange and decreases group productivity, resulting in ineffective decision-making (Jehn & Bendersky, 2003). Williams and O'Reilly (1998) explain these social processes and suggest that social categorization is the underlying factor. They state that social categorization causes both categorization and the tendency to be attracted to similar others (i.e., similarity-attraction theory) (Williams & O'Reilly, 1998). Consequently, the before mentioned processes are evoked in the board of directors. On the other hand, conflict can also be beneficial, since conflict teaches people to look at situations from different perspectives, be creative and confront issues (Miller & Triana, 2009). Furthermore, the composition of the board determines the board's base of information and knowledge and board diversity offers a broader base (Hambrick, Li, Xin & Tsui, 2001). In general, conflict is perceived as a strong and negative concept, but the intensity and type of conflict and the approach of handling this will differ. For instance, in some boards voting must be unanimously, leaving no room for disagreement, where in other boards discussion may be encouraged (Huse, 2007).

Jehn (1995) started with the convenient distinction between task-related conflict and relationship conflict. On the one hand, task-related conflict refers to the differences in opinions, perspectives or other task-related disagreements among directors. Huse (2007) argued that task-related conflict does not only involve tasks and objectives, yet also other kind of disagreements. For example, goal conflict is disagreement about what is best for the firm and policy conflict concerns how and when tasks are performed. Task-related conflict emerges from disagreements about the content of the tasks and is likely to occur in groups that are interdependent and have to perform complex decision-making tasks (Forbes & Milliken, 1999). On the other hand, relationship conflict is typically regarded as disadvantageous. Relationship conflict³ is best described as the dysfunctional and emotional

³ This study did not measure for relationship conflict, due to the lack of data. Relationship conflict is not easily measured by content analysis, as emotional and nonverbal communication cannot be measured in notes.

conflict that emerges from arguments or social disagreements. Relationship conflict precipitates tension, stress, frustration and hostility (Huse, 2007; Jehn, 1995). Consequently, relationship conflict has a negative effect on group satisfaction and performance (Jehn, 1997).

Previous research has found evidence for the effect that board diversity has on task-related conflict. Where demographically diverse groups are more liable to express criticism on other members' ideas and initiate novel, strategic decisions, homogeneous groups may be anxious to ensure unanimity and can therefore suffer from inertia (Hambrick & Mason, 1984; Jehn, 1995). Demographic diversity in the board may encourage constructive debate on task-related issues, due to the variety of skills, knowledge and experience (Jehn et al., 1999). As stated before, scholars have claimed an inconsistency in the effect of board diversity. Consequently, this study aims to examine these different types of board diversity.

The size of the literature on the effects of gender diversity in the board has reached an impressive amount. Some studies perceive gender diversity as an endogenous driver of board composition (Johnson et al., 2013), i.e., members of under-represented groups are elected to show equality in the board or firm. In this study's context, directors are elected by external constituencies, and thus, the influence of this kind of tokenism may be neglected. Furthermore, Andreoni and Vesterlund (2001) argue that the different level of altruism could impact the degree of conflict. They suggest that men show more altruistic behavior in situations where the costs of altruism are low, where women show exactly the opposite behavior. Therefore, the different perspectives determined by gender may evoke task-related conflict. Moreover, both Li and Hambrick (2005) and Kim (2014) argue that directors who are demographically similar commonly show improved communication and interpersonal interactions (i.e., similarity-attraction theory). Thus, where Li and Hambrick (2005) state that this reduces conflict, this study suggests that diversity will increase task-related conflict. Since demographically diverse directors will assumingly disagree more often, opposed to demographically similar boards.

Hypothesis 1a: The higher the level of board diversity in gender, the higher the level of task-related conflict within the board.

A diverse board in terms of educational level can provide different types of information and knowledge (Dahlin et al., 2005). Moreover, Johnson et al. (2013) suggest that education may represent a variety of underlying constructs, such as: resemblance in socialization, social status and availability of a network. Furthermore, education is suggested

to be related to the level of moral reasoning (Turner, Barling, Epitropaki, Butcher & Milner, 2002). Moral reasoning is a process of considering whether an idea is right or wrong. Hence, diversity in educational level may provoke task-related conflict within the board, since different levels of moral reasoning may lead to conflicting ideas. These differences may cause boards to disagree more often, due to the varying viewpoints of directors (Hambrick et al., 2001). Thus, educational level may induce task-related conflict within the board of directors. To my knowledge, educational level is not a prerequisite to become a director in the water management boards, since external elections determine the board composition. Therefore, a pure effect of educational level diversity on task-related conflict can be measured.

Hypothesis 1b: The higher the level of board diversity in educational level, the higher the level of task-related conflict within the board.

Considering industry background, diversity could have similar consequences for the level of task-related conflict in the board. In a study of Li and Hambrick (2005), the authors suggest that diverse industry backgrounds imply a variation in problem-solving skills and experiences. Moreover, these different backgrounds may offer a variety of perspectives and knowledge, which every director could perceive as valid. Consequently, the level of task-related conflict may rise with the level of industry background diversity in the board (Li & Hambrick, 2005).

In the setting of this research, seats in the board are partly reserved for different industry categories. Hence, the diversity in industry background is to a certain extent established. Therefore, a minimum level of industry background diversity is assured in this context. This diversity in industry representatives implies a dispersion of interests. A dispersion of interests may lead to complications with the allocation of resources (Bourgeois, 1980). Kor (2006) claimed that reaching consensus is complicated when the interests in the board are varying and conflicting. Consequently, task-related conflict may increase when industry background diversity rises.

Hypothesis 1c: The higher the level of board diversity in industry background, the higher the level of task-related conflict within the board.

Task-related Conflict and Firm Performance

Forbes and Milliken (1999) suggest that task-related conflict is a board process that influences board task performance, and thus firm performance. Although task-related conflict is theorized to have a positive effect on firm performance, evidence of the effect is not always found by scholars (e.g., Zona & Zattoni, 2007). Previous literature suggests that the effect of task-related conflict on firm performance is dependent on several contextual factors, which will be explained in the following paragraphs.

First, task-related conflict has a more positive effect when decision-making is nonroutine. Nonroutine decision-making is commonly linked with complex tasks, which demand increased attention of the board. Task-related conflict can cause directors to inspect their tasks more carefully, because this induces directors to engage in exhaustive evaluation processes and think more critically. Consequently, the board becomes more creative and effective in decision-making, resulting in higher performance (Jehn, 1995). On the contrary, routine tasks usually have standard operating procedures to ensure effectiveness. Task-related conflict in this case would obstruct these procedures and therefore, decrease effectiveness and performance (De Dreu & Weingart, 2003). In the context of water management authorities, the board of directors is particularly involved with the control task. This task is nonroutine, since the board only gathers several times a year to discuss varying issues.

Second, the organizational level where the conflict occurs, is a determining, contextual factor. The organizational level is specified as the location of the group in the organizational hierarchy. De Wit, Greer and Jehn (2012) found that the higher the organizational level is, the more positive outcomes task-related conflict has. Presumably, this is also a consequence of the nature of the tasks in the upper levels of the organization, which are nonroutine and increasingly complex. However, another argument is that members of higher-level groups are probably better capable to handle conflicts, since they are likely to have more political intellect for solving or avoiding complex, intrapersonal conflicts. Hence, task-related conflict in the board implies a more positive outcome than it would for, for example, a team of service employees. Thus, the setting of the water management authorities is suitable, since the board of directors is at the apex of the organization.

Last, the third contextual factor is the triggering effect of task-related conflict on relationship conflict (Heemskerk et al., 2017; Huse, 2007; Zona & Zattoni, 2007). At high levels of task-related conflict, relationship conflict may arise, due to the emergence of

negative emotions. This emergence of negative emotions can be explained by self-verification theory, which describes that challenges of perspectives are experienced as negative judgments of an individual's expertise and skills (Swann, Polzer, Seyle & Ko, 2004). Subsequently, directors can experience mental pressure and tension, due to task-related conflict (De Wit et al., 2012). Consequently, cognitive flexibility, creative thinking and group cohesion can deteriorate, resulting in decreased group and firm performance. However, the literature provides examples where task-related debate can be controlled and not ends in relationship conflict, the effect of task-related conflict on firm performance can still be positive (e.g., Eisenhardt et al., 1997). Hence, a balanced board environment, where conflict is supportive will presumably be beneficial.

Furthermore, task-related conflict can positively affect strategic decision-making, because of the consideration of multiple perspectives and a careful evaluation of alternatives (Forbes & Milliken, 1999). The constructive debate and exchange of comments help boards to carry out their intellectual tasks more effectively (Zona & Zattoni, 2007). In particular, the control task of the board is enhanced by this kind of interactive processes, because disagreement and criticism require CEOs and other top-level managers to justify and evaluate strategic decisions (Forbes & Milliken, 1999). Moreover, task-related conflict can decrease groupthink within the board of directors, since discussion supports board directors to assess multiple perspectives and courses of action (Huse, 2007). Thus, task-related conflict stimulates board members to generate novel concepts and approaches (Jehn, 1995). Consequently, this will induce boards to take unconventional decisions and lead firms to strategic change (Barkema & Shvyrkov, 2007). However, Jehn (1995) found that high levels of task-related conflict could provoke low satisfaction and cohesion among group members (Forbes & Milliken, 1999). This is a disadvantage that should not be neglected, although it only holds for high levels of task-related conflict.

Considering task-related conflict and group cohesion, the literature is ambiguous on its interplay. On the one hand, scholars have found that task-related conflict could evoke relationship conflict when group cohesion is low (Heemskerk et al., 2017). On the other hand, McNulty, Florackis and Ormrod (2013) found that high levels of social cohesion in the board can hinder the positive effect of task-related conflict. In their study, emphasis lies on board dynamics and the mix of support, control and challenge. These dynamics can be hampered when directors perceive other members as friends and attempt to avoid conflict. Furthermore,

Westphal and Bednar (2005) claim to have evidence for a negative effect of low levels of cohesion. They suggest that low levels of group cohesion can prevent non-executive directors to express their opinions. Presumably, a balance in group cohesion will lead to the best outcomes, examining the previous literature.

Evidently, conflict and cohesion are not mutually exclusive and the interaction between the concepts is complicated to understand, due to the difficulty in distinguishing relationship conflict and cohesion (Heemskerk et al., 2017). A right balance is required and conflict should not be avoided (Eisenhardt, Kahwajy & Bourgeois, 1997; Heemskerk et al., 2017). The active avoidance of conflict interferes with strategic decision-making of the board, because it complicates engagement in debate. Therefore, firms should attempt to induce constructive task conflict, without letting it initiate dysfunctional relationship conflict (Eisenhardt et al., 1997).

Summarizing, task-related conflict in the board of directors is expected to have a positive effect on firm performance, since the decision-making is complicated and the board of directors is the upper level in the organizational hierarchy. Hence, the context of this research is appropriate for testing the effect of task-related conflict on firm performance. However, an important comment is that task-related conflict should be preserved to constructive debate, without causing relationship conflict. In this manner, task-related conflict could positively influence firm performance.

Hypothesis 2: Task-related conflict has a positive effect on firm performance.

Mediation of the Board Diversity-Firm Performance Relationship

To my knowledge, task-related conflict has only been theorized to influence the board diversity-firm performance relationship (e.g., Forbes & Milliken, 1999). Furthermore, Heemskerk, Heemskerk and Wats (2017) conducted research on the conflict-performance relationship and recommended future studies to include board diversity in their framework. Jehn et al. (1999) found that informational diversity positively influences group performance, mediated by task-related conflict. This indicates that task-related conflict can have a mediating effect, may it be in a different setting. Moreover, Forbes and Milliken (1999) previously suggested the mediating role of task-related conflict in the board diversity-firm performance relationship. In line with a study of Milliken and Martins (1996), the relationship between board diversity and task-related conflict is claimed. Subsequently, task-related conflict should enhance the board's performance and eventually firm performance. Below, a visual overview is provided in figure 1.

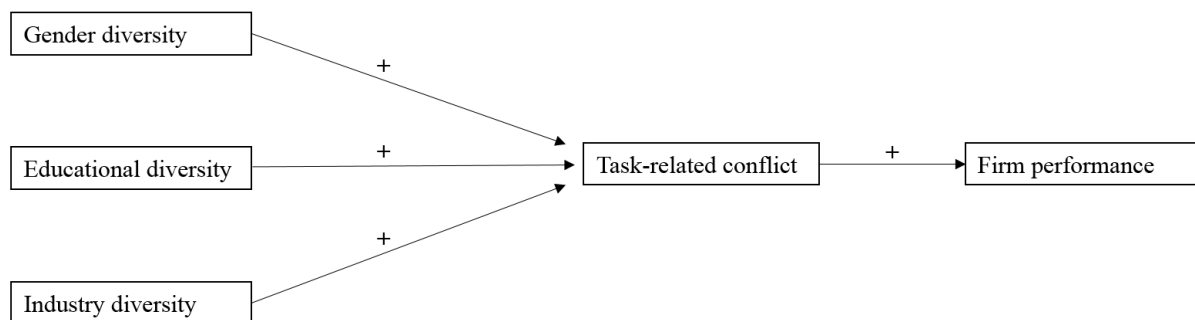


Figure 1. Proposed conceptual framework

The intervening processes in the relationship between board diversity and performance have been described as ‘the black box’ (Zona & Zattoni, 2007) and are mentioned as very important to investigate (Forbes & Milliken, 1999). For example, Johnson et al. (2013) argue that scholars should use mechanism-based research questions to investigate the relationship between group composition, conduct and outcome. This study tries to provide an explanation for the obscure processes within the black box, by including task-related conflict in the model. Board diversity is expected to have a positive effect on task-related conflict, as the implied variety of knowledge, experience and skills can induce constructive debate (Jehn et al., 1999). Task-related conflict is expected to have a positive effect on firm performance, because the contextual factors of task-related conflict mentioned before are favorable for boards.

Therefore, this study proposes that task-related conflict has a mediating role in the board diversity-firm performance relationship.

Hypothesis 3a: Task-related conflict mediates the relationship between board gender diversity and firm performance.

Hypothesis 3b: Task-related conflict mediates the relationship between board educational level diversity and firm performance.

Hypothesis 3c: Task-related conflict mediates the relationship between board industry background diversity and firm performance.

Methodology

Sample

The sample of this study contains data on all the water management authority boards in The Netherlands from 2008 to 2016. The water management authorities have two types of boards: a daily board and a general board. The general board gathers approximately every four weeks, where the daily board is responsible for daily business. Moreover, the general board commonly counts 30 members, where the daily board regularly consists of five members. These five members are also members of the general board. In this study, the focus is on the general board, since this board includes all directors and larger teams have more potential for diversity (Bantel & Jackson, 1989). The directors are partly nominated by public elections, and to some extent, places are reserved for farmers, firm managers and environmental managers. Since the activities of the water management authorities concern multiple groups of stakeholders, these places are reserved to safeguard their vote. Hence, the diversity in these boards is already partly established in terms of industry background.

The general board is particularly involved in all the activities concerning water environmental issues in their appointed region (see Appendix I). Considering service tasks, this encompasses a variety of activities, like: the creation of regulations, describing the water management structure, imposing fines and managing employee salaries. Moreover, the determination of the budget, taxes and the annual report are service task responsibilities of the board of directors. The control task, which is the largest responsibility of the general board, includes the monitoring of the executed strategy by the top management team. Currently, the total number of water management authorities is 22 (Unie van Waterschappen, 2016) and the largest part of the water management authority boards consists of 30 persons. The number of authorities has changed over the years, due to mergers between authorities, so the data can best be described as unbalanced panel data.

The board characteristics data consists of gender, educational level, industry background, age, political group and board size. This data was collected via the organization Unie van Waterschappen, which is the union of water management authorities, and via publicly available sources as websites of the water management authorities. Moreover, the notes of meetings and the annual costs per water management authority were gathered. The notes of meetings are publicly available via the websites of the water management authorities.

The annual costs can be found in the annual reports of the water management authorities. Other information was gathered from the database Waves, which is available via the website of the Unie van Waterschappen. The original sample counted 216 observations, but due to missing data the sample size was reduced to 132 organization-year observations.

Independent Variables

Board Diversity

Hambrick and Mason (1984) argued that demographic characteristics can be used alternatively to examine diversity for two reasons: (1) since the cognitive bases, values and perceptions of board directors are inconvenient to measure; and (2) some characteristics, like functional background, do not have further psychological equivalents. Furthermore, scholars commonly presume that demographic characteristics influence the cognition, behavior, and decision-making of directors (Forbes & Milliken, 1999). Lawrence (1997) describes the demographic characteristic as a predictor of the subjective concept, which is in turn a predictor to a possible outcome. Since this intervening process is included in the relationship, predictor and outcome are no longer directly related and the demographic characteristic can be used to explain the outcome. In this way, research does not have to rely solely on psychological dimensions, which would unnecessarily hamper the development of literature.

In this study, the data for board diversity are composed of the variables educational level, industry background and gender diversity. Considering the diversity in knowledge and skills among directors, educational level, industry background and gender are good indicators, since these signal a variety of experiences and perspectives (Dahlin, Weingart, & Hinds, 2005; Dougherty, 1992). The data on education, industry background and gender were retrieved from the Unie van Waterschappen. In this panel data, every water management authority's board is one unit of analysis and every year is a time period. For missing values, external sources as the websites of individual water management authorities were examined. Moreover, individual authorities were contacted to gather missing information. After gathering all data on the characteristics, the diversity level per characteristic was calculated for every board annually.

For categorical variables as educational level, industry background and gender, experts in the field of diversity have used and recommended Blau's heterogeneity index (1977) to calculate diversity (Bantel & Jackson, 1989; Harrison & Klein, 2007; Miller & Triana, 2009). Since this research theorizes diversity as a variation among directors, an operationalization of

diversity representing variability is suitable (Harrison & Klein, 2007). Moreover, the four criteria for good measurement of diversity are met: a higher index indicates a higher level of diversity, the index does not allow negative values, the index has a zero point to represent perfect homogeneity, and the index is not unbounded (Harrison & Sin, 2006; Miller & Triana, 2009). Hence, Blau's index (1977) is utilized to capture an objective, relative measure of diversity (Triana et al., 2013) and is calculated as follows:

$$\text{Heterogeneity} = (1 - \sum p_i^2),$$

where p equals the proportion of group members in a category and i represents the number of different categories that are present in the board. The range of the index is dependent on the number of categories for a characteristic. The range theoretically starts at 0, meaning perfect homogeneity in the board. The upper level is calculated by $(i - 1)/i$ (Miller & Triana, 2009). As a result, the categorical variables are transformed into continuous variables.

Gender diversity. The existing body of literature on board gender diversity is considerable and research found ambiguous results on its effect (Johnson et al., 2013). Therefore, this study includes this type of diversity into the model. The board composition in terms of gender is easily observable and since only two categories are present for this characteristic, gender diversity is calculated by the Blau index as well and theoretically ranges from 0 to 0.5.

Educational level diversity. For this variable, three categories are selected: WO, HBO and 'No Title'. The categories stand for the highest level of Dutch education that a director has completed, with WO being a university degree and the highest category. HBO is one degree lower than the university degree and 'No Title' suggests a person had MBO education or high school education, which are lower levels of education in this data set. Hence, three categories result in an index that theoretically can range from 0, when only one educational level is present in the board, to approximately 0.67, when all levels are evenly distributed in the board.

Industry background diversity. Previous literature has used industry background as a characteristic when investigating board diversity (e.g., Tuggle, Schnatterly & Johnson, 2010), since industry background can influence the directors' cognitive biases (Johnson et al., 2013). Moreover, the distinction is made between industry insider, industry outsider and firm insider. In this research, the data is compiled into seven categories: no paid work, self-employed, employee in business, employee in health care, employee in education, employee in the

government, and employee in other type of industry. Since this data is more accurate, more reliable conclusions may be found. For this variable, the theoretical range of the Blau heterogeneity index stretches from 0 to approximately 0.86.

Task-related Conflict

Notes of board meetings in the period 2008-2016 were analyzed to investigate task-related conflict. An objective measurement of task-related conflict could be obtained in the notes of board meetings, due to the unbiased nature of notes. Furthermore, Jehn (1997) found that the objective measure (i.e., categorical tree diagram) indicated task-related conflict in 95% of the cases, which was the most accurate score of the study's measures. Therefore, an objective measure for task-related conflict is preferred. Content analysis is suitable to examine notes, since the concept of task-related conflict could be captured in dictionary keywords (Abrahamson & Eisenman, 2008; Wade, Porac & Pollock, 1997). Considering the content analysis, this study made use of a computer-automated analysis of keywords. The content analysis was conducted in a rather similar way as in a previous study of Wade et al. (1997), which is explained hereafter.

First, to collect the data from these minutes, dimensions of task-related conflict were constructed, based on existing literature (e.g., Jehn, 1995, 1997). Next, a dictionary with keywords for every dimension was developed and tested to assess content validity (see appendix II). By manually testing the keywords in a sample of 0.5% of all notes, the number of hits and the false hit rates were computed. After the manual test, the number of dimensions was reduced from four to three, since the dimension 'disagreeing on goals and objectives' was highly similar to dimension A. Below, the three dimensions for task-related conflict are displayed in table 1.

Table 1. Dimensions of task-related conflict

Dimension	Measurement	Author(s)
A	<i>Disagreeing on content and outcomes of the tasks being performed</i>	Amason (1996); De Dreu & Weingart (2003); De Wit, Greer & Jehn (2012); Jehn (1994, 1995); Jehn & Bendersky (2003); Pelled (1996); Pelled, Eisenhardt & Xin (1999)
B	<i>Evaluating different perspectives/alternatives</i>	Amason (1996); De Wit, Greer & Jehn (2012); Jehn (1995); Jehn & Bendersky (2003); Pelled, Eisenhardt & Xin (1999)
C	<i>Inducing constructive debate</i>	De Wit, Greer & Jehn (2012); Gibson & Vermeulen (2003); Wall & Nolan (1986)

Moreover, the most appropriate keywords were preserved, hence the keywords with the highest number of hits and the lowest false hit rates (i.e., below 0.2) (Wade et al., 1997). The final dictionary is displayed in table 2 and the previous keyword selection can be found in Appendix III. Then, content analysis on the frequency of these task-related conflict keywords was applied with the program LIWC 2015. LIWC 2015 is an automated content analysis program that can search and count the number of dictionary words within a text. LIWC 2015 returns the number of dictionary words in a percentage of the total number of words in a text. In this way, the results of a text with a larger number of words, and thus a higher probability of having more dictionary words, is placed in perspective. Also, in a study of Abrahamson and Eisenman (2008) a ratio was applied for content analysis. Hence, the measure for task-related conflict is the weight of the number of dictionary words in the total number of words in a text.

Table 2. Corresponding words and (false) hit rates with the dimensions of task-related conflict

Dimension	Corresponding Words	Words in Dutch	Hit Rate	False Hit Rate
A	Objective(s)	Doelstelling(en)	15	0.13
	Core task	Kerntaak	6	0.17
	To not support	Niet steunen/steunt	5	0
	Task(s)	Taak/Taken	17	0.06
	Responsibility	Verantwoordelijkheid/ Verantwoording	9	0.11
	To question	Vraagt zich af/Vraag mij af/Vragen ons af/Afvragen	8	0
B	Attention	Aandacht	27	0.19
	Consequences	Consequenties	13	0
	Possibilities	Mogelijkheden	16	0.125
C	(Request) More information	(Vraagt/vragen om) Meer/Nadere informatie	3	0

Dependent Variable

The dependent variable firm performance is operationalized as accounting-based performance, using costs divided by the number of regional inhabitants and subsequently negatively scaled. This variable is suitable, since the water management authority's performance is monitored by annual costs. The costs of the water management authority

should be fully covered by the taxes paid by the local citizens. Hence, logically reasoning, the board can be expected to be held accountable for the amount of taxes. Therefore, it is important for the board to lower the costs, since subsequently, the taxes can decrease. When the board succeeds in decreasing taxes, the citizens will be more satisfied with the board and the probability of being re-elected increases. Other studies have primarily focused on the firm revenues, profit or stock price. Yet, in this context, measuring firm performance with revenues or profit would deliver a wrong interpretation of results. The incentive for directors is to minimize the annual costs, while achieving an efficient way of operating. Thus, to interpret performance similar to other studies, it is necessary to focus on the right performance indicator.

The annual costs are retrieved from the annual reports of each individual water management authority. The number of inhabitants in the region of the water management authority helps to place the costs in perspective of the size of operations. This number is gathered from the database Waves, which is available through the website of the Unie van Waterschappen. The performance is measured from 2008 till 2016, since the effect of strategic decision-making on firm performance commonly requires several years to examine (Erhardt et al., 2003).

Control Variables

As suggested by an extensive review of the literature and a logical reasoning on the research environment, the following control variables are included in the model: age diversity, political diversity, board size, firm size, lagged firm performance and attainment discrepancy.

Age diversity. Age diversity is examined by other scholars (Milliken & Martins, 1996) and could influence the formation of subgroups and firm performance. Therefore, it is included as a control variable in this study. The directors' age is divided into five categories: ≤ 30 , $30 \leq 40$, $40 \leq 50$, $50 \leq 60$, $60 >$. Thus, the Blau index ranges from 0 to 0.8.

Political diversity. The research setting for this study is a very specific one, where directors can enter as a subgroup. The public elections for the board seat allocation are extraordinary in comparison to boards in other industries. In this context, it could be logically argued that the more political diversity exists within a board, the more differences in opinions are present within the board. Consequently, this could lead to the formation of subgroups. Hence, including this diversity variable as a control variable is necessary to control for political

subgroup diversity. The maximum number of political categories is twelve, so the Blau index has a theoretical range from 0 to approximately 0.92.

Board size. The size of the board is acknowledged to have an impact on group dynamics (Li & Hambrick, 2005; Pelled et al., 1999). Hence, according to other literature, studies on diversity should include this control variable. The board size is measured by the number of directors.

Firm size. Previous literature on board diversity and firm performance included firm size as a control variable (Miller & Triana, 2009), hence in this study that example is followed. Firm size is measured as the logarithm of the regional number of inhabitants per water management authority, since the number of employees is not available and the number of inhabitants indicates the size of the operations.

Lagged firm performance. A lagged dependent variable has been included as a control variable to control for the effect of performance in the year preceding the year of the dependent variable. This is necessary, since the dependent variable is highly dependent on the performance in the previous year (Katila & Ahuja, 2002). The inclusion of a lagged variable also brings disadvantages, like endogeneity, but increases the explanation of the variation in the dependent variable. Hence, the importance of including this variable is evident.

Attainment Discrepancy. In this context, attainment discrepancy could best be described as the difference between the aspired (i.e., budgeted) costs and the realized costs (Lant & Montgomery, 1987). This could influence task-related conflict, since discussions can emerge when the budgeted costs are not reached. On the other hand, a positive result can lead to less conflict, due to a good fulfillment of the task. Therefore, and to preserve as much observations as possible, the variable is distinguished in two separate variables: positive and negative attainment discrepancy (i.e., PAD and NAD).

Year dummies. To control for time-specific effects, year dummies are included in the model. This is suggested by Barkema and Shvyrkov (2007), who studied the effect of TMT diversity. Moreover, it is recommended to utilize time variables when investigating panel data, since including year effects could enhance explanatory power (McGahan & Porter, 1997).

Analysis

The analysis of the model was conducted with the statistical program Stata. Hypotheses 1a, 1b, 1c and 2 were tested by using generalized least squares (GLS) regression, since the variables consist of panel data. Panel data are likely to have a certain degree of serial correlation within the error term of the regression, due to unobserved individual-specific time-invariant effects (Ahn, Lee & Schmidt, 2013; Hausman & Taylor, 1981). Therefore, the panel data were analyzed with the random-effects model (Rumelt, 1991), since this controls for the before mentioned effects. Furthermore, the size of the panel data is rather short, due to missing observations, hence a random-effects model is more feasible in this case. Also, a fixed-effects model demands complete exogeneity, which is not feasible due to the inclusion of the lagged dependent variable (Bettis, Gambardella, Helfat & Mitchell, 2014). However, according to Bettis et al. (2014), including a lagged dependent variable can help to control for fixed effects.

In addition, the control variables were included in the different models, to investigate whether the variation in the dependent variable is caused by the independent variables. First, in Model 1, the control variables were regressed on task-related conflict. Second, educational level, industry background and gender diversity were included in Model 2. Third, in Model 3, a regression of the control variables on firm performance was executed. Fourth, the diversity and task-related conflict variables were included in Model 4. Moreover, robust standard errors were used to deal with heteroscedasticity. Last, a reverse causality regression was executed, to rule out the case of reverse causality.

Furthermore, Hypothesis 3a, 3b and 3c were analyzed by using bootstrapping, as recommended by Preacher and Hayes (2008a, 2008b). Bootstrapping is a random sampling method with replacement, which does not demand the assumption of a normally distributed sample. By resampling hundreds to thousands of times, an approximation of the indirect effect's confidence interval can be constructed. While smaller samples are often not normally distributed, bootstrapping is a method that can help to investigate the mediating effect in smaller samples. Therefore, bootstrapping is the preferred method in this study. First, a regression of the independent and control variables on task-related conflict was executed, using bootstrapping. After that, all independent and control variables were regressed with bootstrapping on firm performance.

Results

The descriptive statistics of the included variables are shown in Table 3. This study controls for time-specific effects, yet these are not displayed in the tables to conserve space. Firm performance was scaled negatively, since performance is measured as costs divided by the number of regional inhabitants. The mean is -137.528 and the range of firm performance is rather wide. Hence, a high level of variation in the dependent variable is observed. The mean of gender diversity is moderately high with 0.313, whilst the theoretical maximum was 0.5. The educational diversity variable has a range that stretches from 0.444 to 0.667 approximately, while the theoretical maximum value was 0.67. Moreover, the mean is 0.595, which is fairly high. We can conclude that the level of educational diversity is high in the boards of water management authorities. Possibly, this can be explained by the high average age in the boards. Today, it is more regular to study for a longer period after high school, than 50 years ago, for example. Hence, for older people it could hold that educational level shows more variation. The industry diversity variable had a theoretical maximum of 0.86, but the maximum value in the dataset was 0.812. The mean is 0.732 and the standard deviation is lower compared to other diversity variables (0.048). Thus, industry diversity is high in this dataset and this is logically explained by the before mentioned election process.

Table 3. Descriptive Statistics of the Included Variables

<i>Variable</i>	<i>N</i>	<i>Mean</i>	<i>S.D.</i>	<i>Min</i>	<i>Max</i>
1. Firm Performance	122	-137.528	30.928	-262.086	-46.958
2. Educational Diversity	119	.595141	.0584526	.4444444	.6666667
3. Industry Diversity	132	0.732	0.048	0.596	0.812
4. Gender Diversity	132	0.313	0.077	0.147	0.464
5. Task Conflict	132	0.162	0.058	0.008	0.322
6. Political Diversity	130	0.802	0.106	0.477	0.873
7. Age Diversity	125	0.473	0.080	0.331	0.643
8. Board Size	132	28.356	3.077	23	45
9. Firm Size	122	5.838	0.187	5.342	6.130
10. Lag Firm Performance	132	-137.217	27.819	-262.086	-83.737
11. Positive Attainment Discrepancy	132	0.032	0.045	0	0.381
12. Negative Attainment Discrepancy	132	0.009	0.026	0	0.162

Table 4 revealed some significant correlations between the included variables, again, excluding year dummies from the presented table. Gender diversity is positively correlated with firm performance (0.3309, $p < 0.01$), which suggests a positive effect of female representation within the board. Moreover, firm performance and educational diversity show a significant and positive correlation of 0.2161 ($p < 0.05$). This suggests that boards containing directors with a more diverse educational level are able to perform better than those with a lower diversity score. However, between task-related conflict, industry diversity and firm performance no significant correlations are found ($p > 0.1$). Although only one correlation within the proposed model is significantly found, multiple control variables seem to be correlated with the variables in the model. For instance, on the one hand, political diversity, age diversity and NAD are negatively correlated with firm performance ($p < 0.1$). On the other hand, board size and firm size are positively and significantly correlated with firm performance (respectively, $p < 0.05$; $p < 0.01$). Considering task-related conflict, political diversity is negatively correlated and age diversity positively correlated ($p < 0.05$; $p < 0.1$, respectively). Further analysis investigates the support of the proposed hypotheses.

Hypotheses 1a, 1b and 1c predict respectively that gender, educational level and industry background diversity are positively related to task-related conflict. In Table 5, the results are shown of regressing task-related conflict on these variables and all control variables. For every model in this study, the Wald chi square test was executed to control if the variables in the models had an effect. Hence, the variables in the models contribute to the explanation of the dependent variable. Model 1 excludes educational, industry and gender diversity to test the effect of the control variables on task-related conflict. Political diversity shows a negative effect of -0.213 on task-related conflict ($p < 0.01$). Moreover, the R^2 in Model 2 increases from 0.2267 to 0.3885, which suggests that the explanatory variables are adding value to the explanation of the variation in the dependent variable. Model 2 includes the explanatory variables and shows that, hypothesis 1a can be accepted, since gender diversity has a positive effect of 0.194 on task-related conflict with significance level 0.035. For every standard deviation increase (0.077) in gender diversity, the percentage points of words in minutes related to task conflict increases with 0.015 approximately. Considering the mean of task-related conflict (0.162), the magnitude of this effect is moderately low. Educational and industry diversity are not significantly related to task-related conflict (-0.077 and 0.109, $p > 0.1$ respectively). Consequently, hypotheses 1b and 1c are not supported.

	2	3	4	5	6	7	8
0.1154	1						
0.2644**	0.3067***	1					
0.0653	0.0756	0.1108	1				
0.2906**	0.0933	0.1437	-0.2540**	1			
0.4521***	-0.0945	0.2887**	0.1497*	0.0725	1		
0.2409**	-0.2104**	0.0821	0.0083	0.4780***	0.0051	1	
0.2928**	-0.2274**	0.2081**	0.0176	0.2410**	-0.0734	0.6895	1
0.1490	-0.0980	0.3297***	0.0843	-0.3282***	-0.1567*	0.2491	0.2491
0.0073	0.0520	0.0296	-0.0025	-0.0422	0.0100	-0.0422	0.0100
0.1373	0.0043	-0.1525**	0.1029	0.0019	-0.0717	0.0418	0.0418

Table 5. Random-effects GLS regression results independent variables on mediating variable

<i>Variables</i>	<i>Task-related Conflict</i>			
	<i>Model 1</i>		<i>Model 2</i>	
	Coefficient	Sign. Level	Coefficient	Sign. Level
Educ. Diversity			-0.077 (0.128)	0.548
Industry Diversity			0.109 (0.196)	0.579
Gender Diversity			0.194** (0.092)	0.035
Political Diversity	-0.213*** (0.049)	0.000	-0.311* (0.084)	0.000
Age Diversity	0.206 (0.140)	0.141	0.311** (0.129)	0.016
Board Size	0.004 (0.004)	0.295	0.008* (0.004)	0.058
Firm Size	0.019 (0.063)	0.760	0.004 (0.048)	0.927
Lag Performance	0.000 (0.000)	0.268	-0.001 (0.000)	0.121
PAD	-0.100 (0.104)	0.334	-0.133 (0.110)	0.227
NAD	-0.009 (0.225)	0.970	0.105 (0.254)	0.680
R ²	0.2267		0.3885	
Wald Chi ²	74.16		104.64	
Prob>Chi ²	0.000		0.000	

Notes: Controlled for time-specific effects. Robust standard errors in parentheses. * p < 0.1; ** p < 0.05; *** p < 0.01.

In Table 6, the regression models for testing hypothesis 2 are shown, which suggests that task-related conflict is positively related to firm performance. First, Model 3 shows the effect of all control variables on firm performance. The R^2 of Model 3 is almost equal to the R^2 of Model 4, which indicates that the explanation of the variation in the dependent variable is mostly explained by the control variables. Next, Model 4 includes the explanatory variables in the regression. Gender diversity is positively related to firm performance (56.822, $p < 0.05$), where industry background diversity and political diversity are negatively related to performance (-51.216, $p < 0.1$; -72.595, $p < 0.01$ respectively). Task-related conflict does not show a significant relationship with firm performance (-0.198, $p > 0.1$). Therefore, hypothesis 2 should be rejected.

To examine hypotheses 3a, 3b and 3c, the explanatory and control variables were regressed on task-related conflict and firm performance sequentially, using bootstrapping. Gender diversity shows a positive relationship with task-related conflict (0.195, $p < 0.05$). However, task-related conflict is not significantly related to educational diversity and industry diversity ($p > 0.1$). Therefore, hypothesis 3b and 3c are not supported. In addition, political diversity does show a negative relationship with task-related conflict (-0.311, $p < 0.01$). Last, the effect of task-related conflict on firm performance is not found to be significant, suggesting no mediating relationship of task-related conflict. Consequently, also hypothesis 3a must be rejected.

Table 6. Random-effects GLS regression results independent variables on dependent variable

<i>Variables</i>	<i>Firm Performance</i>			
	<i>Model 3</i>		<i>Model 4</i>	
	Coefficient	Sign. Level	Coefficient	Sign. Level
Educ. Diversity			-17.133 (18.769)	0.361
Industry Diversity			-51.216* (26.558)	0.054
Gender Diversity			56.822** (22.568)	0.012
Task-related Conflict			-0.198 (28.534)	0.994
Political Diversity	-50.673*** (6.559)	0.000	-72.595*** (16.332)	0.000
Age Diversity	-3.064 (11.501)	0.790	-28.525 (19.089)	0.135
Board Size	0.882* (0.513)	0.085	1.592** (0.659)	0.016
Firm Size	8.918 (7.590)	0.240	5.556 (6.117)	0.364
Lag Performance	0.860*** (0.040)	0.000	0.726*** (0.065)	0.000
PAD	28.715* (16.230)	0.077	25.975 (20.442)	0.204
NAD	-134.698** (56.137)	0.016	-179.085*** (47.549)	0.000
R ²	0.8799		0.8866	
Wald Chi ²	15523.13		29166.80	
Prob>Chi ²	0.000		0.000	

Notes: Controlled for time-specific effects. Robust standard errors in parentheses. * p < 0.1; ** p < 0.05; *** p < 0.01.

Table 7. Bootstrapping Results of the Mediation Model

<i>Variables</i>	<i>Task-related Conflict</i>		<i>Firm Performance</i>	
	Coefficient	Sign. Level	Coefficient	Sign. Level
Task-related Conflict			-0.198 (25.102)	0.994
Educ. Diversity	-0.075 (0.142)	0.600	-17.133 (22.967)	0.456
Industry Diversity	0.109 (0.159)	0.492	-51.216* (30.543)	0.094
Gender Diversity	0.195** (0.089)	0.029	56.822** (25.041)	0.023
Political Diversity	-0.311*** (0.078)	0.000	-72.595*** (22.949)	0.002
Age Diversity	0.313*** (0.088)	0.000	-28.525 (19.832)	0.150
Board Size	0.008** (0.004)	0.045	1.592* (0.856)	0.063
Firm Size	0.004 (0.043)	0.926	5.556 (9.802)	0.571
Lag Performance	-0.001 (0.000)	0.116	0.726*** (0.084)	0.000
PAD	-0.132 (0.153)	0.388	25.975 (33.682)	0.441
NAD	0.106 (0.338)	0.754	-179.085*** (67.454)	0.008
R ²	0.3886		0.8866	
Wald Chi ²	66.72		821.06	
Prob>Chi ²	0.000		0.000	

Notes: Controlled for time-specific effects. Robust standard errors in parentheses. * p < 0.1; ** p < 0.05; *** p < 0.01.

Robustness Checks

In this study, the context of task-related conflict keywords was taken into account, since it is recommended to look at context, when investigating a smaller sample (Abrahamson & Eisenman, 2008). In table 8, examples of sentences containing these keywords are gathered. Since achieving complete accuracy in automated content analysis is complicated (Wade et al., 1997), the results were adapted with the support of the tested false hit rates, to obtain the most reliable data. Hence, the results of content analysis were multiplied by $(1-FHR)$, where FHR is the false hit rate of the keyword. This is different from previous research (e.g., Abrahamson & Eisenman, 2008; Wade et al, 1997), where false hits were rather accepted than addressed. Furthermore, the different dictionaries with their respective false hit rate adjustments, were analyzed separately to investigate dissimilarities between the analyses. Eventually, the dictionary in table 2 showed the most significant results with the most reliable and strict data.

Table 8. Examples of keywords in the context of task-related conflict

Keyword in Dutch	Keyword in English	Conflict Example Dutch	Conflict Example English
Afvragen	To question	En dan blijf ik mij <i>afvragen</i> : gaat een waterschap zo om met haar inwoners?	And then I keep questioning myself: is a water authority treating its citizens like this?
Aandacht	Attention	Meer <i>aandacht</i> voor de bedrijfsvoering en een goede inzet van de instrumenten en middelen is dus dringend geboden, daar roep ik u toe op.	More attention for managing and a good allocation of instruments and resources is urgently needed, I call on you.
Consequenties	Consequences	En u zegt van, nou, wellicht kan dat consequenties hebben voor de huisbezoeken. Die huisbezoeken moeten gewoon plaatsvinden, vind ik (..)	And you say, well, maybe that can have consequences for home visits. Those home visits should just take place, I think (..)
Doelstelling	Objective	(..) een probleem is een probleem als het de <i>doelstellingen</i> van de organisatie belemmert. Maar het gaat ook om wat er in de buitenwereld gebeurt en waarom wordt daar geen rekening mee gehouden.	(..) a problem is a problem, when it hinders the goals of the organization. However, it is also about the outside world and why is this not taken into account.
Kerntaak	Core task	Hij vraagt zich af of dezelfde discussie moet worden gevoerd over de <i>kerntaak</i> van het	He questions himself if the same discussion should be performed about the core task of the water

		waterschap, want de verdrogingsmaatregelen worden slechts voor 20% gerealiseerd.	authority, because the dehydration regulations are only realized for 20%.
Mogelijkheden	Possibilities	Zijn verzoek is nog eens kritisch te kijken naar de <i>mogelijkheden</i> van bezuiniging.	His request is critically looked at again to investigate the possibilities of economizing.
Niet steunen	To not support	De fractie vindt motie 2 volslagen buiten de orde en dat die hoort bij de behandeling van de begroting 2013. WN zal de motie <i>niet steunen</i> .	The party thinks that resolution 2 is completely out of order and that this belongs to the budget estimation of 2013. WN will not support the resolution.
Taak	Task	Het is een majeur project van een andere overheid, maar het AB heeft de <i>taak</i> zich daarin te verdiepen.	It is a major project of a different authority, but the general board has the task to consider it.
Verantwoordelijkheid	Responsibility	De fractie roept de coalitiefracties derhalve op het coalitieakkoord nog eens tegen het licht van de internationale financiële crisis te houden en daar consequenties aan te verbinden door minder uitgaven te doen, en zodoende ook <i>verantwoordelijkheid</i> te nemen.	The party calls the coalition parties to shed a light on the agreement again, keeping the international financial crisis in mind and tie consequences to this by decreasing expenses, to take responsibility in this way.

After regressing the models, a reverse causality regression was executed of firm performance on task-related conflict and showed no reversed causal relationship between the two variables ($p > 0.1$). Moreover, the diversity variables education and industry are not influenced by firm performance ($p > 0.1$). To my knowledge, the management literature never claimed these relationships either, thus the probability of these reverse causal relationships can be considered minimal.

Discussion

In this study, the relationship between board diversity and firm performance was examined with the support of gender diversity, educational level diversity and industry background diversity. Moreover, this research investigated the mediating role of task-related conflict in this relationship. Below, figure 2 provides a complete overview of the relationships found in this study. This study could accept one of the proposed hypotheses, i.e., hypothesis 1a, since gender diversity is found to be positively related to task-related conflict. This could imply that female directors bring diverse backgrounds, knowledge and perspectives on situations in the board. Consequently, female directors may discuss the different perspectives and viewpoints, increasing task-related debate within the board. Another explanation may be provided by Li and Hambrick (2005), who stated that a board with demographically similar individuals may show improved communication and interaction. They suggest that this homogeneity would reduce conflict in the board. Hence, this study suggests that heterogeneity (i.e., diversity) will increase task-related conflict. However, this research could not find significant evidence for a mediating role of task-related conflict in the board diversity – firm performance relationship. Since task-related conflict showed no significant relationship with firm performance, a mediating effect is not proven. The underlying mechanism between board diversity and firm performance is thus still to be investigated.

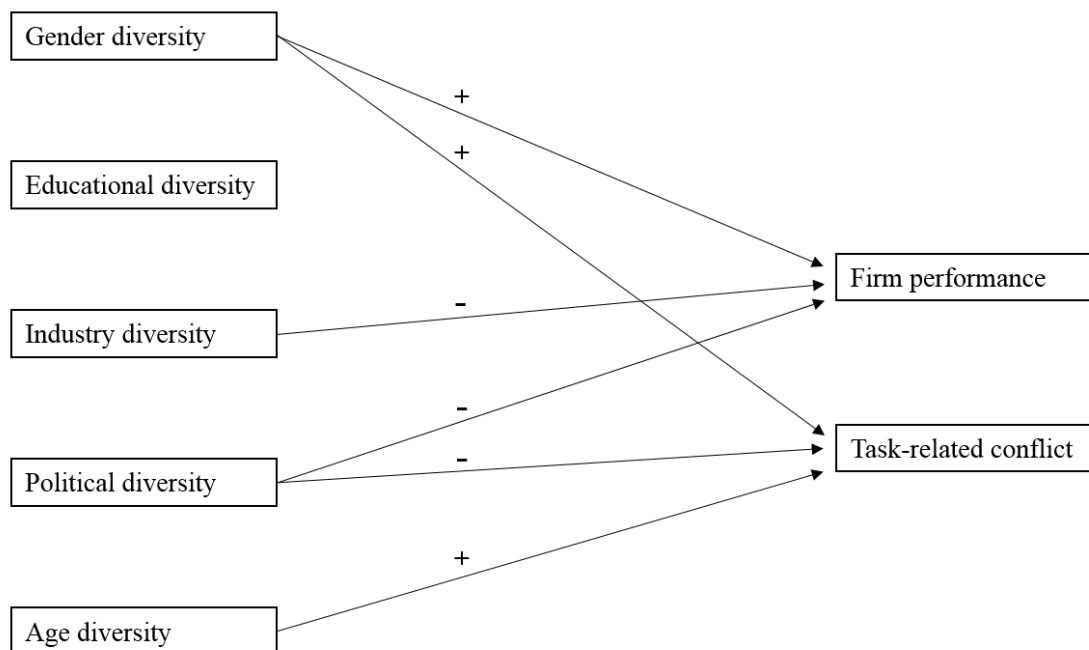


Figure 2. Regression results

This study found no evidence for the relationship between educational level diversity and task-related conflict. Apparently, this type of diversity in this context does not have a significant impact on the level of task-related conflict in the board of directors. An explanation might be, that this type of diversity does not provide different perspectives on the tasks to be performed. For example, a different level of education may provide a different knowledge base, but is not necessarily an assurance for varying views and opinions on the task. However, a distinction in type of education (e.g., business, law, biology, etc.) might show different results, since varying areas of expertise could imply a diversity in perspectives (Johnson et al., 2013).

Furthermore, industry background diversity does not induce task-related conflict according to this study's analysis. In previous board diversity literature, industry background diversity has been proved to influence firm performance (e.g., Kor & Sundaramurthy, 2009), yet it has not been claimed to have an impact on task-related conflict. Now, this study found no evidence for an influence of industry background diversity on the level of task-related conflict. Although industry diversity was not significantly correlated with task-related conflict, it showed to be negatively correlated with firm performance directly. Possibly, the high level of diversity on this aspect implies the dispersion of interests. According to Kor (2006), reaching consensus is difficult when interests are diverse and conflicting. Particularly, with the allocation of means, this could affect the firm performance negatively (Bourgeois, 1980). In this context, directors with different industry backgrounds frequently have conflicting interests. Therefore, the industry background diversity could have a direct negative effect on firm performance.

Although the effect of task-related conflict on firm performance could not be statistically proven in this study, two explanations for this may be provided. Firstly, this study is the first to study task-related conflict with the method of content analysis. Consequently, directors are not able to influence the results. The notes of board meetings are expected to be of an objective nature, opposed to questionnaires, which could be influenced very easily by biased answers. Secondly, the task-related conflict – firm performance relationship could have the shape of an inverted U-curve. When the level of task-related conflict is low, the discussion and evaluation of the task-related issues are too scarce and firm performance is low. However, if task-related conflict increases, firm performance also improves, due to better discussions and more alternatives being considered. Eventually, this level of task-related conflict can rise

so high, that conflict on task-oriented issues can turn into relationship conflict (e.g., Heemskerk et al., 2017; Huse, 2007; Zona & Zattoni, 2007). Previous literature also implied that relationship conflict is detrimental to firm performance, hence eventually high levels of task-related conflict could have a negative effect on firm performance (e.g., Huse, 2007).

Since the task-related conflict – firm performance relationship was insignificant, mediation analyses were logically also insignificant. Seemingly, task-related conflict has no direct effect on firm performance and can therefore not perform a mediating role in the board diversity – firm performance relationship. However, the results on gender and political diversity show that the sign of the relationships with task-related conflict and firm performance is similar. Assumably, the effect of board diversity on firm performance is mediated by different underlying mechanisms that flow from the observable board characteristics.

Considering the control variables, multiple variables were found to be significantly influencing either task-related conflict, firm performance or both. As suggested by Dahlin et al. (2005), diversity is inconsistent in its effect on firm performance. Some types of diversity affected firm performance positively, while others had no effect or even a negative influence. For instance, political diversity showed a negative relationship with both task-related conflict and firm performance. This could be logically explained by the differences in opinions between parties, which cause directors to strongly disagree. Strong disagreement could lead the board to never reach consensus on issues, which is negative for performance in this type of stable environment (Priem, 1990). However, this study has not found evidence for a mediating relationship of task-related conflict. Political diversity might have a negative influence on social cohesion within the board, leading to decreased performance.

According to this study, age diversity positively affects task-related conflict. The explanation for this relationship is more straightforward, since the average director age in this context is very high (the maximum number of directors in a board with an age of less than 40 years is three). Johnson et al. (2013) previously mentioned that age cohorts are probable to have varying opinions and values, because the cohorts' values have been shaped by different environments and these values also develop by maturation. Assumably, a diversity in values and opinions could cause the emergence of conflict (Pfeffer, 1983).

Last, in the analyses, a lagged dependent variable was included to control for fixed effects. However, when we excluded this variable and NAD from the model, task conflict was

significantly related to firm performance with a coefficient of -68.7343 (see Appendix IV, $p < 0.1$). This could imply that task-related conflict does have a mediating effect for some board diversity variables. The negative effect of task-related conflict on firm performance is peculiar, since the literature suggests the opposite effect. Nevertheless, the exclusion of these variables would increase omitted variable bias and deteriorate the quality of conclusions drawn in this research. Therefore, the lagged dependent variable was maintained in the model and the results of this model neglected.

Contribution and Future Research

This study contributes to the literature in several ways. First, the mediating role of conflict in the board diversity – firm performance relationship has not been empirically investigated before. Although no significant relationship was found, this study contributes to a stream of literature that has not been explored sufficiently. Moreover, the inconclusive result on the task-related conflict – firm performance relationship is uncommon and therefore interesting for other researchers to consider and explore further. Second, the signs of the relationships with both task-related conflict and firm performance are found to be positive for gender diversity and negative for political diversity. This implies that task-related conflict and firm performance are both triggered by board diversity. Yet, the effects differ and the mediating effect that has been theorized is not found significantly. Third, the method of measuring task-related conflict was novel and very different from previous literature on conflict. Previously, scholars measured conflict in boards of directors with questionnaires among directors. However, this type of measurement is very sensitive for biased results. Content analysis could offer a solution to this complication. Fourth, the board diversity and performance data were gathered personally, which indicates a higher level of reliability than with, for example, archival sources. Last, the context of this research setting allowed for results with a low probability of being biased. Since directors regularly elect other directors, interpretation of results can be confusing. In this context, directors are chosen externally and therefore, this does not play a role in the model and simplifies the interpretation of the results.

Although no mediating role of task-related conflict could be found, board diversity should still influence firm performance by underlying mechanisms. The positive effect of female board representation on firm performance has been suggested by other scholars (e.g., Erhardt et al., 2003; Post & Byron, 2015). Particularly, the control task is claimed to be positively influenced by female board representation. Erhardt et al. (2003) provide two

possible explanations for this. First, the pool of talented directors increases, when both male and female directors are considered. As a consequence, more talented directors may be seated in the board, who may lead the firm to better results. Second, as female directors may perceive discrimination at the work floor, they may be motivated to outperform men to achieve similar results. Consequently, a board with higher levels of female representation may perform better. In this context, the control task is the most important task of the board. Hence, the firm performance driven by the board is mostly dependent on the control task in this setting. Therefore, gender diversity may improve the board's performance on the control task, eventually leading to improved firm performance.

Furthermore, future researchers could investigate the mediating effect of task-related conflict in the board diversity – firm performance relationship with different methods. First, the task-related conflict dictionary could be revised and developed further, as the results of task-related conflict could become stronger by further development of the dictionary. Second, the 'black box' with the underlying mechanisms between board diversity and firm performance needs to be explored more and in different ways to understand these mechanisms. Possibly, the inclusion of the variable relationship conflict could provide a more complete model. Heemskerk et al. (2017) mentioned the high interdependency between task and relationship conflict, thus including this type of conflict in the model could offer a complete illustration. Nevertheless, relationship conflict is a construct that cannot easily be measured by content analysis. New methods have to be developed to obtain an unbiased measure of relationship conflict. Third, the role of national culture should not be underestimated. National culture could have an effect in the underlying mechanisms between board diversity and firm performance. For instance, in a culture that is very open to discussion, task-related conflict will rarely be associated with negative emotions. However, in other countries the level of task-related conflict could have a higher impact on negative emotions between directors, resulting in relationship conflict. Eventually, this could decrease group cohesion and firm performance (Westphal & Bednar, 2005). Last, as mentioned before in this study, the relationship between task-related conflict and firm performance could be shaped as an inverted U-curve. Future studies could examine this relationship and investigate the possible existence and shape of the relationship.

Managerial Relevance

This research also offers important implications for practice, since the study's context allowed to interpret research results in a low-biased environment. As mentioned before, directors are elected by the residents of the authority's area or via stakeholder positions, ensuring a low bias caused by the selection process. Possibly, the most important lessons learned, are that gender diversity is positively related with firm performance and industry background and political diversity have a direct negative effect on firm performance. Therefore, the selection of directors can also be seen as strategically important to firms. The selection process of directors can be seen in a different perspective when considering the benefits and disadvantages of board diversity. Since gender diversity is positively related to firm performance, it could be recommended to ensure a certain level of female representation in the board. This could be accomplished by stimulating women to participate in the board. In the case of water management authorities, the government or the authorities could focus more on the representation of women in the board and approaching them to consider a board position.

Considering political diversity, boards should not consist of too many different political groups, since this decreases firm performance. Therefore, the presence of too many political groups in the water management authority's board should be avoided. However, changing this system may be difficult, if not beyond limits. Furthermore, political diversity in other firms can be seen as subgroups within the board, i.e., subgroups with strongly differing opinions from other subgroups. Moreover, according to this study's findings, educational level diversity does not have an effect on firm performance. However, the educational background diversity could show different results, due to the variation in study areas. Consequently, studying educational background diversity in the same type of model is recommended for future research.

Limitations

This research has found several results in the board diversity – firm performance relationship. Nonetheless, the study has several limitations as well. First, the most important limitation is the size of the panel data. Due to the low response rate on a few diversity variables and some missing data on task-related conflict, approximately 100 observations had to be deleted. Particularly the low response rate on educational level could have an impact on the significance of the results on this variable. Second, the industry background variable was

measured by the director's performed type of work, due to the availability of data. Hence, it was also possible to be unemployed. Possibly, measuring the directors' industry experience would offer different results. Third, the educational background of a director could perhaps provide a better illustration of the importance of educational diversity. Since the study area of a person could logically lead to a different perspective on situations. Apparently, the educational level diversity is less important when considering its effect on task-related conflict and firm performance. Fourth, the context of this study is a very specific one. Therefore, the generalizability to other industries may be complicated. Since directors are elected externally, these results cannot be interpreted without considering the context of this research. Moreover, performance of a water management authority director is dependent on different performance indicators than, for instance, a director of a large multinational firm. Fifth, the dependent variable in this study was measured by the costs of the water authority divided by the number of inhabitants of the region. This variable can be interpreted as an efficiency measure, while most studies use an effectiveness measure. However, in this context, measuring effectiveness as a performance variable would lead to wrong interpretations, since performance of the water authority is measured by their efficiency. Last, the measure of this study does not control for the number of directors involved in conflict. For instance, it is possible that only two directors are constantly arguing and the other directors do not experience conflict situations. However, this increases the complexity of measuring conflict and it may even be beyond the bounds of possibility.

Conclusion

The central question of this study was: *'What is the influence of board diversity on firm performance and does task-related conflict mediate this relationship?'*. Answering the request of Lawrence (1997) to open the 'black box' and examine intervening variables in relationships, this study tried to provide an explanation for the board diversity – firm performance relationship. This study contributed to the literature in several ways, yet the most important contribution is the inconclusive result on the mediating role of task-related conflict. Previously, scholars have theorized this construct to mediate the board diversity – firm performance relationship. However, this study is the first to empirically investigate this theory. The findings suggest that only some types of board diversity influence performance. Industry background diversity and political diversity are found to have a negative influence on firm performance, where gender diversity influences firm performance positively. Therefore, female representation within the water management boards should be encouraged and stimulated. Moreover, educational level diversity showed no significant relationship with firm performance in this research. Furthermore, no evidence was found for a mediating role of task-related conflict in the board diversity – firm performance relationship. However, when excluding the constructs negative attainment discrepancy and lagged firm performance, significant results for task-related conflict were obtained. This might imply that future researchers could find significant results considering this relationship. Future research should include different variables to examine the type of relationship and the underlying mechanisms involved to explore the 'black box'.

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Appendices

Appendix I: Board of Directors' Role (from the Water Authorities Act)

1. The board of directors is authorized to regulate and govern the tasks assigned to the water authority;
2. The board of directors creates the regulations that it considers necessary for the tasks assigned to the water authority;
3. The board of directors determines the “legger” in which the water management structures are described (e.g. location, form), but also the maintenance obligations of these structures are described (which structures are maintained by the water authority and which should be maintained by others);
4. The board of directors creates the regulations which determines how residents and relevant stakeholders are involved in the preparations of the policy creation of that board;
5. The board of directors can impose a fine or custody of a maximum of three months when the Waterway Regulations (Keur) are violated, with or without disclosure of the court order;
6. The board of directors manages the salaries of the employees of the water authority;
7. The board of directors
 - a. Determines the budget for the next calendar year;
 - b. Determines the taxes (there are important limits in the law on this, e.g. the different categories of stakeholders are taxed on the basis of the value of real estate in economic traffic – article 120, paragraph 2);
 - c. Determines the annual account and annual report;
 - d. Determines who the accountant will be that will check the annual account and report;

- e. Determines the introduction, change, or abolishment of a water tax by determining a tax regulation;
- f. May determine that no or partial remission for taxes is granted.

8. The board of directors cannot delegate the following tasks:

- a. Determining and changing the budget;
- b. Determining annual account;
- c. Determining rules regarding financial policy, which includes:
 - i. Rules for the valuation and amortization of assets;
 - ii. Bases for calculating the prices charged by the board of directors and tariffs for rights (taxes);
 - iii. Rules on the general objectives and the guidelines and limits of the finance function.
- d. Levying taxes or rights;
- e. Determining regulations;
- f. Determining water level regulations
- g. Determining plans under special laws, with the exception of project plans that concern the creation and maintenance of water management structures;

9. The board of directors should monitor whether the rules with regard to the authorities of the board of directors are followed;

10. The board of directors monitors the executed strategy/policy of the top management team.

Appendix II: First Version Keywords Task-related Conflict

Dimension	Corresponding Words	Words in Dutch	Hit Rate	False Hits
A	To (not) understand	Begrijp(t/en) (niet)	16	6
	Concern/Worried	Bezorgd(heid)	1	1
	Objection	Bezwaar	2	3
	Compromise	Compromis	0	0
	Objective(s)	Doel(en)	10	6
	Objective(s)	Doelstelling(en)	13	2
	Main task	Kerntaak	5	1
	Critical	Kritisch(e)	6	2
	Not well	Niet goed	6	3
	To not support	Niet steunen/steunt	5	0
	Disagree	Oneens/Niet eens	3	1
	Unhappy	Ongelukkig/Niet gelukkig	1	2
	Dissatisfied	Ontevreden/Niet tevreden	1	1
	Insufficient	Onvoldoende/Niet voldoende	3	4
	Bad/Worse	Slecht(e/er)	2	1
	Task(s)	Taak/Taken	16	1
	Task statement	Taakstelling	3	1
	Responsibility	Verantwoordelijkheid/ Verantwoording	8	1
	Surprised	Verbaasd	1	0
	To question	Vraagt zich af/Vraag mij af/Vragen ons af/Afvragen	8	0
Question mark(s)	Vraagteken(s)	1	0	
Would like to know	Wil(t/en) graag	5	3	
B	Attention	Aandacht	22	5
	Alternative(s)	Alternatief/Alternatieven	1	0
	Consequences	Consequenties	13	0
	Possibilities	Mogelijkheden	14	2
	Scenarios	Scenario's	1	0
C	(Request) More information	(Vraagt/vragen om) Meer/Nadere informatie	3	0
	Solution(s)	Oplossing(en)	7	6

	Problem(s)	Probleem/Problemen	9	16
	Explanation	Toelichting	10	6
	Explanation	Uitleg	3	6
	Statement	Verklaring	2	3
D	(Goal(s)) are not accomplished	(Doel(en)) niet wordt/worden gehaald	3	0
	Conflicting with goal(s)	Tegenstrijdig met doel(en)	0	0

Appendix III: Second Version Keywords Task-related Conflict

Dimen- sion	Corresponding Words	Words in Dutch	Hit Rate	False Hit Rate
A	To (not) understand	Begrijp(t/en) (niet)	22	0.27
	Goal(s)	Doel(en)	19*	0.32*
	Objective(s)	Doelstelling(en)	15	0.13
	Core task	Kerntaak	6	0.17
	Critical	Kritisch(e)	8	0.25
	Not well	Niet goed	9	0.33
	To not support	Niet steunen/steunt	5	0
	Disagree	Oneens/Niet eens	4	0.25
	Task(s)	Taak/Taken	17	0.06
	Task statement	Taakstelling	4	0.25
	Responsibility	Verantwoordelijkheid/ Verantwoording	9	0.11
To question	Vraagt zich af/Vraag mij af/Vragen ons af/Afvragen	8	0	
B	Attention	Aandacht	27	0.19
	Consequences	Consequenties	13	0
	Possibilities	Mogelijkheden	16	0.125
C	(Request) More information	(Vraagt/vragen om) Meer/Nadere informatie	3	0
	Explanation	Toelichting	16	0.375

* In the first version, the keyword 'goals not accomplished' had 3 hits and a false hit rate of 0. Since this keyword was placed in the wrong dimension, it was merged with the keyword 'goal(s)' in dimension A.

Appendix IV: Regression Results when Excluding Lagged Firm Performance and Attainment Discrepancy

<i>Variables</i>	<i>Firm Performance</i>	
	Coefficient	Sign. Level
Educ. Diversity	-77,6327 (75,1779)	0.302
Industry Diversity	-164,9430** (64,9835)	0.011
Gender Diversity	216,7165*** (56,2171)	0.000
Task Conflict	-68.7343* (39.4242)	0.081
Political Diversity	-191,5659*** (26,4844)	0.000
Age Diversity	-86,7392 (76,4598)	0.257
Board Size	3,5208* (2,1256)	0.098
Firm Size	32,4461 (34,0436)	0.341
R ²	0.6919	
Wald Chi ²	232.05	
Prob>Chi ²	0.000	

Notes: Controlled for time-specific effects. Robust standard errors in parentheses. * p < 0.1; ** p < 0.05; *** p < 0.01.

Appendix V: Context Examples of Second Version Keywords Task-related Conflict

Keyword in Dutch	Keyword in English	Conflict Example Dutch	Conflict Example English
Afvragen	To question	En dan blijf ik mij <i>afvragen</i> : gaat een waterschap zo om met haar inwoners?	And then I keep questioning myself: is a water authority treating its citizens like this?
Aandacht	Attention	Meer <i>aandacht</i> voor de bedrijfsvoering en een goede inzet van de instrumenten en middelen is dus dringend geboden, daar roep ik u toe op.	More attention for managing and a good allocation of instruments and resources is urgently needed, I call on you.
Begrijpen	To understand	<i>Begrijp</i> ik het goed dat de vertegenwoordiger van Bedrijfsgebouwd pleit voor een herziening van het belastingsysteem?	Do I understand it correctly that a representative of the companies is asking for a revision of the tax system?
Consequenties	Consequences	En u zegt van, nou, wellicht kan dat consequenties hebben voor de huisbezoeken. Die huisbezoeken moeten gewoon plaatsvinden, vind ik (..)	And you say, well, maybe that can have consequences for home visits. Those home visits should just take place, I think (..)
Doel	Goal	Punt drie, welk <i>doel</i> bereik je hiermee?	Statement three, which goal do you accomplish with this?
Doelstelling	Objective	(..) een probleem is een probleem als het de <i>doelstellingen</i> van de organisatie belemmert. Maar het gaat ook om wat er in de buitenwereld gebeurt en waarom wordt daar geen rekening mee gehouden.	(..) a problem is a problem, when it hinders the goals of the organization. However, it is also about the outside world and why is this not taken into account.
Informatie	Information	(..) nog niet heeft gekregen en waarom nog geen <i>informatie</i> is verstrekt over de bodemverontreiniging bij de Bakelse Plassen. Hij vindt dat dit na twee maanden wel had gekund.	(..) not yet received and why no information is provided about the pollution of soil at the Bakelse Plassen. He thinks this could have been done in two months.
Kerntaak	Core task	Hij vraagt zich af of dezelfde discussie moet worden gevoerd over de <i>kerntaak</i> van het waterschap, want de verdrogingsmaatregelen	He questions himself if the same discussion should be performed about the core task of the water authority, because the dehydration regulations are

		worden slechts voor 20% gerealiseerd.	only realized for 20%.
Kritisch	Critical	(..) zijn fractie staat voor de maatschappelijke doelen die zij wil realiseren en voor een goed financieel beleid. Er is al <i>kritisch</i> gekeken naar uitgaven, (..)	(..) his party stands for societal goals, which it wants to realize and for good financial politics. There has already been critically looked at the expenses, (..)
Mogelijkheden	Possibilities	Zijn verzoek is nog eens kritisch te kijken naar de <i>mogelijkheden</i> van bezuiniging.	His request is critically looked at again to investigate the possibilities of economizing.
Niet goed	Not well	We zijn het op onderdelen <i>niet eens</i> over hoe sommige zaken worden aangepakt, maar dat zijn inhoudelijke verschillen van mening.	We are disagreeing on some parts of the handling of cases, but those are content-wise differences in opinion.
Niet steunen	To not support	De fractie vindt motie 2 volslagen buiten de orde en dat die hoort bij de behandeling van de begroting 2013. WN zal de motie <i>niet steunen</i> .	The party thinks that resolution 2 is completely out of order and that this belongs to the budget estimation of 2013. WN will not support the resolution.
Oneens	Disagree	De heer Van Gerven is het <i>oneens</i> met de vorige spreker, omdat dan het AB in principe overbodig is.	Sir Van Gerven disagrees with the previous speaker, because then the general board is unnecessary.
Taak	Task	Het is een majeur project van een andere overheid, maar het AB heeft de <i>taak</i> zich daarin te verdiepen.	It is a major project of a different authority, but the general board has the task to consider it.
Taakstelling	Task statement	Dit is in de ogen van de fractie slecht rentmeesterschap. In de commissie is het DB gevraagd om aan Waternet een <i>taakstelling</i> mee te geven om de tariefstijging nu en in de toekomst te beperken.	This is bad stewardship in the party's opinion. In the committee, the daily board has been asked to give Waternet a task statement to limit the rise of tariffs now and in the future.
Toelichting	Explanation	Mevrouw Schouten is een beetje verbaasd over het procesbesluit. Er is in beide commissies over gesproken, maar dat het stuk er nu ligt, verbaast haar. Zij wil een <i>toelichting</i> .	Miss Schouten is a bit surprised about the process decision. In both committees, there has been spoken about it, but the document that lies in front of her, surprises her. She wants an explanation.
Verantwoordelijk-	Responsibility	De fractie roept de coalitiefracties derhalve op het	The party calls the coalition parties to shed a light on the

heid

coalitieakkoord nog eens tegen het licht van de internationale financiële crisis te houden en daar consequenties aan te verbinden door minder uitgaven te doen, en zodoende ook *verantwoordelijkheid* te nemen.

agreement again, keeping the international financial crisis in mind and tie consequences to this by decreasing expenses, to take responsibility in this way.

Appendix VI: Extended Descriptive Statistics

<i>Statistics</i>	<i>Firm Performance</i>	<i>Educational Diversity</i>	<i>Industry Diversity</i>	<i>Task Conflict</i>	<i>Gender Diversity</i>	<i>Political Diversity</i>	<i>Age Diversity</i>	<i>Board Size</i>	<i>Firm Size</i>	<i>Lag Firm</i>	<i>PAD</i>	<i>NAD</i>
Mean	-137.528	0.595	0.732	0.162	0.313	0.802	0.473	28.356	5.838	-137.217	0.032	0.009
Min	-262.086	0.444	0.596	0.008	0.147	0.477	0.331	23.000	5.342	-262.086	0.000	0.000
Max	-46.958	0.667	0.812	0.322	0.464	0.873	0.643	45.000	6.130	-83.737	0.381	0.162
N	122.000	119	132	132	132	130	125	132	122	132	132	132
S.D.	30.928	0.058	0.048	0.058	0.077	0.106	0.080	3.077	0.187	27.819	0.045	0.026
S.E. (mean)	2.800	0.005	0.004	0.005	0.007	0.009	0.007	0.268	0.017	2.421	0.004	0.002
p25	-152.538	0.547	0.691	0.128	0.231	0.810	0.422	25.000	5.662	-152.126	0.000	0.000
p50	-132.612	0.607	0.745	0.161	0.320	0.836	0.480	30.000	5.872	-134.809	0.025	0.000
p75	-117.285	0.647	0.764	0.200	0.358	0.853	0.522	30.000	5.954	-117.255	0.043	0.000
Skewness	-0.795	-0.936	-0.572	-0.003	-0.298	-2.525	0.158	0.415	-0.634	-1.131	4.277	3.835