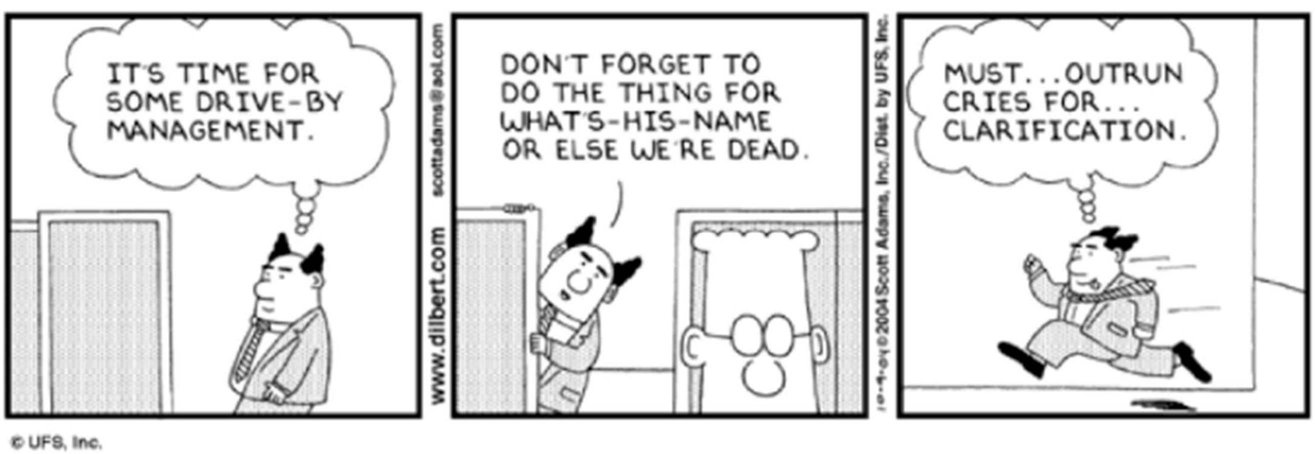
Middle Management Supports and Management Innovation in the Firm; the effect of Private Equity ownership

"*Autonomous strategic initiatives emerge from critical inter- and intra-organizational linkages, and in this process certain middle managers who are in close proximity to these linkages, emerge as informal leaders"* (Floyd & Wooldridge, 1997)



Middle management supports and management innovation in the firm; the effect of private equity ownership

Master thesis

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PREFACE

This Thesis marks the end of a ten-year period in my life of studying. Not being able to do this when I was younger, I have pursued my ambitions and with the finalization of this MScBA program will gain my third degree. This program was the toughest, most challenging but also a lifetime experience that will help to follow my ambitions further. For me the absolute high was our trip to South Africa, which has inspired me even more to take control and create my own future, as the people there should do more also.

The research I have done for this thesis was also a very interesting journey, and finding the right topic was probably the hardest challenge. A lot of ideas were there at the start but to transform these ideas to a proper research proposal was hard. Of course this is part of the learning curve and it helps that both in literature and in talking to colleague students you get the confirmation that this is part of the process.

In the end the topic of my research is something that is close to me, and has been part of a set of questions in my mind for a long time. During my career I have moved up the corporate ladder from analyst on the lab to become a management team member. Always I've been intrigued by how a company works and how it can improve using the most important assets it has, the people. Studying management innovation and how it can be supported with a focus for human agency is for me a logical continuation of earlier research I did on development of knowledge of employees. I learned a lot from studying the subject and will put those lessons into practice during the rest of my career.

I want to express my gratitude to many people that have stuck by me in ongoing ambitions and in this (for now last formal) learning experience. To start the most important people in my life; my beautiful wife and daughters, without their love and support a man could not achieve anything. Than my fellow students, the "Audaces Fortuna Iuvat" team Jos, Ruben and Wilbert and in particular Benjamin who has become my sparring partner and partner in crime. I hope we will remain close after ending the program. From the university I would like to thank all the staff including support(!) for the inspirational lessons, in particular Merieke for the fantastic OE classes and being my co-reader, and Raymond for being a good coach making me sweat with his feedback and also a guy which I have a nice click. Both of you have inspired me with the energy you put in your students and creating a great learning experience. To end I also would like to thank my colleagues and in particular, my own team who have had to be patient while I was always busy pursuing my ambitions….it will not change a lot, sorry.

SUMMARY

Management innovation is an important aspect of the innovation of a firm and a necessary process for the long term survival of a firm. The aim of this study was to gain more insight on how the organizational supports for middle management can influence the process of management innovation in the firm, and what the effect is of private equity ownership on this process.

The findings confirm Dixons (1995) proposition that empowerment of middle management leads to a positive contribution to the renewal of the firm, and reflect the idea that empowerment does give middle management the tools, resources and authority to act as the change agent and driving the management innovation process as suggested by Klagge (1998). It underpins the importance of empowerment and its effects on management innovation performance to contribute to future development and growth, and it adds to the idea that empowerment of middle management not only leads to learning, growth and inspiration of middle management as proposed by Currie (1999) and Patrick et al (2006), but also materializes in an actual increase of the level of management innovation in the firm.

The results also show that involvement of middle management in strategy increases the management innovation in the firm, confirming the proposition of Wooldridge et al (2008) that middle management plays an important role in the process of building and renewing the capabilities of the firm. It shows that a broader and shared understanding of the strategical direction of the firm that includes middle management is effective to increase management innovation. Since, in parallel to the strategy process, management innovation is an incremental and emerging process following the arguments of Wooldridge and Floyd (1989), this should lead top managers to understand the benefits of including middle management in the strategy development process.

This study also investigated the moderating effect of PE ownership on the relation between empowerment and management innovation following the reasoning of Bruining et al (2005) that this would have a positive effect. No significant evidence was found to support the indication that PE ownership would increase the effect that empowerment has on management innovation. A moderately significant effect was found for the moderating role of PE ownership on the relation between strategy involvement of middle management and management innovation, showing that involving middle management has a stronger effect in non-PE owned companies than in PE owned companies. Additional research is necessary to get a better understanding on the effects of ownership on the management innovation process.

CONTENTS

1 INTRODUCTION

Innovation is considered as the driver for competitive advantage of a firm, and management innovation explains a substantial degree of the variance of innovation performance of firms (Volberda, Van den Bosch, & Heij, 2013). Therefore it is an important form of innovation for a firm, that will help to adapt the organization to changes in the environment and support growth. Management innovation, novel changes in processes and structures of managing, has not been studied as extensively as other forms of innovation (Birkinshaw, Hamel, & Mol, 2008; Damanpour, 1987). This is remarkable since it is an important source for competitive advantage (Vaccaro, Jansen, Van Den Bosch, & Volberda, 2012). A reason for it to be important for creating competitive advantage, is that management innovations are thought to be more embedded into the organizational structure and culture than other forms of innovation, making it harder to imitate by competition (Barney, 1991). As an example, robotization of a production process as form of technical innovation is easier to copy by a competitor than training management to adapt a new management practice as a form of management innovation. It is critical for achieving strategic renewal, because it challenges the management orthodoxy which is often deeply ingrained in executive thinking (Hamel, 2006) and relates to sticking to known ways of managing without the willingness to adapt new methods. So which actors in the management process can drive management innovation to become a competitive advantage and how can it be supported?

Anyone from the top management to the operational employees can influence management innovation, but middle managers have a big impact on innovation as they are the ones who make many small but critical choices that make the difference between success and failure (Mollick, 2013). They monitor the operations and set in motion new ideas (Kanter, 1982). For example, when middle management mediates between divergent inputs, situational demands, and the existing strategy, this will initiate the process of organizational learning (Floyd & Lane, 2000) and this may lead to management innovation because it will show the need for changes in the operational processes and how these are managed.

The type of ownership of a firm can be of great importance for middle management behavior because of the social and political consequences in motivating managers. For example when management has an ownership stake or is strongly incentivized for performance they will be more vigilant and more focused on business opportunities (Green, 1992) which can increase the motivation to make changes and follow them through.

To enable middle management to contribute to innovation and creativity to be more structural and not a sporadic occurrence, a supportive environment and culture is necessary (Malaviya & Wadhwa, 2005). If the organizational context is not favorable this will limit what individuals are allowed to bring to their jobs (Hamel, 2006) and will not contribute to management innovation.

A study by Dixon (1995) amongst middle managers suggests the organizational supports most needed by middle management to make a positive contribution to change in the organization are more empowerment of middle management and specifically more involvement in the strategy of the firm. More of these supports could increase the level of authority of middle management making it easier for them to make changes in management practices and thus contribute to management innovation in the firm.

Empowerment entails how much authority middle management has to drive changes without formal authorization, including the power middle management has to initiate change in management practices. Empowered managers are enabled by their organizational context to act more effectively because of increased involvement, and their perception of empowerment effects their attitude towards empowering other employees (Fenton-O'Creevy, 2001). This could support the process of renewal and adaptation of new ideas throughout the organization, including new ideas on management practices. A unifying vision for empowerment must be set at top management level to make this possible (Klagge, 1998).

The second support is a very specific form of empowerment, being the involvement in corporate strategy, which allows middle management to have a better understanding of the organizational direction and goals and to contribute to reaching those. It enables middle management to influence the long term direction of the organization. The contribution of middle management can be of great importance because it is close to the customers and has great knowledge of operational processes (Tregoe & Tobla, 1990). This could enable middle management to translate customer needs in adaptations in the processes and improved understanding if other forms of management are needed. If top-management creates structures and systems to encourage middle management to think strategically, this could create the intrinsic motivation for altering managing practices to fit the strategy (Wooldridge & Floyd, 1990).

A certain level of empowerment and involvement in strategy of middle management can be expected in any type of company and will be dependent on many factors. How this can lead to management innovation of the firm may also be influenced by its environment. In this study the moderating role of ownership is considered because of its influence on the behavior of senior or top managers (Gedajlovic, 1993), and on the corporate governance of the firm (Belloc, 2012).

The level of corporate governance can have an effect on management, because it determines if and how much will be invested in innovation processes (Belloc, 2012). If ownership is dispersed, influence decreases and there is less control over what managers do, opposite to centralized ownership where there is a high level of control (Boeker & Goodstein, 1993). With less control over what management does, the effect of empowerment and more involvement in strategy of middle management on management innovation in the firm can be reduced because middle managers are not lead to effectively contribute to the innovation process.

The ownership of a company can generally be divided in three types; a public or listed company, a privately held or family owned company and a leveraged buy-out company were private equity is involved. The latter is a company were a private equity firm in the majority of situations plays an important role in financing the buy-out and taking a stake in the company. Private equity ownership is viewed by most non-financial stakeholders as negative for other stakeholders than the shareholders, but there is no strong evidence for this (Wright, Amess, Weir, & Girma, 2009). It is clear that private equity is associated with incentives and governance mechanisms that enhance performance (Cumming, Siegel, & Wright, 2007).

The rise of private equity markets in recent years and the mostly negative attention for this in the media give some people a view that this type of ownership has no interest in the long term development of the companies they own, let alone management innovation. But performance focused ownership by private equity could also be a *driver* of management innovation leading to long term competitive advantage by stimulating middle management to contribute to renewal.

Dixon (1995) translated her propositions on empowerment and involvement of middle managers in strategy, into recommendations to encourage organizations to re-evaluate the role of their middle managers. In later studies the necessity for this is repeated (Klagge, 1998; Huy, 2001; Currie, 1999) indicating the ongoing need for organizations to act on increasing middle management involvement and empowerment. By linking management innovation performance to the actual level of empowerment and strategy involvement of middle management, this study aims to give more insight on how the organizational supports of empowerment and strategical involvement of middle management can influence the level of management innovation in the firm. If a relation is found, this could help to encourage top management of organizations that understand the need for management innovation to re-evaluate their middle management involvement as proposed by Dixon.

By also taking the effect of private equity ownership on this process into account, this study reflects on the propositions of Cumming et al (2007) and Bruining et al (2011) that private equity involvement influences performance and governance. If an effect is found it could indicate how this influences the supports of middle management depending on the ownership environment. This would enable (top) managers to understand the influence of ownership when they want to increase the involvement of middle management in their pursuit of management innovation.

The central research question for this study is defined as:

What is the effect of middle management empowerment and involvement in strategy on the management innovation in a firm and how does private equity ownership influence these relationships?

This report is structured as follows; chapter two describes the theoretical background and hypothesis of this study, chapter three describes the research design with a description of the sample and the used methods, the data analysis and results are presented in chapter four, in chapter five the discussion and conclusion are presented, and finally chapter six describes limitations and future research.

2 THEORETICAL FRAMEWORK AND HYPOTHESES

2.1 Management Innovation and middle management: definitions and level of analysis

Management innovation can be defined as a difference in the form, quality or state over time of the management activities in an organization, where the change is a novel or unprecedented departure from the past (Hargrave & Van de Ven, 2006). It comprises novel changes in processes and structures of managing, and is of great importance for the future of the firm, focusing on how management is setting direction, making decisions, coordinating activities and motivating people (Birkinshaw, Hamel, & Mol, 2008; Hamel, 2006). It differs from other forms of innovation because of its focus on the process of management and its renewal, which creates value in novel ways of coordination and motivation of the organizations stakeholders (Foss, Pedersen, Pyndt, & Schultz, 2012). This study focused on the adaptation and generation of management innovations new to the firm related to middle management support, answering the call of Birkinshaw et al (2008) to increase the emphasis on human agency in management innovation keeping in mind the contextual dynamics. Middle management can have meaningful contributions on management innovation and strategy in general (Kanter, 1982; Wooldridge & Floyd, 1990).

Organizations that pursue innovative activity have to build in empowerment to release engagement in their work climate (Bhatnagar, 2012), which could act as mediator for middle management contribution to management innovation. Therefore it could be expected that more empowerment will lead to a higher involvement of middle management, and this will lead to more management innovation in the firm. To identify which managers are defined as middle manager the definition of Huy (2001) is followed were the middle manager is two levels below the CEO and one level above line workers and professionals. Depending on the type and size of a firm this can constitute one or multiple layers of middle management, but they will fulfill a similar role mediating between top management and the operations. The two supports of empowerment and strategy involvement of middle managers which could affect the contribution middle management can give to management innovation of the firm are studied at organizational level. Empowerment in general has been studied for its effect on involvement of middle management, leading to contribute to management innovation as mentioned above. A more detailed form of involvement has been studied in the form of involvement in strategy of middle management. Wooldridge and Floyd (1990) suggest the involvement of middle management in the strategy process leads to increasing the possibility for them to initiate and assess alternative courses of action and question strategic decisions. If middle management is able to do that it could result in innovation of the management processes.

2.2 The effect of empowerment of middle management on management innovation

Middle management can fulfill different roles including facilitating decision making and supporting continuous improvement (Klagge, 1996) by involving all workers in changes, innovations and improvements (Frohman & Johnson, 1992). In this role middle management acts as internal change agent driving the innovation in the firm via the management innovation process (Birkinshaw, Hamel, & Mol, 2008). To be able to fulfil this role middle management must have the power to act as change agent which is determined by the level of empowerment available in the organization. Middle management empowerment entails placing the responsibility for decisions and actions at a lower level within the organization and gives the middle management level the tools, resources and authority needed to decide and act (Klagge, 1998). Kanter (1993) describes these empowering work environments as environments that provide information, resources and the opportunity to learn and develop which enhances the power to accomplish work by the middle manager. She concludes that the organization benefits from this because of improved employee attitudes and increased effectiveness.

The positive effect of empowering support in the process of middle manager's strategic decision making and change is found in studies in the health care sector, were evidence was found that work conditions which empower middle managers enable them to learn and grow, also inspiring others in the organization (Currie, 1999; Patrick & Spence Laschinger, 2006). Empowerment of middle management allows the process of problem-driven search, trial and error and reflective experimenting by middle management, which are the main actions middle management have to execute in the role of internal change agent in the pursuit of management innovation (Birkinshaw, Hamel, & Mol, 2008). If the organization gives middle management the room and authority to look deeper into the problem, see the problem in new ways and start to hypothesize about new ways of solving problems, this will lead the organization toward management innovation (Birkinshaw & Mol, 2006). Therefore it is expected that the level of middle management empowerment in the firm effects the contribution the middle manager can make in the process of management innovation in the firm. This leads to the first hypotheses;

Hypotheses 1: As middle management becomes more empowered, management innovation within the organization will increase

2.3 The effect of middle managements involvement in corporate strategy on management innovation

Even though not every employee is actively involved in strategy and setting objectives for the organization, they can be a store of local wisdom and inventiveness (Nicholson, Rees, & Brooks-Rooney, 1990). Studying strategy from a middle management perspective is important because middle managers may play a greater role than top-managers in activities associated with the organizational process of building and renewing capabilities (Wooldridge, Schmid, & Floyd, 2008).

Involvement of middle management in strategy can be seen as a very specific form of empowerment because of its link to the *future* development of the organization making it a long term investment of the company (Tregoe & Tobla, 1990). It may not only empower middle management to act, but give them a greater understanding of the strategic direction, linking the future need from the customer side to the future needs of the organization. Middle management often has relevant detailed knowledge about future developments and organizational capabilities which need to be reflected in an integrative approach towards strategy development (Darkow, 2015). If middle management understands the strategic objectives and is involved in the development of strategy, it can collect relevant information and transport it to the higher layers of management where this needs to be taken into account in the process of strategy formulation (Floyd & Wooldridge, 1997).

This strategic role of middle management helps the organization to respond to change in the environment and adapt to the new situation (Floyd & Lane, 2000). It can help to better understand were management innovation is needed because of the ability to identify managerial constraints in the daily operations which might block the strategic initiatives to materialize. It allows middle management to question strategic decisions and be able to assess alternative courses of action (Wooldridge & Floyd, 1990). Involvement of middle management in strategy determines the understanding of corporate direction and objectives and the power to influence these. Therefore it is expected that a middle manager which is involved more in strategy can fulfill the role of internal change agent as mentioned before (Birkinshaw, Hamel, & Mol, 2008) by identifying the managerial constraints, have the power to propose alternative management practices and test these, increasing the process of management innovation in the firm. This leads to the second hypotheses which is proposed as follows;

Hypotheses 2: As middle management becomes more involved in strategy development, management innovation within the organization will increase

2.4 The effect of Private Equity ownership

The ownership of a company is linked to were firms gain their access to capital. Companies listed on a stock exchange gain capital from public capital markets, and private companies have gained their capital from managers, family managers or via private equity funds. The latter is seen as an innovation in the capital market for financing companies (Wright, Amess, Weir, & Girma, 2009). This is of importance because besides the funding element, it also influences management processes in an organization due to the distance between ownership and control of the firm (Hart, 1995). The differences in corporate governance linked to the type of ownership matter significantly for innovation performance, because of the effect of corporate governance on the contractual relationship between employees and employer (Belloc, 2012), which influences the behavior of employees and managers.

Private equity distinguishes from other ownership forms as being an active investor using incentives and monitoring mechanisms to induce wealth maximization (Jensen, 1989).
A traditional view of private equity ownership of a firm is linked to that of a strong focus for relatively short term profit, control and financial leverage. The effect of private equity ownership is still under debate and empirical studies show varying results (Cumming, Siegel, & Wright, 2007).

On the one hand, the private equity focus for short-term returns for the investors could result in encouragement to reduce employment and treat employees in an exploitative manner (Froud & Williams, 2007). When this occurs it could result in a lower level of trust and a feeling of insecurity amongst middle management, based on the view of private equity ownership leading to the reduction of management layers and job losses often claimed by trade unions (Rodrigues & Child, 2010). Then, even when middle management is empowered, the expected effect on management innovations could be negative because middle managers could be more risk averse and then only contribute to management innovations if it is clear beforehand it will contribute to the expected performance.

The same could be valid for strategy involvement. Even when middle management is involved in strategy development, actually making a contribution could also be depended on how safe they feel to contribute. Darkow (2015) shows that a consensus driven culture is needed to involve middle management in strategy development. In the context as described above were middle management perceives the culture as being exploitative and not based on trust does not match with a drive for consensus, which stimulates active involvement of middle management in strategy development.

On the other hand there is evidence that private equity involvement results in more innovation and growth due to better incentives and room for investment (Bruining, Boselie, Wright, & Bacon, 2005). The (mostly financial) incentive linked to expected performance can then show a positive effect for middle management to implement new management practices. In a later study Bruining et al (2011) suggest that private equity ownership helps organizations to become more ambidextrous which creates more room for (management) innovation to occur, creating opportunity for managers of the organization to take the lead in innovations. Learning from the experience of the private equity firm involved can play a role in improving performance and leading to better managers (Cumming, Siegel, & Wright, 2007).

The performance incentives could have a positive effect on the relation between empowerment and management innovation because it could increase the motivation for the middle manager to go the extra mile, and use its empowerment to develop, adapt and implement the new management approaches leading to increased performance, which is then rewarded with the incentive for example in the form of a financial bonus.

Learning from the experience of private equity helps to increase knowledge of middle managers on the strategy process. This in its turn can then have a positive effect on the relation between strategy involvement and management innovation, because as their understanding of how strategy is developed increases, it is also easier for them to understand the need to change current management practices and actively contribute to the management innovation process and speed this up.

Since literature so far gives a varying view it is not clear on beforehand if, and what effect can be expected; a positive or negative. Looking at some empiric evidence and analyses of cases where companies with private equity involvement went bankrupt, these show the blame was not the so much the involvement of private equity, but were due to the financial crisis, a change in government policy or out of date business models still in use (Jorritsma & van Voorst tot Voorst, 2016). Bruining et al (2005) suggest that buy-out firms (with private equity involvement) have a positive effect on employee relations and show, amongst others, an increase in employee involvement.

The extensive focus for the exploitation of opportunities by private equity backed buy-outs results in positive effects due to the incentives to show a good performance (Cumming, Siegel, & Wright, 2007). These studies suggest that it is the other forms of ownership that have a negative impact on (management) innovation due to agency related problems or a dominant view of the owner in the situation of a family owned business, which negatively influence the effect of empowerment of middle managers and reduce their influence in setting the strategy of the organization. These effects of leadership have been studied by Vaccaro et al (2012), which suggest the role of top managers and CEO's is instrumental in creating the organizational context conducive to experimentation with and introduction of new processes, practices or structures.

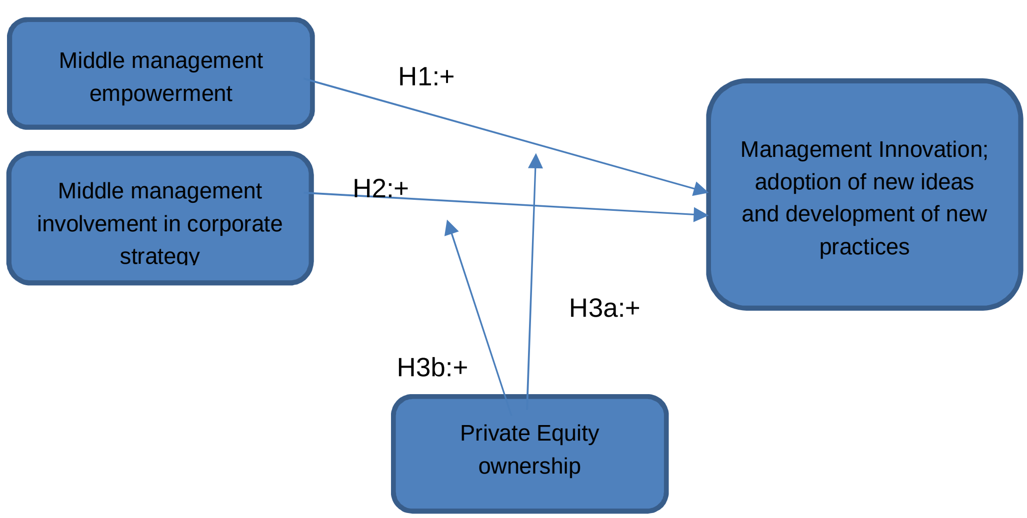
From what is found in literature, the positive effects on the relationships of empowerment and strategy involvement on management innovation, through incentives coupled to performance and access to a broad knowledge base related with private equity ownership, is expected to be stronger then the possible negative effects of suspicious and low trust in private equity ownership.

This leads to the two final hypothesis ;

Hypotheses 3a: The relation between middle manager's empowerment and management innovation will be stronger in a private equity owned firm than in a firm not owned by private equity

Hypotheses 3b: The relation between middle manager's strategy involvement and management innovation will be stronger in a private equity owned firm than in a firm not owned by private equity

The relations of the constructs that have been formulated have been further conceptualized in a model:



3 RESEARCH DESIGN

For this study a survey was designed and send to a group of 266 Dutch companies larger than 50 fte in the private sector providing professional services both with and without private equity involvement. The professional service sector is characterized by the intangible nature of services making product innovation in this sector easily observable for competitors, and therefore innovations of organizational practices and processes are especially important for this sector to obtain an advantage over competition (Nieves, 2016). This makes this sector an interesting focal point for this study. Data was collected over a period of eight weeks by sending the survey to a selected group of respondents.

3.1 Sample

To make sure the firms included in the sample for this study were useful and relevant, the following criteria were used; first selected companies were providing a professional service, second they were privately held and third all companies were larger than 50 fte. It was the researchers assumption this is a minimum for having a middle management layer, after not having found a minimum number of employees in literature. From the respondents no feedback was received that no middle management layer was present which validated this assumption. A random sample was drawn of 266 Dutch private firms providing services (both technical as business service) using two sources. The first source used was the database of the NVP (the Dutch association of Participation firms) from which 66 companies within the criteria were randomly selected, with a level of private equity participation of >50%, to ensure a sufficient number of PE owned firms were in the sample. The second source was the network of the researcher containing a broad group of services companies meeting the criteria of which 200 were randomly selected, although in this group it was not always known beforehand if PE was involved. Only Dutch firms were selected in the sample because the effects that institutional contexts can have on empowerment (Bruining, Boselie, Wright, & Bacon, 2005).

3.2 Data Collection

No databases were available containing the required information on middle management empowerment and involvement in strategy linked to management innovation, therefore a survey was designed to collect the necessary data. This survey was designed and administered digitally (using the Survey monkey application, annex III) and was send using email and other electronic means. The advantage of this is that participating in a digital survey is fairly quick and easy for the respondents, the used application provides an SPSS output, and respondents will see if a question is missed resulting in a lower number of invalid responses. The use of a premium Linkedin account, a paid account allowing to send direct mails to people you are not connected with, proved to be very helpful. It enabled the researcher to send the request directly to the relevant respondents with a personal explanation of the study. Using this approach a request to participate in the survey with an explanation of the background of this study was send to the contact person of the firm if known (71) or to a general email address (195) with the request to forward it to the correct person.

In the request it was asked for the survey to be filled by middle managers using the definition of Huy (2001) as a manager which is at least two levels below the CEO and one level above line workers and professionals, and a top manager (the CEO, managing director or top-manager). By asking the survey to be filled out by multiple managers including a top-manager an ex ante attempt was made to address the risk of same-respondent replies resulting in common method variance in line with the best practice approaches of Chang et al (2010).

The respondents were assured that all responses were treated confidentially, thereby reducing the risk they modified their answers to conform to any perceived expectations. The constructed survey was pre-tested for readability by sending it to a group of seven middle managers from one specific respondent in which two layers of middle management were available and willing to participate, to check if the grammar used was clear and understandable and to validate the survey as it was designed for this study. The seven returned comments were used to improve the textual setup of the survey. After this, a small pilot study was done to pre-check the reliability of the used scales, which resulted in the acceptance of these scales as suitable for this study.

The targeting of managers in this study reflects the role of human agency in management innovation acting as internal change agents (Birkinshaw, Hamel, & Mol, 2008; Vaccaro, Jansen, Van Den Bosch, & Volberda, 2012). The respondent managers were suited to give the adequate responses given their role and knowledge of the firm. Respondents were ensured confidentiality and offered a summary of the results by leaving their name and email address. As compensation for participating in the survey, respondents could choose between three charity organizations which received a donation for each completed survey, as an attempt to increase response. After the initial request a follow up request was sent after two weeks if no response was received yet.

After the eight weeks of collecting data via the online survey 93 responses were collected from individuals. From 6 organizations multiple responses were collected, for all the other organizations only a single response was received. The results from the 6 organizations from which multiple responses were collected, showed comparable inter-company results and were aggregated into a single response. Some responses were incomplete and therefore discarded. The end result was 63 usable responses and thus a response rate of 23,6%, which was higher than comparable studies on management innovation as for example the study of Vaccaro et al (2012) which had a response rate of 15,1 %. Due to the planning of this thesis it was decided to close the survey after 8 weeks when responses after various reminders started to decline.

After the ex-ante attempt to prevent common method bias, the dataset was tested for this ex-post using the Harman's one factor test. The result showed the variance explained by a single factor was 28,34% which confirms that with this test no common method bias was detected.

3.3 Measures and Validation of Constructs

In the survey validated scales from earlier studies have been used to measure the variables. These have been combined in the survey together with general information and controls.
The scales have all been converted to a multiple item measure with a 7 point Likert scale.

Dependent Variable

The scale to measure management innovation was derived from Vaccaro et al (2012) which is a well-designed measure consisting of six items that reflect all three facets of management innovation and the organizational context which makes it a usable scale. With this scale Vaccaro et al (2012) reflect the manifestation of management innovation in new practices, processes and structures which are the three facets indicating what managers do, how they do it, and the organizational context. This study follows the reasoning of Vaccaro et al (2012) that this focus helps to create a bigger pool of management innovations due to a bigger focus on management innovation even if it is not labeled as such. It has been successfully tested for sufficient discriminant- and convergent validity by Vaccaro et al (2012). Each item has been measured on a 7-item scale, reaching from "strongly disagree" (1) to "strongly agree" (7). Following Vaccaro et al (2012) the average of the items was used to create a single index for management innovation. The scale reliability was assessed after the data was collected resulting in an alpha coefficient of 0,703 (see annex II) giving a slightly lower reliability as Vaccaro et al (2012), but it was deemed reliable enough for inclusion in this study.

Independent and moderating variables

For measuring managerial empowerment the validated scale of Fenton-O'Creevy (2001) has been adapted which measures the extent to which respondents have control over resources, access to information and discretion in how they carry out their work. This is a measure that captures empowerment from the middle management perspective. It consists of an eight item measure, originally with a five point Likert scale, which for this study was converted to the same seven point Likert scale to align it with the measurement of the dependent variable.

Following Fenton-O'Creevy (2001) the mean was calculated as a single index for empowerment of middle management, with negatively items reversed (for questions 13 and 15 which were reversed as check). The scale reliability was assessed after the data was collected resulting in an alpha coefficient of 0,801 (see annex II) giving a comparable reliability as Fenton-O'Creevy (2001).

For measuring middle management involvement in strategy the validated scale of Floyd and Wooldridge (1992) was adapted which measures how middle managers are involved in this process in the different roles middle managers can have. It consists of a sixteen item measure with a five point Likert scale divided over 4 categories of roles for the middle manager; championing, implementing, facilitating and synthesizing. Here also a seven point Likert scale has been used to align it with the measurement of the dependent variable.

Because the alpha's for the original scales from the study of Floyd and Wooldridge (1992) are relatively low, 3 items were added to increase validity directly measuring strategy involvement of middle management. The combined scale was used as measure for strategy involvement also with the calculated mean as the single index for strategy involvement of middle management. The scale reliability was assessed after the data was collected resulting in an alpha coefficient of 0,899 (see annex II) showing a higher reliability then the original scales of Floyd and Wooldridge (1992) with the inclusion of the three additional items.

To test the hypotheses both PE as non-PE owned firms needed to be examined. Therefore the survey was send to a group of PE and a group of non-PE firms. A question was added to check the level of private equity involvement for this group by asking if private equity involvement was; less than 25%, between 25-50% or more than 50%. This was designed to allow for assessment if increased involvement resulted in increased effect. After collecting the data only two groups could be identified, firms with less than 25% and firms with more than 50% PE involvement. This resulted in this moderating variable to become a dichotomous variable in the statistical analysis.

Control variables

Two control variables have been taken into account for potential alternative explanations. First was size of the organization, following the argument of Vaccaro et al (2012) that this is a key contextual variable studying management innovation as it relates to the underlying added complexity of pursuing management innovation in organizations of different sizes.

And as a second control measure the level of competition of the environment of the organization was added, as the external environment has a moderating role in innovation (Jansen, Van den Bosch, & Volberda, 2006). For the measure the classification of Volberda (2004) was used which defines four extreme types of environmental turbulence; stable, moderately competitive, hyper competitive and extreme competitive.

3.4 Data analysis

After the dataset was completed and corrected for inconsistencies, incomplete data was removed, multiple responses per organization were aggregated into a single response and first conclusions were drawn from the descriptive statistics. Evaluation of the means of the measured variables were included in this analysis. To check the existence of possible relationship of the variables in this study, a bivariate analysis was executed based on correlation coefficients (5 % significance level).

To measure the relation of the different variables according to the conceptual model, a multiple hierarchical regression was applied. Before computing the interactions, the variables were mean-centered (Kraemer & Blasey, 2004).

For testing the hypothesis the regression analyses was executed with management innovation as the dependent variable after which multiple models have been tested; just the control variables, the independent variables “empowerment” and “strategy involvement”, the moderating role of PE ownership and interaction terms.

A check was also done if the variables included in the sample showed a normal distribution and if no outliers could be identified for the variables “empowerment”, “strategy involvement” and “management innovation”. All variables show a normal distribution and could be included in the regression analyses (figure 3.1).

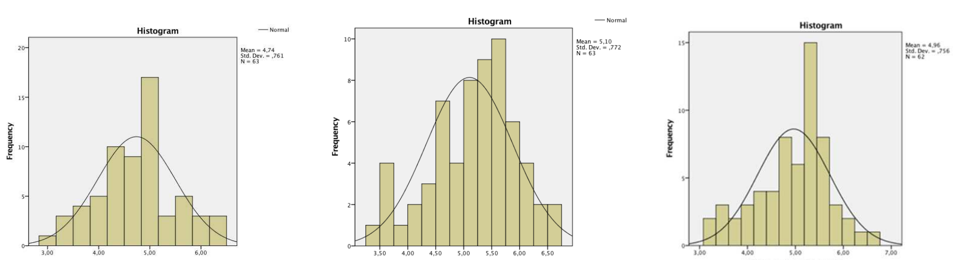


Figure 3.1: distributions of the variables

For the dataset of “empowerment” and “ strategy involvement” no outliers were found. For the dataset of “management innovation” one outlier was found. This respondent scored significantly lower on management innovation. This respondent was further investigated and it was found that this is a very specific company which provides a calibration service which is executed under strict regulations. Although the level of empowerment was relatively high, the level of management innovation was low. An inquiry with the respondent revealed that due to the requirement of following the strict regulations, the items used to measure the construct of management innovation were relatively low, because these regulations don’t allow changes as implied by the measurement of management innovation in this study. Since the outlier result didn’t affect the results, but was in conflict with the assumptions of this study it was decided to remove this result from the dataset in line with the guideline of Grace-Martin (2012).

4 RESULTS

4.1 Dataset and Descriptive statistics

The dataset consisted (see annex 1) of 23 PE owned firms (36,5%) versus 40 non-PE owned firms (63,5%). The number of fte. employed reached from 50 to 95000, with a mean of 3057. Of the respondents 9 (14,3%) were female and 54 (85,7%) were male, 61,9% were of the age group 40-60 and 89,1% had an educational level of Bachelor (HBO) or higher.

The level of education was high in this sample which is of importance because relates to the idea that to be able to transfer ideas into innovations, individuals must acquire human capital including amongst others knowledge, education and training (Subramanian, Rok Choi, Lee, & Hang, 2016). This could then implicate that middle managers with a higher education level would be better able to contribute to the process of management innovation. Because the majority of the middle managers in the sample had a high education, this can be considered constant.

Figure 4.1 shows there was a slight difference in the level of management innovation and empowerment between PE and Non-PE owned firms, with PE owned firms showing a relative higher average score for both.

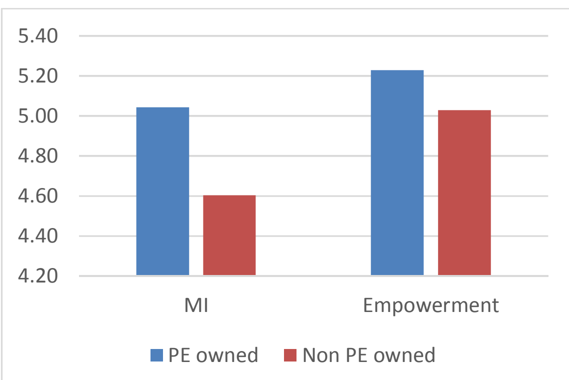


Figure 4.1: PE and Non-PE firms compared

Table 4.1 shows the statistical summary and correlations between the variables, where the general used significance levels (p<0,10, 0,05 and 0,01) were used to indicate if a found correlation is significant.

The correlation analysis show a positive correlation between empowerment and management innovation which is statistically reliable (p<0,01), a positive correlation between involvement in strategy of middle management and management innovation which is also statistically reliable (p<0,05) and a statistical reliable (p<0,05) correlation with PE ownership. No significant correlation with the control variables was found.

Since these are the main constructs studied and a moderately strong correlation was found, this supports the direction of the study. It shows a first indication that increasing empowerment and strategy involvement of middle management could lead to a higher level of management innovation. The correlation with PE ownership indicates that there is a possible interaction effect. This is further explored by conducting regression analyses on these main constructs, investigating their relation and the possible moderating effect of PE ownership.

Table 4.1: Means, standard deviations, correlations between the variables

		Mean	S.D.	1	2	3	4	5
1.	Management Innovation	4,7661	0,73332					
2.	Organization Size (# of fte.)	3056,55	12160,791	0,022				
3.	Level of competition	2,5323	0,76217	0,177	0,096			
4.	Empowerment	5,1028	0,77833	0,333**	-0,165	-0,090		
5.	Strategy involvement	4,9643	0,75569	0,295*	0,052	-0,044	0,628**	
6.	PE ownership (centered)	-0,1290	0,48701	0,293*	-0,095	0,166	0,125	0,105

* p<0.05, ** p<0.01

From the correlation analysis, a correlation was also found between the two independent variables indicating possible multicollinearity. The found correlation of 0,628 is too high. If this happens the possible solutions are to omit the distorting variable, combine the variables with a high mutual correlation (van der Velde, Jansen, & Anderson, 2004), or execute separate independent regression analysis per variable. The latter was chosen since the correlation analysis show significant correlation for both independent variables.

4.2 Regression analyses empowerment and management innovation

The dataset without the removed outlier was submitted to a multiple hierarchical regression analysis to test the hypotheses 1 and 3a. To further reduce the potential for multicollinearity the strategy of Kraemer & Blasey (2004) was followed, by centering the dichotomous variable of PE ownership (+1/2 and -1/2) before calculating the interaction terms. The variance inflation factors (VIF) were also assessed but did not indicate risk of multicollinearity. The results of the regression analyses can be found in table 4.2.

Table 4.2: Results of hierarchical regression analyses: empowerment and management innovation

	Model 1	*Model 2*	*Model 3*	*Model 4*
(Constant)	*4,334***	*2,518***	*2,806***	*2,772***
Controls				
Number of employees	0,005	0,062	0,084	0,082
Level of competition	0,177	0,204 †	0,161	0,161
Empowerment of Middle management		0,362**	0,332**	0,339*
PE ownership (centered)			0,233 †	0,159
Interaction PE (centered) x Empowerment				0,074
R^2	0,032	0,158	0,209	0,209
$\triangle R^2$	-0,001	0,115	0,154	0,139
F	0,96	3,63*	3,769**	2,964*
N	62	62	62	62

† p<0.10, * p<0.05, ** p<0.01

In model 1 only the control variables number of employees and level of competition were entered. Looking at the results of this regression with management innovation as the dependent variable in interaction with the control variables, no significant results were found. Thus the number of employees and the level of competition have no significant alternative explanatory effect.

In model 2 the independent variable of empowerment of middle management was included to test (hypothesis 1) whether a significant relationship exists between empowerment of middle management and management innovation. The results of this regression show a significant result, were b= 0,362 (p<0,01) for empowerment. From this it can be concluded that support is found for hypothesis 1, and that management innovation is increasing with 0,362 when empowerment of middle management increases by a point.

In model 3 the moderator variable of PE ownership was included to test if PE ownership has a direct effect on the relationship between empowerment and management innovation. An effect can be seen which is moderately significant (p<0,10) showing an increase of the explanatory effect for PE owned companies. The results of the regression show a significant result were b= 0,332 (p<0,01) for empowerment, and b= 0,233 (p<0,10) for PE ownership of the firm. The lower reliability of the PE ownership effect, could result from the smaller group of PE owned firms (n=23) in the sample. From this it can be concluded that PE ownership increases the effect of empowerment on management innovation with 0,233.

To test if an effect could be seen from the interaction between PE ownership and empowerment this interaction was calculated and entered as model 4. No significant result was found. Because no significant interaction was found, this regression analysis indicates that the effect of empowerment on the management innovation is not significantly different between the PE and non-PE owned firms. This does not support hypothesis 3a, and thus no support is found for a moderating effect of PE ownership on the relation between empowerment of middle management and management innovation. Because this was expected and correlation was found, some additional explanatory questions were asked to the respondents with the highest management innovation scores for PE owned companies. Results indicate an effect, although this could not be confirmed in this quantitative analysis.

Although no support was found for a moderating effect of PE ownership, a plot was created to visualize the effects in PE and non-PE firms. Figure 4.2 to shows the interactions of empowerment of middle management in PE owned versus Non-PE owned companies.

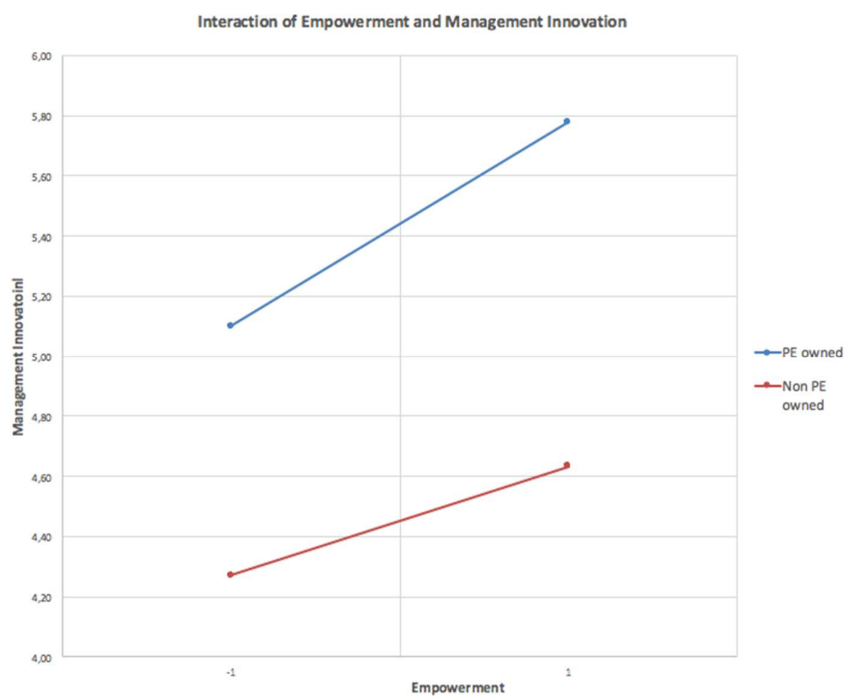


Figure 4.2: Interaction of Empowerment and Management Innovation; the effect of PE ownership

4.3 Regression analyses strategy involvement and management innovation

The dataset without the removed outlier was submitted to a second multiple hierarchical regression analysis to test the hypotheses 2 and 3b. Also in this analyses to further reduce the potential for multicollinearity the strategy of Kraemer & Blasey (2004) was followed, by centering the dichotomous variable of PE ownership (+1/2 and -1/2) before calculating the interaction terms. The variance inflation factors (VIF) were also assessed but did not indicate risk of multicollinearity. The results of the regression analyses can be found in table 4.3.

Table 4.3: Results of hierarchical regression analyses: strategy involvement and management innovation

	Model 1	*Model 2*	*Model 3*	*Model 4*
(Constant)	*4,334***	*2,837***	*3,124***	*3,322***
Controls				
Number of employees	0,005	-0.012	0,016	0,011
Level of competition	0,177	0,192	0,148	0,175
Strategy involvement of Middle management		0,304*	0,275*	0,224 †
PE ownership (centered)			0,241 †	1,674*
Interaction PE (centered) x Strategy Involvement				-1,450 †
R^2	0,032	0,123	0,178	0,224
$\triangle R^2$	-0,001	0,078	0,121	0,155
F	0,96	2,719 †	3,091*	3,232*
N	62	62	62	62

† p<0.10, * p<0.05, ** p<0.01

Again in model 1 only the control variables number of employees and level of competition were entered of which the result is the same as in the regression with empowerment (table 4.2).

In model 2 the independent variable of strategy involvement of middle management was included to test (hypothesis 2) whether a significant relationship exists between involvement of middle management in strategy and management innovation. The results of this regression does show a significant result, were b= 0,304 (p<0,05) for strategy involvement. From this it can be concluded that support is found for hypothesis 2, and that management innovation is increasing with 0,304 when the involvement of middle management increases by a point.

In model 3 the moderator variable of PE ownership was included to test if PE ownership has a direct effect on the relationship between strategy involvement of middle management and management innovation. An effect can be seen which is moderately significant (p<0,10) showing an increase of the explanatory effect for PE owned companies. The results of the regression show a significant result were b= 0,275 (p<0,05) for strategy involvement, and b= 0,241 (p<0,10) for PE ownership of the firm. The lower reliability of the PE ownership effect, could result from the smaller group of PE owned firms (n=23) in the sample. From this it can be concluded that PE ownership increases the effect of strategy involvement of middle management on management innovation with 0,241.

To test if an effect could be seen from the interaction between PE ownership and strategy involvement, this interaction was calculated and entered as model 4. The results of this analyses show that an interaction effect is found which is moderately significant with b= -1.450 (p<0,10). This does not support hypothesis 3b, and indicates that increasing involvement of middle management in strategy has a stronger effect in Non-PE owned companies.

To further visualize this effect a plot was created in figure 4.2 which shows the interactions of strategy involvement of middle management in PE owned versus Non-PE owned companies.

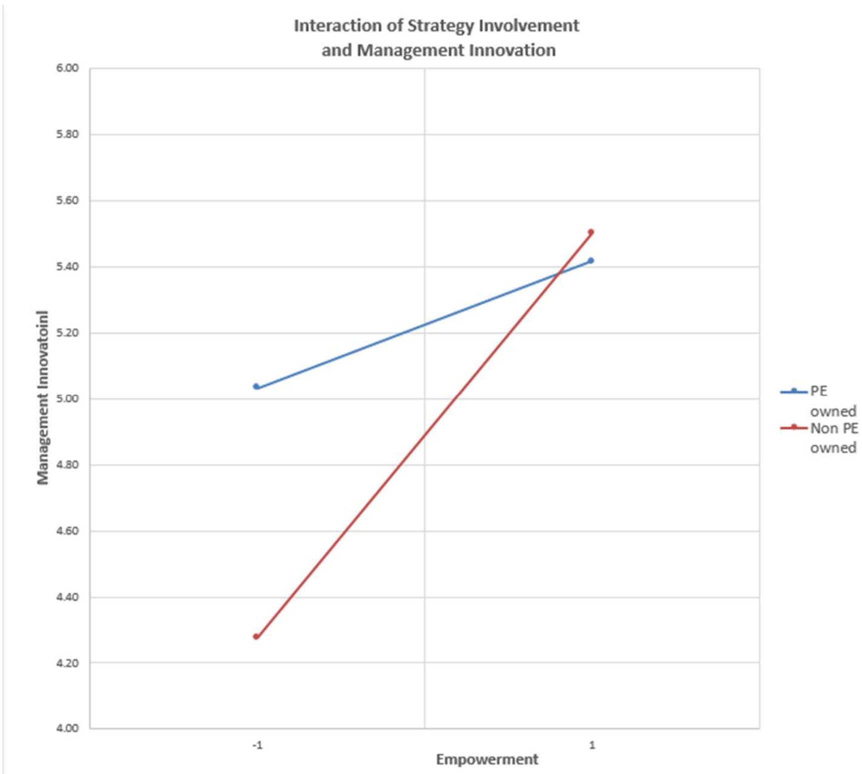


Figure 4.3: Interaction of Strategy Involvement and Management Innovation; the effect of PE ownership

The plot shows the effect is stronger in Non-PE firms.

5 DISCUSSION, CONCLUSION AND FUTURE RESEARCH

5.1 Main conclusions and discussion

The increasing attention for studying management innovation is important, to increase the knowledge on its contribution to the overall innovation process and renewal of the firm. The aim of this study was to gain more insight on how the organizational supports for middle management can influence the process of management innovation in the firm, and what the effect is of private equity ownership on this process.

The results confirm Dixons (1995) proposition that empowerment of middle management leads to a positive contribution to the renewal of the firm, and reflect the idea that empowerment does give middle management the tools, resources and authority to act as the change agent and driving the management innovation process suggested by Klagge (1998). The results underpin the importance of empowerment and its effects on management innovation performance to contribute to future development and growth. It shows that empowerment of middle management not only leads to learning, growth and inspiration of middle management as proposed by Currie (1999) and Patrick et al (2006), but also materializes in an actual increase of the level of management innovation in the firm. The findings reflect the role human agency plays in pursuing management innovation (Birkinshaw, Hamel, & Mol, 2008), with middle management fulfilling a critical role in changing practices, processes and structures of the organization. By increasing the empowerment of middle managers, the level of management innovation in the firm will also increase. The results also show that a higher involvement of middle management in strategy increases the management innovation in the firm, confirming the proposition of Wooldridge et al (2008) that middle management plays an important role in the process of building and renewing the capabilities of the firm. It shows that a broader and shared understanding of the strategical direction of the firm that includes middle management, is an effective way to increase management innovation. Since, in parallel to the strategy process, management innovation is an incremental and emerging process following the arguments of Wooldridge and Floyd (1989), this should lead top managers to understand the benefits of including middle management in the strategy development process. This study followed the proposition of Dixon (1995) that middle management needs empowerment and strategy involvement as forms of support to make a positive contribution to renewal. In her study other supports defined as “allowing and supporting entrepreneurship” and “allowing and supporting cross-functional teamwork” are also mentioned which could be interesting additional supports for future research, in particular if in combination with the supports from this study the explanatory effect on management innovation would further increase. More research to a broader spectrum of supports could then reveal which are the most effective supports for middle management enhancing the process of management innovation in the firm. Moreover this study only looked at companies in the service industry. Additional research in others industries could reveal if these effects can also be seen elsewere.

This study also investigated the moderating effect of PE ownership of the firm on the relation between empowerment and management innovation following the reasoning of Bruining et al (2005) that this would have a positive effect. No significant evidence was found to support the indication that PE ownership would increase the effect that empowerment has on management innovation. This could be an effect of a relatively small group of PE owned companies in the sample. Additional research with a larger pool of PE owned companies would be valuable to either confirm that no effect exists, or indicate a significant effect can be found. Because an effect was expected additional qualitative research could also be useful to understand the learning effect as proposed by Cumming et al (2007) which indicates a positive effect could come from learning from the experience of PE ownership. A first attempt for this was made after the initial survey in this study, by asking the two respondents with the highest scores for management innovation (respondents T and X) to answer a specific additional question after the data collection: “In what way did PE ownership support you and your company towards management innovation?”. From the feedback the most important concept was that the PE firm challenged the company to improve performance in several ways without directly interfering in how this should be done. One of the two indicated that the company gained a lot from the financial management experience of the PE ownership to help and improve management practices. This indicates that additional research on the topic could be valuable. Future research could combine repeating the quantitative measurement from this study in a larger pool of PE owned firms with a qualitative approach to understand how PE involvement effects the relation of empowerment and management innovation. A moderately significant effect was found for the moderating role of PE ownership on the relation between strategy involvement of middle management and management innovation. The results show that involving middle management has a stronger effect in non-PE owned companies than in PE owned companies. This effect could be explained by the fact that including middle management in the strategy process creates more shared control increasing their influence and reducing any negative governance effects as proposed by Boeker & Goodstein (1993) on the management innovation process. These governance issues tend to have a larger effect in non-PE firms (Bruining, Verwaal, & Wright, 2011) explaining that if mitigated by more involvement of middle management, this would have a bigger impact than in PE firms were the government issue is less. The results indicate that increasing the involvement of middle management in strategy, has a stronger effect in non-PE companies.

5.2 Management Implications

All companies, no matter what the ownership structure, can benefit from increasing empowerment and strategy involvement in their pursuit of management innovation. By increasing both type of middle management supports, the level of management innovation in the firm will increase, which will support the necessary renewal of the firm as indicated in the introduction of this study.

Non-PE owned companies should pay specific attention to the involvement of middle management in the strategy process of the firm, because a stronger effect on the management innovation process can be expected.

5.3 Limitations

The sample size for this study remained relatively small despite the efforts taken to have a larger respondent level. In particular the number of PE owned respondents was relatively low which is of influence on the representativeness of the results and overall effect found for PE ownership. Repetition of the study with a larger sample size would be recommended to further test the hypotheses with a higher reliability. A longer period for sample collection would then be necessary and a closer collaboration with PE associations, asking them to mediate to have a larger pool of PE owned firms in the sample. The response rate of PE firms has been lower and from the feedback it can be concluded that these companies are more reluctant to cooperate in a study like this, despite efforts to account for confidentiality. Mediation from a PE association (like the NVP Dutch association for participation firms) could help to overcome this reluctance.

The used scale for management innovation from Vaccaro et al (2012) resulted in an alpha of 0,703 which was accepted, but was relatively low compared to the other scales. A reliability test of the items in the scale was performed but there were no items which could be removed that would increase the reliability of the scale. Future research should look if stronger alternative scales or additions to the scale could improve the reliability for the measurement of management innovation.

After concluding that multicollinearity existed between the two independent variables, three respondents were asked if they found the two distinctive enough. Two replied that the two were seen as one item, one found there were too much questions for “strategy involvement” leading to repeating answers used before without giving the questions to much thought. This can contribute to the strong correlation and insufficient distinctiveness of the measurement of the two independent variables. It is recommended that in future research a combined scale be used, while reducing the number of items.

The outlier found in the dataset of management innovation showed a significant lower score for management innovation and relative high results for empowerment. Further investigation revealed that this company delivers a specific service that is highly regulated. These regulations have a high impact on management system and other aspects of management innovation as was studied. It can affect management innovation negatively because constrictions the regulations prevent making major changes in the management practices. Future research should consider this. It could be both an interesting angle for future research, but also a parameter to control for in a broader oriented sample.

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ANNEX I: DATASET

Resp.	#_fte	Competition	PE_ownership	Educationlevel	Role	managementinnovation_mean	empowerment_mean	PE_owned	PE_owned_centered	Stable_centered	Moderate_centered	Hyper_centered	Extreme_centered	Interaction_PE_EMP
A	135	2.00	1.00	5.00	0.00	5.33	6.13	1.00	0.50	-0.25	0.75	-0.25	-0.25	3.06
B	235	3.00	1.00	4.00	2.00	5.00	4.50	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.25
C	85	3.00	1.00	4.00	2.00	4.67	5.00	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.50
D	233	2.00	1.00	5.00	2.00	5.50	5.75	1.00	0.50	-0.25	0.75	-0.25	-0.25	2.88
E	75	2.00	1.00	4.00	2.00	5.17	4.50	1.00	0.50	-0.25	0.75	-0.25	-0.25	2.25
F	100	3.00	1.00	4.00	2.00	4.67	4.38	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.19
G	56	3.00	1.00	5.00	1.00	5.17	4.88	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.44
H	90	3.00	1.00	4.00	2.00	4.67	5.50	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.75
I	500	2.00	1.00	4.00	0.00	5.17	5.25	1.00	0.50	-0.25	0.75	-0.25	-0.25	2.63
J	1300	4.00	1.00	4.00	2.00	5.00	5.50	1.00	0.50	-0.25	-0.25	-0.25	0.75	2.75
K	8000	2.00	1.00	5.00	1.00	4.33	5.50	1.00	0.50	-0.25	0.75	-0.25	-0.25	2.75
L	2500	3.00	1.00	4.00	2.00	4.67	4.75	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.38
M	8000	3.00	1.00	4.00	2.00	4.83	5.75	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.88
N	130	3.00	1.00	5.00	0.00	5.00	4.50	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.25
P	80	4.00	1.00	4.00	1.00	4.83	5.13	1.00	0.50	-0.25	-0.25	-0.25	0.75	2.56
Q	3200	3.00	1.00	5.00	1.00	5.67	5.13	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.56
R	200	1.00	1.00	5.00	2.00	5.67	4.63	1.00	0.50	0.75	-0.25	-0.25	-0.25	2.31
S	4300	3.00	1.00	5.00	1.00	3.17	5.13	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.56
T	150	2.00	1.00	5.00	2.00	5.83	6.00	1.00	0.50	-0.25	0.75	-0.25	-0.25	3.00
U	140	2.00	1.00	4.00	2.00	5.00	5.00	1.00	0.50	-0.25	0.75	-0.25	-0.25	2.50
V	350	4.00	1.00	3.00	2.00	5.83	5.38	1.00	0.50	-0.25	-0.25	-0.25	0.75	2.69
W	240	2.00	1.00	5.00	2.00	4.67	5.63	1.00	0.50	-0.25	0.75	-0.25	-0.25	2.81
X	5800	3.00	1.00	4.00	2.00	6.17	6.38	1.00	0.50	-0.25	-0.25	0.75	-0.25	3.19
Y	100	3.00	3.00	5.00	2.00	4.33	5.00	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.50
Z	110	3.00	3.00	4.00	2.00	4.67	5.75	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.88
AA	450	3.00	3.00	4.00	2.00	3.67	3.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-1.75
AB	60	2.00	3.00	4.00	1.00	5.67	5.75	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-2.88
AC	150	3.00	3.00	2.00	1.00	5.17	6.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-3.25
AD	350	3.00	3.00	4.00	1.00	4.00	4.63	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.31
AE	51	3.00	3.00	3.00	2.00	5.17	5.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.75
AF	120	3.00	3.00	4.00	0.00	4.17	5.25	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.63
AG	1200	3.00	3.00	5.00	2.00	6.17	5.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.75
AH	10000	3.00	3.00	5.00	1.00	5.17	5.38	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.69
AI	800	1.00	3.00	4.00	2.00	5.17	5.88	0.00	-0.50	0.75	-0.25	-0.25	-0.25	-2.94
AJ	80	3.00	3.00	3.00	2.00	3.67	5.25	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.63
AK	180	2.00	3.00	2.00	2.00	5.83	5.63	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-2.81
AL	3500	1.00	3.00	4.00	2.00	4.00	4.38	0.00	-0.50	0.75	-0.25	-0.25	-0.25	-2.19
AM	100	1.00	3.00	5.00	1.00	3.33	5.75	0.00	-0.50	0.75	-0.25	-0.25	-0.25	-2.88
AN	10000	3.00	3.00	5.00	2.00	6.33	5.63	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.81
AO	51	3.00	3.00	5.00	1.00	5.00	6.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-3.25
AP	53	3.00	3.00	3.00	0.00	4.50	5.63	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.81
AQ	52	2.00	3.00	4.00	2.00	5.00	6.25	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-3.13
AR	300	2.00	3.00	4.00	2.00	5.33	5.25	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-2.63
AS	10000	3.00	3.00	4.00	0.00	5.50	3.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-1.75
AT	75	2.00	3.00	4.00	2.00	4.33	4.50	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-2.25
AU	160	3.00	3.00	5.00	2.00	4.33	4.13	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.06
AV	1800	1.00	3.00	5.00	1.00	3.83	5.13	0.00	-0.50	0.75	-0.25	-0.25	-0.25	-2.56
AW	65	2.00	3.00	4.00	0.00	3.67	6.00	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-3.00
AX	1200	3.00	3.00	5.00	2.00	3.33	3.38	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-1.69
AY	4000	3.00	3.00	5.00	0.00	5.33	4.25	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.13
AZ	4500	2.00	3.00	5.00	2.00	4.67	5.50	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-2.75
BA	105	3.00	3.00	2.00	1.00	4.33	4.75	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.38
BB	335	3.00	3.00	4.00	2.00	4.83	3.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-1.75
BC	3500	1.00	3.00	4.00	2.00	3.50	3.75	0.00	-0.50	0.75	-0.25	-0.25	-0.25	-1.88
BD	95000	3.00	3.00	5.00	2.00	4.67	4.13	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.06
BE	2200	3.00	3.00	4.00	2.00	5.17	5.38	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.69
BF	50	3.00	3.00	5.00	1.00	4.33	3.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-1.75
BH	200	2.00	3.00	5.00	2.00	4.33	6.00	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-3.00
BI	900	2.00	3.00	4.00	0.00	4.00	5.38	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-2.69
BJ	100	1.00	3.00	4.00	1.00	4.33	4.50	0.00	-0.50	0.75	-0.25	-0.25	-0.25	-2.25
BK	1500	3.00	3.00	5.00	2.00	4.33	4.75	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.38
BL	210	2.00	3.00	5.00	2.00	4.33	5.25	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-2.63

ANNEX II: RELIABILITY CHECK USED SCALES (SPPS OUTPUT)

Scale: Management_innovation

Case Processing Summary

		N	%
Cases	Valid	63	100,0
	Excluded[a]	0	,0
	Total	63	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,703	6

Scale: Empowerment

Case Processing Summary

		N	%
Cases	Valid	63	100,0
	Excluded[a]	0	,0
	Total	63	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,801	8

Scale: Strategy_involvement

Case Processing Summary

		N	%
Cases	Valid	63	100,0
	Excluded[a]	0	,0
	Total	63	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,899	19

ANNEX III: SURVEY QUESTIONS

General open questions:
- Company name
- Type of industry
- Number of employees
- Description of competitive environment of the company
- Number of share owned by Private Equity
- Age
- Gender
- Highest level of education
- Role in the organization

Questions on Management Innovation (7 point Likert from I strongly disagree to I strongly agree):
- Rules and procedures within our organization are regularly renewed
- We regularly make changes to our employees' tasks and functions
- Our organization regularly implements new management systems
- The policy with regard to compensation has been changed in the last three years
- The intra- and inter-departmental communication structure within our organization is regularly restructured
- We continuously alter certain elements of the organizational structure

Questions on Middle manager empowerment (7 point Likert from I strongly disagree to I strongly agree):
- I have good access to the information I need to do my job
- I could perform my job more effectively with better access to information
- I have sufficient control over resources to do my best work
- I could do a much better job with better control over resources
- I have a lot to say over what happens in my work
- My job allows me to make a lot of decisions on my own authority
- I have enough freedom as to how I do my own work

I have Questions on Middle Manager specific involvement in the strategy process (7 point Likert from I strongly disagree to I strongly agree):
- I justify and define new programs
- I evaluate the merits of new proposals
- I search for new opportunities
- I propose programs of projects to higher level managers
- I encourage informal discussion and information sharing
- I relax regulations to get new projects started
- I "buy time" for experimental programs
- I locate and provide resources for trial projects
- I provide a safe haven for experimental programs
- I gather information on the feasibility of new programs
- I communicate the activities of competitors, suppliers etc
- I assess changes in the external environment
- I monitor activities to support top management objectives
- I translate goals into action plans
- I translate goals into individual objectives
- I sell top management initiatives to subordinates

Middle Management Supports and Management Innovation in the Firm; the effect of Private Equity ownership

"*Autonomous strategic initiatives emerge from critical inter- and intra-organizational linkages, and in this process certain middle managers who are in close proximity to these linkages, emerge as informal leaders"* (Floyd & Wooldridge, 1997)

Middle management supports and management innovation in the firm; the effect of private equity ownership

Master thesis

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PREFACE

This Thesis marks the end of a ten-year period in my life of studying. Not being able to do this when I was younger, I have pursued my ambitions and with the finalization of this MScBA program will gain my third degree. This program was the toughest, most challenging but also a lifetime experience that will help to follow my ambitions further. For me the absolute high was our trip to South Africa, which has inspired me even more to take control and create my own future, as the people there should do more also.

The research I have done for this thesis was also a very interesting journey, and finding the right topic was probably the hardest challenge. A lot of ideas were there at the start but to transform these ideas to a proper research proposal was hard. Of course this is part of the learning curve and it helps that both in literature and in talking to colleague students you get the confirmation that this is part of the process.

In the end the topic of my research is something that is close to me, and has been part of a set of questions in my mind for a long time. During my career I have moved up the corporate ladder from analyst on the lab to become a management team member. Always I've been intrigued by how a company works and how it can improve using the most important assets it has, the people. Studying management innovation and how it can be supported with a focus for human agency is for me a logical continuation of earlier research I did on development of knowledge of employees. I learned a lot from studying the subject and will put those lessons into practice during the rest of my career.

I want to express my gratitude to many people that have stuck by me in ongoing ambitions and in this (for now last formal) learning experience. To start the most important people in my life; my beautiful wife and daughters, without their love and support a man could not achieve anything. Than my fellow students, the “Audaces Fortuna Iuvat” team Jos, Ruben and Wilbert and in particular Benjamin who has become my sparring partner and partner in crime. I hope we will remain close after ending the program. From the university I would like to thank all the staff including support(!) for the inspirational lessons, in particular Merieke for the fantastic OE classes and being my co-reader, and Raymond for being a good coach making me sweat with his feedback and also a guy which I have a nice click. Both of you have inspired me with the energy you put in your students and creating a great learning experience. To end I also would like to thank my colleagues and in particular, my own team who have had to be patient while I was always busy pursuing my ambitions….it will not change a lot, sorry.

SUMMARY

Management innovation is an important aspect of the innovation of a firm and a necessary process for the long term survival of a firm. The aim of this study was to gain more insight on how the organizational supports for middle management can influence the process of management innovation in the firm, and what the effect is of private equity ownership on this process.

The findings confirm Dixons (1995) proposition that empowerment of middle management leads to a positive contribution to the renewal of the firm, and reflect the idea that empowerment does give middle management the tools, resources and authority to act as the change agent and driving the management innovation process as suggested by Klagge (1998). It underpins the importance of empowerment and its effects on management innovation performance to contribute to future development and growth, and it adds to the idea that empowerment of middle management not only leads to learning, growth and inspiration of middle management as proposed by Currie (1999) and Patrick et al (2006), but also materializes in an actual increase of the level of management innovation in the firm.

The results also show that involvement of middle management in strategy increases the management innovation in the firm, confirming the proposition of Wooldridge et al (2008) that middle management plays an important role in the process of building and renewing the capabilities of the firm. It shows that a broader and shared understanding of the strategical direction of the firm that includes middle management is effective to increase management innovation. Since, in parallel to the strategy process, management innovation is an incremental and emerging process following the arguments of Wooldridge and Floyd (1989), this should lead top managers to understand the benefits of including middle management in the strategy development process.

This study also investigated the moderating effect of PE ownership on the relation between empowerment and management innovation following the reasoning of Bruining et al (2005) that this would have a positive effect. No significant evidence was found to support the indication that PE ownership would increase the effect that empowerment has on management innovation. A moderately significant effect was found for the moderating role of PE ownership on the relation between strategy involvement of middle management and management innovation, showing that involving middle management has a stronger effect in non-PE owned companies than in PE owned companies. Additional research is necessary to get a better understanding on the effects of ownership on the management innovation process.

CONTENTS

1 INTRODUCTION

Innovation is considered as the driver for competitive advantage of a firm, and management innovation explains a substantial degree of the variance of innovation performance of firms (Volberda, Van den Bosch, & Heij, 2013). Therefore it is an important form of innovation for a firm, that will help to adapt the organization to changes in the environment and support growth. Management innovation, novel changes in processes and structures of managing, has not been studied as extensively as other forms of innovation (Birkinshaw, Hamel, & Mol, 2008; Damanpour, 1987). This is remarkable since it is an important source for competitive advantage (Vaccaro, Jansen, Van Den Bosch, & Volberda, 2012). A reason for it to be important for creating competitive advantage, is that management innovations are thought to be more embedded into the organizational structure and culture than other forms of innovation, making it harder to imitate by competition (Barney, 1991). As an example, robotization of a production process as form of technical innovation is easier to copy by a competitor than training management to adapt a new management practice as a form of management innovation. It is critical for achieving strategic renewal, because it challenges the management orthodoxy which is often deeply ingrained in executive thinking (Hamel, 2006) and relates to sticking to known ways of managing without the willingness to adapt new methods. So which actors in the management process can drive management innovation to become a competitive advantage and how can it be supported?

Anyone from the top management to the operational employees can influence management innovation, but middle managers have a big impact on innovation as they are the ones who make many small but critical choices that make the difference between success and failure (Mollick, 2013). They monitor the operations and set in motion new ideas (Kanter, 1982). For example, when middle management mediates between divergent inputs, situational demands, and the existing strategy, this will initiate the process of organizational learning (Floyd & Lane, 2000) and this may lead to management innovation because it will show the need for changes in the operational processes and how these are managed.

The type of ownership of a firm can be of great importance for middle management behavior because of the social and political consequences in motivating managers. For example when management has an ownership stake or is strongly incentivized for performance they will be more vigilant and more focused on business opportunities (Green, 1992) which can increase the motivation to make changes and follow them through.

To enable middle management to contribute to innovation and creativity to be more structural and not a sporadic occurrence, a supportive environment and culture is necessary (Malaviya & Wadhwa, 2005). If the organizational context is not favorable this will limit what individuals are allowed to bring to their jobs (Hamel, 2006) and will not contribute to management innovation.

A study by Dixon (1995) amongst middle managers suggests the organizational supports most needed by middle management to make a positive contribution to change in the organization are more empowerment of middle management and specifically more involvement in the strategy of the firm. More of these supports could increase the level of authority of middle management making it easier for them to make changes in management practices and thus contribute to management innovation in the firm.

Empowerment entails how much authority middle management has to drive changes without formal authorization, including the power middle management has to initiate change in management practices. Empowered managers are enabled by their organizational context to act more effectively because of increased involvement, and their perception of empowerment effects their attitude towards empowering other employees (Fenton-O'Creevy, 2001). This could support the process of renewal and adaptation of new ideas throughout the organization, including new ideas on management practices. A unifying vision for empowerment must be set at top management level to make this possible (Klagge, 1998).

The second support is a very specific form of empowerment, being the involvement in corporate strategy, which allows middle management to have a better understanding of the organizational direction and goals and to contribute to reaching those. It enables middle management to influence the long term direction of the organization. The contribution of middle management can be of great importance because it is close to the customers and has great knowledge of operational processes (Tregoe & Tobla, 1990). This could enable middle management to translate customer needs in adaptations in the processes and improved understanding if other forms of management are needed. If top-management creates structures and systems to encourage middle management to think strategically, this could create the intrinsic motivation for altering managing practices to fit the strategy (Wooldridge & Floyd, 1990).

A certain level of empowerment and involvement in strategy of middle management can be expected in any type of company and will be dependent on many factors. How this can lead to management innovation of the firm may also be influenced by its environment. In this study the moderating role of ownership is considered because of its influence on the behavior of senior or top managers (Gedajlovic, 1993), and on the corporate governance of the firm (Belloc, 2012).

The level of corporate governance can have an effect on management, because it determines if and how much will be invested in innovation processes (Belloc, 2012). If ownership is dispersed, influence decreases and there is less control over what managers do, opposite to centralized ownership where there is a high level of control (Boeker & Goodstein, 1993). With less control over what management does, the effect of empowerment and more involvement in strategy of middle management on management innovation in the firm can be reduced because middle managers are not lead to effectively contribute to the innovation process.

The ownership of a company can generally be divided in three types; a public or listed company, a privately held or family owned company and a leveraged buy-out company were private equity is involved. The latter is a company were a private equity firm in the majority of situations plays an important role in financing the buy-out and taking a stake in the company. Private equity ownership is viewed by most non-financial stakeholders as negative for other stakeholders than the shareholders, but there is no strong evidence for this (Wright, Amess, Weir, & Girma, 2009). It is clear that private equity is associated with incentives and governance mechanisms that enhance performance (Cumming, Siegel, & Wright, 2007).

The rise of private equity markets in recent years and the mostly negative attention for this in the media give some people a view that this type of ownership has no interest in the long term development of the companies they own, let alone management innovation. But performance focused ownership by private equity could also be a *driver* of management innovation leading to long term competitive advantage by stimulating middle management to contribute to renewal.

Dixon (1995) translated her propositions on empowerment and involvement of middle managers in strategy, into recommendations to encourage organizations to re-evaluate the role of their middle managers. In later studies the necessity for this is repeated (Klagge, 1998; Huy, 2001; Currie, 1999) indicating the ongoing need for organizations to act on increasing middle management involvement and empowerment. By linking management innovation performance to the actual level of empowerment and strategy involvement of middle management, this study aims to give more insight on how the organizational supports of empowerment and strategical involvement of middle management can influence the level of management innovation in the firm. If a relation is found, this could help to encourage top management of organizations that understand the need for management innovation to re-evaluate their middle management involvement as proposed by Dixon.

By also taking the effect of private equity ownership on this process into account, this study reflects on the propositions of Cumming et al (2007) and Bruining et al (2011) that private equity involvement influences performance and governance. If an effect is found it could indicate how this influences the supports of middle management depending on the ownership environment. This would enable (top) managers to understand the influence of ownership when they want to increase the involvement of middle management in their pursuit of management innovation.

The central research question for this study is defined as:

What is the effect of middle management empowerment and involvement in strategy on the management innovation in a firm and how does private equity ownership influence these relationships?

This report is structured as follows; chapter two describes the theoretical background and hypothesis of this study, chapter three describes the research design with a description of the sample and the used methods, the data analysis and results are presented in chapter four, in chapter five the discussion and conclusion are presented, and finally chapter six describes limitations and future research.

2 THEORETICAL FRAMEWORK AND HYPOTHESES

2.1 Management Innovation and middle management: definitions and level of analysis

Management innovation can be defined as a difference in the form, quality or state over time of the management activities in an organization, where the change is a novel or unprecedented departure from the past (Hargrave & Van de Ven, 2006). It comprises novel changes in processes and structures of managing, and is of great importance for the future of the firm, focusing on how management is setting direction, making decisions, coordinating activities and motivating people (Birkinshaw, Hamel, & Mol, 2008; Hamel, 2006). It differs from other forms of innovation because of its focus on the process of management and its renewal, which creates value in novel ways of coordination and motivation of the organizations stakeholders (Foss, Pedersen, Pyndt, & Schultz, 2012). This study focused on the adaptation and generation of management innovations new to the firm related to middle management support, answering the call of Birkinshaw et al (2008) to increase the emphasis on human agency in management innovation keeping in mind the contextual dynamics. Middle management can have meaningful contributions on management innovation and strategy in general (Kanter, 1982; Wooldridge & Floyd, 1990).

Organizations that pursue innovative activity have to build in empowerment to release engagement in their work climate (Bhatnagar, 2012), which could act as mediator for middle management contribution to management innovation. Therefore it could be expected that more empowerment will lead to a higher involvement of middle management, and this will lead to more management innovation in the firm. To identify which managers are defined as middle manager the definition of Huy (2001) is followed were the middle manager is two levels below the CEO and one level above line workers and professionals. Depending on the type and size of a firm this can constitute one or multiple layers of middle management, but they will fulfill a similar role mediating between top management and the operations. The two supports of empowerment and strategy involvement of middle managers which could affect the contribution middle management can give to management innovation of the firm are studied at organizational level. Empowerment in general has been studied for its effect on involvement of middle management, leading to contribute to management innovation as mentioned above. A more detailed form of involvement has been studied in the form of involvement in strategy of middle management. Wooldridge and Floyd (1990) suggest the involvement of middle management in the strategy process leads to increasing the possibility for them to initiate and assess alternative courses of action and question strategic decisions. If middle management is able to do that it could result in innovation of the management processes.

2.2 The effect of empowerment of middle management on management innovation

Middle management can fulfill different roles including facilitating decision making and supporting continuous improvement (Klagge, 1996) by involving all workers in changes, innovations and improvements (Frohman & Johnson, 1992). In this role middle management acts as internal change agent driving the innovation in the firm via the management innovation process (Birkinshaw, Hamel, & Mol, 2008). To be able to fulfil this role middle management must have the power to act as change agent which is determined by the level of empowerment available in the organization. Middle management empowerment entails placing the responsibility for decisions and actions at a lower level within the organization and gives the middle management level the tools, resources and authority needed to decide and act (Klagge, 1998). Kanter (1993) describes these empowering work environments as environments that provide information, resources and the opportunity to learn and develop which enhances the power to accomplish work by the middle manager. She concludes that the organization benefits from this because of improved employee attitudes and increased effectiveness.

The positive effect of empowering support in the process of middle manager's strategic decision making and change is found in studies in the health care sector, were evidence was found that work conditions which empower middle managers enable them to learn and grow, also inspiring others in the organization (Currie, 1999; Patrick & Spence Laschinger, 2006). Empowerment of middle management allows the process of problem-driven search, trial and error and reflective experimenting by middle management, which are the main actions middle management have to execute in the role of internal change agent in the pursuit of management innovation (Birkinshaw, Hamel, & Mol, 2008). If the organization gives middle management the room and authority to look deeper into the problem, see the problem in new ways and start to hypothesize about new ways of solving problems, this will lead the organization toward management innovation (Birkinshaw & Mol, 2006). Therefore it is expected that the level of middle management empowerment in the firm effects the contribution the middle manager can make in the process of management innovation in the firm. This leads to the first hypotheses;

Hypotheses 1: As middle management becomes more empowered, management innovation within the organization will increase

2.3 The effect of middle managements involvement in corporate strategy on management innovation

Even though not every employee is actively involved in strategy and setting objectives for the organization, they can be a store of local wisdom and inventiveness (Nicholson, Rees, & Brooks-Rooney, 1990). Studying strategy from a middle management perspective is important because middle managers may play a greater role than top-managers in activities associated with the organizational process of building and renewing capabilities (Wooldridge, Schmid, & Floyd, 2008).

Involvement of middle management in strategy can be seen as a very specific form of empowerment because of its link to the *future* development of the organization making it a long term investment of the company (Tregoe & Tobla, 1990). It may not only empower middle management to act, but give them a greater understanding of the strategic direction, linking the future need from the customer side to the future needs of the organization. Middle management often has relevant detailed knowledge about future developments and organizational capabilities which need to be reflected in an integrative approach towards strategy development (Darkow, 2015). If middle management understands the strategic objectives and is involved in the development of strategy, it can collect relevant information and transport it to the higher layers of management where this needs to be taken into account in the process of strategy formulation (Floyd & Wooldridge, 1997).

This strategic role of middle management helps the organization to respond to change in the environment and adapt to the new situation (Floyd & Lane, 2000). It can help to better understand were management innovation is needed because of the ability to identify managerial constraints in the daily operations which might block the strategic initiatives to materialize. It allows middle management to question strategic decisions and be able to assess alternative courses of action (Wooldridge & Floyd, 1990). Involvement of middle management in strategy determines the understanding of corporate direction and objectives and the power to influence these. Therefore it is expected that a middle manager which is involved more in strategy can fulfill the role of internal change agent as mentioned before (Birkinshaw, Hamel, & Mol, 2008) by identifying the managerial constraints, have the power to propose alternative management practices and test these, increasing the process of management innovation in the firm. This leads to the second hypotheses which is proposed as follows;

Hypotheses 2: As middle management becomes more involved in strategy development, management innovation within the organization will increase

2.4 The effect of Private Equity ownership

The ownership of a company is linked to were firms gain their access to capital. Companies listed on a stock exchange gain capital from public capital markets, and private companies have gained their capital from managers, family managers or via private equity funds. The latter is seen as an innovation in the capital market for financing companies (Wright, Amess, Weir, & Girma, 2009). This is of importance because besides the funding element, it also influences management processes in an organization due to the distance between ownership and control of the firm (Hart, 1995). The differences in corporate governance linked to the type of ownership matter significantly for innovation performance, because of the effect of corporate governance on the contractual relationship between employees and employer (Belloc, 2012), which influences the behavior of employees and managers.

Private equity distinguishes from other ownership forms as being an active investor using incentives and monitoring mechanisms to induce wealth maximization (Jensen, 1989).
A traditional view of private equity ownership of a firm is linked to that of a strong focus for relatively short term profit, control and financial leverage. The effect of private equity ownership is still under debate and empirical studies show varying results (Cumming, Siegel, & Wright, 2007).

On the one hand, the private equity focus for short-term returns for the investors could result in encouragement to reduce employment and treat employees in an exploitative manner (Froud & Williams, 2007). When this occurs it could result in a lower level of trust and a feeling of insecurity amongst middle management, based on the view of private equity ownership leading to the reduction of management layers and job losses often claimed by trade unions (Rodrigues & Child, 2010). Then, even when middle management is empowered, the expected effect on management innovations could be negative because middle managers could be more risk averse and then only contribute to management innovations if it is clear beforehand it will contribute to the expected performance.

The same could be valid for strategy involvement. Even when middle management is involved in strategy development, actually making a contribution could also be depended on how safe they feel to contribute. Darkow (2015) shows that a consensus driven culture is needed to involve middle management in strategy development. In the context as described above were middle management perceives the culture as being exploitative and not based on trust does not match with a drive for consensus, which stimulates active involvement of middle management in strategy development.

On the other hand there is evidence that private equity involvement results in more innovation and growth due to better incentives and room for investment (Bruining, Boselie, Wright, & Bacon, 2005). The (mostly financial) incentive linked to expected performance can then show a positive effect for middle management to implement new management practices. In a later study Bruining et al (2011) suggest that private equity ownership helps organizations to become more ambidextrous which creates more room for (management) innovation to occur, creating opportunity for managers of the organization to take the lead in innovations. Learning from the experience of the private equity firm involved can play a role in improving performance and leading to better managers (Cumming, Siegel, & Wright, 2007).

The performance incentives could have a positive effect on the relation between empowerment and management innovation because it could increase the motivation for the middle manager to go the extra mile, and use its empowerment to develop, adapt and implement the new management approaches leading to increased performance, which is then rewarded with the incentive for example in the form of a financial bonus.

Learning from the experience of private equity helps to increase knowledge of middle managers on the strategy process. This in its turn can then have a positive effect on the relation between strategy involvement and management innovation, because as their understanding of how strategy is developed increases, it is also easier for them to understand the need to change current management practices and actively contribute to the management innovation process and speed this up.

Since literature so far gives a varying view it is not clear on beforehand if, and what effect can be expected; a positive or negative. Looking at some empiric evidence and analyses of cases where companies with private equity involvement went bankrupt, these show the blame was not the so much the involvement of private equity, but were due to the financial crisis, a change in government policy or out of date business models still in use (Jorritsma & van Voorst tot Voorst, 2016). Bruining et al (2005) suggest that buy-out firms (with private equity involvement) have a positive effect on employee relations and show, amongst others, an increase in employee involvement.

The extensive focus for the exploitation of opportunities by private equity backed buy-outs results in positive effects due to the incentives to show a good performance (Cumming, Siegel, & Wright, 2007). These studies suggest that it is the other forms of ownership that have a negative impact on (management) innovation due to agency related problems or a dominant view of the owner in the situation of a family owned business, which negatively influence the effect of empowerment of middle managers and reduce their influence in setting the strategy of the organization. These effects of leadership have been studied by Vaccaro et al (2012), which suggest the role of top managers and CEO’s is instrumental in creating the organizational context conducive to experimentation with and introduction of new processes, practices or structures.

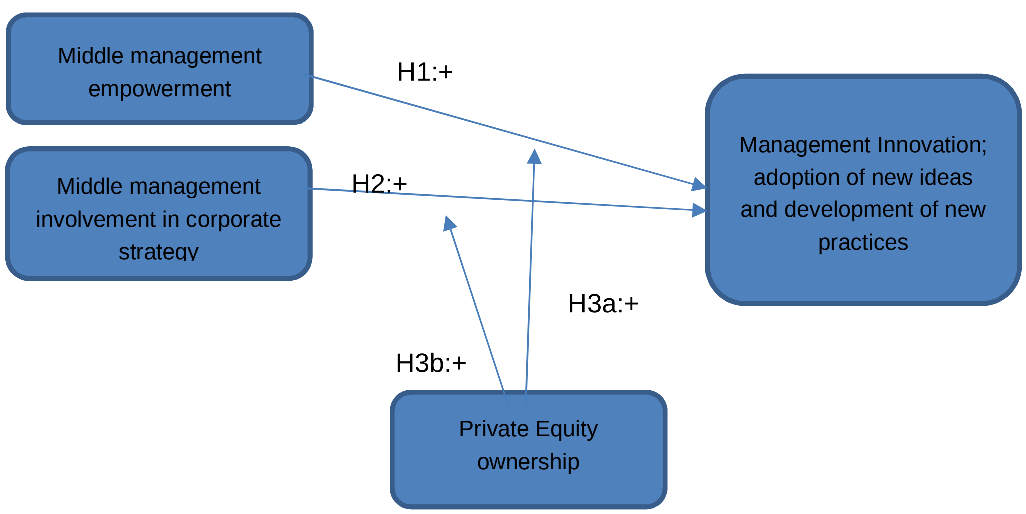
From what is found in literature, the positive effects on the relationships of empowerment and strategy involvement on management innovation, through incentives coupled to performance and access to a broad knowledge base related with private equity ownership, is expected to be stronger then the possible negative effects of suspicious and low trust in private equity ownership.

This leads to the two final hypothesis ;

Hypotheses 3a: The relation between middle manager's empowerment and management innovation will be stronger in a private equity owned firm than in a firm not owned by private equity

Hypotheses 3b: The relation between middle manager's strategy involvement and management innovation will be stronger in a private equity owned firm than in a firm not owned by private equity

The relations of the constructs that have been formulated have been further conceptualized in a model:



3 RESEARCH DESIGN

For this study a survey was designed and send to a group of 266 Dutch companies larger than 50 fte in the private sector providing professional services both with and without private equity involvement. The professional service sector is characterized by the intangible nature of services making product innovation in this sector easily observable for competitors, and therefore innovations of organizational practices and processes are especially important for this sector to obtain an advantage over competition (Nieves, 2016). This makes this sector an interesting focal point for this study. Data was collected over a period of eight weeks by sending the survey to a selected group of respondents.

3.1 Sample

To make sure the firms included in the sample for this study were useful and relevant, the following criteria were used; first selected companies were providing a professional service, second they were privately held and third all companies were larger than 50 fte. It was the researchers assumption this is a minimum for having a middle management layer, after not having found a minimum number of employees in literature. From the respondents no feedback was received that no middle management layer was present which validated this assumption. A random sample was drawn of 266 Dutch private firms providing services (both technical as business service) using two sources. The first source used was the database of the NVP (the Dutch association of Participation firms) from which 66 companies within the criteria were randomly selected, with a level of private equity participation of >50%, to ensure a sufficient number of PE owned firms were in the sample. The second source was the network of the researcher containing a broad group of services companies meeting the criteria of which 200 were randomly selected, although in this group it was not always known beforehand if PE was involved. Only Dutch firms were selected in the sample because the effects that institutional contexts can have on empowerment (Bruining, Boselie, Wright, & Bacon, 2005).

3.2 Data Collection

No databases were available containing the required information on middle management empowerment and involvement in strategy linked to management innovation, therefore a survey was designed to collect the necessary data. This survey was designed and administered digitally (using the Survey monkey application, annex III) and was send using email and other electronic means. The advantage of this is that participating in a digital survey is fairly quick and easy for the respondents, the used application provides an SPSS output, and respondents will see if a question is missed resulting in a lower number of invalid responses. The use of a premium Linkedin account, a paid account allowing to send direct mails to people you are not connected with, proved to be very helpful. It enabled the researcher to send the request directly to the relevant respondents with a personal explanation of the study. Using this approach a request to participate in the survey with an explanation of the background of this study was send to the contact person of the firm if known (71) or to a general email address (195) with the request to forward it to the correct person.

In the request it was asked for the survey to be filled by middle managers using the definition of Huy (2001) as a manager which is at least two levels below the CEO and one level above line workers and professionals, and a top manager (the CEO, managing director or top-manager). By asking the survey to be filled out by multiple managers including a top-manager an ex ante attempt was made to address the risk of same-respondent replies resulting in common method variance in line with the best practice approaches of Chang et al (2010).

The respondents were assured that all responses were treated confidentially, thereby reducing the risk they modified their answers to conform to any perceived expectations. The constructed survey was pre-tested for readability by sending it to a group of seven middle managers from one specific respondent in which two layers of middle management were available and willing to participate, to check if the grammar used was clear and understandable and to validate the survey as it was designed for this study. The seven returned comments were used to improve the textual setup of the survey. After this, a small pilot study was done to pre-check the reliability of the used scales, which resulted in the acceptance of these scales as suitable for this study.

The targeting of managers in this study reflects the role of human agency in management innovation acting as internal change agents (Birkinshaw, Hamel, & Mol, 2008; Vaccaro, Jansen, Van Den Bosch, & Volberda, 2012). The respondent managers were suited to give the adequate responses given their role and knowledge of the firm. Respondents were ensured confidentiality and offered a summary of the results by leaving their name and email address. As compensation for participating in the survey, respondents could choose between three charity organizations which received a donation for each completed survey, as an attempt to increase response. After the initial request a follow up request was sent after two weeks if no response was received yet.

After the eight weeks of collecting data via the online survey 93 responses were collected from individuals. From 6 organizations multiple responses were collected, for all the other organizations only a single response was received. The results from the 6 organizations from which multiple responses were collected, showed comparable inter-company results and were aggregated into a single response. Some responses were incomplete and therefore discarded. The end result was 63 usable responses and thus a response rate of 23,6%, which was higher than comparable studies on management innovation as for example the study of Vaccaro et al (2012) which had a response rate of 15,1 %. Due to the planning of this thesis it was decided to close the survey after 8 weeks when responses after various reminders started to decline.

After the ex-ante attempt to prevent common method bias, the dataset was tested for this ex-post using the Harman's one factor test. The result showed the variance explained by a single factor was 28,34% which confirms that with this test no common method bias was detected.

3.3 Measures and Validation of Constructs

In the survey validated scales from earlier studies have been used to measure the variables. These have been combined in the survey together with general information and controls.
The scales have all been converted to a multiple item measure with a 7 point Likert scale.

Dependent Variable

The scale to measure management innovation was derived from Vaccaro et al (2012) which is a well-designed measure consisting of six items that reflect all three facets of management innovation and the organizational context which makes it a usable scale. With this scale Vaccaro et al (2012) reflect the manifestation of management innovation in new practices, processes and structures which are the three facets indicating what managers do, how they do it, and the organizational context. This study follows the reasoning of Vaccaro et al (2012) that this focus helps to create a bigger pool of management innovations due to a bigger focus on management innovation even if it is not labeled as such. It has been successfully tested for sufficient discriminant- and convergent validity by Vaccaro et al (2012). Each item has been measured on a 7-item scale, reaching from "strongly disagree" (1) to "strongly agree" (7). Following Vaccaro et al (2012) the average of the items was used to create a single index for management innovation. The scale reliability was assessed after the data was collected resulting in an alpha coefficient of 0,703 (see annex II) giving a slightly lower reliability as Vaccaro et al (2012), but it was deemed reliable enough for inclusion in this study.

Independent and moderating variables

For measuring managerial empowerment the validated scale of Fenton-O'Creevy (2001) has been adapted which measures the extent to which respondents have control over resources, access to information and discretion in how they carry out their work. This is a measure that captures empowerment from the middle management perspective. It consists of an eight item measure, originally with a five point Likert scale, which for this study was converted to the same seven point Likert scale to align it with the measurement of the dependent variable.

Following Fenton-O'Creevy (2001) the mean was calculated as a single index for empowerment of middle management, with negatively items reversed (for questions 13 and 15 which were reversed as check). The scale reliability was assessed after the data was collected resulting in an alpha coefficient of 0,801 (see annex II) giving a comparable reliability as Fenton-O'Creevy (2001).

For measuring middle management involvement in strategy the validated scale of Floyd and Wooldridge (1992) was adapted which measures how middle managers are involved in this process in the different roles middle managers can have. It consists of a sixteen item measure with a five point Likert scale divided over 4 categories of roles for the middle manager; championing, implementing, facilitating and synthesizing. Here also a seven point Likert scale has been used to align it with the measurement of the dependent variable.

Because the alpha's for the original scales from the study of Floyd and Wooldridge (1992) are relatively low, 3 items were added to increase validity directly measuring strategy involvement of middle management. The combined scale was used as measure for strategy involvement also with the calculated mean as the single index for strategy involvement of middle management. The scale reliability was assessed after the data was collected resulting in an alpha coefficient of 0,899 (see annex II) showing a higher reliability then the original scales of Floyd and Wooldridge (1992) with the inclusion of the three additional items.

To test the hypotheses both PE as non-PE owned firms needed to be examined. Therefore the survey was send to a group of PE and a group of non-PE firms. A question was added to check the level of private equity involvement for this group by asking if private equity involvement was; less than 25%, between 25-50% or more than 50%. This was designed to allow for assessment if increased involvement resulted in increased effect. After collecting the data only two groups could be identified, firms with less than 25% and firms with more than 50% PE involvement. This resulted in this moderating variable to become a dichotomous variable in the statistical analysis.

Control variables

Two control variables have been taken into account for potential alternative explanations. First was size of the organization, following the argument of Vaccaro et al (2012) that this is a key contextual variable studying management innovation as it relates to the underlying added complexity of pursuing management innovation in organizations of different sizes.

And as a second control measure the level of competition of the environment of the organization was added, as the external environment has a moderating role in innovation (Jansen, Van den Bosch, & Volberda, 2006). For the measure the classification of Volberda (2004) was used which defines four extreme types of environmental turbulence; stable, moderately competitive, hyper competitive and extreme competitive.

3.4 Data analysis

After the dataset was completed and corrected for inconsistencies, incomplete data was removed, multiple responses per organization were aggregated into a single response and first conclusions were drawn from the descriptive statistics. Evaluation of the means of the measured variables were included in this analysis. To check the existence of possible relationship of the variables in this study, a bivariate analysis was executed based on correlation coefficients (5 % significance level).

To measure the relation of the different variables according to the conceptual model, a multiple hierarchical regression was applied. Before computing the interactions, the variables were mean-centered (Kraemer & Blasey, 2004).

For testing the hypothesis the regression analyses was executed with management innovation as the dependent variable after which multiple models have been tested; just the control variables, the independent variables “empowerment” and “strategy involvement”, the moderating role of PE ownership and interaction terms.

A check was also done if the variables included in the sample showed a normal distribution and if no outliers could be identified for the variables “empowerment”, “strategy involvement” and “management innovation”. All variables show a normal distribution and could be included in the regression analyses (figure 3.1).

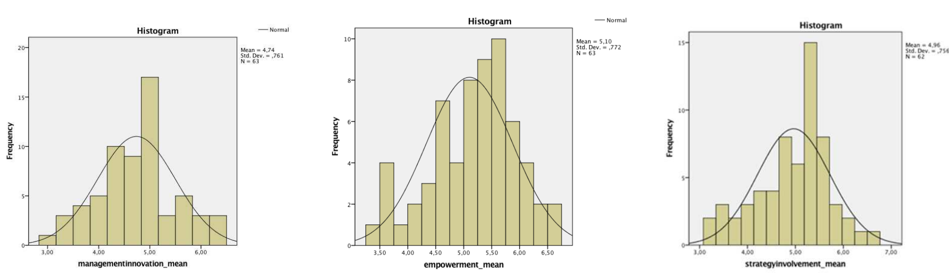


Figure 3.1: distributions of the variables

For the dataset of “empowerment” and “ strategy involvement” no outliers were found. For the dataset of “management innovation” one outlier was found. This respondent scored significantly lower on management innovation. This respondent was further investigated and it was found that this is a very specific company which provides a calibration service which is executed under strict regulations. Although the level of empowerment was relatively high, the level of management innovation was low. An inquiry with the respondent revealed that due to the requirement of following the strict regulations, the items used to measure the construct of management innovation were relatively low, because these regulations don’t allow changes as implied by the measurement of management innovation in this study. Since the outlier result didn’t affect the results, but was in conflict with the assumptions of this study it was decided to remove this result from the dataset in line with the guideline of Grace-Martin (2012).

4 RESULTS

4.1 Dataset and Descriptive statistics

The dataset consisted (see annex 1) of 23 PE owned firms (36,5%) versus 40 non-PE owned firms (63,5%). The number of fte. employed reached from 50 to 95000, with a mean of 3057. Of the respondents 9 (14,3%) were female and 54 (85,7%) were male, 61,9% were of the age group 40-60 and 89,1% had an educational level of Bachelor (HBO) or higher.

The level of education was high in this sample which is of importance because relates to the idea that to be able to transfer ideas into innovations, individuals must acquire human capital including amongst others knowledge, education and training (Subramanian, Rok Choi, Lee, & Hang, 2016). This could then implicate that middle managers with a higher education level would be better able to contribute to the process of management innovation. Because the majority of the middle managers in the sample had a high education, this can be considered constant.

Figure 4.1 shows there was a slight difference in the level of management innovation and empowerment between PE and Non-PE owned firms, with PE owned firms showing a relative higher average score for both.

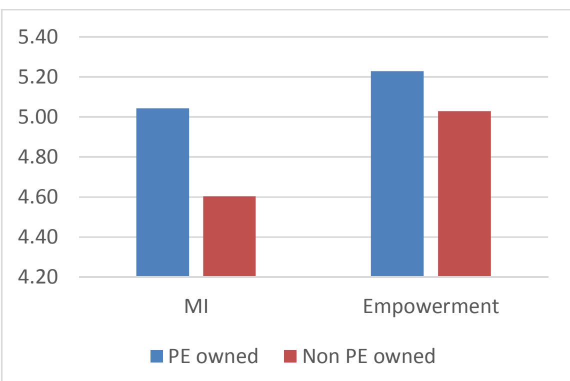


Figure 4.1: PE and Non-PE firms compared

Table 4.1 shows the statistical summary and correlations between the variables, where the general used significance levels (p<0,10, 0,05 and 0,01) were used to indicate if a found correlation is significant.

The correlation analysis show a positive correlation between empowerment and management innovation which is statistically reliable (p<0,01), a positive correlation between involvement in strategy of middle management and management innovation which is also statistically reliable (p<0,05) and a statistical reliable (p<0,05) correlation with PE ownership. No significant correlation with the control variables was found.

Since these are the main constructs studied and a moderately strong correlation was found, this supports the direction of the study. It shows a first indication that increasing empowerment and strategy involvement of middle management could lead to a higher level of management innovation. The correlation with PE ownership indicates that there is a possible interaction effect. This is further explored by conducting regression analyses on these main constructs, investigating their relation and the possible moderating effect of PE ownership.

Table 4.1: Means, standard deviations, correlations between the variables

		Mean	S.D.	1	2	3	4	5
1.	Management Innovation	4,7661	0,73332					
2.	Organization Size (# of fte.)	3056,55	12160,791	0,022				
3.	Level of competition	2,5323	0,76217	0,177	0,096			
4.	Empowerment	5,1028	0,77833	0,333**	-0,165	-0,090		
5.	Strategy involvement	4,9643	0,75569	0,295*	0,052	-0,044	0,628**	
6.	PE ownership (centered)	-0,1290	0,48701	0,293*	-0,095	0,166	0,125	0,105

* p<0.05, ** p<0.01

From the correlation analysis, a correlation was also found between the two independent variables indicating possible multicollinearity. The found correlation of 0,628 is too high. If this happens the possible solutions are to omit the distorting variable, combine the variables with a high mutual correlation (van der Velde, Jansen, & Anderson, 2004), or execute separate independent regression analysis per variable. The latter was chosen since the correlation analysis show significant correlation for both independent variables.

4.2 Regression analyses empowerment and management innovation

The dataset without the removed outlier was submitted to a multiple hierarchical regression analysis to test the hypotheses 1 and 3a. To further reduce the potential for multicollinearity the strategy of Kraemer & Blasey (2004) was followed, by centering the dichotomous variable of PE ownership (+1/2 and -1/2) before calculating the interaction terms. The variance inflation factors (VIF) were also assessed but did not indicate risk of multicollinearity. The results of the regression analyses can be found in table 4.2.

Table 4.2: Results of hierarchical regression analyses: empowerment and management innovation

	Model 1	*Model 2*	*Model 3*	*Model 4*
(Constant)	*4,334***	*2,518***	*2,806***	*2,772***
Controls				
Number of employees	0,005	0,062	0,084	0,082
Level of competition	0,177	0,204 †	0,161	0,161
Empowerment of Middle management		0,362**	0,332**	0,339*
PE ownership (centered)			0,233 †	0,159
Interaction PE (centered) x Empowerment				0,074
R^2	0,032	0,158	0,209	0,209
$\triangle R^2$	-0,001	0,115	0,154	0,139
F	0,96	3,63*	3,769**	2,964*
N	62	62	62	62

† p<0.10, * p<0.05, ** p<0.01

In model 1 only the control variables number of employees and level of competition were entered. Looking at the results of this regression with management innovation as the dependent variable in interaction with the control variables, no significant results were found. Thus the number of employees and the level of competition have no significant alternative explanatory effect.

In model 2 the independent variable of empowerment of middle management was included to test (hypothesis 1) whether a significant relationship exists between empowerment of middle management and management innovation. The results of this regression show a significant result, were b= 0,362 (p<0,01) for empowerment. From this it can be concluded that support is found for hypothesis 1, and that management innovation is increasing with 0,362 when empowerment of middle management increases by a point.

In model 3 the moderator variable of PE ownership was included to test if PE ownership has a direct effect on the relationship between empowerment and management innovation. An effect can be seen which is moderately significant (p<0,10) showing an increase of the explanatory effect for PE owned companies. The results of the regression show a significant result were b= 0,332 (p<0,01) for empowerment, and b= 0,233 (p<0,10) for PE ownership of the firm. The lower reliability of the PE ownership effect, could result from the smaller group of PE owned firms (n=23) in the sample. From this it can be concluded that PE ownership increases the effect of empowerment on management innovation with 0,233.

To test if an effect could be seen from the interaction between PE ownership and empowerment this interaction was calculated and entered as model 4. No significant result was found. Because no significant interaction was found, this regression analysis indicates that the effect of empowerment on the management innovation is not significantly different between the PE and non-PE owned firms. This does not support hypothesis 3a, and thus no support is found for a moderating effect of PE ownership on the relation between empowerment of middle management and management innovation. Because this was expected and correlation was found, some additional explanatory questions were asked to the respondents with the highest management innovation scores for PE owned companies. Results indicate an effect, although this could not be confirmed in this quantitative analysis.

Although no support was found for a moderating effect of PE ownership, a plot was created to visualize the effects in PE and non-PE firms. Figure 4.2 to shows the interactions of empowerment of middle management in PE owned versus Non-PE owned companies.

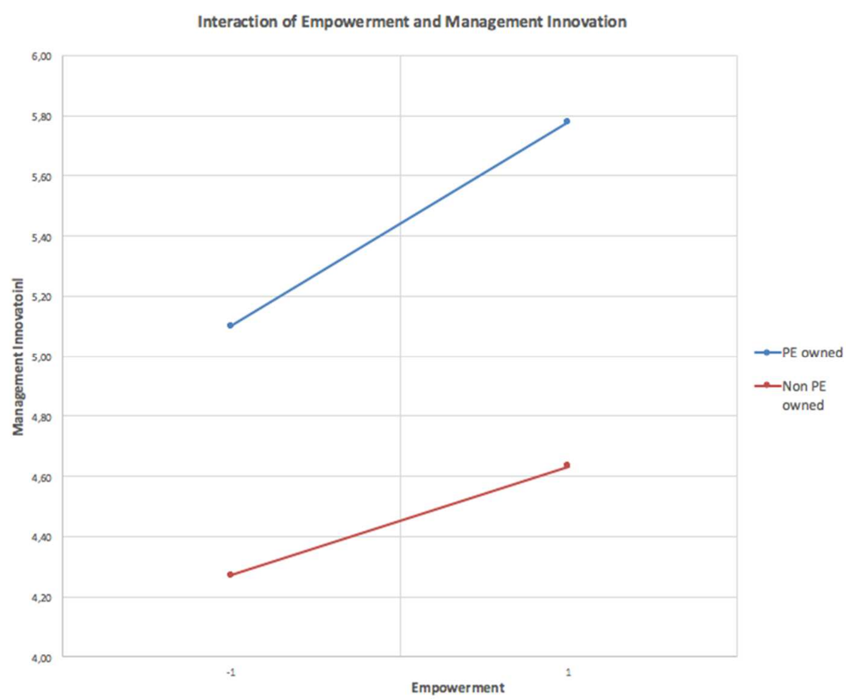


Figure 4.2: Interaction of Empowerment and Management Innovation; the effect of PE ownership

4.3 Regression analyses strategy involvement and management innovation

The dataset without the removed outlier was submitted to a second multiple hierarchical regression analysis to test the hypotheses 2 and 3b. Also in this analyses to further reduce the potential for multicollinearity the strategy of Kraemer & Blasey (2004) was followed, by centering the dichotomous variable of PE ownership (+1/2 and -1/2) before calculating the interaction terms. The variance inflation factors (VIF) were also assessed but did not indicate risk of multicollinearity. The results of the regression analyses can be found in table 4.3.

Table 4.3: Results of hierarchical regression analyses: strategy involvement and management innovation

	Model 1	*Model 2*	*Model 3*	*Model 4*
(Constant)	*4,334***	*2,837***	*3,124***	*3,322***
Controls				
Number of employees	0,005	-0.012	0,016	0,011
Level of competition	0,177	0,192	0,148	0,175
Strategy involvement of Middle management		0,304*	0,275*	0,224 †
PE ownership (centered)			0,241 †	1,674*
Interaction PE (centered) x Strategy Involvement				-1,450 †
R^2	0,032	0,123	0,178	0,224
$\triangle R^2$	-0,001	0,078	0,121	0,155
F	0,96	2,719 †	3,091*	3,232*
N	62	62	62	62

† p<0.10, * p<0.05, ** p<0.01

Again in model 1 only the control variables number of employees and level of competition were entered of which the result is the same as in the regression with empowerment (table 4.2).

In model 2 the independent variable of strategy involvement of middle management was included to test (hypothesis 2) whether a significant relationship exists between involvement of middle management in strategy and management innovation. The results of this regression does show a significant result, were b= 0,304 (p<0,05) for strategy involvement. From this it can be concluded that support is found for hypothesis 2, and that management innovation is increasing with 0,304 when the involvement of middle management increases by a point.

In model 3 the moderator variable of PE ownership was included to test if PE ownership has a direct effect on the relationship between strategy involvement of middle management and management innovation. An effect can be seen which is moderately significant (p<0,10) showing an increase of the explanatory effect for PE owned companies. The results of the regression show a significant result were b= 0,275 (p<0,05) for strategy involvement, and b= 0,241 (p<0,10) for PE ownership of the firm. The lower reliability of the PE ownership effect, could result from the smaller group of PE owned firms (n=23) in the sample. From this it can be concluded that PE ownership increases the effect of strategy involvement of middle management on management innovation with 0,241.

To test if an effect could be seen from the interaction between PE ownership and strategy involvement, this interaction was calculated and entered as model 4. The results of this analyses show that an interaction effect is found which is moderately significant with b= -1.450 (p<0,10). This does not support hypothesis 3b, and indicates that increasing involvement of middle management in strategy has a stronger effect in Non-PE owned companies.

To further visualize this effect a plot was created in figure 4.2 which shows the interactions of strategy involvement of middle management in PE owned versus Non-PE owned companies.

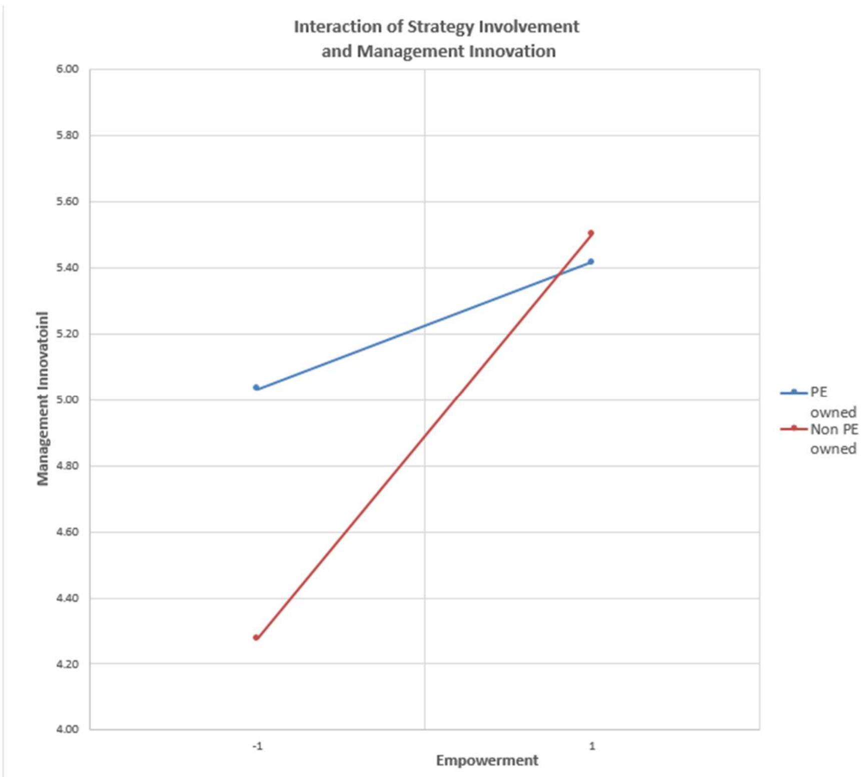


Figure 4.3: Interaction of Strategy Involvement and Management Innovation; the effect of PE ownership

The plot shows the effect is stronger in Non-PE firms.

5 DISCUSSION, CONCLUSION AND FUTURE RESEARCH

5.1 Main conclusions and discussion

The increasing attention for studying management innovation is important, to increase the knowledge on its contribution to the overall innovation process and renewal of the firm. The aim of this study was to gain more insight on how the organizational supports for middle management can influence the process of management innovation in the firm, and what the effect is of private equity ownership on this process.

The results confirm Dixons (1995) proposition that empowerment of middle management leads to a positive contribution to the renewal of the firm, and reflect the idea that empowerment does give middle management the tools, resources and authority to act as the change agent and driving the management innovation process suggested by Klagge (1998). The results underpin the importance of empowerment and its effects on management innovation performance to contribute to future development and growth. It shows that empowerment of middle management not only leads to learning, growth and inspiration of middle management as proposed by Currie (1999) and Patrick et al (2006), but also materializes in an actual increase of the level of management innovation in the firm. The findings reflect the role human agency plays in pursuing management innovation (Birkinshaw, Hamel, & Mol, 2008), with middle management fulfilling a critical role in changing practices, processes and structures of the organization. By increasing the empowerment of middle managers, the level of management innovation in the firm will also increase. The results also show that a higher involvement of middle management in strategy increases the management innovation in the firm, confirming the proposition of Wooldridge et al (2008) that middle management plays an important role in the process of building and renewing the capabilities of the firm. It shows that a broader and shared understanding of the strategical direction of the firm that includes middle management, is an effective way to increase management innovation. Since, in parallel to the strategy process, management innovation is an incremental and emerging process following the arguments of Wooldridge and Floyd (1989), this should lead top managers to understand the benefits of including middle management in the strategy development process. This study followed the proposition of Dixon (1995) that middle management needs empowerment and strategy involvement as forms of support to make a positive contribution to renewal. In her study other supports defined as “allowing and supporting entrepreneurship” and “allowing and supporting cross-functional teamwork” are also mentioned which could be interesting additional supports for future research, in particular if in combination with the supports from this study the explanatory effect on management innovation would further increase. More research to a broader spectrum of supports could then reveal which are the most effective supports for middle management enhancing the process of management innovation in the firm. Moreover this study only looked at companies in the service industry. Additional research in others industries could reveal if these effects can also be seen elsewere.

This study also investigated the moderating effect of PE ownership of the firm on the relation between empowerment and management innovation following the reasoning of Bruining et al (2005) that this would have a positive effect. No significant evidence was found to support the indication that PE ownership would increase the effect that empowerment has on management innovation. This could be an effect of a relatively small group of PE owned companies in the sample. Additional research with a larger pool of PE owned companies would be valuable to either confirm that no effect exists, or indicate a significant effect can be found. Because an effect was expected additional qualitative research could also be useful to understand the learning effect as proposed by Cumming et al (2007) which indicates a positive effect could come from learning from the experience of PE ownership. A first attempt for this was made after the initial survey in this study, by asking the two respondents with the highest scores for management innovation (respondents T and X) to answer a specific additional question after the data collection: “In what way did PE ownership support you and your company towards management innovation?”. From the feedback the most important concept was that the PE firm challenged the company to improve performance in several ways without directly interfering in how this should be done. One of the two indicated that the company gained a lot from the financial management experience of the PE ownership to help and improve management practices. This indicates that additional research on the topic could be valuable. Future research could combine repeating the quantitative measurement from this study in a larger pool of PE owned firms with a qualitative approach to understand how PE involvement effects the relation of empowerment and management innovation. A moderately significant effect was found for the moderating role of PE ownership on the relation between strategy involvement of middle management and management innovation. The results show that involving middle management has a stronger effect in non-PE owned companies than in PE owned companies. This effect could be explained by the fact that including middle management in the strategy process creates more shared control increasing their influence and reducing any negative governance effects as proposed by Boeker & Goodstein (1993) on the management innovation process. These governance issues tend to have a larger effect in non-PE firms (Bruining, Verwaal, & Wright, 2011) explaining that if mitigated by more involvement of middle management, this would have a bigger impact than in PE firms were the government issue is less. The results indicate that increasing the involvement of middle management in strategy, has a stronger effect in non-PE companies.

5.2 Management Implications

All companies, no matter what the ownership structure, can benefit from increasing empowerment and strategy involvement in their pursuit of management innovation. By increasing both type of middle management supports, the level of management innovation in the firm will increase, which will support the necessary renewal of the firm as indicated in the introduction of this study.

Non-PE owned companies should pay specific attention to the involvement of middle management in the strategy process of the firm, because a stronger effect on the management innovation process can be expected.

5.3 Limitations

The sample size for this study remained relatively small despite the efforts taken to have a larger respondent level. In particular the number of PE owned respondents was relatively low which is of influence on the representativeness of the results and overall effect found for PE ownership. Repetition of the study with a larger sample size would be recommended to further test the hypotheses with a higher reliability. A longer period for sample collection would then be necessary and a closer collaboration with PE associations, asking them to mediate to have a larger pool of PE owned firms in the sample. The response rate of PE firms has been lower and from the feedback it can be concluded that these companies are more reluctant to cooperate in a study like this, despite efforts to account for confidentiality. Mediation from a PE association (like the NVP Dutch association for participation firms) could help to overcome this reluctance.

The used scale for management innovation from Vaccaro et al (2012) resulted in an alpha of 0,703 which was accepted, but was relatively low compared to the other scales. A reliability test of the items in the scale was performed but there were no items which could be removed that would increase the reliability of the scale. Future research should look if stronger alternative scales or additions to the scale could improve the reliability for the measurement of management innovation.

After concluding that multicollinearity existed between the two independent variables, three respondents were asked if they found the two distinctive enough. Two replied that the two were seen as one item, one found there were too much questions for “strategy involvement” leading to repeating answers used before without giving the questions to much thought. This can contribute to the strong correlation and insufficient distinctiveness of the measurement of the two independent variables. It is recommended that in future research a combined scale be used, while reducing the number of items.

The outlier found in the dataset of management innovation showed a significant lower score for management innovation and relative high results for empowerment. Further investigation revealed that this company delivers a specific service that is highly regulated. These regulations have a high impact on management system and other aspects of management innovation as was studied. It can affect management innovation negatively because constrictions the regulations prevent making major changes in the management practices. Future research should consider this. It could be both an interesting angle for future research, but also a parameter to control for in a broader oriented sample.

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ANNEX I: DATASET

Resp.	#_fte	Competition	PE_ownership	Educationlevel	Role	managementinnovation_mean	empowerment_mean	PE_owned	PE_owned_centered	Stable_centered	Moderate_centered	Hyper_centered	Extreme_centered	Interaction_PE_EMP
A	135	2.00	1.00	5.00	0.00	5.33	6.13	1.00	0.50	-0.25	0.75	-0.25	-0.25	3.06
B	235	3.00	1.00	4.00	2.00	5.00	4.50	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.25
C	85	3.00	1.00	4.00	2.00	4.67	5.00	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.50
D	233	2.00	1.00	5.00	2.00	5.50	5.75	1.00	0.50	-0.25	0.75	-0.25	-0.25	2.88
E	75	2.00	1.00	4.00	2.00	5.17	4.50	1.00	0.50	-0.25	0.75	-0.25	-0.25	2.25
F	100	3.00	1.00	4.00	2.00	4.67	4.38	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.19
G	56	3.00	1.00	5.00	1.00	5.17	4.88	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.44
H	90	3.00	1.00	4.00	2.00	4.67	5.50	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.75
I	500	2.00	1.00	4.00	0.00	5.17	5.25	1.00	0.50	-0.25	0.75	-0.25	-0.25	2.63
J	1300	4.00	1.00	4.00	2.00	5.00	5.50	1.00	0.50	-0.25	-0.25	-0.25	0.75	2.75
K	8000	2.00	1.00	5.00	1.00	4.33	5.50	1.00	0.50	-0.25	0.75	-0.25	-0.25	2.75
L	2500	3.00	1.00	4.00	2.00	4.67	4.75	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.38
M	8000	3.00	1.00	4.00	2.00	4.83	5.75	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.88
N	130	3.00	1.00	5.00	0.00	5.00	4.50	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.25
P	80	4.00	1.00	4.00	1.00	4.83	5.13	1.00	0.50	-0.25	-0.25	-0.25	0.75	2.56
Q	3200	3.00	1.00	5.00	1.00	5.67	5.13	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.56
R	200	1.00	1.00	5.00	2.00	5.67	4.63	1.00	0.50	0.75	-0.25	-0.25	-0.25	2.31
S	4300	3.00	1.00	5.00	1.00	3.17	5.13	1.00	0.50	-0.25	-0.25	0.75	-0.25	2.56
T	150	2.00	1.00	5.00	2.00	5.83	6.00	1.00	0.50	-0.25	0.75	-0.25	-0.25	3.00
U	140	2.00	1.00	4.00	2.00	5.00	5.00	1.00	0.50	-0.25	0.75	-0.25	-0.25	2.50
V	350	4.00	1.00	3.00	2.00	5.83	5.38	1.00	0.50	-0.25	-0.25	-0.25	0.75	2.69
W	240	2.00	1.00	5.00	2.00	4.67	5.63	1.00	0.50	-0.25	0.75	-0.25	-0.25	2.81
X	5800	3.00	1.00	4.00	2.00	6.17	6.38	1.00	0.50	-0.25	-0.25	0.75	-0.25	3.19
Y	100	3.00	3.00	5.00	2.00	4.33	5.00	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.50
Z	110	3.00	3.00	4.00	2.00	4.67	5.75	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.88
AA	450	3.00	3.00	4.00	2.00	3.67	3.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-1.75
AB	60	2.00	3.00	4.00	1.00	5.67	5.75	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-2.88
AC	150	3.00	3.00	2.00	1.00	5.17	6.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-3.25
AD	350	3.00	3.00	4.00	1.00	4.00	4.63	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.31
AE	51	3.00	3.00	3.00	2.00	5.17	5.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.75
AF	120	3.00	3.00	4.00	0.00	4.17	5.25	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.63
AG	1200	3.00	3.00	5.00	2.00	6.17	5.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.75
AH	10000	3.00	3.00	5.00	1.00	5.17	5.38	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.69
AI	800	1.00	3.00	4.00	2.00	5.17	5.88	0.00	-0.50	0.75	-0.25	-0.25	-0.25	-2.94
AJ	80	3.00	3.00	3.00	2.00	3.67	5.25	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.63
AK	180	2.00	3.00	2.00	2.00	5.83	5.63	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-2.81
AL	3500	1.00	3.00	4.00	2.00	4.00	4.38	0.00	-0.50	0.75	-0.25	-0.25	-0.25	-2.19
AM	100	1.00	3.00	5.00	1.00	3.33	5.75	0.00	-0.50	0.75	-0.25	-0.25	-0.25	-2.88
AN	10000	3.00	3.00	5.00	2.00	6.33	5.63	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.81
AO	51	3.00	3.00	5.00	1.00	5.00	6.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-3.25
AP	53	3.00	3.00	3.00	0.00	4.50	5.63	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.81
AQ	52	2.00	3.00	4.00	2.00	5.00	6.25	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-3.13
AR	300	2.00	3.00	4.00	2.00	5.33	5.25	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-2.63
AS	10000	3.00	3.00	4.00	0.00	5.50	3.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-1.75
AT	75	2.00	3.00	4.00	2.00	4.33	4.50	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-2.25
AU	160	3.00	3.00	5.00	2.00	4.33	4.13	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.06
AV	1800	1.00	3.00	5.00	1.00	3.83	5.13	0.00	-0.50	0.75	-0.25	-0.25	-0.25	-2.56
AW	65	2.00	3.00	4.00	0.00	3.67	6.00	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-3.00
AX	1200	3.00	3.00	5.00	2.00	3.33	3.38	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-1.69
AY	4000	3.00	3.00	5.00	0.00	5.33	4.25	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.13
AZ	4500	2.00	3.00	5.00	2.00	4.67	5.50	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-2.75
BA	105	3.00	3.00	2.00	1.00	4.33	4.75	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.38
BB	335	3.00	3.00	4.00	2.00	4.83	3.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-1.75
BC	3500	1.00	3.00	4.00	2.00	3.50	3.75	0.00	-0.50	0.75	-0.25	-0.25	-0.25	-1.88
BD	95000	3.00	3.00	5.00	2.00	4.67	4.13	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.06
BE	2200	3.00	3.00	4.00	2.00	5.17	5.38	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.69
BF	50	3.00	3.00	5.00	1.00	4.33	3.50	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-1.75
BH	200	2.00	3.00	5.00	2.00	4.33	6.00	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-3.00
BI	900	2.00	3.00	4.00	0.00	4.00	5.38	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-2.69
BJ	100	1.00	3.00	4.00	1.00	4.33	4.50	0.00	-0.50	0.75	-0.25	-0.25	-0.25	-2.25
BK	1500	3.00	3.00	5.00	2.00	4.33	4.75	0.00	-0.50	-0.25	-0.25	0.75	-0.25	-2.38
BL	210	2.00	3.00	5.00	2.00	4.33	5.25	0.00	-0.50	-0.25	0.75	-0.25	-0.25	-2.63

ANNEX II: RELIABILITY CHECK USED SCALES (SPPS OUTPUT)

Scale: Management_innovation

Case Processing Summary

		N	%
Cases	Valid	63	100,0
	Excluded[a]	0	,0
	Total	63	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,703	6

Scale: Empowerment

Case Processing Summary

		N	%
Cases	Valid	63	100,0
	Excluded[a]	0	,0
	Total	63	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,801	8

Scale: Strategy_involvement

Case Processing Summary

		N	%
Cases	Valid	63	100,0
	Excluded[a]	0	,0
	Total	63	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,899	19

ANNEX III: SURVEY QUESTIONS

General open questions:
- Company name
- Type of industry
- Number of employees
- Description of competitive environment of the company
- Number of share owned by Private Equity
- Age
- Gender
- Highest level of education
- Role in the organization

Questions on Management Innovation (7 point Likert from I strongly disagree to I strongly agree):
- Rules and procedures within our organization are regularly renewed
- We regularly make changes to our employees' tasks and functions
- Our organization regularly implements new management systems
- The policy with regard to compensation has been changed in the last three years
- The intra- and inter-departmental communication structure within our organization is regularly restructured
- We continuously alter certain elements of the organizational structure

Questions on Middle manager empowerment (7 point Likert from I strongly disagree to I strongly agree):
- I have good access to the information I need to do my job
- I could perform my job more effectively with better access to information
- I have sufficient control over resources to do my best work
- I could do a much better job with better control over resources
- I have a lot to say over what happens in my work
- My job allows me to make a lot of decisions on my own authority
- I have enough freedom as to how I do my own work

I have Questions on Middle Manager specific involvement in the strategy process (7 point Likert from I strongly disagree to I strongly agree):
- I justify and define new programs
- I evaluate the merits of new proposals
- I search for new opportunities
- I propose programs of projects to higher level managers
- I encourage informal discussion and information sharing
- I relax regulations to get new projects started
- I "buy time" for experimental programs
- I locate and provide resources for trial projects
- I provide a safe haven for experimental programs
- I gather information on the feasibility of new programs
- I communicate the activities of competitors, suppliers etc
- I assess changes in the external environment
- I monitor activities to support top management objectives
- I translate goals into action plans
- I translate goals into individual objectives
- I sell top management initiatives to subordinates