

Master Thesis  
Strategic Management

**Top Management Team heterogeneity and  
firm performance: a study on the  
moderating effects of CEO power and  
participative middle management.**

Jenny Lijten

To what extent does Top Management Team heterogeneity influence firm performance, and how is this relationship moderated by the power of a Chief Executive Officer and the participation of the middle manager in strategic decisions

University: Erasmus University, Rotterdam School of Management

Education: Master of Business Administration (Part-time)

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Thesis coach: Dr. R. van Wijk

Author: J.L. Lijten

Gazellestraat 82, 3523 SZ Utrecht

420597

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## Graduation commission

First Reviewer: Dr. R. van Wijk

Second Reviewer: Dr. V. van de Vrande

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## Preface

Writing and finishing my Master thesis means the end of the Part-time Master of Business Administration at Rotterdam School of Management, Erasmus University. After two years I will leave the Rotterdam School of Management with more knowledge and skills to hopefully become a future leader. I am pleased to finish this master because it was a tough but valuable journey. One of the reasons I started this program was to develop myself. I can assure you that I did. I have learned from the lectures, the literature, the (group) assignments and projects, from my professors, my fellow-students and myself. In this journey of two years I want to highlight two projects I have worked on, the national and international project. The national project was valuable because it was the first time I got introduced with doing research. We did research for a major charity organization, Red Cross, and provided valuable information on how to recruit volunteers. The International Project brought me and 40 of my fellow-students to Shanghai. Our research was about what made Dutch Start-ups in Shanghai successful. We have interviewed various Dutch entrepreneurs and got to listen to their inspirational stories. An experience I will never forget.

After these projects it was time for the last project, my Master thesis. It was not difficult to come up with a topic for my Master thesis. My interest in business goes to the apex of the organization and how they lead organizations. A special interest goes to the position of the CEO as he is overall responsible for the organization. Deciding what I wanted to research and developing a proper research question was slightly more difficult. This Master thesis is a result of a long thinking process and many hours of writing. I am thankful for all the help I got throughout this process. First I would like to thank my coach, Dr. R. van Wijk for his feedback, useful comments and guidance when I got stuck in my Master thesis. I would also like to thank Dr. V. van de Vrande for her useful feedback and comments on my thesis and for her tips in this process. Another thank you goes to my fellow students Eline, Kier-Jan and Niels, who also became good friends. Our study weekends in Rotterdam and Belgium, their critical but helpful questions, their feedback, and wine and dinners helped finishing my Master thesis. Lastly, I would like to thank my family and friends for their unconditional support.

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## Executive summary

Much interest in research goes to the relationship between the apex of the organization and their influence on firm performance. The most considerable contribution comes from Hambrick and Mason (1984). They argued that organizations are a reflection of their top executives. Strategic choices made by TMT members may partially be predicted by managerial background characteristics of the TMT. Good strategic decisions may lead to enhances firm performance. The assumption is that diversity in demographic characteristic of TMT members is positively associated with firm performance.

However, much research has been done on the relationship between TMT heterogeneity and firm performance and the outcomes are ambiguous. Therefore, scholars have suggested more research must be done on the moderating effects of the relationship between TMT and firm performance, to realize more consistent outcomes (e.g. Carpenter, 2002). This study examined the relationship between TMT heterogeneity and firm performance and the moderating effects of CEO power and participative middle management in the strategic decision-making process, using a sample of 67 organizations located in the Netherlands. TMT members were asked to fill in a questionnaire.

It was expected that there was an inverted u-shaped relationship between TMT heterogeneity and firm performance. Furthermore, the assumption was that CEO power would negatively influence this relationship and that participation of middle management in the strategic decision-making process would cause a positive effect on this relationship. In this study, no support for these hypotheses has been found. However, a significant u-shaped relationship has been found between TMT heterogeneity and firm performance, suggesting that low and high TMT heterogeneity have a positive effect on firm performance. Overall, this study makes a valuable contribution to research on TMTs with providing insights on the relationship between TMT heterogeneity and firm performance and by giving more information on the moderating effects. Future research should extent the sample size and focus on one industry to further research this relationship.

*Keywords: TMT heterogeneity, firm performance, CEO power, middle management, strategic decision-making process*

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## 1. Introduction

In the last decades much research has been done on the apex of the organization (e.g.: Cannella Jr., Park & Ho-Uk, 2008; Carpenter, 2002; Halebian & Finkelstein, 1993; Hambrick & Mason, 1984; Nielsen & Nielsen, 2013). The most considerable contribution comes from Hambrick and Mason (1984) and their upper echelon theory. They argue that organizations are reflections of their top executives. Strategic choices and performance levels of organizations are partially predicted by managerial background characteristics of the Top management Team (TMT). More and more organizations, and not the least, went bankrupt in the last couple of years. Department store Vroom & Dreesman, the Free Record Shop, Unlimited Sports Group and Macintosh are some examples (NU.nl, 2016). Bankruptcy may be the result of the decisions taken by TMT members. For example within Macintosh, Chief Executive Officer (CEO) De Moor is held responsible for failing to successfully continue the organization (den Brinker & Keuning, 2016). One of the reasons that Vroom & Dreesman went bankrupt is the wrong strategic decisions were made by the TMT. For example, they did not develop an online strategy and when they started with a web shop, they were far too late (Koster & Sjouwerman, 2015).

A key construct addressed in TMT research is the heterogeneity of the TMT (Carpenter, 2002; Finkelstein, Hambrick, & Cannella Jr., 2009; Hambrick, Cho, & Chen, 1996; Murray, 1989). Heterogeneous TMTs are defined as teams where the team members differ on various characteristics, i.e. functional background, educational background and tenure (Campion, Medsker, & Higgs, 1993; Carpenter, Geletkanycz, & Sanders, 2004). Many researchers used the upper echelon theory as a starting point for further research on the relationship between TMT heterogeneity and firm performance. It is notable that the outcomes of research on the relationship between TMT heterogeneity on diverse characteristics and various measures of firm performance are ambiguous. Positive relationships have been found for the relationship between TMT intrapersonal functional diversity (Cannella Jr., Park, & Lee, 2008), TMT educational, functional, and tenure heterogeneity (Carpenter, 2002; Hambrick, Cho, & Chen, 1996), characteristics of the founding TMT (Eisenhardt & Schoonhoven, 1990), broader functional and organizational experience and education (Norburn & Birley, 1988) and firm performance. Scholars also found negative relationships for the relationship between diverse functional backgrounds (Simons, Hope, & Smith, 1999) and experience

(Smith, Smith, Olian, Sims, O'Bannon, & Scully, 1994) and firm performance. Lastly, also zero effects have been found on the relationship between demographic heterogeneity and firm performance (West Jr. & Schwenk, 1996). Because of these ambiguous results more research on the characteristics of the TMT is needed (Cannella & Holcomb, 2005).

In Hambricks' update on the upper echelon theory (2007), he argued that the executive characteristics should be treated as dependent variables to gain insight that eventually helps sharpen the predictors on how and why executives' characteristics may influence organizational outcomes. In this study the differences in demographic characteristics through heterogeneity are taken into account. This study focuses on the strategic decision-making process, because TMT heterogeneity shows to have a positive effect on the decision-making process and therefore on firm performance (Finkelstein et al., 2009). The quality of decisions "depend heavily upon the process that the group actually employs" (Steiner, 1972: 35). High quality decisions can be produced through critical and investigative interaction processes (Amason, 1996). These decisions are important as they may have a positive effect on firm performance. Scholars also have suggested that more research must be done on the moderating effects of the relationship between TMT and firm performance to realize more consistent outcomes in research (e.g. Carpenter, 2002). Two important constructs that are being researched in this study as moderating effects are CEO power and participative middle management. CEO power as well as middle management may have an important role in the strategic decision-making process.

By studying the effect of these two moderators, this study addresses the following gaps in literature. The first gap in literature I address to in this study is the issue of power equalization within the TMT. Much research tends to equalize the power within the TMT, many scholars assume that every member of the TMT has the same amount of power (Carpenter, 2005). In research the inquiry of the differences between the power of the CEO and the TMT as a whole are not taken into account (Dalton & Dalton, 2005), This is remarkable, as the CEO has the overall responsibility and is the manager of the TMT. As a result of his overall responsibility the CEO probably overpowers the rest of the TMT (Cannella & Holcomb, 2005; Finkelstein et al., 2009), which creates an exceptional and more powerful position (Cannella & Holcomb, 2005; Finkelstein, Hambrick, & Cannella Jr., 2009). It is arguable that a CEO with more power influences the strategic decision-making process and therefore possibly influence firm



performance. Due to his powerful position the CEO may influence the interaction process by determining which decisions are being made and he may ignore suggestions of the other TMT members, which may influence their further participation in the strategic decision-making process (Pitcher & Smith, 2001). As the main idea is that through heterogeneity the TMT can take advantage of the different knowledge, backgrounds and visions of each TMT member (Finkelstein et al., 2009), a powerful CEO may influence the positive effects of TMT heterogeneity on firm performance, because less perspectives and opinions are taken into account in the decision-making process. Therefore a closer look is being taken on to what extent CEO power can influence the relationship of TMT heterogeneity and firm performance

The second gap in literature I address to is that the strategic decision-making process is seen as a task for the TMT alone. However, the TMT is not the only group concerned with the strategic decision-making process within the organization (Roberto, 2003), employees of different organizational levels can be concerned with diverse strategic decisions as well. Middle management has a pivotal role in organizations between the apex and the operating core. They need to manage the operating core and inform and challenge the TMT. Their participation in the strategic decision-making process is important (Floyd & Lane, 2000). They synthesize by selling issues to the TMT and champion the TMT by presenting them alternatives (Floyd & Lane, 2000). Nevertheless, little research has been done on the participation of middle management in the strategic decision-making process as a moderating effect on the relationship between TMT heterogeneity and firm performance. It is arguable that when middle managers are involved in the strategic decision-making process, better strategic decisions are made which can positively affect the relationship between TMT heterogeneity and firm performance. With their knowledge on operations and the markets, they can provide valuable information to the TMT on strategic topics, which can positively affect the strategic decision making process, which may lead to more or other alternatives. This idea is equivalent to the suggestions of Finkelstein et al. (2009) that TMT heterogeneity shows a positive effect on firm performance, because more alternatives are developed and those are evaluated through diverse perspectives. Due to their important role in the organization and the information the middle management provides, they may influence the strategic decisions of the TMT. The central role of middle management in organizations makes them able to evaluate whether new ideas and opportunities satisfy

customers' needs and whether those ideas and opportunities are effective and possible to realize (Floyd & Lane, 2000). This can result in better evaluated decisions and to a certain extent influence firm performance positively. Therefore a closer look is being taken on the participation of middle management in the strategic decision-making process as moderating effect on the relationship between TMT heterogeneity and firm performance.

As stated above firm performance is being influenced by the TMT, the CEO and middle management. In this research aspects of these three groups are brought together. The main research question is: *'To what extent does Top Management Team heterogeneity influence firm performance, and how is this relationship moderated by the power of a Chief Executive Officer and the participation of the middle manager in strategic decisions?'*

The contribution of this study is twofold. First, this research provides further insights in the relationship between TMT heterogeneity and firm performance. This is important because of the ambiguous outcomes of earlier research. This study addresses to the call for more research on demographic characteristics as dependent variables (Hambrick, 2007) and thereby contributes to the upper echelon theory of Hambrick and Mason (1984) by giving more detailed information on how the relationship between TMT heterogeneity and firm performance can be influenced. Second, it contributes to the gap in literature and the demand for more research on the moderating effects of the relationship between TMT heterogeneity and firm performance (Carpenter, 2002). The results provide insight to what extent the contingency factors as CEO power and participation of middle management in the strategic decision-making process influence the relationship between TMT heterogeneity and firm performance. It shows under which conditions the relationship between TMT heterogeneity and firm performance can be strengthened or weakened.

## **2. Theoretical background**

Firm performance is probably one of the most researched subjects within business and management studies. Enhanced firm performance is essential for every organization that need to make a profit. Knowing what influences firm performance, can help organizations to anticipate on these determinants. There are many determinants of firm performance. The most important determinants are: environment and organizational structure (Lawrence & Lorsch, 1986), innovation capability (Mone, McKinley, & Barker III, 1998), human capital (Crook, Todd, Combs, Woehr, & Ketchen Jr., 2011), industry, governance, firm characteristics, and management (Dyer Jr., 2006).

This study focuses on management and more specifically on the TMT. TMT members are an important factor in organizations to influence firm performance. Prior research show a positive relationship between management and firm performance. Managerial characteristic are important to understand the relationship with firm performance. Differences in managerial profiles have been found between management in top and poor performing organizations. It can be said that managerial characteristics may predict the variations in firm performance (Norburn & Birley, 1988). Hambrick, Cho and Chan (1996) found that a heterogeneous TMT had a positive effect on the changes in market share and profits. One of their characteristics was that they were more risk-taking in competitive actions. TMTs can influence firm performance due to the different demographic characteristics of the TMT members.

### **2.1 TMT heterogeneity**

In literature many different definitions of the TMT are used. In this research I concur with the view that is taken by Finkelstein et al. (2009) that the TMT is “the relatively small group of most influential executives at the apex of an organization – usually the CEO (or general manager) and those who report directly to him or her” (p.10). These executives serve as channels of communication, maintaining the organization in operation (Barnard, 1968), are responsible for setting firm directions (Ceyert & March, 1963), make strategic decisions (Hambrick & Mason, 1984), are accounted to align the internal organization with the external environment, have complex integrative tasks, and have to manage the daily affairs of the organization via subordinates (Hambrick, 1989).

Factors that may influence firm performance can be divided in economic and organizational factors. The latter explains the differences in firm performance twice as much as the first (Hansen & Wernerfelt, 1989). Therefore in this research organizational factors as structure, decision making, group dynamics, demographic characteristics and TMT size as a part of the TMT are taken into account. These organizational factors are different in any organization and are all (partially) associated with firm performance (Boyd, 1995; Hambrick & Mason, 1984; Kroll, Walters, & Le, 2007). Hambrick and Mason (1984) suppose that organizations are a reflection of their TMT through their demographic characteristics. These demographic characteristics determine which strategic decisions are being made. In their upper echelon theory they state that experience, values and personal characteristics of the TMT are of great influence on the situations the organization faces and it influences the choices the TMT makes. The situation determines what kind of TMT member (background) will be chosen for the job. Through the characteristics of the TMT member (e.g.: educational marketing background) will subsequently be determined which strategic choices are being made. Through the interaction between the upper echelon characteristics and the strategic choices organizational performance can be influenced.

Divergent demographic characteristics of members in the TMT lead to heterogeneity, which can be positively related to firm performance (Hambrick & Mason, 1984). TMTs that consist of members with broader functional experience, multiple company employment and wider educational training outperform organizations with TMTs that does not have these wide characteristics (Norburn & Birley, 1988). There are two reasons why TMT Heterogeneity can provide enhanced firm performance.

First, heterogeneous TMTs have broader access to available knowledge, through diverse educational and functional backgrounds (Finkelstein et al., 2009). Priem, Lyon and Dess (1999) stated that TMT heterogeneity provides all the skills needed to manage an organization. One of the reasons is that “TMT heterogeneity lead to varied and complementary competences and thereby provide cognitive variety” (Priem, Lyon, & Dess, 1999, p. 936). Cannella et al. (2008) found a strong and positive relationship between TMT intrapersonal functional diversity and firm performance. TMT heterogeneity also provides access to more sources of information, due to the fact that every TMT member has his own network. Because each TMT member has his own network they will be able to access different types of information (Certo, Lester, Dalton,

& Dalton, 2006; Williams & O'Reilly, 1998). Information is essential to create knowledge and information and knowledge are crucial to create value and subsequently gain competitive advantage (Porter, 1990; Stewart, 2001). With this broad access to diverse information and knowledge the TMT can develop diverse perspectives. The diverse perspectives are valuable to make better strategic decisions as outlined in the second reason why TMT Heterogeneity may provide better firm performance.

Second, heterogeneous TMTs have better problem solving skills than less heterogeneous TMTs and therefore make better strategic decisions. Heterogeneous TMTs are able to devise more alternatives for organizational problems due to their different backgrounds and views. As a result these alternatives are evaluated through more diverse perspectives (Finkelstein et al., 2009). Combining the different views, it provides a variety of perspectives which are evaluated by the TMT. When a problem is analysed through a variety of perspectives better solutions can be found (Finkelstein et al., 2009). The TMT can therefore benefit from these multiple perspectives in solving complex problems (Bantel & Jackson, 1989). In addition, creativity occurs when various perspectives, different knowledge domains and different capabilities are available within the TMT (Dunbar, 1995; Kurtzberg, 2005). This can lead to (sometimes) conflicting views, but combining those views may lead to innovative solutions (Eisenhardt & Schoonhoven, 1990). Earlier research suggests that creativity can lead to competitive advantage (Cox, 1994). As a result of the better problem solving skills, better strategic decisions are made, due to the more alternatives that are discussed and evaluated along multiple perspectives (Finkelstein et al., 2009). Task conflicts, which can occur due to TMT cognitive diversity (Pelled, Eisenhardt, & Xin, 1999), are another explanation why heterogeneity can also lead to better decisions (Certo et al., 2006). This is less likely to occur in homogeneous TMTs. One of the reasons is that cohesion and homogeneity can lead to groupthink. The consequence of groupthink can be that less alternatives are generated and evaluated (Hambrick & Mason, 1984), which possibly leads to less quality decisions (Finkelstein et al., 2009).

However, research also did show negative relationships between TMT heterogeneity and firm performance. Dissension, a negative side effect of TMT heterogeneity, can occur due to too much different views and alternatives which can lead to unsuccessful implementations of strategic decisions (Hitt & Tyler, 1991; Priem, 1990). Too much heterogeneity can therefore have negative consequences on firm

performance. Heterogeneous TMTs may lack consensus, have less social integration and poor communication (Ancona & Caldwell, 1992; Hambrick, Cho, & Chen, 1996; O'Reilly III, Caldwell, & Barnett, 1989; Priem, 1990; Priem, Lyon, & Dess, 1999; Zenger & Lawrence, 1989). Priem (1990) proposes that TMT homogeneity is positively associated to the level of consensus within the TMT, due to group consensus, conformity and cohesiveness. More cohesive teams tend to be more socially integrated (O'Reilly III, Caldwell, & Barnett, 1989). Research has shown a positive relationship between social integration and firm performance (O'Reilly III et al., 1989; Smith et al., 1994). Social integration can have a positive influence on the implementation of strategic decisions due to a more cooperative attitude and better communication (Finkelstein et al., 2009; O'Reilly III et al., 1989). Communication increases when employees are of the same age and when the organizational tenure is similar, both part of demographic homogeneity (Zenger & Lawrence, 1989). Increased communication can influence TMT co-operation positively (Priem et al., 1999) which subsequently positively affects the implementation of strategic decisions. Within heterogeneous TMTs the age and organizational tenure are dissimilar and can negatively affect (informal) communication (Smith et al., 1994). This can be explained by the different backgrounds. Those differences may result in TMT members having different vocabularies and interpretations (Hambrick et al., 1996). As a result disparities can occur. These disparities can impede the distribution of information (Ancona & Caldwell, 1992).

In sum, TMT heterogeneity provides better problem solving skills, better strategic decisions, broader knowledge perspective and avoid groupthink. Besides the latter, these are all determinants for better firm performance. However as shown, the positive effect of TMT heterogeneity on firm performance has an inflection point. Too much heterogeneity may have negative influence on firm performance, due to the difficulty to make decisions, a less social integrated TMT and poor communication. This may negatively affect the strategic decisions the TMT makes, the implementations of these decisions and subsequently influence firm performance negatively. Resulting in the following hypotheses:

***H1: There will be an inverted U-shaped relationship between TMT heterogeneity and firm performance.***

## 2.2 CEO Power

Finkelstein (1992) stated that power of TMT members is a crucial part in researching TMTs. The CEO is eventually responsible for the entire organization (Finkelstein, Hambrick, & Cannella Jr., 2009) as he is the manager of the TMT and often seen as the most powerful organizational member (Daily & Johnson, 1997). CEOs also have other characteristics, e.g. corporate influence, than the other TMT members (Norburn, 1989). It is inconceivable that the power within the TMT is equal (Carpenter, 2005). Due to his more powerful position compared to other TMT members, it is admissible to say that the CEO can influence the decisions that are made within the TMT. He can overpower the other TMT members and therefore may not benefit from the broader available knowledge and different views within the TMT (Cannella & Holcomb, 2005). It possibly results in lower-quality decisions.

Power is often described as the possibility to influence others (Turner, 2005). To research power, it is important to acknowledge the different dimensions of power. There are two contributions that are often referred to in literature. French and Raven (1959) developed five bases of social power: legitimate power, referent power, expert power, reward power and coercive power. The five bases were extended with a sixth dimension; informational power (Raven, 1965). Finkelstein (1992) used four executive related dimensions of power: structural power, ownership power, expert power and prestige power. Some of these dimensions of power can explain why power can be a crucial moderating factor. Some of the dimensions of power in both theories can partially be seen as similar. Legitimate power and structural power are both related to the power someone has because of their hierarchical position. In addition, ownership power can also be obtained by a unique position, due to shareholdings or being the founder or related to the founder. When someone gains power through his interpersonal skills and charisma, also called referent power, they gain power by a more informal position. Lastly, expert power is about the expertise or skills in an area which is crucial for the organization (Finkelstein S., 1992; French Jr. & Raven, 1959).

Much research has been done on CEO power and the relationship with firm performance. Findings in research show that powerful CEOs do not lead to better firm performance. Organizations with powerful CEOs have declined firm value (Bebchuk et al., 2009a,b), reduced cash flow (Core, Holthausen, & Larcker, 1999), perform worse in turbulent environments (Haleblian & Finkelstein, 1993) and invest in risk reducing

projects (Grinstein & Hribar, 2004). Powerful CEOs tend to make extreme decisions which lead to strongly fluctuating firm performance (Adams, Almeida, & Ferreira, 2005). When the CEO has more decisive power, organizations show lower credit ratings (Liu & Jiraporn, 2010). Hence, CEO power may negatively influence firm performance.

To a certain extent TMT heterogeneity is positively associated with firm performance due to better problem solving skills, better strategic decisions and broader access to available knowledge and information. In this process one assumes equalized power within the TMT. However, scholars have shown that the CEO has more power than the other TMT members (Cannella Jr. & Shen, 2001; Hambrick & Cannella Jr., 2004; Reutzel & Cannella, 2004). Through his exceptional position, the CEO has likely more decisive power. TMT heterogeneity provides more and better evaluated alternatives from multiple perspectives, however a powerful CEO can partially or fully ignore these evaluations and can make a decision on his own or with the advice of just a couple of the TMT members and thereby ignore the advantage of heterogeneity. It is likely that the amount of influence on the relationship between TMT heterogeneity and firm performance depends on the amount of power of the CEO.

First, a powerful CEO can negatively influence the relationship between TMT heterogeneity and firm performance. A CEO can use his position to gain more power within the TMT, whereby unequal power arises. Unequal power within the TMT may lead to lower information sharing which reduces innovativeness of ideas and as a result can lead to lower quality decisions. When the CEO uses his dominant power due to his position (legitimate power and structural power), it negatively influences the creativity of the strategic directions (Pitcher & Smith, 2001). In addition, Halebian and Finkelstein (1993) argued that TMT members may be inclined to reject concepts of a powerful CEO. Lastly, CEO power can result in reducing the diversity of alternatives that are generated (Pitcher & Smith, 2001), it can result in a reduced amount of ideas and have a negative impact on the creativity within the TMT (Dewett, 2004). Less creative and low-quality ideas do not contribute to firm performance (Smith, Houghton, Hood, & Ryman, 2006). Hence, CEO power can reduce the positive effects of creativity and diverse alternatives that can be obtained through TMT heterogeneity and therefore may negatively affect the relationship between TMT heterogeneity and firm performance.

Second, as already implied above, the exceptional position of the CEO provides a form of power the other TMT members do not possess. Due to the legitimate power of the



CEO, members of the TMT can or will accept the influence of the CEO because he has the right to influence people because of his position in the organization (Erchul & Raven, 1997). This is similar to the structural power the CEO has due to a certain extent of authority over the other TMT members (Finkelstein, 1992). Besides, when the CEO is one of the major shareholders he also has the possibility to use his ownership power to make strategic decisions (Daily & Johnson, 1997). This authority gives the CEO the opportunity to overrule decisions and/or make his own decisions. Whereas Eisenhardt and Schoonhoven (1990) suggested that conflicting views can lead to competitive advantage, the assumption can also be that the CEO makes the final decisions and therefore does not use the advantage of the different views. It may also occur that other members of the TMT are afraid to bring up ideas that are opposite to the view of a powerful CEO (Hambrick & D'Aveni, 1992). The positive relationship between TMT heterogeneity and firm performance is partially based on the idea that through heterogeneity more alternatives are better evaluated with different views. However, due to his powerful position the CEO can overrule or influence this process whereby the advantage of heterogeneity reduces because alternatives are not considered or different views are not taken into account. This possibly leads to lower-quality decisions. It is admissible to state that when a CEO is more powerful, the relationship between TMT heterogeneity and firm performance will be influenced more.

Third, members of the TMT may admire the CEO due to identification or specific personal traits they admire. They might have a desire to be like the CEO or to be part of his group. With this referent power, the CEO can influence the members of the team for example in the decision-making process (French Jr. & Raven, 1959). As a result the heterogeneity may lose its benefits due to the situation that TMT members will not bring in their own ideas or will finally follow the vision of the CEO.

Lastly, the negative effects of TMT heterogeneity on firm performance were illustrated earlier. Consensus and social integration do have a positive effect on the implementation of strategic decisions, and it leads to better communication and cooperation within the TMT (Finkelstein et al., 2009; O'Reilly III et al., 198; Priem et al., 1999). However, less consensus and social integration occurs in heterogeneous TMTs. This can be explained by the different demographic characteristics and viewpoints which may lead to disparities (Hambrick et al., 1996). Another explanation can be power. Power has an important role in the strategic-decision making process.

Organizations where the CEO is less powerful tend to share more information and there will be more consensus in the decision-making process (Eisenhardt & Bourgeois, 1988). In other words, a powerful CEO can be responsible for less consensus and social integration, due to his legitimate or structural power. He can use his exceptional position for instance to refuse discussion or to not accept dissent. Consensus then will not even be a subject within the TMT and the strategic decision-making process, whereby TMT heterogeneity probably loses its relevance (Finkelstein et al., 2009). Where consensus can positively influence the implementation of strategic decisions, a powerful CEO can have a negative effect on the consensus in the decision making process and therefore on the relationship between TMT heterogeneity and firm performance.

Further, a powerful CEO is also able to select other Top Managers who report to him. He will be likely to select team members who are similar to him and have similar perspectives (Boone & Brabander, 1993; Westphal & Zajac, 1995). This may reduce the positive effects of heterogeneity whereby more alternatives are generated which can be evaluated through different perspectives and lead to better quality decisions. In addition, a powerful CEO can reduce communication and valuable information sharing within the TMT. Edmondson, Roberto and Watkins (2003) found that other TMT members are unwilling to exchange information and give their opinion when the CEO is powerful. Another possibility is that because of the powerful position of the CEO, TMT members will only share information on what they think the CEO needs or wants to know (Buyl, Boone, Hendriks, & Matthyssens, 2011). Reduced communication and information also negatively affect the implementation of strategic decisions (Finkelstein et al., 2009) and therefore negatively affect the relationship between TMT heterogeneity and firm performance.

Summarizing, CEO power can possibly lower the inflection point of the inverted u-shaped relationship between TMT heterogeneity and firm performance. This may be caused by the effect CEO power has on the quality of the decisions, it can reduce the innovativeness in the decision-making process and negatively affect the collaboration in the TMT. Therefore the assumption is that when a CEO has more power it will negatively influence the inverted u-shaped relationship between TMT heterogeneity and firm performance negatively.

***H2: When CEO power increases, the inflection point in the curvilinear relationship between TMT heterogeneity and firm performance will be reached earlier.***

### 2.3 Participative middle management

The decision-making process is often seen as the responsibility of the TMT. The decision making roles as directing and ratifying are part of the executives' job (Floyd & Lane, 2000). However, a considerable amount of outcomes of research is positive on involving middle management in the strategic decision-making process (Bower, 1970; Currie & Procter, 2005; Dutton & Ashford, 1993). The middle line connects the apex of the organization to the operating core, and therefore provides an important link (Mintzberg, Ahlstrand, & Lampel, 2009). Mintzberg (2006) stated that the middle line and even sometimes the operating core can at times be part of the strategy formulation. Middle managers have a pivotal role due to their role towards the TMT as well as the operating level. They communicate and provide information between operational and top levels (Floyd & Lane, 2000).

Research has been done on consulting middle management in the process of strategy forming. Middle management is important in the strategy process. When middle managers were consulted in the strategy process, firms perform better (Wooldridge & Floyd, 1990). In organizations where strategy is focused on innovation, middle managers champion strategic alternatives more (Floyd & Wooldridge, 1994). As discussed before, evaluating alternatives from different perspectives is one of the explanations why TMT heterogeneity is positively associated with firm performance (Finkelstein et al., 2009). Therefore middle managers can play a considerable role in the process of strategy forming.

Research shows that heterogeneous TMTs have better problem solving skills and therefore make higher quality strategic decisions leading to enhanced firm performance (Finkelstein et al., 2009). Consulting middle management in the strategic decision-making process ensures that the information that is gathered is more diverse, due to the fact that people from different levels within the organization with other demographic characteristics are involved. It strengthens the problem solving skills. This can be explained through the following arguments.

First, middle managers have a pivotal role in the organization. They have knowledge on what is important in the operating core. They encounter the issues that are needing

to be improved. In addition, they are closer to the markets, customers and business. The information they can collect from the customers and environment is important for organizations to be innovative, react, or adapt quickly to the needs of their environment (Floyd & Lane, 2000). Organizational learning is an important aspect in this process. An organization needs the feedback from the customers and market to keep improving (Tushman & O'Reilly, 1996). Hence, middle management can contribute to the strategic decision-making process with providing important information to the TMT. This information may help the TMT to make strategic decisions that fit the strategic course as well as customer needs. Additionally, it ensures that the operating core is able to execute actions following from the strategic decisions, due to the information middle management has given. This can lead to better strategic decisions and subsequently to better firm performance (Finkelstein et al., 2009). Information sharing can also provide innovativeness of ideas which can improve the problem solving skills, leading to better quality decisions (Smith, Houghton, Hood, & Ryman, 2006). Through organizational learning, sharing intra-organizational knowledge can lead to competitive advantage (Calantone, Cavusgil, & Zhao, 2002). Sharing intra-organizational knowledge can be accomplished by consulting middle management and can result in a positive effect on the decision-making process.

Second, heterogeneity results in diverse and complementary capabilities which leads to cognitive variety (Priem, Lyon, & Dess, 1999). It is likely that the cognitive variety is bigger when two different organizational levels are brought together to exchange information and discuss the issues within the organization. Cognitive variety can lead to better strategic decisions (Certo et al., 2006) and therefore it can positively moderate the effect on firm performance.

However, too much information and cognitive variety can also have negative consequences. Too much people involved in the process of strategy forming can lead to an abundance of information and knowledge which can make it difficult to make decisions. Mintzberg (1975) appointed the problem of information overload as follows: "brains have difficulty processing all the relevant information --- there is too much, it may not fit with expectations and previous patterns, and some of it may simply be too threatening to accept" (p.17). When people have too much information and are not able to process this information, it may lead to stress and anxiety and subsequently to lower performance (Case, 2012). Hence, involving middle management in the strategic

decision process can also result in a negative effect on the relationship between TMT heterogeneity and firm performance due to an abundance and variety of information and knowledge.

To summarize, when middle management participates in the strategic decision-making process it provides better strategic decisions. It provides a broader perspective to the TMT. Through middle management the TMT can take the views of customers and the market into account to adapt to the environment. Therefore it can positively influence the relationship between TMT heterogeneity and firm performance. However, there is a turning point. Too much participation can lead to too much information and knowledge and therefore worsen firm performance. Participation of middle management in the strategic decision-making process can make the inflection point of the relationship between TMT heterogeneity and firm performance to be higher, but descend eventually.

***H3: When participation of middle management in the strategic decision-making process increases, the inflection point in the curvilinear relationship between TMT heterogeneity and firm performance will be higher.***

## 2.4 Research Framework

To summarize, both CEO power and participative middle management are expected to influence the curvilinear relationship between TMT heterogeneity and firm performance. This results in the following research framework:

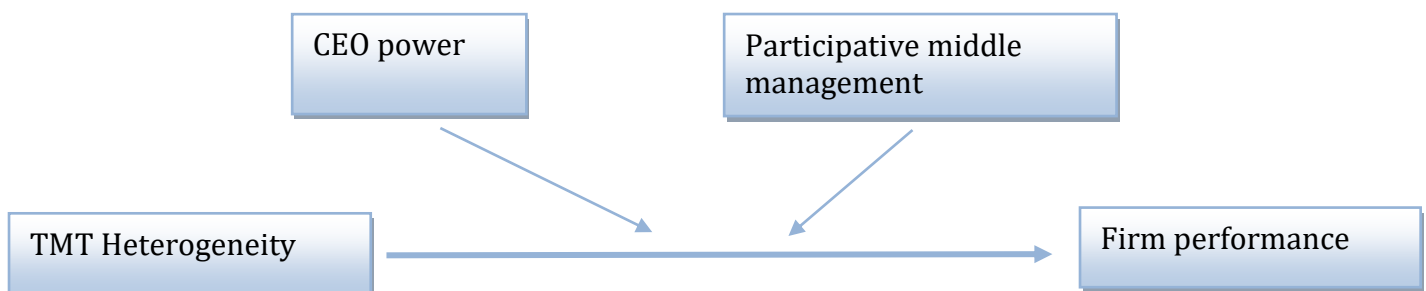


Figure 1. Research framework

### **3. Methodology**

#### **3.1 Empirical Method**

To test the hypotheses a questionnaire was administered to 67 organizations in the Netherlands. Many large organizations are located in the Netherlands due to the commercial opportunities, good infrastructure and export possibilities. Large organizations often have larger sized TMTs, which results in a greater degree of cognitive heterogeneity within TMTs (Finkelstein et al. 2009). Business in the Netherlands is strongly internationalized, which means that there were many TMTs with different educational and functional backgrounds and thus heterogeneity was available. The Netherlands is also an industrially diverse country. This research has been done in diverse industries. In different industries distinct modes of decision-making are used, which enabled studying the effect of TMTs and their decisions. The approach of this research was single-sourced.

#### **3.2 Sample**

The sampling frame contained organizations within the Netherlands. The criteria for the organizations that were included in this research were: 1) profit organizations were included to get access to performance data, 2) the organization was based in the Netherlands due to the possibility of the diversity in TMTs, and 3) the organization consisted of more organizational levels with at least TMT and Middle Management positions. To ensure that the included organizations consisted of more organizational levels, only organizations with more than 250 employees were contacted. Another way to ensure this, was to look upon the company's website and analyse the organigram when it was available.

Furthermore, snowball sampling was used. Respondents in this study who met the criteria were asked to provide contact details of other organizations that also fit the criteria. This is a common method that has been used when the research population is rare or hard to find, as was the case in this research (Easterby-Smith, Thorpe, & Jackson, 2012). Respondents needed to fill in the name of the organization, so the criteria could be checked due to look upon the company's website and the Orbis database.

### 3.3 Data collection

For this research a self-completion questionnaire was used (Appendix A), due to the fact that a very large group of participants could be reached in a short time. It enabled me to use a bigger sample within this research. Also all selected organizations in the Netherlands could be approached, despite of the location of the firm. It could provide a better base to generalize the outcomes (Bryman & Bell, 2015). The first step was pretesting the questionnaire with the aim to reassure that the constructs and items were being understood well and the definitions were clear. The pretesting was done by four people. Two of them worked in management positions and the other two were not related to this research. Based on the feedback of the people that pretested the questionnaire, several changes were made in the questionnaire. Their feedback was mainly on grammar and consistency in writing. I have included their remarks in the final version. Furthermore, two questions about personal information and three scale items were reformulated for better understanding. After processing their feedback the questionnaire was completed.

The questionnaire was made available in English and in Dutch and was created in the online program Survey Monkey. Next, the questionnaire was distributed digitally among 240 organizations that met the requirements. The respondents were approached directly via their personal e-mail address, LinkedIn Inmail or via a direct contact person. This was needed because of the scope of this research. TMT members are not likely to fill in questionnaires due to their busy schedules, certainly not when the request comes from someone they are unfamiliar with. Therefore a lock in was created by sending the e-mail with the request directly to the respondent. Members of the TMT were asked to fill in the questionnaire and to answer questions about themselves, the organization, their middle management and their CEO. If they were the CEO they were asked to answer the question by evaluating themselves.

To increase the response rate a cover letter was used. In this cover letter the purpose of the research and the reason why the respondent was asked to participate were mentioned. Second, the cover letters were addressed personally. Third, confidentiality was guaranteed in the cover letter as well as in the introduction of the online questionnaire. Fourth, a list was made of the organizations where the questionnaire has been sent to. The respondents who did and did not react could be followed. After one week a follow-up note was sent to those who did not return the

questionnaire (Hoddinott & Bass, 1986). Last, the request for participation was sent outside working hours, mostly in the weekends with the idea to by-pass the TMT members' secretary.

A total of 115 respondents, completed the survey. However, 33 were excluded from this research because 27 respondents belonged to the middle management, 3 respondents did not work in the Netherlands, 2 organizations did not have middle management and 1 organization operated in the non-profit sector. From the remaining 82 respondents, 15 respondents worked in the same organization. Their answers were summed and the average was used. Eventually a total of 67 unique TMT members of different organizations participated in this research. The final sample contained 88,1% male respondents. The TMT members that participated had an average organizational tenure of 10.73 years and an average TMT tenure of 9.43 years. The average age of the respondents was between 46 and 55 years. The three industries that represented the most organizations in the sample were: Professional & business services (35.8%), financial services (14.9%), and IT (11,9%).

To test for non-response bias I compared the respondents with the non-respondents of the sampling frame on industry. The T-test showed no significant differences based on the industry. To test for common method bias, I carried out Harman's one-factor test, using all items included in the research model. The single factor was accounted for 16.88% of the variance. When one factor is accounted for more than 50% of the variance, common method bias would be present. Because the single factor was accounted for less than 50%, common method bias was not an issue in this study (Podsakoff & Organ, 1986).

Secondary sources were used as well. Data on firm performance, firm characteristics and TMT characteristics were retrieved from the Orbis and Boardex databases. Furthermore, data was collected from formal company websites, LinkedIn and annual reports.

### 3.4 Variables and measures

#### *Dependent variable*

**Firm Performance.** To measure firm performance a self-reported measure was used. With self-reported measures respondents are usually asked to estimate the performance on different items compared to their competitors (Luo, 2008; Van Doorn, Jansen, Van



den Bosch, & Volberda, 2013). Firm performance was measured through operational outcome in the questionnaire. Respondents were asked to estimate to what extent their organizations perform compared to close competitors in their industry on the following five items: labour productivity, manufacturing/ quality control, technology development, customer service and management efficiency (Luo, 2008). The scale used Likert-type items scored on a five-point scale ranging from 1= lowest 20% in the industry to 5= Top 20% in the industry. The item technology development was deleted because the correlation of this item relative to the total correlation was low (.21) and reduced inter-item reliability. The resulting scale was reliable ( $\alpha = .72$ ).

#### *Independent variables*

**TMT heterogeneity.** TMT heterogeneity was measured by a four item Likert scale. In the questionnaire TMT heterogeneity was included with a four item scale adopted from Van Doorn, Jansen, Van den Bosch & Volberda (2013), who added an item to the original scale of Campion, Medsker and Higgs (1993). The scale used Likert-type items scored on a five-point scale ranging from 1= strongly disagree to 5= strongly agree. The four items referred to the TMT members and their differences in area of expertise, differences in backgrounds, differences of professional experience and whether they had skills and abilities that complemented each other ( $\alpha = .69$ ).

**CEO Power.** There are many forms of power and therefore it was impossible to measure all different dimensions and influences of power. In this research a social power scale was used adopted from Pearce II and Robinson Jr. (1987) referring to the forms of power of French Jr. and Raven (1959). The scale consisted of 7 items to measure CEO power. The original scale contained 15 items, but not all items were applicable to this research. The items that were not included measured reward and coercive power, these forms of power were not taken into account in this research. Also two items were excluded by the designers. Only the relevant items were maintained. The scale used Likert-type items scored on a five-point scale ranging from 1= almost never to 5= usually ( $\alpha = .80$ ).

**Participative Middle Management.** The participation of middle management was measured due to strategic involvement, using a 16-item Likert scale developed by Floyd

and Wooldridge (Floyd & Wooldridge, 1996). The scale identified the extent to which middle management was involved in strategy development within the organization. Respondents were asked to fill in statements about the extent of involvement in strategic management items. The scale used Likert-type items scored on a five-point scale ranging from 1=never to 5=frequently ( $\alpha = .75$ ).

**Control variables.** Numerous factors help explain the relationship between TMT heterogeneity and firm performance. Obviously it was impossible to take them all into account. The following were included.

*TMT size.* TMT size was measured by the total amount of members within the TMT of the organization. This variable may be valuable because TMT size can have a positive effect on sales growth (Certo, Lester, Dalton, & Dalton, 2006), however it may also reduce corporate strategic change when the TMT size is too large (Wiersema & Bantel, 1992) and therefore may partially explain the inverted u-shaped relationship between TMT heterogeneity and firm performance.

*Firm size.* Firm size was measured by the total of employees working within the organization. Respondents were asked to choose between the different given categories with the total number of employees that are working in their organization: 0 till 10, 10 till 50, 50 till 250, and 250 or more. Miller argued (1991) that firm size may influence the relationship between TMT characteristics and firm performance. Carpenter (2002) suggests that larger organizations have more opportunities due to the access to resources. He also mentioned the side effect of large organizations: bureaucracy. Both could possibly influence the relationship of TMT heterogeneity and firm performance.

*Environmental dynamism.* Respondents were asked to fill in statements about the environmental dynamism that described their organization best. The scale used Likert-type items scored on a five-point scale ranging from 1= strongly disagree to 5= strongly agree (Dill, 1958; Jansen, Van den Bosch, & Volberda, 2006; Van Doorn, Jansen, Van den Bosch, & Volberda, 2013). Earlier research showed positive effects of TMT heterogeneity in complex environments (Hambrick & Mason, 1984; Hambrick, Cho, & Chen, 1996; Priem, 1990). The dynamism of the environment may explain a part of the relationship between TMT heterogeneity and firm performance. The reliability coefficient of this scale was  $\alpha = .72$ .

*Industry.* Industry may affect the relationship between TMT heterogeneity and firm performance. To control for industry a dummy variable was included. The classification of the industries was: 1) Agriculture, mining, construction, 2) Manufacturing, 3) Communication, household, personal services, 4) Education, health services, 5) Financial services, 6) IT, 7) Leisure & hospitality, 8) Professional & business services, 9) Trade, 10) Transportation & utilities.

### 3.5 Data analysis

The data collected from the questionnaire was statistically analysed with SPSS. One item (environmental dynamism, item 4) was recoded due to the negative formulation. First some tests were done to check the robustness of the data and to ensure that the data was comparable. Studying the Variance Inflation Factors (VIF) of all variables, no multicollinearity was shown. The mean VIF was 1.15, where factors below 10 are acceptable (Aiken & West, 1991). No outliers were detected in the data, using the outlier labeling rule with factor 1.5 (Tukey, 1977). The dependent and independent variables were standardised ( $X = 0$  and  $S.D. = 1$ ) and to create a composite score their values were averaged. To test the hypothesis the interaction effects for CEO power and participative middle management with TMT heterogeneity were created.

The analyses contained several steps. In the baseline model correlation coefficients were used to determine whether there was a significant relationship and regression analyses were used to show whether the relationship had a predictive quality or not. The baseline model only consisted of control variables. In the second model TMT heterogeneity and the squared variable of TMT heterogeneity were added to inquire the nonlinear effect of TMT heterogeneity on firm performance. In the third model the moderating variables CEO power and participative middle management were added to inquire the main effects of these variables on firm performance. In the fourth model the interaction of CEO power and TMT heterogeneity was added to determine if the relationship between TMT heterogeneity and firm performance was affected to be stronger or weaker. The same applies to model five, only this time the interaction of participative middle management with TMT heterogeneity was added. In the last model, model six, all variables were added. Besides the dependent and independent variables, control variables were included in all models.

#### 4. Results

Table I provides the descriptive statistics and bivariate correlations between all variables used in this research. As shown in table 1 there are no high correlations between the variables. There is a significant correlation between participative middle management and CEO power ( $R = 0.39$ ;  $p < 0.01$ ) and between firm size and TMT size ( $R = 0.25$ ;  $p < 0.05$ ), however this correlation is weak.

Table I. Descriptive statistics and correlation coefficients<sup>a</sup>

Variable	Mean	S.D.	1	2	3	4	5	6	7
1. Firm performance	3,47	0,86							
2. TMT heterogeneity	4,15	0,52	0,21						
3. CEO power	3,41	0,58	0,09	0,02					
4. Participative middle management	3,72	0,38	0,22	0,21	0,39**				
5. TMT Size	7,10	6,06	-0,11	0,01	0,08	0,01			
6. Firm Size <sup>b</sup>	3,58	0,68	0,01	-0,04	0,06	0,20	0,25*		
7. Environmental dynamism	4,09	0,54	-0,09	0,17	-0,16	0,06	-0,09	0,05	
8. Industry	6,72	2,26	-0,13	0,05	-0,01	-0,02	0,18	-0,05	0,04

Notes:

<sup>a</sup>  $n = 67$

<sup>b</sup> Number of employees

\*  $p < 0.05$ ; \*\*  $p < 0.01$  (two-tailed).

Table II shows the result of the regression analyses with firm performance as the dependent variable. Model 1 contains the baseline model and includes only the control variables, Model 2 includes the main effect of the independent variable, Model 3 includes the main effect of the moderating variables, Model 4 shows the interaction effect of CEO power, Model 5 includes the interaction effect of participative middle management and Model 6 shows the main effects and interaction effects.

Model 1 shows no significant relationships between the control variables and firm performance. Also in the other models none of the control variables are significantly related to firm performance. Model 2 does significantly explain more variance ( $\Delta R^2 = 0.128$ ;  $p < 0.05$ ). As predicted TMT heterogeneity is related to firm performance ( $\beta = 0.280$ ;  $p < 0.05$ ). However, an inverted U-shape relation was expected. The results show an U-shape relation between TMT heterogeneity and firm performance which implies that when the TMT is average heterogeneous, firm performance will be worsened. The results therefore do not support Hypotheses 1.

Model 3 explains more variance, but is not significant ( $\Delta R^2 = 0.025$ ;  $p = 0.416$ ). It shows that CEO power is negatively related to firm performance, which is consistent to prior research that when CEO power increases, firm performance decreases (Bebchuk et al., 2009a,b; Liu & Jiraporn, 2010). However, the results are not significant ( $\beta = -0.057$ ;  $p = 0.675$ ). The same can be applied to the main effect of participative middle management. There is a slightly positive relationship for participative middle management and firm performance, but it is not significant ( $\beta = 0.180$ ;  $p < 0.189$ ).

Table II. Results of curvilinear regression analyses<sup>a</sup>: Firm performance

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	0,225	-0,215	-0,039	0,399	0,737	0,818
<i>Interaction effects</i>						
TMT heterogeneity X CEO power				0,187		0,153
TMT heterogeneity <sup>2</sup> X CEO power				-0,077		-0,123
TMT heterogeneity X participative middle management					0,121	0,144
TMT heterogeneity <sup>2</sup> X participative middle management					0,007	-0,062
<i>Main effects</i>						
TMT heterogeneity		0,247*	0,211	0,189	0,206	0,161
TMT heterogeneity <sup>2</sup>		0,280*	0,279*	0,338*	0,252	0,320*
CEO power			-0,057	0,010		-0,043
Participative middle management			0,180		0,123	0,169
<i>Controls</i>						
TMT Size	-0,106	-0,093	-0,081	-0,078	-0,089	-0,065
Firm Size <sup>b</sup>	0,039	0,048	0,011	0,036	-0,001	-0,013
Environmental dynamism	-0,093	-0,094	-0,106	-0,077	-0,085	-0,098
Industry	-0,104	-0,049	-0,047	-0,056	-0,072	-0,065
F	0,529	1,914	1,653	1,482	1,544	1,284
R <sup>2</sup>	0,033	0,161	0,186	0,190	0,196	0,222
Adjusted R <sup>2</sup>	-0,029	0,077	0,073	0,062	0,069	0,049
$\Delta R^2$	0,033	0,128*	0,025	0,004	0,006	0,026
N	67	67	67	67	67	67

*Notes:*<sup>a</sup> Standardized Coefficients<sup>b</sup> Number of employees\*  $p < 0.05$ ; \*\*  $p < 0.01$ 

Model 4 tested Hypotheses 2 and does explain more variance, but Model 4 is also not significant ( $\Delta R^2 = 0.004$ ;  $p = 0.369$ ). A lower inflection point of the relationship between TMT heterogeneity and firm performance was expected by adding CEO power as a moderating effect. Results do show a negative effect but it is not significant ( $\beta = -0.077$ ;  $p = 0.671$ ). According to the results there is no support for Hypotheses 2.

Model 5 tested Hypotheses 3. Hypothesis 3 expected a positive effect on the inverted U-shaped relationship between TMT heterogeneity and firm performance due to the moderating effect of participative middle management in the strategic decision-making

process. Although there is a positive association by adding the interaction in the model, the results are not significant ( $\beta = 0.007$ ;  $p = 0.969$ ). Therefore Hypotheses 3 is not supported. Lastly, in model 6 all variables are taken into account. No significant results were found for this model, except for the nonlinear relationship between TMT heterogeneity and firm performance. This relationship stays significant in almost every model, despite the variables that were added.

In sum, no results were found for an inverted U-shaped relationship between TMT heterogeneity and firm performance, nor for the moderating effects of CEO power and participative middle management. Therefore Hypotheses 1, 2, and 3 are not supported.

## 5. Discussion and conclusion

Hambrick and Mason (1984) stated that the TMT can influence firm performance by their characteristics. With this study I contribute to the literature by providing more information on the ambiguous relationship between TMT heterogeneity and firm performance and on which moderating effects may influence this relationship. Prior research was mainly focussed on the TMT, assuming that power within the TMT is equal and that the strategic decision-making process is done by the TMT alone. Trying to explain what could moderate the effect of TMT heterogeneity on firm performance, this study focussed on the power of the CEO within the TMT and the participation of middle management in the strategic decision-making process. Results showed the opposite of what was expected. A significant U-shaped relationship between TMT heterogeneity and firm performance has been found. This implicates that enhanced firm performance occurs when heterogeneity within the TMT is low or high and when TMT heterogeneity is average firm performance will decrease. No support was found for the moderating effects of CEO power and participative middle management in this study, suggesting that those effects do not influence the relationship between TMT heterogeneity and firm performance. Although no results were found for the developed hypotheses, this study has been important by giving more information on the diverse moderating effects and it provides insight on the relationship between TMT heterogeneity and firm performance. It contributes to the existing ambiguous results and provides directions for future research.

Prior research showed positive, negative and zero findings on this relationship. Contrary to Hypothesis 1 that posited an inverted u-shaped relationship, in this study the relationship appears to be slightly u-shaped. A possible explanation for the finding that low heterogeneity is associated with enhanced firm performance may be that the lack of consensus within heterogeneous TMTs has a greater negative effect on the strategic decision-making process (Ancona & Caldwell, 1992; Hambrick, Cho, & Chen, 1996; O'Reilly III, Caldwell, & Barnett, 1989; Priem, 1990), and that within homogeneous TMTs communication and cooperation increases (Priem, Lyon, & Dess, 1999). A second explanation may be that TMT size effects the relationship. Prior research found a relationship between TMT/board size and firm performance. Results show that when the size of the TMT increases it takes more time to make decisions due to the search for consensus. Subsequently decisions that are made will be less extreme and firm

performance will be more stable (Cheng, 2008). Despite of the positive effects of TMT heterogeneity through more alternatives and diverse perspectives, reaching consensus within the TMT may have a greater effect on the final decisions and the decision-making process. Future research should include measures on the need to reach consensus within TMTs, to further understand the effect of consensus in the strategic decision-making process on the relationship between TMT heterogeneity and firm performance.

Findings in this research show no significant results for the moderating effect of CEO power on the relationship between TMT heterogeneity and firm performance. These findings may suggest that respondents tend to answer more positively than their actual opinion might be. After all, they need to evaluate the CEO of the organization, or they need to be evaluated themselves. To be more certain about the effect of CEO power, future research should include more objective measurements as tenure, ownership and duality to measure CEO power (Combs et al, 2007) to cross-validate the self-measured scale. When the CEO is one of the major shareholders he has the possibility to use his ownership power to decide (Daily & Johnson, 1997), especially when the CEO is the chairman of the board as well (Combs et al., 2007). Another possible reason for these findings is that the industry the organizations operate in, may influence the moderating effect of CEO power. Earlier research found that organizations containing TMTs with a less powerful CEO were more profitable in turbulent environments than in stable environments (Haleblian & Finkelstein, 1993). Although the control variable 'industry' did not have a significant effect in this study, it should not be ruled out. In this study no specific industry has been chosen. It is possible that research among organizations in one specific industry and for example controlled for environmental and organizational conditions, combined with a bigger sample provides different insights. Therefore, future research should focus on specific industries to be more conclusive on the effect of CEO power in the decision-making process and subsequently on firm performance.

Lastly, prior research found that power inequality could be positively associated with firm performance under the condition that an executive pair had most of the power (Smith, Houghton, Hood, & Ryman, 2006). The power distribution within the TMT has not been taken into account in this research. To further understand the effect of power distribution within the TMT, future research should include measures on power distribution within the TMT.



Findings in this research suggest no significant moderating effect of participative middle management on the relationship of TMT heterogeneity and firm performance. The distance between middle management and top management may be too great. Due to the distance, views and perspectives could be too different and disparities could occur. The relationship between TMT and middle management could also be of influence. Future research should be done on how these organizational levels collaborate. Another possible reason for these findings may be that when middle management is not involved in the strategic decision-making process, the decision-making process will be faster. Research shows that fast strategic decision-making processes are positively related to firm growth (Baum & Wally, 2003). To further understand the impact of involving middle management in the strategic decision-making process related to firm performance, future research needs to include measures characterising the decision-making process.

This research contributed to the already abundant available research on TMT and firm performance. Although no significant results were found this research provides relevant information for further research. This study supports and provides more evidence to the call for more research on the possible moderating effects on the relationship between TMT heterogeneity and firm performance (Carpenter, 2002) and the research on demographic characteristics as dependent variables (Hambrick, 2007).

### **5.1 Limitations**

Although this study was performed with care several limitations need to be discussed and might provide valuable information for further research. First, the sample size and period of research is likely to have limited this research. The sample size is relatively small, which may have affected the outcomes of this research. Additionally, all industries were included in the sample of this research. When the research had focused on one specific industry, environmental aspects could be taken into account and may possibly provide valuable information. Second, the timeframe of this research may also have influenced the results. The effects of strategic decisions may take more than one year to positively affect firm performance. Therefore longitudinal studies should be done to gather valuable results over a longer period.

A third limitation is that research has not been done on the whole TMT of the organization. Mostly, only one of the members of the TMT was asked to fill in the

questionnaire. When heterogeneity is available within the TMT, it is possible that TMT members have different viewpoints and opinions. Although the scales in this research are validated by internal consistency, it would have made this research more reliable if the whole TMT of the responding organizations participated in this research. Future research should use methods were the whole TMT participates in research.

Fourth, this research is a single sourced research. All variables were tested via the questionnaire and only members of the TMT were asked to fill in questions on middle management. It might provide valuable information when middle management is questioned as well in order to compare these results to increase the validity of the outcomes of research. This also applies for the measurement of firm performance. In this research a self-reported dimension of firm performance has been used. Although common method bias was not an issue in this study, it still might increase the validity of this research to compare and cross-validate self-reported measures and accounting based measures of firm performance. Future research should consider to enlarge the sample with middle management as well, and use various measures of the variables to cross-validate the outcomes of research.

## 5.2 Practical implications

Although no significant results were found for the developed hypotheses, a significant u-shaped relationship between TMT heterogeneity and firm performance has been found. Heterogeneity does have an effect on firm performance, and diversity does matter. This is relevant information for the composition of TMT's which can be used in the recruitment process. When a member of the TMT has to be replaced, it is important to determine which characteristics his successor needs to possess to complement the demographic characteristics of the other TMT members. However, organizations have to find the right balance on diversity in the organization to prevent them from the negative aspects of heterogeneity. They need to take the organizational characteristics in relation to TMT characteristics into account.

Another managerial implication is that every TMT should consider participation of middle management in the strategic decision-making process. Although there was no empirical evidence in this study on the participation of middle management in the strategic decisions-making process, literature has shown that middle management could provide valuable and useful information in the strategic decision-making process.

However, it may not be seen as a direct effect for enhanced firm performance. The formal organizational structure in Dutch organizations often is hierarchal, which may suggest that middle management is less participative due to the hierarchy. TMT's need to reflect on the role of middle management in general and more specific in the decision-making process. As shown middle management provides valuable information on operational, customer and market circumstances. In addition, middle management can translate the goals of the organization into objectives for the employees and they are able to implement action plans to realize the goals of the organization. Therefore the TMT should use the benefits of the pivotal role of middle management. This may also lead to more involved employees. Participative employees are proven to be more involved with the organization, which can be beneficial for organizations. It is commonly known that people who were involved with the decisions that were made, are more likely to execute the decision successfully.

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## Appendix A: Questionnaire

### VRAGENLIJST – TMT HETEROGENITEIT EN DE PRESTATIE VAN DE ORGANISATIE

**Definitie van het Top Management Team:** *het Top Management Team is een kleine groep van directieleden aan de top van de organisatie (Finkelstein et al., 2009), zij hebben de dagelijkse leiding over de gehele organisatie (Hambrick, 1989) en zijn onder andere verantwoordelijk voor het bepalen van de organisatiedoelstellingen (Ceyert & March, 1963). Ze worden ook wel het Directieteam of de Raad van Bestuur genoemd.*

1. Prestatie van de organisatie (Luo, 2008)
Omcirkel het percentage dat volgens u het beste weergeeft hoe uw organisatie presteert op de volgende onderwerpen ten opzichte van uw directe concurrenten gedurende de afgelopen drie jaar (5-puntsschaal; 1= laagste 20% en 5 = top 20%):
Arbeidsproductiviteit
Productie/ kwaliteitscontrole
Technologische ontwikkeling
Klantenservice
Management efficiëntie

2. Middelmanagement (Floyd & Wooldridge, 1996)
Hoe vaak voert u in uw rol als manager de volgende activiteiten uit. Als u lid bent van het Top Management Team, beantwoordt dan hoe vaak het middelmanagement deze activiteiten in uw ogen uitvoert (5-puntsschaal; 1= nooit en 5 = vaak):
Het implementeren van actieplannen die bijdragen aan het realiseren van de doelstellingen van het Top Management Team te realiseren.
Het integreren van informatie uit verschillende bronnen met als doel het overbrengen van het strategische belang.
Het evalueren van de waarde van nieuwe voorstellen.
Het vertalen van organisatiedoelstellingen naar individuele doelstellingen.
Zorgen voor een veilige omgeving waarin experimentele programma's uitgevoerd kunnen worden.
De implicaties voor de organisatie ten aanzien van nieuwe informatie beoordelen en communiceren richting leden van het Top Management Team.
Nieuwe kansen zoeken en deze onder de aandacht van leden van het Top Management Team brengen.
Het communiceren en verkopen van initiatieven van het Top Management Team aan de medewerkers waaraan u leiding geeft.
Het uiteenzetten en verantwoorden van het doel van nieuwe programma's of processen aan leden van het Top Management Team.
Het aanmoedigen van multidisciplinaire probleem-oplossende teams.
Het proactief zoeken naar informatie van klanten, leveranciers, concurrenten, artikelen enz. over uw organisatie.
Het monitoren van en communiceren over activiteiten van concurrenten, leveranciers en andere externe partijen richting leden van het Top Management Team.
Het ontwikkelen van doelstellingen/ strategieën voor nog niet-gedefinieerde (nog niet formele) projecten en het leveren van middelen hiervoor.

Soepel omgaan met voorschriften en procedures met als doel gemakkelijker nieuwe projecten op te kunnen starten.

Het doen van voorstellen van nieuwe programma's of projecten aan leden van het Top Management Team.

### 3. CEO (Pearce II & Robinson Jr., 1987)

Hieronder volgen een aantal uitspraken. Geef voor iedere uitspraak aan hoe vaak dit een reden is om de ideeën van uw CEO ten aanzien van de strategische beslissingen te ondersteunen. Indien u CEO bent, dan graag invullen hoe u denkt dat uw medewerkers hier naar kijken (5-puntsschaal; 1= bijna nooit en 5= meestal):

Ik respecteer de CEO en wil mij gedragen op de manier waarmee ik zijn respect en bewondering verdien.

Ik respecteer de kennis van de CEO, hij is meer ervaren dan ik.

Het is legitiem, gezien de positie van de CEO, dat hij/zij verwacht dat zijn/haar suggesties uitgedragen worden.

Omdat hij/zij de CEO is, ben ik verplicht zijn suggesties te volgen.

Wanneer het advies van de CEO gevolgd wordt, leidt dit tot betere beslissingen.

Ik werk samen met de CEO omdat ik graag met hem/haar geïdentificeerd wordt.

Samenwerken met de CEO kan een positieve impact op mijn prestaties hebben.

### 4. Heterogeniteit (Campion, Medsker, & Higgs, 1993; Van Doorn, Jansen, Van den Bosch, & Volberda, 2013)

Geef bij elk van de volgende uitspraken weer in hoeverre dit uw Top Management Team omschrijft (5-puntsschaal; 1= helemaal oneens en 5= helemaal eens):

De leden van het Top Management Team in mijn organisatie verschillen sterk van elkaar als het gaat om hun vakgebied.

De leden van het Top Management Team in mijn organisatie hebben verschillende achtergronden.

De leden van het Top Management Team in mijn organisatie hebben vaardigheden en capaciteiten die complementair zijn aan elkaar.

De leden van het Top Management Team in mijn organisatie zijn verschillend wat betreft hun professionele ervaring.

### 5. Omgevingsdynamiek (Dill, 1958; Jansen, Van den Bosch, & Volberda, 2006; Van Doorn, Jansen, Van den Bosch, & Volberda, 2013)

Geef hier aan in welke mate elk van onderstaande beweringen van toepassing is op uw organisatie (5-puntsschaal; 1= helemaal oneens en 5= helemaal eens):

In onze markt zijn de veranderingen in omgevingsfactoren zeer ingrijpend.

Onze opdrachtgevers en klanten vragen regelmatig om nieuwe producten en diensten.

In onze markt vinden voortdurend veranderingen plaats.

Het afgelopen jaar is er niets veranderd in onze markt.\*

De omvang van de vraag naar producten of diensten veranderd snel en vaak in onze markt.

\*reversed scoring item

6. Informatie over uw organisatie	
Voor welke organisatie bent u werkzaam?	
In welk jaar is uw organisatie opgericht?	
In welke bedrijfstak is uw organisatie actief?	<input type="checkbox"/> Landbouw, mijnbouw en bouw <input type="checkbox"/> Industrie <input type="checkbox"/> Communicatie, huishouden en persoonlijke diensten <input type="checkbox"/> Onderwijs en gezondheidszorg <input type="checkbox"/> Financiële dienstverlening <input type="checkbox"/> IT <input type="checkbox"/> Recreatie en Horeca <input type="checkbox"/> Professionele en zakelijke dienstverlening <input type="checkbox"/> Handel <input type="checkbox"/> Transport en nutsbedrijven
Hoeveel medewerkers werken er in uw organisatie (European Commission, 2016)?	<input type="checkbox"/> 0-10 werknemers <input type="checkbox"/> 10-50 werknemers <input type="checkbox"/> 50-250 werknemers <input type="checkbox"/> ≥250 werknemers
Uit hoeveel leden bestaat het Top Management Team in uw organisatie?	
7. Persoonlijke informatie (Barsade, Ward, Turner, & Sonnenfeld, 2000; Carpenter, 2002)	
Wat is uw geslacht?	<input type="checkbox"/> Male <input type="checkbox"/> Female
Wat is uw leeftijd?	<input type="checkbox"/> <25 <input type="checkbox"/> 25-35 <input type="checkbox"/> 36-45 <input type="checkbox"/> 46-55 <input type="checkbox"/> 56-65 <input type="checkbox"/> >65
Wat is uw functie?	
Hoeveel jaar bent u werkzaam in uw huidige functie (afgerond in hele jaren)?	
Hoeveel jaar bent u werkzaam voor uw organisatie (afgerond in hele jaren)?	
Hoeveel jaar bent u werkzaam in het Top Management Team (afgerond in hele jaren)?	
Wat is uw functionele achtergrond?	<input type="checkbox"/> General management <input type="checkbox"/> Finance <input type="checkbox"/> Operations <input type="checkbox"/> Marketing <input type="checkbox"/> Human Resources <input type="checkbox"/> Legal <input type="checkbox"/> Accounting <input type="checkbox"/> Ondernemerschap <input type="checkbox"/> Anders

## A study on the influence of the TMT on firm performance

Wat is uw hoogst genoten afgeronde opleiding?	0 M.B.A. of Doctoraal 0 Bachelor (HBO) of Master (Universiteit) 0 Middelbare school en lager
-----------------------------------------------	----------------------------------------------------------------------------------------------------



## Appendix B: Cover letter

Jenny Lijten  
Gazellestraat 82  
3523 SZ Utrecht

Onderwerp: Verzoek voor participatie in onderzoek

Geachte heer/mevrouw,

Voor mijn master scriptie voor de opleiding Master of Business Administration aan de Rotterdam School of Management van de Erasmus Universiteit, doe ik onderzoek naar de rol van het top management team en het middenmanagement in het strategische besluitvormingsproces. Ik waardeer het zeer als u de vragenlijst in wilt vullen. Het kost ongeveer 10 minuten van uw tijd. Hierbij de link naar de enquête:  
<https://nl.surveymonkey.com/r/XNXPCN8>.

Uw antwoorden worden vertrouwelijk behandeld, worden alleen gebruikt voor mijn scriptie onderzoek en worden onder geen enkele omstandigheid gedeeld met derden. Alle reacties worden gebruikt in een samengestelde vorm en uw individuele antwoorden zijn niet te identificeren in de resultaten van dit onderzoek.

Wanneer u dat wenst, stuur ik u de managementsamenvatting van het onderzoek toe. Hierin vindt u aanbevelingen over het onderwerp en het kan daarmee waardevolle informatie voor uw organisatie bevatten. U kunt in de vragenlijst uw e-mail adres achterlaten, waar het rapport naartoe gestuurd kan worden.

Indien u meer informatie wilt over de vragenlijst of het onderzoek dan kunt u contact met mij opnemen op telefoonnummer 06 – 4216 6223 of via mijn e-mail adres [jennylijten@hotmail.com](mailto:jennylijten@hotmail.com).

Alvast hartelijk bedankt voor uw medewerking.

Met vriendelijke groet,

Jenny Lijten