



**Individuals as a Key to better Firm Performance:
The Role of Decision-Making Styles of Individual
Decision Makers in Organizations**

Joep Verhoeven

Supervised by Koen van den Oever

Radboud University Nijmegen

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Name:	J.J.A. Verhoeven
Student number:	4466802
Supervisor:	dr. K.F. van den Oever
Second examiner:	dr. ir. G.W. Ziggers

Abstract

This study aims to investigate the relation between the decision-making styles of individual decision makers and the overall firm performance of organizations. Previous research has theorized that a procedural rational decision-making style has a positive effect on firm performance, whereas a political decision-making style has a negative impact on firm performance. Other scholars have tested this assumption in relation with organizational decision-making styles. However, this study focuses on the decision-making style of individual decision makers.

This research is executed on the Dutch water authorities, as the minutes of the meetings of the board of directors are publicly available. Whether an individual executes a procedural rational or a political decision-making style is determined with a content analysis. With this content analysis, it is determined which decision-making style an individual is executing and hence, the majorities are determined. Firm performance is computed by the costs of the water authority divided by the regional inhabitants of that water authority.

This study found significant positive effects of a high number of individuals with a procedural rational decision-making style and significant negative effects of a high number of individuals with a political decision-making style on firm performance. In addition, a majority of individuals with a political decision-making style in combination with a high number of individuals with a procedural rational decision-making style has a positive, but non-significant effect on firm performance. In the future, scholars should attempt to further explore the relationship between the decision-making styles of individuals and firm performance, as it is still not totally clear in what context a certain decision-making style has the most positive effect on firm performance.

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Introduction

The strategic decision-making processes are of great interest in both organization theory and strategic management (Walter, Kellermans & Lechner, 2012; Van den Steen, 2017), as it is important to understand how decisions are being made within an organization in order to understand the organizational actions (Eisenhardt & Zbaracki, 1992; Gavetti, Levinthal, & Ocasio, 2007). A strategic decision-making process is “made up of action-taking steps indicating how to make a decision” (Nutt, 2008, p. 425), and it involves superadditive, interdependent decisions in organizations (Leiblein, Reuer, & Zenger, 2018). Previous research has stated that the strategic decision-making style influences the outcome of that process (Shepherd & Rudd, 2014; Rajagopalan, Rasheed, & Datta, 1993). A strategic decision-making style can be defined as the way of reasoning of decision makers (Henderson & Nutt, 1980). Furthermore, it is known that the individuals in an organization have a substantial impact on the strategic decision-making process, since strategic choices are partly reflections of the individual strategic decision makers (Van den Steen, 2018; Hambrick & Mason, 1984).

Strategic decision-making processes take place at the alliance-, firm- and individual level. For instance, Van den Oever & Martin (2019) have focused on the impact of decision-making styles in partnerships between organizations. Furthermore, Walter et al. (2012) have examined the relation between firm performance and decision-making styles both within and between organizations. It can be concluded that previously, scholars primarily focused on decision-making styles with regard to entire organizations (e.g. Hutzschenreuter & Kleindienst, 2006; Shepherd & Rudd, 2014). However, given the role of the individual decision maker, these ways of measuring the effects of decision-making styles on overall firm performance are insufficient, as will be explained in the following paragraph.

Scholars have stated that decision-making styles evolve around individuals within the organization and because of this, individual decision makers have an enormous impact on the strategic decision-making process and therefore on firm performance (Van den Steen, 2018; Walter et al., 2012). It is thus inadequate to focus only on the decision-making styles of entire organizations. One has to examine the decision-making styles of individual decision makers, as these individuals play a considerably important role in the decision-making process. If the decision-making style of the overall organization is examined, the results can be biased by an individual decision maker whom embraced one specific decision-making style very strongly. That individual decision maker may have a significant impact on the results of the strategic decision-making style of the organization. However, if the strategic decision-making style of

each individual separately is taken into account, this places the impact of that single decision maker in perspective and may lead to a different outcome. It is thus necessary to involve the decision-making styles of individual decision makers.

Because a large extent of frameworks (e.g. Wright et al., 2016; Nutt, 2008; Shrivastava & Grant, 1985) refer somehow to the three phases of identification, development and selection developed by Mintzberg, Raisinghani & Theorêt (1976), that framework will be used in order to describe how decisions are made (Shepherd & Rudd, 2014). This study focuses on the selection phase, as in this phase the actual decisions are made, which allows a more direct link between the decision-making process and the overall firm performance than the other phases. The decision-making styles of the members of the board of directors in this selection phase are examined, since a vigilance, monitoring board of directors has a positive link with firm performance (De Villiers, Naiker & Van Staden, 2011). It is therefore important to examine the decision-making styles of the individual board members in this phase.

Previous research on the topic of decision-making has generally distinguished several theoretical styles of decision-making in organizations. These styles range from mere rational styles of decision-making on the one hand, and so-called political styles on the other hand (e.g. Rajagopalan et al., 1993). Although in fact a decision-making style is never completely political or procedural rational (Atuahene-Gima & Haiyang, 2004), these two kinds of decision-making styles have some unique characteristics. A procedural rational decision-making style can be defined as a manner how decision makers attempt to select the best of all generated decision alternatives based on relevant, analyzed information (Dean & Sharfman, 1993). On contrast, a political decision-making style is a style in which decisions are made after the individuals and organizational coalitions have negotiated about their competing interests (Walter et al., 2012). Other scholars have also examined the role of intuition in decision-making processes (e.g. Elbanna & Child, 2007). However, it is stated that intuition is mostly followed by rationality in order to evaluate the product of intuitive processing (Calabretta, Gemser, & Wijnberg, 2017). Intuition is thus not an independent decision-making style. Therefore, this study focuses on both procedural rational as well as political styles of decision-making, hereby capturing the interplay between the individual and the organization (Walter et al., 2012).

At the organizational level, research has moved in the direction of a conception in which procedural rational decision-making styles result in better firm performance compared to political decision-making styles (e.g. Dean & Sharfman, 1996; Elbanna & Child, 2007;

Elbanna, 2018). There are several reasons for this conclusion (Ismail & Zhao, 2017). One of these reasons is that a procedural rational decision-making style is characterized by the involvement of complete information and the knowledge of limitations. An organization with complete information has a better perception of the decision that must be made, which is positively related with firm performance. Because of the substantial impact of individuals on the strategic decision-making process (Van den Steen, 2018), this study suggests that the decision-making styles of individuals in an organization have an impact on the overall firm performance. Therefore, this study focuses on the communication between the individual decision makers prior to taking the decisions. This will be done by examining the minutes of the meetings of the board of directors in the selection phase of the decision-making process. By focusing on this communication, the different decision-making styles of the individual board members can be distinguished. Subsequently, the effects of the decision-making styles of these individual board members on the overall firm performance is determined.

The central question dealt with in this study is therefore: *'What is the effect of the strategic decision-making styles of individual decision makers of an organization on the overall firm performance of that organization?'*

In answering this question, this study contributes to the literature by linking the concepts of decision-making styles and the effects of individual decision makers on the overall decision-making process, since the effects of the different decision-making styles of individuals are investigated. This is important, because previous research has only focused on decision-making styles with regard to entire organizations (e.g. Dean & Sharfman, 1996; Elbanna & Child, 2007). Since the decision-making styles of individual decision makers have an enormous impact on firm performance, focusing only on the decision-making styles on organizational levels is insufficient and will increase the risk of biased results. This study tackles this gap by linking the decision-making styles at individual level on organizational outcomes. In order to determine the decision-making style of the different individual decision makers, this study takes the way of communicating by individual decision makers into account, which is stated to be of great significance in the decision-making process (Witte, 1972). This study thus aims to make a theoretical contribution by examining the impact of decision-making styles at the individual level on the overall firm performance of an organization.

This study consists of four parts. In the first part, the Conceptual Background and hypothesis development, a comprehensive literature study has taken place. This has led to several

hypotheses. Secondly, in the Methodology section, the data is introduced and the method of analysis is described. The results of this analysis are discussed in the Results section. Last, in the Discussion and Conclusion section, the limitations and implications of this study and an advice for future research are extensively described.

Conceptual background and hypothesis development

The strategic decision-making process

Literature on strategic decision-making processes is quite extensive (e.g. Mintzberg et al., 1976; Schwenk, 1995; Elbanna, 2006). This research focuses on the way strategic decisions are made in organizations and the effects of these processes on the organization (Rajagopalan et al., 1993). The strategic decision-making process enables the decision maker to make a strategic decision. Mintzberg et al. (1976) have stated that a decision is occurred to be strategic if it has long term effects. This indicates that strategic decision-making processes in an organization are not isolated but interdependent (Leiblein et al., 2018).

It should be noticed that there is no single strategic decision-making process that is appropriate for all situations, due to the unique organizational and environmental aspects of each organization (Nickerson & Argyres, 2018). As mentioned in the previous paragraph, this study will use the framework developed by Mintzberg et al. (1976) in order to describe how decisions are made (Shepherd & Rudd, 2014). In the first phase, the identification phase, it is recognized that a decision must be made and the cause-effect relationships for the decision situation are distinguished. The development phase is the second and most important phase, because this phase consists of a set of activities that in the end lead to the development of one or more solutions to the problem. In the selection phase, the last phase, the criteria for choice are determined, the consequences are evaluated and ultimately a choice is made. This study focuses on the selection phase, because the actual decisions are made in that phase and thus a more direct link between the strategic decision-making process and the overall firm performance can be found. It should be noticed that each phase of the strategic decision-making processes in organizations is influenced by the context of the environment of the organization and these phases are therefore uncertain and complex (Nickerson & Argyres, 2018; Rajagopalan et al., 1993).

Both top management teams and board of directors have received attention through the research on strategic decision-making processes (Burgelman et al., 2017). Literature has distinguished two broad roles for the board of directors in the selection phase (Judge & Talaulicer, 2017). The first one is the service role, in which the board provides oversight, advice and counsel to the top management team (Finkelstein & Mooney, 2003). The second, and most discussed role, is the monitoring role. In this role, the board oversees the execution of strategies and tactics. Literature provides evidence of a positive link between a vigilance, monitoring board of directors in the selection phase and effective strategic decisions of the organization (De Villiers,

Naiker, & Van Staden, 2011). The agency theory underlies this conception (Bendickson, Muldoon, Liguori, & Davis, 2016). This theory implies that due to for instance self-interest and bounded rationality of the agent, it is necessary for an agent to be monitored in order to optimally serve the interest of the principal. In this study, the agent is the top management team and the board of directors executes a monitoring role. The agency theory states that an actively monitoring board of directors is positively related with firm performance, because of the conflicting interests between the principal and the agent (Bonazzi & Islam, 2007). A monitoring board of directors can effectively represent the interests of the principal in order to prevent that the agent does not work on behalf of the principal. Since a well-functioning monitoring board of directors in the selection phase has a positive link with firm performance (De Villiers et al., 2011), it is important to examine what kind of influence decision-making styles of individual decision makers have on this aspect of the strategic decision-making process.

Previously in this paper, it was stated that each strategic decision-making process is uncertain and complex (Nickerson & Argyres, 2018). Besides these environmental characteristics, strategic decision-making processes are recognized by process characteristics. One of these process characteristics is introduced by Schilit and Paine (1987), who have stated that a strategic decision-making process deviates from purely rational comprehensiveness. The degree of procedural rationality can be defined as the extent to which the strategic decision-making process of an organization is exhaustive and inclusive (Fredrickson, 1984; Atuahene-Gima & Haiyang, 2004). Strategic decision-making processes are characterized by the fact that no strategic decision-making process is purely procedural rational, because every strategic decision-making process is affected by for instance initial sense-making, perceptions of risk and return and coalition activity. The degree of procedural rationality of a strategic decision-making process is represented by the existing scanning, analysis and planning processes of the organization (Priem, Rasheed & Kotulic, 1995). These processes have an influence on the attention of the individual decision makers. Strategic decision-making in organizations is thus the result of the limited capacity of humans and the influences of the organization on the attention of the individuals (Ocasio & Joseph, 2018; Ocasio, 1997).

Besides the process characteristic of a certain degree of procedural rationality, each strategic decision-making process is recognized by a certain amount of political activity (Elbanna, 2018; Rajagopalan et al., 1993). The amount of political activity is represented by the number of actions undertaken to acquire, enhance, and use power to obtain preferred outcomes (Kreutzer, Walter & Cardinal, 2014; Welsh & Slusher, 1986). The amount of political activity depends on

the degree of consensus and interdependence in an organization. Interdependence implies that the decision makers share common interests, which fosters the need for exerting influence and thus the amount of political activity. In contrast, when decision makers are in consensus, this will diminish the amount of political activity as there is no need for individuals to undertake certain actions to obtain preferred outcomes.

The above-mentioned process characteristics of a degree of procedural rationality and an amount of political activity have an impact on the outcomes of the strategic decision-making process. Scholars have stated that each strategic decision is unique in the way the knowledges and abilities of the decision makers are used and therefore the decision quality depends on the process of strategic decision-making that is employed (Hutzschenreuter & Kleindienst, 2006). This is consistent with the conception that decision-making processes in organizations are affected by the influences of the organization on the attention of the decision makers (Ocasio & Joseph, 2018). Besides the aspect of attention, it is stated that the cognitive capacities of the individuals affect the strategic decision-making process. It therefore matters which individuals are part of the organization (Van den Steen, 2018).

The role of the individual

One of the basic assumptions in the literature about strategic decision-making is that virtually all individuals in an organization are to some extent decision makers, as every individual affects the strategic decision-making process somehow (Zhang & Greve, 2019; Laroche, 1995). This is due to the fact that the strategic decision-making process can actually be seen as a social representation of organizational life. The members of an organization are constantly talking about decisions and thereby influencing the decisions that must be made, for instance by forming coalitions. The strategic decisions that an organization has made are thus not only the result of the evaluation of relevant information, but these decisions are the reflection of cognitive capabilities of the individuals within the organization (Van den Steen, 2018; Hutzschenreuter & Kleindienst, 2006). Several scholars have underlined the link between the personal and cognitive context of the individual decision makers and the outcomes of the strategic decision-making process (e.g. Hambrick, Humphrey, & Gupta, 2015; Amason, 1996; Forbes & Milliken, 1999). The quality of the decisions depends on the one hand on the cognitive capabilities of the individuals within an organization, which is stated to be limited, and the process of interaction between these individuals on the other hand (Amason, 1996).

In literature, the conception that individuals have limited cognitive capabilities is known as bounded rationality. The concept of bounded rationality can be defined as “the inherent

cognitive limitations of decision makers that restrict their ability to collect and analyze all relevant information and identify all possible alternatives” (Shepherd & Rudd, 2014, p. 343). Decisions are influenced by the cognitive capabilities and personal characteristics of all the strategic decision makers together within the organization (Hutzschenreuter & Kleindienst, 2006). It is thus the combination of the perception of the decision makers, the characteristics and their values that together determine the decision outcomes (Hambrick & Mason, 1984).

Based on the literature on strategic decision-making and individual decision makers, several theoretical assumptions can be made. First, individuals in the organization influence the decision-making process and thus the outcomes of the decisions of an organization. Second, it is stated that the style of the strategic decision-making process has an impact on the organizational outcomes of that process. Hereafter, two decision-making styles will be discussed. Furthermore, these styles will be linked with theory about individual decision makers in order to determine whether the kind of the decision-making styles of the individual decision makers in an organization has an impact on the overall firm performance. This study focuses on one aspect of the strategic decision-making process, namely the monitoring role of the board of directors in the selection phase.

Organizational and individual procedural rationality

Earlier in this paper, it was described that procedural rationality is a way the decisions are being made and that such a way has an impact on the outcomes of these decisions. It is about collecting and analyzing relevant information in order to come to a comprehensive decision (Schepker, Nyberg, Ulrich, & Wright, 2018). Although the research on organizational procedural rationality is quite comprehensive, several scholars have presented conflicting results about the effects of organizational procedural rationality on firm performance (Priem et al., 1995).

In general, one can distinguish the effects of organizational procedural rationality on firm performance in stable and unstable environments. With regard to stable environments, some scholars have stated that organizational procedural rationality leads to better firm performance by organizations (e.g. Fredrickson, 1984). In these environments relatively few opportunities arise and if an opportunity arises, it is relevant for both the organization and its competitors. Because of this, the decision makers must be aware of the fact that there is smaller margin for error and thus procedural rationality is appropriate because all the information is used. With regard to unstable environments, some researchers have stated that organizations have better firm performance if decisions are made fast and without trying to integrate that decision in an overall strategy (e.g. Anderson & Paine, 1975; Nutt, 1976). Organizational procedural

rationality in these environments leads to lower firm performance, because data is not available, relationships are not obvious and procedural rationality is time consuming. However, another stream of literature came to conflicting results, as other scholars have stated that decision makers in unstable environments should use organizational procedural rationality in order to obtain better firm performance (Deligianni, Dimitratos, Petrou, & Aharoni, 2016; Eisenhardt 1989). Decision makers must accelerate the aspects of procedural rationality, like the use of information and advice. Unstable environments have an urge for fast but weighed decisions and therefore organizational procedural rationality in these environments leads to better firm performance (Eisenhardt & Bourgeois, 1988).

Although literature is divided on whether organizational procedural rationality leads to a better firm performance, research has moved in the direction of a conception in which organizational procedural rationality is positively related with effective strategic decision-making (e.g. Schepker et al., 2018; Elbanna & Child, 2007; Dean & Sharfman, 1996). The positive link between organizational procedural rationality and firm performance is also consistent with the prescription of rationality in strategy formulation (Priem et al., 1995).

Even though literature views organizational procedural rationality as positively related to firm performance, it should be noticed that strategic decision-making processes deviate from pure organizational procedural rationality. As mentioned before, a strategic decision-making process is never exhaustive and inclusive and thus never completely procedural rational (Atuahene-Gima & Haiyang, 2004). Several scholars have therefore introduced the concept of bounded rationality (e.g. Foss & Weber, 2016; Sterman, Henderson, Beinhocker, & Newman, 2007). Bounded rationality contains the conception that no strategic decision-making process can be completely procedural rational, because of several reasons (Schilit & Paine, 1987). For instance, every strategic decision-making process is affected by unclear goals that shift over time, initial sense-making and different perceptions of risk. Decision makers will search for a satisfying solution instead of an optimal solution. This has led to empirical research that supports the existence of cognitive limits to organizational procedural rationality (Eisenhardt & Zbaracki, 1992). Although organizational procedural rationality is considered to have a positive impact on effective strategic decision-making, it is thus an illusion to think that it is possible to obtain pure organizational procedural rationality in a strategic decision-making process.

Procedural rationality at organizational level is thus positively related with firm performance because when the organization considers more alternatives, takes into account a great amount of advice and uses all the information available, this will lead to weighed and thus better decisions (Priem et al., 1995). Organizational procedural rationality may have a downside besides these positive aspects. Many scholars have introduced the double-edged sword, meaning that procedural rationality may hinder the board in making fast decisions (Forbes & Milliken, 1999). The consideration of more alternatives leads to longer discussions, which restrains the speed of the strategic decision-making processes. However, recent research has shown that the use of knowledge and skills has a positive effect on decision-making speed (Kanadli, Bankewitz, & Zhang, 2018). Decision-making speed is positively affected by boards benefiting from the simultaneous evaluation of the different alternatives.

The extensive literature on organizational procedural rationality shows that procedural rationality on organizational level is positively related to firm performance. However, it is not yet examined whether the use of procedural rationality by individual decision makers in the decision-making process of the organization leads to a better overall firm performance of that organization. This gap in literature is remarkable, because the influence of individuals in the decision-making process is long been recognized (e.g. Amason, 1996). The effectiveness of organizational decisions is considered to be linked with the personal and cognitive context of individual decision makers (Forbes & Milliken, 1999).

On the one hand literature has stated that procedural rationality on organizational level leads to better firm performance. On the other hand, it is long been recognized that the influence of individuals in decision-making processes is extensive. If the theory about organizational procedural rationality is combined with theory about the effects of individual decision makers, one can argue that when the individuals in a decision-making team have characteristics that lead to the use of individual procedural rationality in the decision-making process (Le Pine, 2003), this will have a positive impact on the overall firm performance of the organization. This is due to the fact that on the one hand, the characteristics of individuals in an organization influence the decision-making process, and on the other hand it is stated that procedural rationality on organizational level leads to better firm performance.

Walter et al. (2012) suggests that in order to fully portray the effects of strategic decision-making processes, it may be beneficial to create a comprehensive, multilevel model of strategic decision processes in which each organization is assessed separately. In addition to this

multilevel model, this study takes the strategic decision-making styles of individuals into account. The importance and difference of this approach in relation to that multilevel model can be illustrated with an example. For instance, one organization consists of a certain amount of decision makers. One or two of these decision makers are extremely procedural rational, while the others are to a much less extent procedural rational. Another organization consists of an amount of decision makers whom are all procedural rational to a certain extent. If one examines the amount of procedural rationality on organizational level, it may suggest that both organizations are procedural rational to the same extent. However, the first organization consists of only one or two decision makers who are (extremely) procedural rational, while the latter organization consists of decision makers whom are all procedural rational to some extent. The latter organization thus should have a better firm performance, because all decision makers in that organization are to a certain extent procedural rational. Thus, if there is a high number of individual decision makers in a decision-making team that is procedural rational, this should have a positive impact on the overall firm performance of the entire organization.

Hypothesis 1: A high number of individual decision makers with a decision-making style that is procedural rational has a positive effect on the overall firm performance.

Organizational and individual political decision-making

Besides organizational procedural rationality, the amount of organizational political activity is distinguished as a process characteristic with an impact on the decision outcomes (Elbanna, 2018; Welsh & Slusher, 1986). It is long been recognized that organizational political activity is an aspect of strategic decision-making and several scholars have thus paid attention to this aspect (Child & Tsai, 2005). A political decision-making style is a style in which decisions are made after the individuals and organizational coalitions have negotiated about their competing interests (Walter et al., 2012). These competing interests lead to a certain degree of organizational political decision-making, because via this organizational political decision-making style the decision makers strive for their own interests (Kreutzer et al., 2014). The protection of these interests in an organization can take place by several activities, of which the most important activities are lobbying, coalition formation and the withholding of information (Eisenhardt & Bourgeois, 1988).

Research has distinguished two causes of organizational political decision-making. First, it is stated that one source of political activity in the organization is conflict, which leads to a disagreement (Elbanna & Child, 2007). To reach their goals, decision makers use politics. Organizational political decision-making thus occurs when decision makers must protect their

interests by forming coalitions in order to maximize the protection of these interests. Besides conflict, unequally distributed power is known to trigger political activity (Shepherd & Rudd, 2014). When power is centralized and thus not distributed equally among the decision makers, the decision makers with no power form coalitions and pursue their own agendas in order to obtain some of that power.

In contrast to the literature on organizational procedural rationality, the general view in literature about organizational political decision-making is that politics on the organizational level have overwhelmingly negative outcomes (e.g. Kreutzer et al., 2014; Eisenhardt & Bourgeois, 1988; Dean & Sharfman, 1996; Elbanna & Child, 2007). This has several reasons. One reason that is mentioned in literature is the time-consuming aspects of organizational political decision-making. This way of decision-making is stated to be very distracting for decision makers and dissipates their energy (Eisenhardt & Bourgeois, 1988). Another and more important reason for the negative outcomes is that organizational political decision-making leads to a restricted information flow. The different coalitions withhold information in order to protect their interests, while most of the time strategic decisions must be made rationally in order to be successful (Kreutzer et al., 2014). Also, cooperation is hampered because political decision-making leads to the forming of stable coalitions. These coalitions distort the perceptions of decision makers about the opinions of the decision makers in other coalitions, which obstructs cooperation (Eisenhardt & Bourgeois, 1988).

As is the case with procedural rationality, the use of politics by individual decision makers in the decision-making process of the organization is not yet empirically examined. Because individuals have an extensive influence in the decision-making process (Amason, 1996), an effect on firm performance of individuals who use a political decision-making style should be present. One could argue that individuals with certain characteristics that lead to a political way of decision-making have a negative impact on the overall firm performance of the organization. The example of the difference between organizational and individual procedural rationality also applies to political decision-making. One organization consists of a certain amount of decision makers, one or two of whom are extremely political. Another organization consists of an amount of decision makers whom are all to a certain extent political. Examining the amount of organizational political decision-making, it may suggest that both organizations are political to the same extent. However, the latter organization consists of decision makers whom are all political to a certain extent and thus that organization should have a worse firm performance.

Hypothesis 2: A high number of individual decision makers with a political decision-making style has a negative impact on the overall firm performance.

Although most of the studies suggest a negative link between political behavior and organizational outcomes (Elbanna & Child, 2007), some authors have argued for the more balanced view that politics may be helpful in some situations (Kanadli et al., 2018; Eisenhardt & Bourgeois, 1988). There are valid arguments to state that a certain degree of individual political decision-making can lead to positive outcomes in some situations. For instance, Stevenson, Pearce and Porter (1985) have argued that organizational political decision-making leads to coalitions of decision makers who already agreed about a certain topic and therefore this will cause efficient decision-making, as it is immediately clear if a coalition is large enough to make the decision. In addition to this, Eisenhardt, Kahwajy and Bourgeois (1997) have stated that organizational political decision-making provides a more inclusive range of information, a better understanding of the problems and a wider range of possible solutions. This is due to the fact that organizational political decision-making has the aim of protecting the interests of different coalitions. The coalition that has in mind one alternative is facing other possible alternatives of different coalitions through the political activity of these coalitions. Because of this organizational political activity, decision makers are forced into a debate about the question which of the alternatives is the right one. This debate is considered to be crucial in order to gather relevant information from different points of view and leads the decision makers to the most appropriate alternative to take. Based on this, Kanadli et al. (2018) suggests that a certain level of conflict and disagreement may benefit the quality of decision outcomes. Another argument in literature that pleads for a more balanced view of the impact of individual political decision-making on organizational outcomes is that individuals that practice politics do that in order to make their alliances as large as possible. This leads to the fast and smooth adaptation of a decision, which is considered to have positive outcomes (Eisenhardt & Bourgeois, 1988). A side note must be made about this argument, because a fast decision is not necessarily a decision with high quality. Furthermore, it should be noticed that the empirical evidence of these positions is limited (Franke & Foerstl, 2018).

Earlier on, it is described that due to bounded rationality a strategic decision-making process is never completely procedural rational (Atuahene-Gima & Haiyang, 2004). The cognitive capabilities of the individual decision makers are considered limited and in addition to this, every individual has different perceptions of, for instance, risk. This leads to the conception that decision makers are restricted in their ability to collect and analyze all relevant information

(Shepherd & Rudd, 2014). Despite of the bounded rationality of the individuals, together these individuals can form a decision-making team which can be considered as procedural rational to a large extent. These individuals then complement each other. According to the literature, this kind of decision-making team will have a positive effect on firm performance (e.g. Priem et al., 1995).

However, a decision-making team that is seen as procedural rational to a large extent can also have a downside. This can be explained as follows. An organizational political decision-making style is characterized by negotiating between the different coalitions and therefore by discussion (Walter et al., 2012). Discussion is a consequence of disagreement among the decision makers, because of different opinions and viewpoints (Simons & Peterson, 2000). Because of the perception of discrepant views and incompatibilities, conflict will arise between the decision makers, and this conflict will be solved by conducting a discussion about the different views (De Dreu, 2006; Jehn, 1995). It is demonstrated that conflict and thus discussion within decision-making teams leads to a higher degree of decision quality (e.g. Schweiger, Sandberg, & Ragan, 1986). The main cause of this positive link with decision quality is that discussion and other interactions among the decision makers ensure that all the available information is shared, evaluated and recommended (e.g. Stagner, 1969; Mintzberg et al., 1976). In other words, discussion in a decision-making team leads to a comprehensive use of the relevant information. If a decision-making team is procedural rational to a large extent, there will be limited discussion within that team due to the lack of divergent views.

Taking into account the positive effects of discussion (Schweiger et al., 1986) in combination with a more balanced view of the effects of a political decision-making style (Kanadli et al., 2018; Eisenhardt et al., 1997), leads to the conception that a certain amount of individual political activity in the decision-making process has a positive link with firm performance. If a high number of individual decision makers with a political decision-making style is combined with a majority of the individual decision makers with a procedural rational decision-making style, this would result in a better overall firm performance.

Hypothesis 3a: A high number of individuals with a political decision-making style, in combination with a majority of individuals with a procedural rational decision-making style, has a positive effect on overall firm performance.

On the other hand, this can be the case in the situation where a high number of individuals with a procedural rational decision-making style is combined with a majority of individual decision makers with a political decision-making style.

Hypothesis 3b: A high number of individuals with a procedural rational decision-making style, in combination with a majority of individuals with a political decision-making style, has a positive effect on overall firm performance.

Methodology

The hypotheses of this study are tested in the Dutch water authority sector. The Dutch water authorities are responsible for the water management in the Netherlands (Van den Oever & Martin, 2015). The water authorities focus on all aspects of water management and therefore perform an important task, because the Netherlands has a vulnerable geography and good water management is thus indispensable (Van den Oever, 2017).

As of 2019, 21 water authorities exist in the Netherlands (Unie van Waterschappen, 2019). The Dutch water authorities are public authorities with a board of directors that is partly chosen by election every four years (Art. B.2.a Kieswet, 1989; Art. 12 Waterschapswet, 1991). Although the water authorities are public organizations, one can compare the governance of these authorities with the governance of business firms (Van den Oever, 2017). Each water authority has a board of directors of approximately 30 individuals (this number depends on the size of the water authority). Out of these directors, approximately five individuals compose the top management team. The board of directors is charged with the strategic decision-making process, the determination of the budget and the levying of taxes (Art. 83 Waterschapswet, 1991). All water authorities keep detailed minutes about the meetings of the board of directors.

In order to study the influence of the different individual decision-making styles on the decision-making process, it is necessary to frame the model at firm-performance level of analysis rather than at decision level, because it is stated that decisions within an organization are not made in isolation of each other and therefore it is not appropriate to examine firm performance with decisions independently of each other (Leiblein et al., 2018; Langley, Mintzberg, Pitcher, Posada, & Saint-Macary, 1995).

Because previous research has shown that decision processes within an organization often vary substantially (Dean & Sharfman, 1996), this study examines the acting of individual decision makers in meetings of the water authority boards independently to determine the effect of decision-making styles of individuals in these meetings on the overall firm performance of the organization. Furthermore, this study examines the meetings of organizations over several years and is therefore longitudinal, because it often takes time for decisions to have effect on organizational performance (Hart & Banbury, 1994).

Data collection

The population of the water authorities is considered during the period 2009-2014. This study focuses on that specific period because every water authority keeps minutes of the meetings of

the board of directors in this period. No written minutes are kept of meetings before or after this period. Nowadays, there are 21 water authorities. In 2009, there was a population of 26 water authorities (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2010). Over the years, several water authorities have merged. In 2011, the water authorities ‘Zeeuws-Vlaanderen’ and ‘Zeeuwse Eilanden’ have merged into water authority ‘Scheldestromen’. In 2013 and 2014, the water authorities ‘Veluwe’ and ‘Vallei & Eem’ have merged into water authority ‘Vallei en Veluwe’, and ‘Regge en Dinkel’ and ‘Velt en Vecht’ into water authority ‘Waterschap Vechtstromen’ (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2014). Later, the water authorities ‘Groot Salland’ and ‘Reest en Wieden’ have merged into water authority ‘Drents Overijsselse Delta’, and the water authorities ‘Peel en Maasvallei’ and ‘Roer en Overmaas’ into water authority ‘Limburg’ (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2016). This implies that the population varies over the years, from 26 water authorities in 2009 until 23 water authorities in 2014. The data can thus best be described as unbalanced panel data. The total number of observations is 131.

In this panel data, the unit of analysis for this study is each water authority and every year is a time period. To determine the decision-making style of the individual decision makers, data containing everything the decision makers have said during meetings of the board is examined. This data emanates from the internal minutes of the water authorities and consists of text files for each individual of the water authority, per meeting and per year. Through this data, the decision-making style of each individual per meeting can be determined. To measure the decision-making styles of these individuals, the qualitative data of this text files is transformed into quantitative data using content analysis. Via this process, one can determine whether an individual uses a *procedural rational decision-making style* or whether this individual uses a *political decision-making style*. A total number of 16,625 text files is analyzed. After gathering all data on the individual board members, the number of individuals with a procedural rational decision-making style and the number of individuals with a political decision-making style was calculated for every board annually. To gather data about firm performance, the annual reports of the water authorities are examined. In these annual reports, the total costs of the water authority and the number of regional inhabitants is displayed. This information can be used to operationalize the dependent variable *firm performance*.

Content analysis

To measure the kind of decision-making styles, the qualitative data of the text files is transformed into quantitative data using content analysis. Content analysis is considered an

appropriate tool for analyzing a large amount of managerial research questions (Duriiau, Reger, & Pfarrer, 2007). The main reason for this is that groups of words reveal underlying concepts. As such, content analysis provides access to both individual and collective structures such as values, attitudes and cognitions (Carley, 1997). Content analysis is therefore very appropriate to analyze the different decision-making styles of individuals. Content analysis differs from other qualitative methods by combining the rich meaning associated with organizational documents with a powerful quantitative analysis (Short, McKenny & Reid, 2018; Duriiau et al., 2007). The most fundamental issues of the application of content analysis are reliability and validity (McKenny, Aguinis, Short & Anglin, 2018). One of the concerns is whether content analyses of documents such as minutes are indicative of managerial structures, but researchers have addressed this issue thoroughly (Duriiau et al., 2007). In contrast to for instance interviews and surveys, content analysis involves data collected in naturally occurring organizational contexts and therefore the data that is collected allow for greater confidence regarding relations among underlying constructs. Content analysis must be executed carefully in order not to derive meaning where it does not exist. However, the advantages of content analysis outweigh the limitations if studies are carefully implemented (Short et al., 2018).

Dependent variable

Firm performance is a difficult concept to apply in research and therefore literature shows some inconsistencies (Miller, Washburn, & Glick, 2013). Some authors have approached firm performance as a multidimensional concept, represented by the shared variances of different dimensions. Other studies have measured firm performance by separate constructs, through for instance stock price or return on assets. However, water authorities are public organizations and thus these ways of measurement are inappropriate.

In this study, the dependent variable firm performance is measured by the annual costs of the water authority divided by the number of regional inhabitants. The board of directors has an incentive to minimize the annual costs in order to be re-elected. This can be explained as follows. The water authorities levy taxes in order to cover the costs (Art. 99 Waterschapswet, 1991). The board of directors is responsible for the levying of taxes (Art. 83 Waterschapswet). Almost all costs are covered by these tax revenues (Centraal Bureau voor de Statistiek, 2017). Therefore, if the board of directors succeeds in keeping the costs down, this has the consequence that the taxes can be kept low either. Citizens will then be more satisfied with the board of directors and the probability of being re-elected increases. Hence, the board is held accountable

for the amount of taxes. It is thus important for the board to lower the costs, since subsequently, the taxes can decrease.

The importance of cost control at the water authorities is expressed in various ways. For instance, a business comparison between the water authorities is made every two year (Unie van Waterschappen, 2018). This comparison pays much attention to the cost development of the different water authorities, for instance by describing ways to save costs. “With innovative solutions, cooperation with other parties and efficiency measures, the boards keep the increment of costs, and therefore the increment of the burden for citizens and businesses, as low as possible” (Unie van Waterschappen, 2018, p. 58). The comparison also considers future developments by describing the agreements that have been made in order to keep the increment of taxes limited. “In 2011, the water boards made agreements (...) to ensure that the costly investments required for safety against high water, good water quality and not too much and not too little water can be carried out without leading to a sharp rise in taxes for households and businesses” (Unie van Waterschappen 2018, p. 65). In addition to this, the water authorities focus on costs in the annual reports and the preparation of the budget. Appendix II contains parts of annual reports and budgets of several water authorities in which is shown that the emphasis is on cost control. Furthermore, the elections for the water authorities were held on the 20th of March, 2019. Almost every political party focuses on costs and taxes in their election programs. Appendix III contains parts of election programs from several political parties of different water authorities, which shows that the costs are the most important topic at the elections. Although every water authority has unique costs due to for instance geography, the presence of rivers and areas with high or low attitudes, legally established standards apply to many duties of the water authorities (Unie van Waterschappen, 2018). Because of these standards, the costs of the water authorities can be compared with each other. Furthermore, these differences are taken into account with fixed effects.

Based on the above, it can be concluded that the costs of each water authority divided by the number of inhabitants is an appropriate indicator to measure the dependent variable firm performance. The costs of the water authorities are covered by the taxes the regional inhabitants paid. Because of this, it is important for the board to make effective decisions in order not to exceed the incomes out of taxes that can be used to cover the costs. The total costs per year is divided by the number of regional inhabitants and is therefore negatively scaled.

The annual costs are retrieved from the annual reports of each individual management authority. Furthermore, the number of inhabitants per water authority is gathered from the database Waves, which is available through the website of the Unie van Waterschappen.

Independent variables

The independent variables of this study are the *number of individual decision makers with a procedural rational decision-making style* and the *number of individual decision makers with a political decision-making style*. In order to perform a content analysis, a dictionary of both procedural rational and political decision-making style is composed. For these independent variables, this study will lean on the dictionaries of these variables composed by Van den Oever and Martin (2019). However, both dictionaries are aimed at organizational level rather than individual level. These dictionaries thus need to be aligned to the individual level of decision-making styles. After the dictionaries are composed, the content analysis is executed with the program LIWC 2015, a program that is considered useful to examine dictionaries about behavior in organizations (Short et al., 2018). LIWC 2015 is an automated content analysis program, counting the number of dictionary words within a text. This program places the number of dictionary words in perspective by turning this number into a percentage of the total number of words in a text.

The minutes of the meetings of the board of directors provide a consistent annual form of communication which cannot be captured through surveys or interviews, because of the lack of availability over long periods of time and the risks of retrospective bias (Gamache, McNamara, Mannor & Johnson, 2015).

Threshold

In order to determine whether the decision-making style of an individual decision maker can be considered as either procedural rational or political, the following method for both independent variables is used. First, the sum of the percentages of both procedural rational and political words per board member, per text file, per year is given by LIWC 2015. The sums of these percentages per decision maker per year are then added up separately and the average of these two totals is determined. The decision-making style of a decision maker is regarded procedural rational or political if his or her average sum of that year is higher than the average of the sums of each board member in every organization in that specific year. This threshold is used because it has the best model fit. However, in order to be able to perform a robustness check, other thresholds are composed. Furthermore, two other independent variables are composed. If the number of individual decision makers with either a procedural rational or political decision-

making style of an organization exceeds more than half of the total decision makers in that organization, this organization is considered as an organization with a majority of individuals with either a procedural rational or political decision-making style. Whether there is a majority in an organization is also determined based on other thresholds, in order to perform a robustness check.

The number of individual decision makers with a political decision-making style

First, to collect the data from the text files, the dictionary of political decision-making by Van den Oever and Martin (2019) is examined, see appendix I. As mentioned before, this dictionary is aimed at organizational level. To compose the final dictionary, the existing dictionary is subjected to the gathered literature about political decision-making at individual level to consider whether this dictionary needs adjustments.

Considering the overview of measures for politics by Van den Oever and Martin (2019), it is shown that these measures are composed after an extensive literature review which is similar to the literature review of this study. Most of the authors included in the literature review of Van den Oever (2017), are included in the literature review of this study (e.g, Eisenhardt, 1989; Eisenhardt & Bourgeois, 1988; Eisenhardt et al., 1997; Elbanna & Child, 2007; Welsh & Slusher, 1986). The only article that Van den Oever (2017) has taken into account and which is missing in the literature review of this study, is the article of Kipnis, Schmidt and Wilkinson (1980). This article is published in the Journal of Applied Psychology and is about the tactics used by people to influence their superiors and co-workers, and not directly about the political decision-making style. Furthermore, this article is not recently published. Therefore, this study does not take that article into account.

Although the existing dictionary thus represents the concept of an individual decision-making style quite well, this dictionary is formulated on organizational level. However, this study examines text files of individual decision makers, hereby ensuring that the individual and not the organizational decision-making style is measured. The false hit rates were found by testing randomly selected text files per word.

Table 1. Dictionary for politics

English	Dutch	Total hits	False hit rate
We think	Wij denken	338	0.0000
We find	Wij vinden	773	0.0000

Fraction / Political group	Fractie	16.719	0.1450
Our opinion	Onze mening	140	0.0000
Preference	Voorkeur	554	0.000
Discussion / Conflict	Discussie	3.848	0.1250

The number of individual decision makers with a procedural rational decision-making style

As is the case for the independent variable political decision-making, this study will lean on the dictionary for procedural rationality by Van den Oever and Martin (2019), see appendix I. However, again needs to be determined whether this dictionary needs adjustments.

In the paragraph about procedural rationality (Van den Oever & Martin, 2019, p. 7), it is shown that the composers of the dictionary lean for most part on the work of the same authors as the literature review of this study (e.g. Dean & Sharfman, 1996; Simon, 1976; Eisenhardt, 1989; Fredrickson, 1984; Walter et al., 2012). Therefore, this study does not make any adjustments to the existing dictionary for procedural rationality. Again, this study examines text files of individual decision makers in order to determine whether the individual is considered as procedural rational, which guarantees that this study examines the decision-making styles of the individuals rather than the organizational decision-making style.

Table 2. Dictionary for procedural rationality

English	Dutch	Total hits	False hit rate
Case	Case	106	0.0000
Research	Onderzoek	2.898	0.1243
Risk	Risico	1.250	0.0986
Possibilities	Mogelijkheden	2.762	0.1652
Evaluation	Evaluatie	1.293	0.04063
Give full attention to	Aandacht	1.164	0.2194

Control variables

An extensive review of the literature leads to the inclusion of control variables in the model. Following previous studies, this study controls for several factors.

First, this study controls for *slack resources* (Slack Resources), as the availability of slack affects firm performance. Research has shown that slack resources are used to improve firm performance, which is consistent with both the resource-based view and the behavioral theory of the firm (Daniel, Lohrke, Fornaciari, & Turner, 2004).

Second, this study controls for *political diversity* (PolDiv), as a more political diverse organization will have more individual decision makers with a political decision-making style.

Third, this study controls for *gender diversity* (GenderDiv). Several researchers have claimed that gender diversity has an influence on firm performance. For instance, Post and Byron (2015) state that female board representation has a positive effect on firm performance.

Fourth, this study controls for *negative attainment discrepancy* (NAD). This can be described as the difference between the budgeted costs and the realized costs (Lant & Montgomery, 1987). The behavioral theory of the firm theorizes that firm performance is driven in part by the feedback that firms receive from comparisons made either with the firm's prior performance or with the performance of others (Kacperczyk, Beckman, & Moliterno, 2015). As is described before, water authorities focus on costs. If the budgeted costs are not reached, discussions can emerge. This could both influence the firm performance and the number of individuals using a political decision-making style.

Fifth, this study controls for the *size* of the organization (Size), as this variable may shape board behavior and thus may have an impact on firm performance (Kanadli et al., 2018). This control variable is measured by the number of regional inhabitants of the water authorities per year.

Sixth, this study controls for the *number of board members* (Board Size). The board of directors executes a monitoring role and research has shown that the number of board members has an impact on the way the monitoring role is executed, which affects firm performance (Kroll, Walters & Wright, 2008). Furthermore, if the number of board members increases, the likelihood that there will be members with either a procedural rational or political decision-making style increases.

Seventh, this study controls for the *number of pages* (NumberPages) in source documents per organization per year, as since the number of pages increases, the likelihood that there will be words that describe procedural rationality or political decision-making increases.

Eighth, this study controls for the *number of text files* (NumberFiles) per organization per year. If an organization has more files, there were more board meetings. This will increase the

likelihood that there will be words that describe procedural rationality or political decision-making.

Ninth, this study controls for *number of words* (NumberWords) per organization per year, as since the number of words increases, the likelihood that there will be words that describe procedural rationality or political decision-making increases.

Tenth, this study controls for environmental influences by adding *year dummies* (YDM). Hereby, external events that affect all organizations equally and that may influence decision outcomes are controlled for. Furthermore, when panel data is investigated, it is recommended to utilize time variables, since including year dummies could enhance explanatory power (McGahan & Porter, 1997).

Eleventh, this study controls for *fixed effects* by performing fixed effects OLS regressions. Hereby, this study takes into account possible factors that influence the strategic decisions. The study thus controls for differences that remain stable over the years, for instance differences in organizational culture and political composition of the board. Furthermore, with this control variable, this study takes into account the unique costs of each water authority due to for instance geography.

Analysis

The analysis of the model was conducted with the statistical program STATA. The hypotheses were tested by using fixed effects ordinary least squares (OLS) regression. To measure the decision-making styles of these individuals, the qualitative data of the text files is transformed into quantitative data using content analysis. It is stated that OLS regression is a powerful technique, particularly when it is used in conjunction with data transformation (Hutcheson, 2011). In the first three models, hypotheses 1 and 2 are tested. In model 4 and 5, hypotheses 3a and 3b are tested.

The potential for endogeneity

OLS regression is a widely used regression method. However, this method is inconsistent if there is an endogeneity problem (Bascle, 2008). An endogeneity problem can arise via three instances: errors-in-variables, omitted variables and simultaneous causality. In this study, there may be for example simultaneous causality, as firm performance may influence the decision-making styles of individuals. The behavioral theory of the firm theorizes that the decision-making processes of organizations are influenced by the feedback regarding current performance (Iyer & Miller, 2008). It is thus necessary to control for endogeneity in order to

avoid misspecifications and incorrect conclusions (Shaver, 1998). As the Heckman two-step procedure takes into account only the aspect of the omitted variables bias (Hamilton & Nickerson, 2003), this study will use the instrumental variables (IV) estimation in order to control for endogeneity, because analysts can rely on these methods for all three types of endogeneity (Bascle, 2008). However, given the low number of observations, this study will only use an IV estimation if one of the independent variables is endogenous based on post-estimation checks. Although there are different IV methods, this study will make use of the most common IV method, the two-stage least squares estimation (2SLS). The number of words is used as an instrument for both the political decision-making style and procedural rationality. If there are more words per organization per year, this would increase the likelihood that there will be more words that describe either one of these independent variables. This instrument is assumed to be uncorrelated with the dependent variable firm performance.

First, the strength of the number of words instrument is tested. The F-statistic is 48.845 for the number of words as an instrument for the number of individual board members with a procedural rational decision-making style. The F-statistic is 52.716 for the number of words as an instrument for the number of individual board members with a political decision-making style. Both F-statistic values far exceeds the threshold value of 10 proposed by Stock, Wright and Yogo (2002). It can thus be concluded that the number of words is a sufficiently strong instrument for both independent variables.

Second, it has to be determined whether both independent variables (the number of board members with a procedural rational decision-making style and the number of board members with a political decision-making style) are endogenous. For the number of board members with a procedural rational decision-making style, the Durbin chi2 score and Wu-Hausmann F-statistic are .002504 ($p = 0.9601$) and .002447 ($p = .9606$). For the number of board members with a political decision-making style, the Durbin chi2 score and Wu-Hausmann F-statistic are 2.20338 ($p = .138$) and 2.18976 ($p = .141$). As such, the hypothesis that both independent variables are exogenous is not rejected. The fixed effects OLS regression is used, since endogeneity is not a substantial concern.

Results

First, it is tested whether the assumptions of the OLS regression are met. Since the VIF scores of the independent variables and the control variables are below 10, multicollinearity does not seem to be an issue, see Table 3. This study controls for time-specific effects with so-called year dummies. To conserve space, these control variables are not displayed in the tables. The assumption of normality is checked by the Z-scores of the different variables. The Z-scores of both skewness and kurtosis of the rooted control variables number of words, number of files and number of pages improved. Thus, these transformed control variables are used in the analyses. The Durbin-Watson statistic informs whether the assumption of independent errors is tenable (Field, 2013). Ideally, this value is close to 2 and in any case between 1 and 3. In the model, the values of the Durbin-Watson statistic are between 1 and 3. It can thus be concluded that the assumption of independent errors is met.

Table 3. Coefficients of the Included Variables

<i>Variables</i>	<i>Collinearity Statistics</i>	
	<i>Tolerance</i>	<i>VIF</i>
#Rational individuals	.24	4.14
#Political individuals	.24	4.12
Rational majority	.39	2.58
Political majority	.34	2.93
Slack Resources	.93	1.08
PolDiv	.46	2.17
GenderDiv	.58	1.73
NAD	.91	1.09
Size	.32	3.07
Board Size	.26	3.81
NumberPages	.18	5.46
NumberFiles	.35	2.80
NumberWords	.16	5.97

a. Dependent Variable: FirmPerformance

The descriptive statistics of the included variables are shown in Table 4. Firm performance is operationalized as accounting-based performance. Performance is thus measured as costs divided by the number of regional inhabitants. Therefore, this variable is negatively scaled. The mean is -169,296 and the range of firm performance is rather wide, which indicates a high level of variation of the dependent variable. The maximum number of individual board members with a procedural rational decision-making style in an organization is 22. The maximum number of individual board members with a political decision-making style in an organization is 20.

Table 4. Descriptive Statistics of the Included Variables

	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>S.D.</i>
1. Firm Performance	131	-683.77	-42.92	-169.30	136.15
2. #Rational individuals	131	.00	22.00	9.74	5.30
3. #Political individuals	131	.00	20.00	8.56	5.44
4. Rational majority	131	.00	1.00	.23	.42
5. Political majority	131	.00	1.00	.04	.19
6. Slack resources	131	.00	320.74	65.62	67.94
7. PolDiv	131	.39	.54	.46	.04
8. GenderDiv	131	.13	.42	.30	.07
9. NAD	131	.00	33.96	1.30	4.14
10. Size	131	107,741.00	1,350,000.00	709,599.60	319048.46
11. Board Size	131	21.00	30.0	27.70	2.71
12. NumberPages	131	4.00	18.06	10.07	2.93
13. NumberFiles	131	2.00	3.74	2.80	0.37
14. NumberWords	131	47.44	499.07	232.55	99.38

In Table 5, the correlations between the included variables are shown. Again, the year dummies are excluded from this table. On the one hand, the number of individual board members with a procedural rational decision-making style is negatively correlated with firm performance. On the other hand, the number of individual board members with a political decision-making style is positively correlated with firm performance. Furthermore, a rational majority is significantly negatively correlated with firm performance ($p < 0.05$), while a political majority has a positive but non-significant correlation with firm performance. This is peculiar, since the literature suggests the opposite effects. However, except for the correlation of a rational majority with firm performance, these correlations are non-significant.

As was to be expected, the four independent variables are significantly correlated with each other. This is not striking, since the independent variables all relate somehow to the decision-making style of the individuals. Two of the independent variables relate to the number of individuals with a certain decision-making style, while the other two independent variables relate to majorities of individuals with a certain decision-making style. Furthermore, the table revealed some significant correlations with the dependent variable and several control variables. For instance, political diversity is negatively correlated with firm performance ($p < 0.05$). Gender diversity is positively correlated with the number of individuals with a political and a procedural rational decision-making style, while this correlation does not exist between gender diversity and the majorities of these decision-making style. Size of the organization, size of the board of directors and number of files of an organization are all significantly and positively related with firm performance ($p < 0.05$). It can thus be concluded that the control variables are of great importance in explaining the dependent variable. Further analysis investigates the support of the proposed hypotheses.

Table 5. Correlations of the Included Variables

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>
1. FirmPerformance	1										
2. #Rational individuals	-.16	1									
3. #Political individuals	.04	.55**	1								
4. Rational Majority	-2.16*	.70**	.33**	1							
5. Political Majority	.00	.27**	.73**	.26**	1						
6. Slack Resources	-.06	-.05	.04	-.16	-.02	1					
7. PolDiv	-.27**	.03	-.01	-.00	-.00	-.08	1				
8. GenderDiv	-.09	.25**	.23**	.16	.00	.06	-.17	1			
9. NAD	.04	.10	.00	.06	-.06	.08	.07	-.12	1		
10. Size	.50**	-.10	.09	-.24**	-.04	.10	-.48**	.21*	.03	1	
11. Board Size	.50**	.15	.20*	-.12	.04	.08	-.58**	.06	.07	.71**	1
12. NumberPages	.01	.43**	.55**	.27**	.46**	.02	-.19*	.10	.01	.14	
13. NumberFiles	-.37**	.34**	.24**	.33**	.23**	-.01	.03	-.20*	.09	-.25**	
14. NumberWords	-.09	.52**	.54**	.35**	.43**	-.04	-.11	.03	.01	.14	

* P < 0.1; ** P < 0.05

In Table 6, the results of the fixed OLS regression analyses of the different models are displayed. In all models, the time effects are included with year dummies, but not displayed in the table. The first model contains the dependent variable and the control variables. The second model contains these variables and the number of rational individuals as an independent variable. Besides the dependent variable and the control variable, the third model contains the number of political individuals as an independent variable. The fourth model contains the number of political individuals, the rational majority and the interaction effect between those two variables, besides the dependent variable and the control variables. The fifth model contains the number of rational individuals, the political majority and the interaction effect between those two variables, besides the dependent variable and the control variables. Finally, the sixth model contains all independent variables, control variables and the dependent variable. The value of the R^2 of model 1 shows that the variability in the outcome is accounted by the predictors for 10%. The R^2 of model 2 and 3 show an increase, as the variability in the outcome is accounted by the predictors for 14% and 20%. Model 4 and 5, and more importantly, model 6 show also an increase, as the variability in the outcome is accounted by the predictors for 29%, 25% and 26%.

It should be noticed that four control variables are excluded of the models. These variables are Political Diversity, Gender Diversity, Board Size and YDM2014. However, the exclusion of these control variables is explicable. A control variable is excluded from the model if it can be perfectly predicted from one or more of the other variables. This can be explained as follows. In this study, year dummies for the years 2009 until 2014 are used. If for example the year 2009 is applicable, YDM2009 will get a 1, the other year dummies a 0. However, if the years 2009 until 2013 are not applicable, these year dummies will get a 0 and logically, the year 2014 will get a 1. YDM2014 can be predicted by looking at the other year dummies. If the other year dummies are 0, YDM2014 must be 1. If one of the other year dummies is 1, YDM2014 must be 0. So, the year dummy is excluded, since for k groups only $(k - 1)$ dummy variables can be used. If one more dummy variable is added, the response on that dummy variable is perfectly predictable from the response to other dummy variables. Furthermore, a predictor variable is excluded when the predictor has no variation. The control variables Political Diversity, Gender Diversity and Board Size are excluded because these variables remain stable over the years. These variables have thus no variation.

Table 6. Results

	<i>Model 1: Controls</i>	<i>Model 2: #Rational individuals</i>	<i>Model 3: #Political individuals</i>	<i>Model 4: #Political individuals x Rat. Majority</i>	<i>Model 5: #Rational individuals x Pol. Majority</i>	<i>Model 6: Full Model</i>
#Rational individuals (H1+)		1.19 (.54)**			.58 (.58)	1.15 (.71)
#Political individuals (H2+)			-1.56 (.46)*	-.69 (.54)		-1.12 (.59)
Rational Majority				35.82 (10.83)*		.12 (6.75)
Political Majority					-45.14 (17.58)**	-10.12 (7.78)
#Political Individuals x Rat. Majority (H3a-)				-2.76 (.98)*		
#Rational Individuals x Pol. Majority (h3b+)					1.91 (1.24)	
Slack Resources	-.00 (.04)	.01 (.04)	-.00 (.04)	.01 (.03)	.01 (.03)	.01 (.03)
NAD	-.07 (.46)	-.21 (.45)	-.12 (.43)	-.21 (.42)	-.26 (.42)	-.28 (.43)
Size	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)
NumberPages	-1.20 (1.99)	-.91 (1.95)	-.46 (1.89)	-.05 (1.82)	-.79 (1.85)	-.15 (1.86)
NumberFiles	9.80 (8.97)	8.60 (8.78)	10.23 (8.49)	7.61 (8.14)	6.33 (8.32)	7.82 (8.34)
NumberWords	.05 (.06)	.03 (.06)	.07 (.05)	.04 (.06)	.06 (.05)	.04 (.06)
R Square	.10	.14	.20	.29	.25	.26
N	131	131	131	131	131	131

a. Dependent Variable: FirmPerformance

* P < 0.01; ** P < 0.05

Hypotheses 1 and 2 predict respectively that the number of individual decision makers with a procedural rational decision-making style is positively related with firm performance, whereas the number of individual decision makers with a political decision-making style is negatively related with firm performance. Model 2 and 3 show some significant results. The number of individual decision makers with a procedural rational decision-making style is positively related with firm performance ($p = 0.03$). A one-unit increase in the number of individual decision makers with a procedural rational decision-making style leads to a decrease in the costs of the firm with 1.56 euro per inhabitant. The number of individual decision makers with a political decision-making style is negatively related with firm performance ($p > 0.01$). A one-unit increase in the number of individual decision makers with a political decision-making style leads to an increase in the costs of the firm with 1.62 euro per inhabitant. Although the impact on firm performance seems to be negligible, it should be noticed that firm performance relates to the amount of costs of the organizations per inhabitant. The average amount of costs of the organizations is 169.30 euro per inhabitant. The coefficient of the two independent variables in relation to the total costs per inhabitant can thus be placed in perspective. The organizations have on average 709,599 number of inhabitants. A one-unit increase in the number of individual decision makers with a procedural rational or a political decision-making style can thus on average cause an increase or decrease in the total costs with more than a million euro. Furthermore, the number of individual decision makers in an organization is on average 28. This number is relatively low, which implies that each individual can have a huge impact.

However, to limit the chance of a type I error (Field, 2013), this study will also look at the full model (model 6) when testing for hypotheses 1 and 2. In this model, the effects remain relatively the same, although these effects are non-significant. Based on model 6, it can be stated that the political majority has a stronger effect on firm performance than a high number of individuals with a political decision-making style, whereas a procedural rational majority has a weaker effect on firm performance than a high number of individuals with a procedural rational decision-making style. One side note must be made in relation to model 6. The high numbers of individuals and the majorities are both based on the same data, which thus increases the chances of multicollinearity.

Hypotheses 3a and 3b take into account the interaction effect of the high number of individuals with either a procedural rational or a political decision-making style with the majorities. The results of the fixed effects OLS regression are shown in model 4 and 5. The results of model 4 show the opposite effect than was predicted by the hypothesis. The interaction effect between

a high number of individuals with a political decision-making style with a rational majority has a negative effect on firm performance. This effect is significant ($p = .06$). Hypothesis 3a is thus not supported. Although the interaction effect between a high number of individuals with a procedural rational decision-making style with a political majority shows a positive effect on firm performance, this effect is non-significant ($p = .13$). Therefore, it can be concluded that hypothesis 3b is supported, but with non-significant results. This is remarkable, because when the effects of a majority of individual decision makers with a procedural rational decision-making style on firm performance is examined, this effect is positive and significant. The effect of a majority of individual decision makers with a political decision-making style on firm performance is negative and significant. The results show that a combination of a high number of individuals with the one decision-making style with a majority of the other decision-making style does not have a significant positive effect on firm performance. On contrast, if a rational majority is combined with a high number of individuals with a political decision-making style, this has a significant negative impact on firm performance.

In model 6, all variables are included. Although non-significant, the effects show the same effect on firm performance as the effects of the other models. The number of individuals with a procedural rational decision-making style and the rational majority have a positive impact on firm performance, whereas the number of individuals with a political decision-making style and the political majority have a negative impact on firm performance. Hypotheses 1 and 2 are supported with significant effects. Hypotheses 3a is not supported, whereas hypothesis 3b is supported, but without significant effects.

Robustness checks

In order to be able to perform a robustness check, another threshold is composed to determine whether an individual decision maker has either a procedural rational or a political decision-making style. The average of the percentages of both procedural rational and political words per decision maker per year is determined. The decision-making style of a decision maker is regarded as either procedural rational or political if his or her average of the percentages of words in that year is higher than the average score of each decision maker of all the organizations in that year. Again, a fixed-effects OLS regression is executed in order to perform a robustness check, see table 7. With this threshold, the number of individuals with a procedural rational decision-making style has again a positive effect on firm performance. The number of individuals with a political decision-making style has a negative effect on firm performance, which is similar to the first threshold, as is used in table 6. The majorities show also the same

results as the first threshold. Furthermore, the interaction effects are comparable to the effects with the first threshold. Based on the use of both thresholds, it can be concluded that the results of hypotheses 1 and 2 are robust. The second threshold is also used in order to determine whether the interaction effect between a majority of the one style with a high number of individuals with the other style leads to a better firm performance. Hypothesis 3b is supported without significance, whereas hypothesis 3a is again rejected.

Table 7. Results with the other threshold

	<i>Model 1: #Rational individuals</i>	<i>Model 2: #Political individuals</i>	<i>Model 3: #Political individuals x Rat. Majority</i>	<i>Model 4: #Rational individuals x Pol. Majority</i>	<i>Model 5: Full model</i>
#Rational individuals	1.21 (.54)**			1.26 (.52)**	1.04 (.59)
#Political individuals		-1.54 (.45)*	-1.00 (.04)**		-1.05 (.55)
Rational Majority			34.79 (14.30)		9.98 (9.01)
Political Majority				-36.83 (14.08)	-8.30 (6.75)
#Political individuals x Rat. Majority			-1.80 (1.30)		
#Rational individuals x Pol. Majority				1.84 (1.24)	
Slack Resources	0.01 (.03)	-.00 (.03)	.00 (.03)	.02 (.03)	.00 (.03)
NAD	-.19 (.45)	-.12 (.03)	-.08 (.03)	-.31 (.43)	-.19 (.43)
Size	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)
NumberPages	-.69 (1.96)	-.70 (1.89)	.12 (1.86)	-.60 (1.86)	.08 (1.85)
NumberFiles	10.39 (8.78)	8.43 (8.50)	6.75 (8.29)	9.69 (8.32)	8.21 (8.26)
NumberWords	.05 (.06)	.05 (.06)	.03 (.06)	.05 (.05)	.04 (.05)
R Square	.14	.20	.26	.25	.28
N	131	131	131	131	131

a. Standard errors are in parentheses

b. Dependent Variable: FirmPerformance

* P < 0.01; ** P < 0.05

In addition to the above-mentioned threshold, the same method is used, but then compared to the total decision makers in the specific organization of the decision makers instead of the total decision makers in all the organizations. When the independent variables based on these thresholds are used in the fixed-effects OLS regression, individuals with both a procedural rational and political decision-making style have a negative effect on firm performance. Although this seems contradictory, it should be mentioned that these results are non-significant. Furthermore, in order to determine whether an individual has either a procedural rational or political decision-making style, in these thresholds the individuals are compared to the decision makers in the specific organization of that individual. It can be argued that there are less differences in decision-making styles within a specific organization and thus that no conclusions can be drawn from the results of this threshold.

The above-mentioned thresholds show a limitation. These thresholds take into account the text files of each individual decision maker per year. Whether an individual has either a procedural rational or a political decision-making style is determined based on the total text files of that individual per year. It can occur that an individual decision maker is considered as either very procedural rational or political in one text file, while another text file gives the opposite result. Within a year, an individual decision maker can show different kinds of decision-making styles in different text files. A robustness check in which an individual is determined as someone with either a procedural rational or a political decision-making style only if he or she meets the threshold in every unique text file should therefore be executed. This would be a conservative approach in order to validate the results. However, the data of this study does not allow for such a robustness check. Almost every person has at least one text file per year in which he or she does not execute a procedural rational nor a political decision-making style. As a consequence, almost none individual will be determined as someone with either a procedural rational or a political decision-making style, which implies that in this study, this conservative approach cannot be executed.

It should be noticed that researchers have stated that the dependent variable firm performance is influenced by the firm performance in the previous year (Katila & Ahuja, 2002). Besides this, earlier in this paper it was mentioned that it often takes time for decisions to have effect on firm performance (Han & Banbury, 1994). It can thus be argued that the decision-making styles of individual board members do not have an immediate effect on firm performance. The effects of the decision-making styles may become visible only in the next year. Besides the thresholds mentioned above, this study will therefore take into account the timing effects with lagging and

leading variables in order to determine whether independent variables show the same effects when controlled for timing effects.

Six extra models to test the hypotheses will be conducted, see table 8. In the first three models, the lagging independent variables are included. In the last three models, the leading dependent variable is included. In model 1 and 4, the first two independent variables (number of individuals with a procedural rational and a political decision-making style) are included. In model 2 and 5, the other two lagging independent variables (procedural rational and political majority) are included. Finally, in model 3, a full model with all the lagging independent variables is included. In model 6, a full model with the leading dependent variable is displayed.

The effects of both the number of individuals with a political decision-making style and a political majority remains negative. Except for the two full models, the effects of these independent variables are significant. In the models with lagging variables of the number of individuals with a political decision-making style and the political majority, these effects are significant ($P < .05$). In the models with the leading dependent variable, these effects are again significant ($P < .05$). The effects of both the number of individuals with a procedural rational decision-making style and a procedural rational majority are less robust. In the full models (model 3 and 6), the number of individuals with a procedural rational decision-making style show the opposite effects, namely a negative effect on firm performance. In the other models, the effects of this variable are positive. The effects of a procedural rational majority are positive in all models. However, none of the effects of these two variables are significant. It can thus be concluded that the effects of the number of individuals with a political decision-making style and a political majority are robust when controlled for timing. A rational majority controlled for timing shows the same effects, although these effects are non-significant, whereas the effects of the number of individuals with a procedural rational decision-making style is not robust when controlled for timing.

Table 8. Results of the robustness checks of timing

	<i>Model 1: Lagging #Individuals</i>	<i>Model 2: #Lagging Majorities</i>	<i>Model 3: Full Lagging model</i>	<i>Model 4: Leading DV with #individuals</i>	<i>Model 5: Leading DV with Majorities</i>	<i>Model 6: Full Model with Leading DV</i>
#Rational individuals	.20 (.64)		-.81 (.90)	.29 (.65)		-.63 (.92)
#Political individuals	-1.49 (.58)**		-1.06 (.77)	-1.38 (.52)**		-1.16 (.71)
Rational Majority		7.29 (5.83)	12.33 (8.13)		6.57 (5.73)	10.92 (7.98)
Political Majority		-14.81 (7.33)**	-6.22 (9.58)		-13.98 (6.98)**	-4.05 (9.38)
Slack Resources	.01 (.05)	-.01 (.05)	-.00 (.05)	-.05 (.04)	-.03 (.04)	-.04 (.04)
NAD	-.02 (.00)	-.09 (.51)	-.06 (.51)	.60 (.47)	.53 (.47)	.55 (.47)
Size	-.00 (.00)	.00 (.00)	.00 (.00)	-.00 (.00)	-.00 (.00)	-.00 (.00)
NumberPages	-.29 (2.24)	-.36 (2.26)	-3.37 (2.24)	1.24 (3.12)	1.04 (3.13)	1.53 (3.12)
NumberFiles	4.68 (11.27)	4.79 (11.26)	3.37 (11.23)	-1.50 (10.75)	-2.70 (10.91)	-1.69 (.10.83)
NumberWords	.01 (.07)	.05 (.08)	.03 (.07)	-.12 (.09)	-.13 (.09)	-.12 (.09)
R Square	.15	.15	.19	.21	.19	.23
N	103	103	103	103	103	103

a. Standard errors are in parentheses

b. Dependent Variable: FirmPerformance

* P < 0.01; ** P < 0.05

Discussion and Conclusion

Discussion

In this study, the relationship between the strategic decision-making styles of individual decision makers and firm performance was examined. Moreover, this research investigated the interaction effect of majorities in an organization in combination with a high number of individual decision makers with either a procedural rational or a political decision-making style.

This study contributes to the literature on strategic decision-making processes, decision-making styles and the impact of individual decision makers. Findings in previous literature about decision-making processes have been inconsistent. Some researches state that a decision-making style that is considered as procedural rational leads to higher firm performance (e.g. Deligianni et al., 2016), while others state that in some situations this kind of decision-making leads to lower firm performance (e.g. Nutt, 1976). Although the overall literature on political decision-making styles states that this style leads to a low firm performance (e.g. Kreutzer et al., 2014), some authors have argued for a more balanced view in which a political decision-making style could have advantages (e.g. Kanadli et al., 2018). Furthermore, until now, scholars have only paid attention to the overall organizational decision-making style. The impact of the decision-making styles of individuals in an organization was not yet examined (e.g. Shepherd & Rudd, 2014).

This study combines the general conception that individual decision makers in organizations have an impact on firm performance with the statements in previous research about organizational decision-making styles. Evidence is provided that a high number of individual decision makers with a procedural rational decision-making style has a positive impact on firm performance, whereas a high number of individual decision makers with a political decision-making style has a negative impact on firm performance. However, this research could not find significant evidence for the positive interaction effect between a high number of individual decision makers with either a procedural rational or a political decision-making style in combination with majorities of individuals in an organization with either a procedural rational or a political decision-making style. On contrast, the interaction effect between a high number of individuals with a political decision-making style and a rational majority show the opposite effect. The interaction effect between a high number of individuals with a procedural rational decision-making style and a political majority show a positive effect, but this effect is non-significant. These results indicate that in every context, a high number of individuals with a

political decision-making style has a negative effect on firm performance. The effects of a high number of individuals with a procedural rational decision-making style are less robust.

From a theoretical conception, different implications can be made. By focusing on the individual decision makers separately, this study fills the gap in the studies which focused on the decision-making style of the overall organization, as the results of those studies can be biased by an individual decision maker whom embraced one specific decision-making style very strongly. This study places the impact of that single decision maker in perspective. Further, it can be stated that the way individual decision makers act in an organization has an impact on the overall firm performance. The strategic decision-making process can thus be seen as a social representation of organizational life. This is in line with the statements of Zhang & Greve (2019), whom stated that all individuals affect the strategic decision-making process somehow. As mentioned previously, the way in which individuals communicate with each other in an organization is of importance. The outcomes of the strategic decision-making processes depend thus partly on the process of interaction between the individual decision makers. The strategic decision-making processes in organizations are interdependent (Leiblein et al., 2018). This is reinforced by the fact that individual decision makers influence these processes with their decision-making style.

This study is executed in the selection phase of the decision-making process. Although the development phase is considered as the most important phase, as this phase leads to the development of one or more decisions, this study shows that in the selection phase, as described by Mintzberg et al. (1976), a difference can be made. The examined decision makers in this study executed a monitoring role. The way these decision makers execute this role has a significant impact on the firm performance. It can thus be stated that although the development phase is an important phase in the decision-making process (Shepherd & Rudd, 2014), the selection phase is of great value too.

Kanadli et al. plead for a more balanced view of the effects of a political decision-making style. This conception is partly supported by this study, as a political majority with a high number of individuals with a procedural rational decision-making style show a non-significant positive effect. With regard to strategic decision-making processes in general, this study shows that both decision-making styles have different angles. These decision-making styles show positive and negative effects, depending on the context. Each strategic decision-making process is uncertain and complex (Nickerson & Argyres, 2018). This study underlines this conception and shows that no decision-making style guarantees a good firm performance. More generally, it can be

stated that each strategic decision-making process is unique and therefore different decision-making styles may apply on the situation.

This study offers important implications for practice. The way the selection phase of the strategic decision-making process is executed has a significant impact on firm performance. Besides focusing on the other phases of the strategic decision-making process, decision makers should also pay significant attention to the selection phase, as this phase may be equally relevant. In general, decision makers should in this phase enhance a decision-making style that is procedural rational. Furthermore, this study shows that each individual decision maker can have a significant impact on the firm performance of the organization. Attention to the recruitment of the decision makers is thus necessary. As each decision-making process is unique, different decision-making styles may be relevant. A mixture of individual decision makers with different decision-making styles, hereby focusing on individuals with a procedural rational decision-making style, will therefore have a positive effect on firm performance.

Limitations and Suggestions for Future Research

Notwithstanding the contributions of this study, there are some limitations and suggestions for future research. First, the context of this study is a very specific one, because water authorities are government institutions. The management of the water authorities first develops several possible decision outcomes. After this development phase, the board of directors of the water authorities is charged with the strategic decision-making process, in the way that the board performs a monitoring role. The board of directors is thus responsible for the selection phase of the strategic decision-making process. The strategic decision-making process of the water authorities is therefore similar to the processes in other organizations. However, the fact that water authorities are government institutions does imply that there are some differences. First of all, the culture of a government institution may be different than the culture of for example a corporate enterprise. Furthermore, the board of directors of the water authorities is partly chosen by a public election every four years. In contrast, the board of directors of other organizations is chosen by the people in these organizations. Another limitation is the number of board members. It is stated that this number has an impact on firm performance (Kroll et al., 2008). The number of board members of the water authorities (on average 28) is higher than the number of board members in other organizations.

Although there are some relevant differences, it can be stated that the strategic decision-making processes in water authorities are similar to these processes in other organizations. After all, as is the case with other organizations, the water authorities focus on costs when making decisions.

Furthermore, the different phases of the strategic decision-making processes in water authorities are similar to the phases which are executed in other organizations. The water authorities can thus be compared with other companies. However, to tackle the possible limitation of external validity completely, replication of this study in other settings is warranted.

Another limitation is the size of the panel data. This study contains 131 observations. Future study can take more observations into account. Third, the dependent variable of this study was measured by the costs of the water authority divided by the number of inhabitants of the region. To determine firm performance, other studies use ways of measurement based on effectiveness, for instance stock price or return on assets. However, water authorities are public organizations and these ways of measurement are inappropriate. The board of directors has an incentive to minimize the annual costs in order to be re-elected and therefore the firm performance of the water authorities is measured by their efficiency. Future research can examine the relationships with firm performance measured by effectiveness in order to get a detailed insight in the effect of individual decision makers on firm performance.

Further, the thresholds to determine whether an individual decision maker has either a procedural rational or a political decision-making style shows a limitation. These thresholds take into account the text files of each individual decision maker per year. Whether an individual has either a procedural rational or a political decision-making style is determined based on the total text files of that individual per year. It can occur that an individual decision maker is considered as either very procedural rational or political in one text file, while another text file gives the opposite result. Within a year, an individual decision maker can show different kind of decision-making styles in different text files. Future research could use different thresholds in order to address this limitation.

Researchers have concerns about whether content analyses of documents such as minutes are indicative of managerial structures. Content analysis must be executed carefully in order not to derive meaning where it does not exist. However, the advantages of content analysis outweigh the limitations if studies are carefully implemented (Short et al., 2018). Future research can make use of surveys instead of content analysis, in order to confirm this research and to get a detailed insight in the effects of individuals on firm performance.

In order to take the effects of variables of different years into account, this study has executed two extra models. One of these models contains lagged independent variables, whereas the other model contains a leading dependent variable. However, although literature states that the

firm performance of the previous year has an impact on firm performance of the current year, this study does not control for the lagged dependent variable of firm performance. The fixed effects OLS regression demands for complete exogeneity (Bettis, Gambardella, Helfat, & Mitchell, 2014). Executing a fixed effects OLS regression with a lagged dependent variable is therefore not feasible. Future research can make use of a random-effects model to be able to include a lagged dependent variable, as the inclusion of such a variable can help to control for fixed effects (Bettis et al., 2014).

A potential avenue for future research is to examine whether the effects of individual decision makers with a political decision-making style on firm performance can be positive in other contexts. Furthermore, although the effect of individuals with a procedural rational decision-making style on firm performance in this study is stated to be positive, there were settings in this research in which that effect was negative, for instance when this effect is combined with individuals with a political decision-making style. Future research could examine to what extent individuals with a procedural rational decision-making style have a positive effect on firm performance. Besides this, scholars have previously examined the role of intuition in decision-making processes (e.g. Elbanna & Child, 2007). It could be examined what the role of intuition of the individuals is in a decision-making process. Furthermore, research could pay attention to the effects of procedural rational and political decision-making styles on firm performance, when these styles are combined with intuition. It is stated that the characteristics of individuals lead to the use of a decision-making style (Le Pine, 2003). Besides examining the effects of decision-making styles, researches should also pay attention to the causes of the different decision-making styles. A potential avenue for future research is thus which kind of characteristics of an individual decision maker leads to a certain decision-making style.

Conclusion

The central question dealt with in this study was: *'What is the effect of the strategic decision-making styles of individual decision makers of an organization on the overall firm performance of that organization?'* The fundamental point in this study is thus that individual decision makers have a huge impact on the firm performance of an organization. To test the theoretical predictions, this study did make use of the internal minutes of meetings of several organizations. Content analysis was applied to determine which decision-making style an individual decision maker executed in these meetings. This study tried to provide an answer to the question to what extent individual decision makers have an influence on the firm performance via their individual decision-making style. It can be concluded that the decision-making styles of

individuals in meetings of an organization have significant impact on the overall firm performance of that organization. Individual decision makers with a political decision-making style have negative effect on firm performance, whereas individual decision makers with a procedural rational decision-making style have a positive effect on firm performance, although the latter effect is less present. This study contributed to the literature in several ways, yet the most important contribution is the results of the impact of individual decision makers. Previous scholars have not examined the impact of individual decision makers thoroughly. Instead, they focused on the impact of the organizational decision-making style. It is hoped that this research inspires others to further develop the literature on decision making styles, the impact of individual decision makers on firm performance and other organizational outcomes.

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Appendices

Appendix I: Existing dictionaries of decision-making styles

Table 3. Existing dictionary for politics (Van den Oever & Martin, 2019)

English	Dutch
We think	Wij denken
We find	Wij vinden
Fraction / Political group	Fractie
Our opinion	Onze mening
Preference	Voorkeur
Discussion / Conflict	Discussie

Table 4. Existing dictionary for procedural rationality (Van den Oever & Martin, 2019)

English	Dutch
Case	Case
Research	Onderzoek
Risk	Risico
Possibilities	Mogelijkheden
Evaluation	Evaluatie
Give full attention to	Aandacht

Appendix II: Examples of parts of annual reports and budgets

Wat zijn de totale kosten en opbrengsten in 2019?

Om de kosten van de uitvoering van haar werkzaamheden te dekken, heft het waterschap belasting. De belasting is uitgesplitst naar de drie hoofdtaken:

1. **Watersysteembeheer** (voor veilige dijken, voldoende water, goede waterkwaliteit, bestrijding van muskus- en beverratten en vaarwegbeheer)
 2. **Zuiveringsbeheer** (voor het zuiveren van afvalwater)
 3. **Wegenbeheer** (voor beheer van wegen in enkele regio's)
- Alle kosten worden verdeeld over deze drie hoofdtaken.

De jaarlijkse kosten (exploitatie)

Watersysteembeheer	€ 115,4 mln
Zuiveringsbeheer	€ 71,1 mln
Wegenbeheer	€ 8,3 mln

Opbrengst waterschapsbelasting

Watersysteemheffing	€ 107,9 mln
Zuiveringsheffing	€ 67,3 mln
Wegenheffing	€ 7,6 mln

Budget 2019 of water authority 'Rivierenland' (Waterschap Rivierenland, 2019).



Budget 2019 of water authority 'De Dommel' (Waterschap De Dommel, 2019).

4.8.1 Visie op verbonden partijen

Waterschap Hollandse Delta kent diverse samenwerkingsverbanden met andere overheden en instellingen. Daar waar het voordeel oplevert om samen te werken, zal deze samenwerking worden opgezet, c.q. gecontinueerd. Dit voordeel kan direct zijn in minder kosten en/of betere kwaliteit, maar ook indirect bijvoorbeeld in de vorm van een netwerk of naamsbekendheid.

Annual report 2017 of water authority 'Hollandse Delta' (Waterschap Hollandse Delta, 2017, p. 78).

Appendix III: Examples of parts of election programs

Onderzoek wijst uit dat de huidige balans tussen grondbezit en kostentoedeling scheef is. Agrariërs hebben ongeveer 2/3 e van de grond in gebruik maar betalen nog geen 10 % van de waterschapslasten (de zogenaamde watersysteemheffing). Burgers met ongeveer 1/3 van de totale grond in gebruik betalen ca. 90 % van de lasten. Jaarlijks wordt 1,4 miljard aan watersysteemheffing geïnd. Daarvan betalen de agrariërs 130 miljoen euro. Is dat een eerlijk belastingstelsel; ook wanneer bedacht wordt, dat de meeste taken van het waterschap gericht zijn op de bedrijfsvoering van agrariërs?

De PvdA is voor een eerlijk belastingstelsel. Dat stelsel moet rechtvaardig zijn en de zwaksten ontzien. In de nieuwe bestuursperiode zal een landelijke herziening van het belastingstelsel worden ingevoerd. Het zou goed zijn wanneer daarbij voordelen van watertaken een grotere rol gaan spelen dan nu het geval is. Dan kan ook een financiële prikkel worden ingebouwd tot een meer ecologisch gebruik van landbouwgrond; zie ook Hoofdstuk 4.

De PvdA is bovendien voorstander van een ruimhartig kwijtscheldingsbeleid. Ook voor kleine zelfstandigen. Anders dan de landelijke belastingen kent de waterschapsbelasting geen progressieve werking. Naar verhouding is de waterschapsbelasting daardoor voor de lagere inkomensgroepen zwaarder. Dit maakt een correctie nodig.

Part of the election program 2019 of 'PvdA Noorderzijlvest en Hunze & Aa's' (PvdA Noorderzijlvest en Hunze & Aa's, 2019, p. 6).

...waar verstandig en verantwoord met belastinggeld omgegaan wordt

We zijn voor een eerlijke belastingverdeling voor inwoners en ondernemingen. Iedereen, ook natuurorganisaties, moeten meebetalen. Belastinggeld wordt verdiend door onze ondernemers en inwoners. Iedere euro die het waterschap uitgeeft is door hardwerkende Nederlanders verdiend. Dit geld moet daarom verstandig en verantwoord worden besteed. We willen dat duidelijk is waar ons belastinggeld aan wordt uitgegeven.

- Er moet een gedegen verhouding zijn tussen de taken van het waterschap en de bijdrage die van inwoners en ondernemingen gevraagd wordt. Deze bijdrage moet eerlijk worden verdeeld onder iedereen die in een waterschap woont of gevestigd is.
- We streven naar lage lasten voor inwoners en ondernemingen. Dit is mogelijk door scherp te begroten en waterschapstaken zonder te veel franje uit te voeren. Er worden geen onzinnige bestedingen gedaan en de kosten zijn niet hoger dan noodzakelijk.
- Een goede financiële huishouding is van groot belang. We vinden dat het waterschap een goede boekhouding hoort te hebben. Wanneer het huishoudboekje niet klopt, betalen de inwoners van het waterschap de rekening. Dat mag niet gebeuren.
- De uitgaven en inkomsten zijn transparant. Bewoners en ondernemers krijgen jaarlijks eenvoudig inzage waaraan geld is besteed en wat het bereikte effect is.
- Het waterschap is scherp op de effectiviteit van subsidies. Wanneer een subsidie niet tot resultaten leidt of het onduidelijk is waar het geld precies aan besteed is, wordt de subsidie meteen ingetrokken. Bij misbruik van subsidie willen wij al het geld terugvorderen. Dat vinden wij een stuk eerlijker.
- De waterschappen moeten niet gebruikt worden voor inkomenspolitiek. Dat hoort thuis bij de landelijke overheid of gemeente. Zolang er kwijtschelding bestaat voor de waterschapslasten moet dat ook openstaan voor ondernemers. Daar hebben we voor gezorgd want dat is in ieder geval veel eerlijker.

Part of the election program of 'VVD Amstel, Gooi en Vecht' (VVD Amstel, Gooi en Vecht, 2019, p. 10).

6. Betaalbaarheid en organisatie

Het CDA gaat verantwoord met geld om en is gebrand op een doelmatig, doeltreffend en rechtmatig handelend bestuur. Transparantie en verantwoording zijn daarbij leidende principes. Rekeningen worden niet doorgeschoven naar toekomstige generaties. Als de inkomsten niet toereikend zijn om alle plannen te betalen, worden ambities bijgesteld, getemporeerd of soberder uitgevoerd.



Dit betekent concreet voor het Waterschap Rivierenland:

- *Het CDA wil investeren in de ontwikkeling van nieuwe waarden, bijvoorbeeld door een rioolwaterzuiveringstaak te zien als bron voor grondstoffen en energie (circulaire economie). Het CDA schuwt discussies over een verdienmodel voor waterschappen niet en pleit voor het wegnemen van beperkende wet- en regelgeving door de landelijke- en Europese overheid.*
- *Het CDA wil zuinig met middelen omgaan (ook als die middelen van andere overheden komen). Om voldoende investeringen te kunnen doen moet constant gestreefd worden naar hogere efficiëntie en kostenbesparingen.*
- *Het CDA pleit voor beperking van lastenverzwaring en tariefstijging*
- *Solidariteit staat hoog in het vaandel bij het CDA, maar de kostenveroorzaker moet zelf betalen.*
- *Het CDA is voorstander van een passend kwijtscheldingsbeleid.*
- *Het CDA kiest voor 'meer samenleving, minder overheid' en werkt aan een efficiëntere organisatie, waarbij aansluiting met de samenleving centraal staat.*
- *Het CDA pleit voor koppeling van projecten in de openbare ruimte, zodat 'werk met werk' kan worden gemaakt. Dit levert kostenreductie op en een betere kwaliteit van de leefomgeving.*
- *Het CDA zet stevig in op het aanbieden van opleidingen in de watersector om zo het voorziene tekort aan technisch personeel het hoofd te bieden.*
- *De stijging van het beroep op onze kwijtscheldingsregeling is zorgwekkend. Om ervoor te zorgen dat de kosten beheersbaar blijven willen wij op zoek gaan naar sturingsmogelijkheden. De tarieven mogen deze bestuursperiode met niet meer dan gemiddeld 3% per jaar stijgen. Een verhoging met meer dan gemiddeld 3% is alleen bespreekbaar als de wettelijke taken niet adequaat kunnen worden uitgevoerd. Financiële meevallers komen in de eerste plaats ten goede aan verlaging van onze schuldenlast.*
- *Er dient nadrukkelijk en positief aandacht te zijn voor de positie (en het werk) van vrijwilligers. Door hun betrokkenheid en daaruit voortvloeiende inzet wordt bestuurders en medewerkers veel werk uit handen genomen en wordt de betrokkenheid van inwoners vergroot.*

Part of the election program 2019 of 'CDA Rivierenland' (CDA Rivierenland, 2019, p. 13)

Appendix IV: Research ethics

All parties involved in education and research at the Radboud University Nijmegen have a responsibility in maintaining integrity in science and scholarship. Therefore, the general principles of professional academic conduct will have to be complied with at all times. These principles have been laid down in the Netherlands Code of Conduct on Scientific Practice (*Nederlandse Gedragscode Wetenschapsbeoefening*). Radboud University Nijmegen has endorsed this code as a guideline.

Research entails all investigations undertaken in order to acquire knowledge and deeper understanding. It is powered by a drive to discover and understand. This academic freedom is based on the understanding that researcher act according to high expectations with regard to research practice. Standards of professionalism and integrity must always be upheld.

Delivering excellent research does not only require intellect but also a high standard of integrity. We seek to sustain a research environment that fosters integrity in research. Integrity is about how research activities are undertaken. It demands that we pay thorough attention to detail in order to assure the accuracy and credibility of data and analysis.

We should ensure that our behaviour towards those involved in, or affected by our research, meets the highest standards. We should also fully consider our responsibilities towards stakeholders and society at large. Moreover, research integrity is fostered in a supportive culture that is conscientious, reflective and where genuine mistakes are permitted if they are admitted, carefully corrected, and learnt from.

Integrity and professional conduct require researchers to be:

- Honest and ethical;
- Professional;
- Critical of self and others;
- As skilful, careful and rigorous as possible;
- Respectful to anyone involved in and/or affected by the research;
- Working in ways that are lawful and accountable;
- Collegial: sharing, engaging in open discussions with colleagues and assisting others in their personal and professional development;
- Mindful of their duty to keep their knowledge and skills up to date;
- Risk-aware and responsible for risk management;
- Responsible: communicating honestly, accurately and as openly as possible;

The previous listing applies to all research activities undertaken by both staff and students, wherever and whenever they take place. It is critical that good research principles and practices are observed, and that their observation is monitored. The individual researcher is primarily responsible for upholding good research practices when undertaking research activities and is expected to be committed to intellectual honesty. Supervisors of students are expected to be role models of good practice and professionalism.

Should anyone encounter a situation in which unacceptable research practices (irrespective of whether they are deliberate or negligent deviations) are committed, they are expected to act on these concerns by intervening personally or by contacting the confidential advisor (see below).

Some practices are clearly unacceptable, but there are also grey areas. The boundary between creative insight and fabrication may not be obvious in the case of selective use of research data. Open discussions of such grey areas provide an opportunity to critically reflect on the robustness of justifications in research practices.

Unacceptable Research Practices

All unacceptable practices are to be avoided, as they can lead to different adverse consequences (such as financial loss, waste of resources, or causing psychological and/or reputational harm). Mending problems once they have occurred may range from advice, guidance, mentoring or formal training through an investigation of potential research misconduct. Any innocent errors or mistakes that result in unacceptable research practice(s) should be disclosed transparently and quickly, immediately when they are discovered, and the appropriate reasonable remedy should be supportive. Such remedy should encourage a constructive discussion of ethical dilemmas and challenges in which errors and mistakes can be learnt from.

In particular, the following research practices are regarded as unacceptable:

1. **Fabrication** of data (creation of/making up false data or other aspects of research including documentation and participant consent).
2. **Manipulation** of data, imagery and/or consent forms).
3. **Plagiarism** (general misappropriation or use of (parts of) others' ideas or work (written or otherwise), and submitting them as your own without acknowledgement or permission).
 - a. Plagiarism can be either intentional or unintentional and may take the form of cutting and pasting, taking or closely paraphrasing ideas, passages, sections, sentences, paragraphs, drawings, graphs and other graphical material from books, articles, internet sites or any other source without proper referencing;
 - b. Submitting bought or commissioned work (for example from Internet sites or essay banks) is a serious form of plagiarism. This may take the form of buying or commissioning either the whole piece of work or part of it and implies a clear intention to deceive the examiners.
 - c. Double submission (or self-plagiarism) means resubmitting previously submitted work on one or more occasions (without proper acknowledgement). This may take the form of copying either the whole piece of work or part of it. Usually, credit will already have been given for this work;
 - d. Collusion is where two or more people work together to produce a piece of work, all or part of which is then submitted by each of them as their own individual work. This includes passing on work in any format to another student. Collusion does not occur where students involved in group work are encouraged to work together to produce a joint piece of work, that is truly based on all individual partners' efforts and input, as part of the assessment process.
4. **Misrepresentation**
 - a. of data (e.g., suppression of relevant results and/or data, or knowingly presenting a flawed interpretation of data);
 - b. of interests (including failure to declare material interests either of the researcher or of those who fund the research);
 - c. of qualifications and/or experience (including claiming or implying qualifications or experience which are not held).
5. **Mismanagement or inadequate preservation of data and/or primary material**
 - a. failure to keep clear and accurate records of the research procedures followed and the results obtained, including interim results;
 - b. failure to hold records securely in paper or electronic form;

- c. failure to make relevant primary data and research evidence accessible to others for reasonable periods after the completion of the research;
- d. failure to manage data according to the research funds' data policy and all relevant legislation;
- e. failure to provide careful feedback to respondents if such agreements have been made.

6. Breach of duty of care

- a. disclosing the identity of individuals or groups involved in research without their consent, or other breach of confidentiality;
- b. placing anyone involved in the research in danger, whether as subjects, participants, or associated individuals, without their prior consent and without appropriate safeguards even with consent; this includes reputational danger where that can be anticipated.
- c. not taking all reasonable care to ensure that risks and dangers, broad objectives, and sponsors of the research are known to participants or their legal representatives, to ensure appropriate informed consent is obtained properly explicitly and transparently;
- d. a supervisor not working with a student to establish an effective supervisory relationship; and vice versa, a student not working with a supervisor to establish an effective supervisory relationship;
- e. lack of support for researchers' academic freedom in those situations where researchers are faced with unreasonable pressure from external organizations (for example from a sponsor or other interested party with a vested interest in the research) to produce research results that are in their own interests, or to suppress reporting of results that are not in their interests.

7. Abuse of status as a member of an academic profession (deliberately exploiting status and reputation as a research professional in areas which have no relevance to the field of expertise).

8. Taking reprisals against (an) individual(s) who made an allegation of research misconduct and/or attempting to cover up reprisals taken against (that) individual(s).

Breaches of the code of conduct with respect to academic integrity (as described / referred to in the thesis handbook) should and will be forwarded to the examination board. Acting contrary to the code of conduct can result in declaring the thesis invalid

Appendix V: Research integrity form

Name: Joep Verhoeven	Student number: 4466802
RU e-mail address: j.verhoeven@student.ru.nl	Master specialisation: Strategic Management

<p>Thesis title: Individuals as a Key to better Firm Performance; The Role of Decision-Making Styles of Individual Decision Makers in Organizations</p> <p>Brief description of the study: Scholars have distinguished several types of decision-making processes, from mere political processes to more rational ones. It is stated that the type of decision-making process influences the outcome of that process. Furthermore, it is known that the individuals in an organization have a substantial impact on the strategic decision-making process. This impact is due to the fact that the strategic choices of an organization are partly the reflections of the individuals in that organization. So far, there has been limited focus on the link between individuals in a decision-making process and the different decision-making styles. This study fills this gap by examining the effects of different decision-making styles of individuals on the overall organizational outcomes.</p>

It is my responsibility to follow the university's code of academic integrity and any relevant academic or professional guidelines in the conduct of my study. This includes:

- providing original work or proper use of references;
- providing appropriate information to all involved in my study;
- requesting informed consent from participants;
- transparency in the way data is processed and represented;
- ensuring confidentiality in the storage and use of data;

If there is any significant change in the question, design or conduct over the course of the research, I will complete another Research Integrity Form.

Breaches of the code of conduct with respect to academic integrity (as described / referred to in the thesis handbook) should and will be forwarded to the examination board. Acting contrary to the code of conduct can result in declaring the thesis invalid

Student's Signature: _____ Date: 17-06-2019

To be signed by supervisor

I have instructed the student about ethical issues related to their specific study. I hereby declare that I will challenge him / her on ethical aspects through their investigation and to act on any violations that I may encounter.

Supervisor's Signature: _____ Date: _____