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Employee Stock Ownership: Effect on Strategic Management and Performance

A PhD thesis

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Executive summary

This dissertation creates a model that combines the literature on employee stock ownership (ESO), middle management involvement in strategy and the participative leadership style with the motivational literature on psychological ownership. The model is based on the recognition that despite a strong theoretical foundation of the first three concepts supporting a positive relationship with performance, the empirical evidence is inconclusive. Additionally, the literature on the three concepts finds that the performance effect of the concepts seems to be mediated by the creation of internalised extrinsic motivation in the form of psychological empowerment, organisational citizenship behaviour or psychological ownership. Based on the literature on psychological ownership, ESO, middle management involvement and a participative leadership style are argued to be determinants of psychological ownership. The model thereby argues that the three concepts must be seen as determinants of psychological ownership and that their potential positive effect on performance is triggered by their potential motivational effect. The three concepts can also be seen as interrelated and the model argues that a combination of the three would enhance the performance effect.

Based on the model, a number of hypotheses are empirically tested to investigate the relationships in the model. The tests are based on a cross-sectional survey of 300 top 500 Danish companies as measured by number of employees. The analysis found that different types of companies employ different kinds of ESO schemes ranging from covering only a few key employees to covering a majority of the employees. It can also be seen that the prevalence of ESO schemes is high in stable sectors with relatively low-educated and low-paid employees, e.g. construction, while the prevalence is low in dynamic sectors with highly educated and high-paid employees such as IT and telecommunication.

The test of ESO, middle management involvement and participative leadership style as determinants of psychological ownership supported the model arguing that the effect on performance is based on the concepts' potential motivating effects and that no direct effect on performance can be found. The analysis found that while middle management participation in the strategy process was a significant determinant of psychological ownership, autonomy had no significant effect; this calls for a better understanding of the different effects of the two types of middle management involvement. It was also found that a participative leadership style was the most influential factor in the creation of psychological ownership and that ESO only had an indirect effect which was mediated by middle management participation in strategy. Psychological ownership had a significant positive effect on company performance.

The dissertation contributes to our knowledge by underpinning the importance of the creation of internalised extrinsic motivation in the form of psychological ownership. This means that both scholars and practitioners need to analyse how ESO, middle management involvement in strategy and participative leadership style can be combined in the pursuit of psychological ownership and that the three areas might be combined with other initiatives that enhance motivation. The findings also highlight the need for a better understanding of how different employees are motivated by the different initiatives at an individual level. It may be expected that employees at different organisational levels, in different job types in different sectors and with different job characteristics will be affected differently by the three factors and that the effect on the creation of psychological ownership and thus company performance will be affected by these individual factors.

Executive summary in Danish.

Denne afhandling udvikler en model, der kombinerer teori omkring medarbejder medejerskab, involvering af mellemledere i strategiprocessen og involverende ledelsesstil, med motivationsteoriene om psykologisk ejerskab. Litteraturstudier af de tre områder afslører, at det er vanskeligt empirisk at påvise en effekt på virksomhedens resultater på trods af stærke teoretiske argumenter. Ligeledes viser det sig, at for alle tre områder er en evt. effekt på resultatet medieret af skabelsen af en følelse af medejerskab blandt medarbejderne. Denne følelse af medejerskab angives i litteraturen på forskellig vis i form af ”psychological empowerment”, ”organizational citizenship behaviour” eller ”psychological ownership”. Alle tre former for motivation angiver dog en tilstand, hvor medarbejderen opfatter virksomhedens mål og succes, som identisk med egne mål og egen succes. En analyse af motivationsteorien omkring psykologisk medejerskab afslører, at dette teoriområde ser medejerskab, involvering og involverende ledelsesstil som elementer eller forudsætninger for at skabe motivation. Forfatteren argumenterer derfor for i sin model, at medejerskab, involvering og involverende ledelsesstil udelukkende påvirker virksomhedens resultater via deres indflydelse på medarbejdernes motivation og at de tre områder må forventes at påvirke og forstærke hinanden.

Den udarbejdede model initierer en række hypoteser om de forventede sammenhænge i modellen, som bliver testet empirisk i afhandlingen. Den empiriske del er baseret på en spørgeskemaundersøgelse blandt 300 af de 500 største virksomheder i Danmark målt på antal medarbejdere.

Det første empiriske afsnit finder, at forskellige typer af virksomheder anvender forskellige typer af medarbejderaktie programmer. Det påvises, at andelen af virksomheder med medarbejderaktier er høj i en stabil sektor med relativt lavt uddannede medarbejdere som bygge- og anlægssektoren, mens

andelen af virksomheder med medarbejderaktieprogrammer er lav i IT og telekommunikation, der er en dynamisk sektor med relativt højtuddannede og vellønnede medarbejdere. Ligeledes viser det sig at virksomheder, der har medarbejderaktieprogrammer, der omfatter mere end halvdelen af alle medarbejdere også i højere grad anvender gruppe baserede bonusordninger, mens virksomheder der har medarbejderaktieprogrammer, der kun omfatter nøglemedarbejdere i højere grad anvender individuelle bonusordninger. Dette resultat er i modstrid med den generelle opfattelse af, at brede aktieprogrammer bør komplementeres med individuelle bonusordninger for at understøtte både den langsigtede og den individuelle kortsigtede præstation.

Analysen af medarbejder medejerskab, involvering af mellemledere og involverende lederskab, som forudsætninger for at skabe en følelse af medejerskab understøttede den udviklede model. Ligeledes blev det påvist, at der ikke er en direkte effekt af de tre områder på virksomhedens resultater, men udelukkende via deres evne til at skabe motivation i form af en følelse af medejerskab blandt medarbejderne. Dette bidrag til vores viden omkring effekterne af medarbejder medejerskab, involvering af mellemledere og involverende ledelsesstil åbner op for helt nye forskningsområder. Vi bliver nødt til at ændre vores opfattelse af, at det at involvere medarbejderne, eller tilbyde dem aktier, i sig selv skaber bedre resultater. Vi er nødt til at se de forskellige tiltag i sammenhæng og fokusere på, hvordan de i den konkrete situation kan skabe motivation. Det betyder også, at vi skal kombinere de tre teoriområder med resultaterne fra motivationsteorien.

Motivationsteorien har bidraget med en lang række resultater der fremhæver at mennesker bliver motiveret af en række forskellige tiltag. Medarbejdere i forskellige jobfunktioner, på forskellige organisatoriske niveauer og i forskellige sektorer bliver motiveret på forskellig vis, og effekten på virksomhedens resultater afhænger af, hvilke medarbejdere der bliver motiveret.

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Preface

This dissertation consists of an introductory chapter followed by four papers addressing the topic of middle managers in strategy from different angles. Each chapter is intended to be a contribution in its own right and can be read individually as well as in the larger context of this dissertation.

The development of this thesis and the model included is the result of a journey through a number of research areas and streams. Based on my interest in corporate finance, I initially wondered how ownership structures could support company development and performance. I therefore started out analyzing how employee stock ownership (ESO) among employees at different organizational layers affected performance. This analysis concluded that despite a rich literature on ESO based on agency theory explaining how the introduction of ESO would align the interest of the employee with the interest of the company based on an economic incentive, the dissertation reveals that the effect is mainly rooted in the potential motivational effect of the creation of psychological ownership feelings. While the argument based on an economic incentive might be correct among top managers, who has the organizational power to significantly influence the value of the firm, this influence becomes insignificant at lower organizational levels. Claiming that ESO creates an economic incentive at lower organizational levels thereby violates the general assumption that controllability is a prerequisite for ESO to be effective. This conclusion is also in line with the diverse ESO effect findings which range from neutral to marginally positive. The effect of ESO on performance was found to be mediated by both top management's willingness to involve middle managers in decisions and by the creation of a psychological sense of ownership. If a sense of controllability of the development of the firm's value is needed among stock owning employees and if involvement mediates the effect, involvement in strategy

processes seems to fulfill both needs. This conclusion motivated me to examine the strategy literature with a focus on employee involvement. In this literature review, I especially looked at the involvement of middle managers in strategy processes. The middle manager perspective seemed highly underdeveloped yet very promising due to the theory strongly emphasizing the importance of middle managers as creators of strategic responsiveness, innovations and facilitators of strategy processes. When analyzing the middle manager perspective in strategy, I was puzzled by a number of questions: Can it be assumed that middle managers are automatically motivated to participate, just by allowing them to do so? If participating, are they then doing so in the best interest of the company? If participation creates more innovations, better strategy implementation, more information sharing, better decision-making, then why are the articles testing the performance effects so diverse in their findings? Some scholars advocate that the leadership style conducted can both promote and restrain participation despite a general wish from top management to involve employees in the strategy development. The effect of involvement seems also to be mediated by the creation of engagement, commitment and psychological ownership. Based on the realization that both the effect of ESO and the involvement of middle managers in the strategy process seemed to be mediated by top management's willingness to involve and the leadership style conducted, led me to explore the participative leadership style research stream.

The literature on participative leadership style analyzes how top management can support the involvement of employees in organizational decisions. A participative leader creates a culture in the context of which the employees are aware that their contribution is valuable, cared for and expected and an organizational structure that clearly guides the employees in how new ideas, arguments and problems can be brought to the attention of top management. Despite the reported positive effects of a

participative leadership style, such as increased decision quality, motivation and commitment, the performance effects are reported to be mediated by the creation of psychological empowerment.

This discovery of three research streams, ESO, involvement of middle managers in strategy and participative leadership style, with strong theoretical and empirical support but all mediated by the creation of psychological ownership, encouraged me to investigate the research stream of psychological ownership. Psychological ownership is defined as the state in which individuals *“feel as though the target of ownership or a piece of that target is theirs”* and is found to increase commitment, stewardship and company performance. The creation of psychological ownership is also found to be supported by involvement and task significance (i.e. involvement in strategy), feedback, trust and autonomy (i.e. participative leadership style) and formal ownership (i.e. ESO). By exploring this fourth research stream, the final piece of the jigsaw seemed to fall into place. There appeared to be a clear interconnection between ESO, involvement of middle managers in strategy and participative leadership style and they all supported the creation of psychological ownership. It also seemed clear that a gap existed in our understanding of how these four areas are interrelated and that a combination of the areas could create new insights into how to combine the areas in the pursuit of improved company performance.

The objective of this thesis to theoretically and empirically contribute to the understanding of the interrelation and performance effects of these four areas. The literature review of the four areas revealed that a number of relationships between the four areas lacked a broad-based empirical investigation, and that a contribution could be made by conducting an updated large-scale survey. To ensure statistical validity and avoid common method bias, data needed to be collected from multiple sources. This was achieved by collecting answers from two top managers and two middle managers in 200-300 companies among the top 500 Danish companies. These data were joined by financial data

collected from external sources. Based on the literature review combining the four areas and the data collected, four articles were written, one conceptual article developing the model and three empirical articles analyzing some of the relationships in the model. I am aware that a number of other relationships could be explored and that a finer grained analysis could be conducted based on the model and the data collected, but this task will hopefully be pursued in a future career in academia.

The process of completing this thesis has taught me that I cannot cover everything in one article. An article needs to be focused and thoroughly present theory, method and conclusions in a manner that allows colleagues to review the quality and contribution of the research conducted. Each article is therefore an expression of my view on areas needing contributions and due to the above-mentioned need for focus, they will be restrained by a number of limitations; finally, each article calls for future research to improve and extend the findings.

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Simon S. Torp

Herning, January 2011

1. Employee Stock Ownership: Effect on Strategic Management and Performance

INTRODUCTION

Within business studies, the point of interest has often been the intersections between ownership, management and employees. Different traditions and interests have highlighted different aspects of the interconnection between the areas, just like some have focused on the areas separately. The ownership of companies has been addressed within political science, discussing who should own companies, how profit should be distributed and if any political constraints should be put on the enforcement of ownership rights. Ownership of companies has also been analysed within the context of corporate finance, addressing the effects of different ownership structures. Some scholars have tested the effect of venture capital ownership on company growth, stock listing vs private ownership and companies partly or wholly owned by the employees (Bennedsen, 2001; Himmelberg et al., 1999; Jensen et al., 1976; Zhou, 2002). None of the findings has been able to conclusively determine that specific ownership structures are more efficient than others. Within management studies, a substantial body of work addresses strategies and strategy development.

The diversity within the strategy literature reflects different perceptions of the process, the purpose and the definition of strategy. While some scholars regard strategy as a normative or prescriptive process primarily defined and conducted by top management (Ansoff and McDonell, 1990; Chandler, 1962; Porter, 1980, 1985), other schools see it as a descriptive process only partly controllable which mainly takes the form of interaction between employees at different organisational layers and which may be initiated at different places in the organisation (Burgelman, 1983; Hamel et al., 1994; Mintzberg, 1983,

Mintzberg et al., 1999; Penrose, 1957). While the first approach mainly focuses on the management area, the latter tries to grasp the interaction between management and employees combining management studies with the extensive literature on employees and organisational studies addressing how people interact in organisations through formal and informal power structures and incentive and motivational systems (Maslow, 1954; Mintzberg, 1984; Tayler, 1913; Weber, 1921). Similarly, other research areas combine ownership and management or ownership and employees. Within agency theory (Eisenhart, 1989), the problems of motivating the agent, initially mainly focusing on top management, have been addressed through incentives like stocks, stock options, warrants or other performance related bonuses. The key focus has been on aligning the interest of the utility maximising agent (top management) with the interests of the firm. The recent financial crisis, however, has brought to light some of the potential shortcomings of a short-term performance focus among top managers, namely increased risk, greed and destabilisation of organisation and societies. Agency theory and the alignment of interests have also formed the basis for a research area combining ownership and employees by extending the motivational effects of stock ownership found within top management to all employees. The interest was sparked by the fact that many western companies have developed from being low tech industrial firms to more knowledge intensive service companies; a transformation process during which the motivation of and initiatives from employees became crucial for creating of competitive advantages. Founded in the agency theory, the argument behind employee stock ownership (ESO) covering a larger part of the employees is to create an economic incentive to work in the key interest of the company. While the effect of ESO was found to be significant among top management, the effect of more general ESO programmes is more diverse (Kruse, 2002). Some scholars have reported that the effect is mediated by the creation of psychological ownership, while others report that the size of ownership has no impact on the motivational effect of ESO (Hammer, Landau and Stern,

1981); in fact, it may even have a negative effect on commitment (Pendleton, 2010). This suggests that there is more to the effect of ESO at lower organisational levels than the mere economic incentive and indicates that the motivational effect of being considered important and included in decisions might offer a more plausible explanation for the effect of ESO than the economic incentive founded in agency theory (McCarthy et al. 2010). This position is supported by findings indicating that the effect of ESO is mediated by the creation of psychological ownership among employees and inclusion of employees in the decision-making process. The sense of psychological ownership is enhanced when employees are allowed to participate in strategic decisions due to the importance of the decisions. While all employees could be involved in strategic decisions, interest has increasingly focused on the importance of involving middle managers in the strategy process. The uniqueness of middle managers lies in their access to both top and front end managers coupled with their operations knowledge. In a top-down perspective, this central position allows middle managers to act as sources of change through strategy implementation and by “selling” the strategy at lower organisational levels, hereby working as the extended arm of top management. From a bottom-up perspective, middle managers are in a position to influence the strategic debate at top management level by influencing the issues brought to the top management’s attention (Dutton et al., 2001). Additionally, middle managers act as sources of innovation on account of their close contact with front end managers and the market and their ability to increase information sharing across the organisation, vertically as well as horizontally. In the literature, the term middle manager is understood in a rather wide sense, including all managers below top management and above first-level supervision (Dutton and Ashford, 1993; Uytendoven, 1972). Despite the rich literature on the middle management perspective (Wooldridge et al. 2008) and the theoretically and empirically findings reporting a number of positive effects of middle management involvement in strategy (Balogun and Johnson, 2004; Floyd and Wooldridge, 2000; Huy, 2002; Wooldridge et al.,

2008), analyses of the effect on company performance are few and the findings are diverse (Andersen, 2004; Mair, 2005). This could suggest that middle managers are not automatically willing to become involved even if invited to be so and if they get involved, they might not act in the best interest of the company. Meyer (2006) reported how middle management involvement led to destructive interventions by middle managers and Guth and MacMillan (1986) found that middle managers obstructed strategy implementation through foot-dragging and sabotage. In their analysis of 12 organisations, Mantera and Vaara (2008) found that the leadership style conducted by top management could both constrain and support involvement despite an official policy of involvement.

This thesis will address a number of the gaps that exist in our understanding of how ESOPs, involvement of middle managers in the strategy process and a participative leadership style can increase company performance. While the agency theory based findings of ESOPs assume that the economic incentive of the ESOP will automatically align the interest of the middle manager with the interest of the firm, other findings suggest that it is the creation of motivation spurred by psychological ownership that generates a positive effect. Similarly, the literature on involvement of middle managers in strategy assumes that allowing middle managers to become involved in strategy by definition motivates the middle managers to do so and automatically in the best interest of the company. The findings of Meyer (2006) indicate that involvement in itself may support both supportive and destructive middle management actions and that middle managers somehow need to be motivated to participate and feel committed to act in the best interest of the company. This suggests that our understanding of how middle managers become involved in strategy and how they are motivated is incomplete and that more research in the field is called for.

The creation of intrinsic and extrinsic motivation is addressed in self-determinations theory (SDT) based on need theories (Ryan and Deci, 2000) reporting that intrinsic motivation and the integration of

extrinsic motivation are based on the need for competence, relatedness and autonomy. The thesis will study the interaction between ESOPs, the involvement of middle managers in strategy and a participative leadership style. Based on the theoretical assumption that middle management level ESOPs only create a limited economic incentive due to the lack of controllability with the reward and the (often) limited economic importance of the plan, the effect of the ESOP needs to be found in the plan's potential effect on the creation of motivation and psychological ownership. Similarly, involvement of middle managers in strategy should be understood in the framework of motivation, supported by both formal ownership and a participative leadership style. The SDT stresses the importance of competence, relatedness and autonomy as human needs leading to motivation, personal development and behavioural self-regulation (Ryan, Kuhl and Deci, 1997). This suggests that involvement in strategy (competence, autonomy), ESOP (relatedness) and a participative leadership style (relatedness, autonomy) combined would release the human potential to *“be agentic and inspired, striving to learn, extend themselves, master new skills, and apply their talents responsibly”* (Ryan and Deci, 2000); without motivation, employees become apathetic, alienated and irresponsible. This introduction chapter reviews the fundamental literature within the areas of interest, sets the scene for the gaps addressed in the succeeding four chapters and presents the methodological approach to collecting the empirical data for the thesis.

MOTIVATION AND SELF-DETERMINATION THEORY

From early childhood, human beings are naturally curious, vital and self-motivated. They show considerable effort, agency and commitment in their lives and this attitude seems to be more the rule than the exception (Ryan and Deci, 2000). Despite this positive feature of human nature, the problem of motivating employees and releasing this attitude in a work setting has been at the core of

organisational studies for decades. This paradox suggests that the work setting in itself seems to restrain the nature of humans. The self-determination theory (SDT) *“has focused on the social-contextual conditions that facilitate versus forestall the natural processes of self-motivation and healthy psychological development”* (Ryan and Deci, 2000). Social contexts are found to both facilitate and restrain motivation and personal growth and the effects vary among people. SDT is *“an organic metatheory that highlights the importance of humans’ evolved inner resources for personality development and behavioral self-regulation”* (Ryan, Kuhl and Deci, 1997). The theory has identified three human needs that, if satisfied, facilitate the natural propensities for growth and integration, social development and personal well-being (Ryan and Deci, 2000). The three needs are competence (Harter, 1978), relatedness (Baumeister and Leary, 1995; Reis, 1994) and autonomy (deCharms, 1968; Deci, 1975). Deci and Ryan (1985) have developed the cognitive evaluation theory (CET) as a subtheory of SDT and find that social-contextual events, like feedback, communication and rewards support the sense of competence and enhance intrinsic motivation. They also find that the sense of competence is powerless to enhance intrinsic motivation if not accompanied by a sense of autonomy or, in other words, self-determination. This underlines the need for contextual settings that support both autonomy and a sense of competence. Despite the feeling of competence and autonomy, a sense of relatedness to the task and the settings increases the likelihood of intrinsic motivation flourishing. This requires that the employees are met with trust and respect from the company and their immediate manager(s) and that management makes an effort to provide feedback and takes an interest in the employees. While intrinsic motivation is defined as the inherent tendency to seek out novelty and challenges for the task’s own sake, SDT underlines that people will only feel intrinsically motivated to undertake activities that have the appeal of novelty, challenge and aesthetic value (Ryan and Deci, 2000). To understand the motivation of other activities, SDT addresses the nature and dynamics of extrinsic motivation.

Extrinsic motivation refers “*to the performance of an activity in order to attain some separable outcome*” (Ryan and Deci, 2000). The tasks or the behaviour are defined by others and motivation can range from amotivation or unwillingness, to passive compliance and to active personal commitment. SDT defines five types of extrinsic motivation due to the level of internalisation and perceived locus of causality. The **amotivated person** has an impersonal locus of causality and either does not act at all or act without intent. **External regulation** is motivated by external rewards and externally regulated individuals experience control and feel alienated from the task. There is an external locus of control and the person does not perceive the task (or the job) to be a part of the person’s self (deCharms, 1968). Although still externally driven, **Introjected regulation** is motivated by a wish to demonstrate ability or to avoid guilt. The activities are based on self-control and a sense of duty but the task remains isolated from the personal self (Deci and Ryan, 1995). **Identified regulation** is a more autonomous or self-regulated form of extrinsic motivation where the activities are partly internal and accepted or owned as personally important. The most autonomous and self-determined form of extrinsic motivation is **integrated regulation**; locus of control is internal and the task is internalised and seen as part of the personal self. The task has been valued and brought into congruence with one’s other values and needs. Integrated regulation has many features in common with intrinsic motivation; however, it is still considered extrinsically motivated since the task is performed for the purpose of achieving separable outcomes rather than for the enjoyment of completing the task in itself.

A number of studies have found that well-internalised extrinsic motivation is associated with higher engagement (Connell and Wellborn, 1991), higher quality learning (Grolnick and Ryan, 1987) and better performance (Miserandino, 1996).

Extrinsic motivation is considered integrated if the task or behaviour is being prompted, modelled or valued by significant others (persons or organisations) to whom the person feels attached or related.

This implies that the feeling of relatedness is a strong facilitator of internalisation. To create a feeling of relatedness, the task must be meaningful, the person must experience autonomy and self-determination and an absence of control and finally, experience competence by fulfilling the task.

In the following sections, the literature on employee stock ownership, involvement of middle managers in strategy processes, participative leadership style and psychological ownership will be presented and related to the theoretical framework of motivation based on SDT. The research streams will be synthesised in the model that is tested in the rest of the thesis. Before setting the scene for the rest of the four chapters in the thesis, the methodology of the empirical part will be presented to frame the articles both theoretically and empirically.

EMPLOYEE STOCK OWNERSHIP

In the literature, employee stock ownership (ESO) is commonly defined as ownership through an employee stock ownership plan (ESOP) initiated by the company. The plan is either set up freely or restricted by government laws “*with the explicit intention of providing employees with an additional source of income related to enterprise results*” (Pendleton et al., 2001). The plan can either be narrow-based covering less than 50% of the employees or broad-based covering more than 50% (Pendleton et al., 2001; Robinson and Zhang, 2005). Narrow-based schemes are mainly introduced to present key employees with an economic incentive and to retain them in the company, while broad-based schemes may be introduced to create an incentive and/or as part of a political wish to share the ownership or as part of a leadership style and company culture acknowledging all employees as key stakeholders in the development of the company. The interest in and use of ESOPs increased during the 1980s and 1990s due to government incentives and legislation as well as an increased emphasis on agency cost reduction and employee motivation. Based on 15 different analyses of the prevalence of ESO in America, Kruse

et al. (2008) reported that 21%-24% of all American workers were covered by an ESOP in the 1990s; a substantial percentage when considering that ESOPs were virtually non-existing in 1978 when the 401k plan was introduced (Blasi, Kruse, Sesil and Kroumova, 2003). As far as the EU is concerned, large diversities exist among the individual EU members; for instance, 5% of Portuguese companies with more than 100 employees employed an ESOP in 1999/2000 while the corresponding UK figure was 45% (Pendleton et al., 2001). Due to the financial crisis in the beginning of the 21st century, the USA has experienced a decline in the use of ESO from 24% in 1999 to 18% in 2006 (Buchele et al., 2009; Kruse et al., 2008; Rogers, 1999) and a similar decline in Ireland was reported by D'Art and Turner (2006). This decline indicates that the incentive for participating in an ESOP is mainly financial and that turbulence on the financial markets might increase employees' risk aversion and perception of risk (Markowitz et al., 2010), discouraging them from participating in the plan. The current prevalence of ESO and the use of narrow and broad-based schemes, however, are yet to be explored for the purpose of establishing if the use of ESOPs declines when financial markets are turbulent. If this is indeed the case, it could indicate that companies, in periods of turbulence, tend to reduce the use of an incentive system which has the potential to increase employee involvement and commitment and thus prove essential for the survival of the company. The effects of introducing an ESOP have been found to be increased commitment and job satisfaction (Beatty, 1994; Drago and Heywood, 1995, Kruse, 1996), higher survival rates (Kruse, 2002), higher corporate productivity (Kim, 2009) and partly increased company performance (Addison and Belfield, 2000, 2001; Jones et al., 2010; Kruse, 2002; Logue and Yates, 2001). The effects, however, are mediated by participation in decisions and management's readiness to provide employees with access to company information and the opportunity to bring their influence to bear in the decision-making process (Hambrick and Mason, 1984; Kruse, 2002; Long, 1977; Quarrey and Rosen, 1993). The analyses of the effect on company performance have yielded

different results; some scholars' report of a positive effect, others neutral effects, while no one have found negative effects (Kruse, 2002). Despite the fact that the majority of research conducted on ESO is based on agency theory, increasing the share of ownership and thereby the financial incentive has failed to impact company performance. Especially wholly employee-owned companies have been reported to have either insignificant effects on company performance when controlling for company size (Kramer, 2010) or even a negative effect (Kim, 2009) due to degeneration or abuse of power (Sauser, 2009). The findings also suggest that the effect is somehow influenced by the involvement of employees in the decision-making process and the leadership style conducted. The next sections will address the interface of these areas.

MIDDLE MANAGEMENT INVOLVEMENT IN STRATEGY

In the last decades, the middle management perspective in organisations has been the target of increasing attention (Wooldridge, Schmid and Floyd, 2008) as a supplement to the traditional view on top management as the prime source of change and initiatives. The middle management perspective explores the role and importance of middle managers in corporate entrepreneurship (Burgelman, 1983), innovation and organisational learning (Kanter, 1982; Nonaka, 1994), strategy implementation (Balogun and Johnson, 2004; Huy, 2002) and strategy processes (Currie and Procter, 2005; Floyd and Lane, 2000; Pappas and Wooldridge, 2007; Wooldridge and Floyd, 1990). The perspective addresses the internal processes in the organisation and highlights the middle managers' role as facilitators of strategy implementation (Huy, 2002) or sources of innovations and change through issue-selling or championing activities (Dutton, Asford, O'Neil and Lawrence, 2001; Ling, Floyd and Baldrige, 2005). The uniqueness of middle managers lies in their access to both top and front end managers coupled with an unrivalled knowledge of the day-to-day operations. In a top-down perspective, this

position in the middle allows middle managers to act as sources of change through strategy implementation and by “selling” the strategy at lower organisational levels, hereby working as the auxiliary arm of top management (Conway and Monks, 2010). From a bottom-up perspective, middle managers are in a position to influence the strategic debate at top management level by influencing the issues brought to the attention of top management (Dutton et al., 2001). Additionally, middle managers act as sources of innovation on account of their close contact with front end managers and the market and by increasing information sharing across the organisation, vertically as well as horizontally. Middle management involvement in strategy development can be seen both as allowing middle managers to *participate* in decisions, providing them with the possibility to advocate their ideas (Andersen, 2004), or by distributing the strategic decision authority to middle managers, in the literature referred to as *autonomy* (Burgelman, 1984). By allowing middle managers to participate in decision-making, their knowledge of operations can be included in the decisions and/or they are in a position to perform champion or issue-selling activities by bringing new ventures or innovations to the attention of top management. Participation in the strategy process also increases the sense of ownership to and responsibility for the strategy creating a culture in which middle managers function as agents of change by selling and thus implementing the strategy in the organisation. Distributing decision authority to middle managers allows organisations to react faster to changes in their environment in recognition of the fact that complex geographically dispersed organisations cannot be managed by top management alone but require a form of interactive leadership distributed to middle managers with decision authority (Balugan and Johnson, 2004).

The effects of middle management involvement are multifaceted and address both individual and organisational levels. Ketokivi and Casterñer (2004) reported how middle management involvement in strategy increased acceptance of the strategy and reduced the inclination to pursue subunit goals

enhancing goal convergence and coordination both vertically and horizontally. Similar findings were reported by Vilá and Canales (2008) who arrived at the conclusion that middle management involvement enhanced the acceptance and appreciation of strategic actions and encouraged active participation in the coordination and implementation of the strategy. Involvement of middle managers in strategy has also been found to enhance organisational responsiveness and innovation by increasing the speed at which information reaches top management and by bringing in its train faster implementation of actions taken to address environmental changes (Westley, 1990). Laine and Vaara (2006) added the perspective that without involving middle managers and thereby ensuring acceptance of the strategy, middle managers were prone to create their own strategic conversation and obstruct the implementation of the corporate strategy. The effect of middle management strategy involvement on company performance has been tested by some scholars with varying results. Mair (2005) tested the effect of involvement in a large service firm and found improved subunit performance while Andersen in an analysis of 185 American companies (2004) found a significant effect of autonomy in dynamic environments but no effect of participation. As a contrast to the expected positive effects of involvement, Guth and MacMillan (1986) reported that involvement of middle managers led to foot-dragging and sabotage hindering strategy implementation. In a more recent analysis, Meyer (2006) observed that the pursuit of subunit goals by middle managers led to destructive interventions and the failure of a top management initiated merger. Sillince and Mueller (2007) ascertained that without a firm top management mandate, middle managers reframed responsibilities and pursued opportunism. Wooldridge et al. (2008) conclude in their review of the middle management literature that even though some evidence exists to suggest that middle management involvement can provide positive organisational outcomes, other studies suggest that involvement may be associated with negative performance and that much more research in the area is warranted; particularly in terms of

understanding why some middle managers get more involved than others and how to motivate them to become involved in the best interest of the company. Mantera and Vaara (2008) found that the leadership style conducted could both obstruct and promote involvement despite an intention on management's part to involve in both situations. These findings suggest that middle managers need to be motivated to become involved in the best interest of the company and top management needs to conduct a leadership style that supports involvement; in the literature sometimes referred to as participative leadership style (Chen and Tjosvold, 2006; Kaufman, 2001; Kim, 2002).

PARTICIPATIVE LEADERSHIP STYLE

A participative leadership style supports the involvement of employees in organisational decision making (Kaufman, 2001; Kim, 2002). Participative leaders do so by consulting employees before decisions are made, asking for their opinions and taking them into account. They create a culture in which the employees are aware that their contribution is valuable, appreciated and expected, and believe that they have the opportunity and right to discuss problems and influence organisational decisions (Emery, 1995; Stanton, 1993). The distributed decision authority, in case of involvement of middle managers referred to as autonomy, is in the leadership literature often referred to as empowerment, defined as the delegation of decision authority to the lowest level in the organisation capable of making a competent decision (Conger and Kanungo, 1988; Thomas and Velthouse, 1990; Seibert, Silver and Randolph, 2004). The concept of empowerment is very similar to the concept of autonomy in that it measures the degree of decision authority distribution. Two theoretical models are often used to explain the effect of a participative leadership style. The *motivational model* focuses on the motivation created by having the opportunity to participate in decisions which, in return, supports the creation of psychological empowerment (Spreitzer, 1995; Thomas and Velthouse, 1990). The

exchange model describes how participation signals that superiors trust, respect and show concern for the employee thereby inspiring confidence in the leader (Dirks and Ferrin, 2002). The trust intimated by the leader and the organisation is reciprocated by the employees who exhibit a higher level of work performance (Cohen, 1992; Zallars and Tepper, 2003). Huang et al. (2009) found that while the effect of participative leadership on middle managers was mediated by psychological empowerment (motivational model), the effect on non-managerial employees was mediated by trust-in-supervisor (exchange-based model).

Despite its intention to involve employees in the strategy process, top management may still create systems and a culture that constrain involvement. Mantere and Vaara (2008) found in an analysis of 12 Nordic organisations that mystification, disciplining and technologisation impeded involvement, while self-actualisation, dialogisation and concretisation promoted involvement. This suggests that top management needs to devise systems enabling employees to see how they can participate, it needs to actively seek the opinions of the employees and to engage in constructive controversy involving open-minded discussions of opposing positions (Tjosvold, 1998). To create such a culture, the employees need to feel safe and top management needs to be curious and make an effort to understand the position of the employee (Poon et al., 2001).

The effect of a participative leadership style is reported to be increased quality of decisions (Scully, Kirkpatrick and Locke, 1995), increased employee motivation (Locke and Latham, 1990), commitment (Armenakis, Harris and Mossholder, 1993), satisfaction (Smylie, Lazarus and Brownlee-Conyers, 1996) and psychological empowerment (Eby et al., 1999). The effect on performance has been reported to be mediated by psychological empowerment (Careless, 2004; Seibert et al., 2004) suggesting that involvement per se does not increase performance; to be successful, it needs to be propelled by the

creation of internalised extrinsic motivation of the employee. Especially middle managers have been found to have a pressing need to be empowered to be able to perform effectively (Kanter, 2004).

OWNERSHIP, INVOLVEMENT AND LEADERSHIP – A MATTER OF MOTIVATION?

When analysing the three research streams presented above, it transpires that despite the extensive literature on the subjects, they all seem to fall short when it comes to understanding the processes related to the area at the individual level. It also becomes evident that all three areas are mediated by the creation of internalised extrinsic motivation within the individual employee, manifesting itself as commitment, loyalty, citizenship behaviour, psychological empowerment and psychological ownership. All concepts are capturing a state of mind which facilitate the employee's willingness to participate in the development of the company, and to do so in the best interest of the company. While commitment and loyalty can be seen as subsets or consequences of citizenship behaviour, psychological empowerment and psychological ownership, the distinction between the three last-mentioned is more complex and the concepts are partly overlapping. Organisational citizenship behaviour (OCB) is defined as "*individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organization*" (Organ, Podsakoff and MacKenzie, 2006, p. 3). Participation in job tasks that are intrinsically motivating has been found to trigger the creation of OCB and motivate employees to intensify their work effort (Bateman and Organ, 1983). OCB can, however, be directed both towards organisations and individuals and mainly the first is seen to drive organisational performance and be influenced by environmental and organisational factors, such as involvement in decisions (Skarlicki and Latham, 1997; Williams and Anderson, 1991). The creation of OCB in terms of the organisation is mainly explained through the motivational model and the fact that it is supported

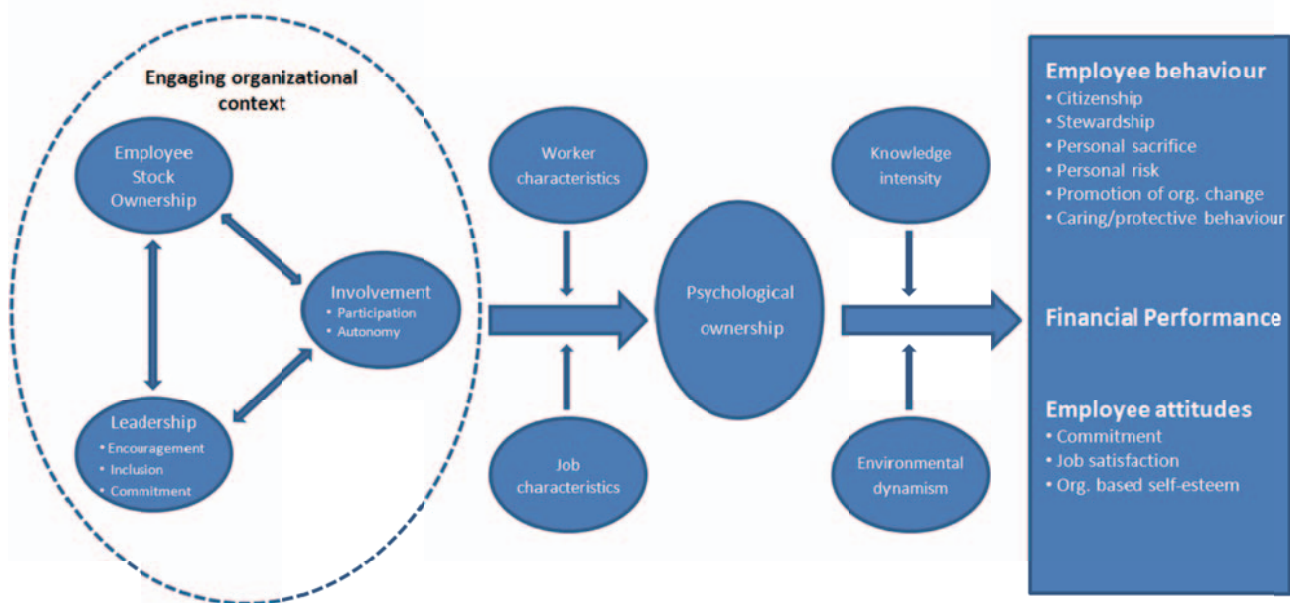
by positive interaction with the employee's supervisor suggests that especially middle managers will develop OCB towards the organisation through involvement in decisions (Huang et al., 2010). Psychological empowerment is defined as "*an individual's experience of intrinsic motivation that is based on cognitions about him- or herself in relation to his or her work role*" (Spreitzer, 1995). The construct is composed by four cognitions: meaning, competence, self-determination and impact (Conger and Kanungo, 1988; Spreitzer, 1995). *Meaning* refers to the value of the work performed based on the individual's subjective evaluation and *competence* is the individual's confidence in their own ability to successfully perform a given task or activity. *Self-determination* is the individual's sense of having a say in how tasks are distributed and which methods should be employed and finally, *impact* is the possibility to influence organisational outcomes (Spreitzer, 1995). The level of empowerment is based on subjective evaluations of the match between individual values and the demands and opportunities of his or her work task. The creation and enhancement of psychological empowerment have been found to be mediated by the empowerment climate (Seibert, Silver and Randolph, 2004) which refers to the organisational climate supporting empowerment. It is defined by a set of shared perceptions regarding the policies, practices, and procedures that are rewarded, supported and expected by an organisation (James, Joyce and Slocum, 1988; Schneider and Reichers, 1983). Thus, the empowerment climate can be viewed as closely related to a participative leadership style made up of systems, signals and procedures used by top management to support, encourage and expect involvement and autonomy from middle managers. Pierce et al. (2003, p. 86) have defined psychological ownership as "*the state in which individuals feel as though the target of ownership or a piece of that target is theirs*". Psychological ownership in organisations has been linked to increased commitment (O'Driscoll et al., 2006; VandeWalle et al., 1995), stewardship (Pierce et al., 2003) and increased company performance (O'Driscoll et al., 2006; Pierce and Rodgers, 2004). The antecedents

of psychological ownership are found to be involvement and formal ownership (Pierce et al., 1991) autonomy and feedback (Pierce et al., 2009) and investment of oneself in the target of ownership (Pierce et al., 2001, 2003). The creation of psychological ownership is based on five human motives; a) efficacy and effectance, b) self-identity, c) having a place, d) territoriality and e) accountability (Avey et al., 2009; Pierce et al., 2003). Pierce et al. (2001, 2003) suggested that stewardship, personal sacrifice and risk, promotion of organisational change and caring and protective behaviour towards the company all are enhanced by the creation of psychological ownership.

As described above, the three concepts, OCB, psychological empowerment and psychological ownership, all constitute different ways of defining organisational commitment and are all based on the generation of internalised extrinsic motivation. Where OCB focuses on increasing the work effort without involving formal incentives and psychological empowerment addresses identification with the organisation, psychological ownership highlights the wish to develop and improve the company, leaving personal interest out of account. As presented previously, ESO, involvement of middle managers in strategy making and participative leadership style were all mediated by the creation of one of these motivational concepts. This raises the question of whether ESO, involvement and leadership style are the prime concepts to investigate in preparation for analysing how to improve company performance, which is a hallmark of strategy management research (Rumelt, Schendel and Teece, 1991), or if the three concepts are antecedents of internalised extrinsic motivation in the form of i.e. psychological ownership. If the latter is the case, research needs to spotlight the individual level of the process of creating psychological ownership, analysing how ESO, involvement and leadership style affect the creation of psychological ownership in a variety of different employees and how they interact. This assumption raises a number of research questions to be answered of which some will be addressed in the next four chapters of the thesis. In the following section, the methodology of the

empirical part of the thesis will be discussed followed by a presentation of the remaining four chapters of the thesis and their contribution to our knowledge of the interaction between ESO, involvement, leadership style and psychological ownership.

Figure 1: A behavioural model of involvement and Employee Stock Ownership



METHODOLOGY AND EMPIRICAL METHOD¹

When conducting empirical research, the methodology approach can be qualitative or quantitative or a combination of the two. The choice of approach depends largely on the scope of the research and the paradigm of the researcher. Being a neo-positivist, I believe in the existence of a world that can be measured notwithstanding the interference of contextual matters and individual perceptions and interpretations. Due to the fact that the individual concepts in the model have been tested in a number

¹ The three questionnaires can be found as appendices to the dissertation.

of case studies within the different research streams and a desire to quantify the effect of ESO, involvement of middle managers in strategy and a participative leadership style on the creation of psychological ownership and ultimately, the effect of psychological ownership on company performance, the choice of a broad-based quantitative survey seems most appropriate.

When preparing a questionnaire and performing a survey, the concepts of validity and reliability of the responses need to be addressed. Validity is “*concerned with whether a variable measures what it is supposed to measure*” (Bollen, 1989, p. 184), while reliability refers to the instrument’s capacity for consistently and stably measuring what it is supposed to measure (Black and Champion, 1976; Winter, 2000). The concept of validity has been divided into a number of different subtypes of validity. Some scholars have divided it into content-related, criterion-related and construct-related validity, while others have divided the concept into internal and external validity.

To ensure content-related validity, all constructs and relationships were based on a theoretical foundation and items were based on former studies where possible. To increase the content-related validity, all questionnaires were pretested on a sample of 3 middle managers to test whether the items were understandable, clear and precise; this led to small linguistic adjustments. After the initial pretest, the questionnaire was pretested again on a group of 66 middle managers and 21 CFOs to test the validity of the constructs. None of the respondents in this pretest formed part of the following main survey. To further test the content-related validity, all constructs were tested in an exploratory factor analysis to ensure a Cronbach’s alpha of at least 0.7 and factor loadings of at least 0.7 (Kline, 2005). All tests supported a sufficient content-related validity.

Criterion-related validity was addressed by collecting performance measure data from official Danish databases containing financial data. The criterion-related validity was also tested by conducting tests

for non-response bias and collection method. The above actions gave no cause for concern in terms of criterion-related validity problems.

Construct-related validity was ensured by using theoretically founded and formerly tested items, constructs and relationships and by collecting data from multiple sources and from 3-4 respondents from each company.

The questionnaires were developed in the autumn of 2009 and were based on a literature review; all items were founded on theory and former surveys or case studies. To increase the possibility of a high response rate, the questionnaires were limited to two pages plus an introduction letter. Despite the limited space, the questionnaire included items addressing aspects of employee stock ownership, involvement of middle managers in strategy, leadership style and psychological ownership relevant for this thesis, but also other items to be used in future research.²

In the winter of 2009/spring of 2010, a list of the 500 largest Danish companies, measured in terms of number of employees (a minimum of 225 full-time employees), was extracted from “Kobmandsstandens Oplysningsbureau”. The 500 companies cover a broad set of industries. In addition to number of employees and company contact information, the database also provided us with 2004-2009 financial data, industry code, stock market listing and founding year. In a first step, the CFO was contacted by means of a personalised cover letter and the CFO questionnaire including questions about the use of ESO. Due to their position in the finance department, the CFOs are most likely to have access to information about who owns shares in the company and how many shares. Two weeks later, the first letter was followed by a second letter directed to the CFOs who had failed to respond to the initial letter. The two waves of letters produced a total of 149 answers from the CFOs. In a third step, the remaining 351 CFOs were contacted by phone and asked to participate in the survey. This resulted

² See the questionnaires in the appendix.

in additional 167 answers yielding a total of 316 answers from the CFOs. Careful inspection for completeness and plausibility of the responses led to the elimination of nineteen answers (one firm had actually received and answered the questionnaire twice, one firm was in the process of liquidation, three firms had severely reduced the number of employees during the autumn of 2009, thus no longer exhibiting the required number of employees, the other responses were severely incomplete or implausible). Thus, a total of 297 answers were collected from a broad set of industries (i.e. a response rate of 59.4%). The questionnaire was sent by mail to the head of marketing/sales in the 297 companies in February 2010; a second letter was sent two weeks later to the non-respondents and finally, the remaining companies were contacted by phone, resulting in a total of 207 answers (i.e. a response rate of 69.7% of the initial 297 companies). A randomly chosen middle manager from each of the 297 companies was contacted by phone to collect answers to a reduced questionnaire. A total of 210 middle managers answered the questionnaire (i.e. a response rate of 70.7% of the initial 297 companies). To be able to test the validity of the answers, answers from two middle managers were collected from 57 companies as a subsample of the 210 companies.

General data on the companies of the entire population and the participating companies are available in the appendix. The 297 companies have been tested for non-response bias and collection method; none of the tests raised any concerns.

The problem of common-method bias has been addressed on the basis of the recommendations of Podsakoff et al. (2003). The main approach for avoiding common-method bias is to use data from multiple sources. This is accomplished by collecting data from multiple respondents in each company and using external financial data collected from official databases as measures of performance. Additionally, in each article, a Harman's single factor test is conducted on all the items used in the models and none of the tests gave cause for common-method bias concerns.

THE CONTENTS OF THE REST OF THE DISSERTATION

The rest of the dissertation is structured as follows: Chapter 2 develops a theoretical model that demonstrates how ESO, involvement in strategy and a participative leadership style are antecedents of psychological ownership among middle managers, and how they influence each other. The model suggests that the creation of psychological ownership is moderated by worker and job characteristics, which, in return, implies that the importance and effect of participative strategy processes among middle managers differ between employees and between sectors. The effect of psychological ownership on employee behaviour, employee attitudes and financial performance is also found to be influenced by the sector's knowledge intensity and environmental dynamism, suggesting that in sectors with high knowledge intensity, the effect of creating psychological ownership among middle managers is greater. This is due to the important role played by highly motivated knowledge intensive employees in the creation of new ventures and difficulties of effective control and the risk of agency costs and slack, caused by job characteristics and the variety of tasks traditionally assigned to knowledge intensive workers. The contribution of the chapter lies in the development of a model combining the areas of ESO, involvement and leadership style; a model which views the concepts not as sources of increased performance, but as antecedents of psychological ownership. The model hereby combines the literature in a new way, creates new insights and directs future research.

Chapter 3 tests the prevalence and antecedents of employee stock ownership in Denmark. As developed in the model in chapter 2, ESO is one of the antecedents of psychological ownership and the effect of psychological ownership on company performance is expected to be stronger in dynamic environments. This indicates that the use of ESO among companies should grow more prevalent in turbulent periods such as the current financial crisis. However, findings from the USA and Ireland have

indicated that the prevalence of ESO has been reduced since the IT bubble burst in 2000. Similarly, the effect of psychological ownership on company performance is expected to be higher in knowledge intensive sectors indicating that the use of ESO would be expected to be higher in these sectors. The model also indicates that the use of ESO is more prevalent in companies with high middle manager involvement in strategy processes born out of the middle managers' desire for some kind of profit sharing as an incentive for engaging in participative strategic actions. The paper reports of an overall increase in the prevalence of ESO in Danish companies but finds that only the prevalence of narrow-based schemes (less than 50% of the employees covered by the scheme) has increased, while the use of broad-based schemes (more than 50% of the employees covered by the scheme) has decreased. The paper contributes to our knowledge by reporting that the antecedents of ESO are determined by the type of ESOP.

Companies employing an ESOP covering only top management are mainly small companies with a traditional view on strategy as a process controlled and executed by top management. In contravention of theory-based recommendations, they combine the narrow-based scheme with individual bonuses. According to a number of scholars, it is recommended to combine narrow-based incentives with broad-based schemes to motivate employees to both contribute to the long-term development of the company and to excel in their individual job functions. Companies employing broad-based schemes covering a majority of the employees also seem to complement the broad-based ESO scheme with group-based bonuses, also contradicting the recommendations from academia.

The general analysis of companies using ESOPs indicates that the prevalence of ESO is higher in listed companies, which is in support of a number of similar findings (Pendleton et al., 2001). Adjusting for stock listing, the prevalence seems to be higher in a stable sector like construction with relatively low-educated, low-paid employees, while lower in a dynamic sector like IT and telecommunication with

relatively high-educated high-paid employees. This finding also conflicts with the expectation that the prevalence would be high in dynamic industries with high-paid employees; an expectation borne out of the fact that such industries should see a greater effect of and need for employee initiatives and the fact that highly salaried employees would be more familiar with stock investments.

Chapter 4 tests ESO, involvement and participative leadership style as antecedents of psychological ownership as well as their interrelations and interactions. Based on the model in chapter 2 and previous literature reviews, it was expected that all three variables would be direct antecedents of psychological ownership and that all interrelations would be significant and positive. The models were tested in structural equation models (SEM) and the model with the best good fit reported both participative leadership style and participation to be significant positive determinants of psychological ownership.

Especially a participative leadership style was reported to have a strong and highly significant impact on the creation of psychological ownership. A participative leadership style was also found to be a strong positive predictor of the level of involvement, implying that a top management which conducts a leadership style that encourages, supports and expects involvement also experiences a high level of involvement among middle managers. ESO had no direct effect on the creation of psychological ownership, but was mediated by participation. This is in line with previous findings arguing that the effect of ESO is mediated by allowing employees to exercise the formal ownership rights like participation in decisions. A number of interactions between the three variables were tested but the tests failed to improve the fits of the model. The chapter contributes to our understanding of the creation of psychological ownership by testing the antecedents, interrelations and interactions of ESO, involvement and leadership style. The findings reveal that especially the leadership style conducted is capable of enhancing the creation of psychological ownership and that despite strong theoretical

arguments indicating involvement as an antecedent of psychological ownership, the present data find that only participation, not autonomy, is a determinant.

Using the model tested in chapter 4, chapter 5 extends the model by testing the effect of psychological ownership on company performance. The model tests if ESO, middle management involvement in strategy and a participative leadership style have a direct effect on performance, if the effect is mediated by psychological ownership or both. The model in SEM demonstrated good fits and confirmed the findings in chapter 4 which indicated that participation and a participative leadership style are antecedents of psychological ownership, while ESO is mediated by participation. No direct effects of the three variables were found on company performance, signifying that ESO, middle management involvement and leadership style are mediated by psychological ownership. These findings provide the empirical support for the model in chapter 2, suggesting that the research areas of ESO, involvement in strategy and leadership style need to focus on the effect of the variables on the creation of internalised extrinsic motivation and especially psychological ownership. This finding also suggests that more research should be conducted into how ESO, involvement and leadership style can be combined with other activities which increase motivation and that the factors in themselves are not sufficient for successfully increasing company performance.

2. Involvement, leadership style and formal ownership as determinants of psychological ownership among middle managers: A behavioural model³

INTRODUCTION

The increased knowledge intensity in work settings and environmental turbulence highlights the need for involving employees in strategic decisions to enable fast reactions to changing market demands or enhance sensemaking, commitment and loyalty among employees. Involvement may take the form of either participation in decisions or distribution of decision authority to the lowest possible relevant organisational level. Especially involvement of middle managers in strategy processes has been the target of increasing attention due to the unique position of middle managers being in close contact with top management as well as lower organisational levels (Nonaka, 1994). Researchers have addressed the phenomenon at both the organisational and the individual level. The first has tested the outcomes of involvement (i.e. Floyd and Lane, 2000; Pappas and Wooldridge, 2007) while the latter focuses on the *social processes* within which strategies are actually realised (Pettigrew, 1973, 1992; Whittington, 2006). At the organisational level, middle management involvement has been linked to increased information sharing, commitment and loyalty (Currie and Procter, 2005; Pappas and Wooldridge, 2007), better strategy implementation (Sillince and Mueller, 2007; Vilá and Canales, 2008) and enhanced innovation performance (Laine and Vaara, 2007; Mantere and Vaara, 2008). Despite the above-mentioned positive outcomes of middle management involvement, tests of the effects on

³ The current chapter corresponds to a single-authored article under review at *Journal of Management Studies*. The author would like to thank Professor Torben Juul Andersen and PhD fellow Stefan Linder for helpful comments during the development of the paper.

company performance are less consistent (Andersen, 2004; Meir, 2005). This lack of a consistent relationship between middle management involvement and company performance indicates a gap in our understanding of the strategy processes at the individual level. This gap is partly addressed in the strategy-as-practice (s-a-p) literature which views strategy as a social practice (Johnson et al., 2003; Whittington, 2006) and seeks a *“better understanding of the microlevel processes and practices constituting strategy and strategizing”* (Mantere and Vaara, 2008). The s-a-p literature has enriched our understanding of how different discursive practices enable or constrain participation (Jarzabkowski, 2005) and how top management can legitimate participation or retain centralised decision power through the language of strategy (Knights and Morgan, 1991). While the potential positive effects of involvement have been addressed in a number of studies (Pappas and Wooldridge, 2007; Currie and Procter, 2005), other studies have found involvement to enhance food-dragging, sabotage and agency costs (Guth and MacMillan, 1986; Laine and Vaara, 2007). These diverse findings highlight a key challenge in middle management involvement: how to motivate middle managers to become involved in strategy processes and to be involved in the best interest of the company.

In their article on self-determination theory (SDT), Ryan and Deci (2000) present how intrinsic motivation or internalisation of extrinsic motivation creates an alignment between company values and goals and individual values and goals. While intrinsic motivation comes from within, spurred by an impulse to complete the task for the task's own sake, most job situation settings will be externally motivated. This calls for an increased focus on how to enhance internalisation of extrinsic motivation among middle managers. Internalisation has been found to increase if the task is perceived as meaningful, is prompted by significant others (persons or organisations) to whom the person feels attached or related and if the middle manager experiences autonomy and self-determination, creating a sense of relatedness to the company (Ryan and Deci, 2000).

The creation of relatedness implies an internalisation of the company which manifests itself in employees perceiving the company as a part of or partly belonging to themselves; this is often referred to as psychological ownership, psychological empowerment or organisational citizenship (Huang et al., 2010; Pierce et al., 2001; Spreitzer, 1995). The concepts are partly overlapping and are found to facilitate the effect of employee stock ownership (psychological ownership), involvement of middle managers in strategy (organisational citizenship behaviour) and a participative leadership style (psychological empowerment) (Eby et al., 1999; Huang et al., 2010; Pierce et al., 2001; Spreitzer, 1995). Formal ownership (ESO), involvement and feedback and support (a participative leadership style) are also found to be determinants of psychological ownership (Pierce et al., 2001). This suggests that all three concepts are mediated by the creation of internalised extrinsic motivation in the form of psychological ownership and highlights a gap in our understanding of how the concepts influence the creation of psychological ownership, how they interact and if ESO, involvement of middle managers in strategy and a participative leadership style in themselves increase company performance or only have an indirect effect through the possible creation of internalised extrinsic motivation and its effect on employee behaviour and attitudes.

This article develops a model which explores that gap by proposing that involvement of middle managers in strategy processes potentially increases middle managers' sense of psychological ownership, which has been found to be a strong predictor of company performance (O'Driscoll et al., 2006). The model also argues that combining involvement with other determinants of psychological ownership, especially formal ownership and a participative leadership style, mediates the creation of psychological ownership and reduces the potential negative effects of involvement, such as foot-dragging and sabotage (Guth and MacMillan, 1986). Thus, the model combines theory on both the

organisational level and the individual level of involvement. Furthermore, the article proposes that involvement, and hence a focus on the creation of psychological ownership, is especially important in a dynamic environment and that sectors with highly educated workers or specific job designs support this creation and thereby enhance the positive effects of middle management involvement. The model only focuses on involvement of middle managers in strategy, ESO covering middle managers and a participative leadership style targeted at middle managers in order to combine the research streams of middle management involvement on the organisational level with the research stream dealing with how to motivate employees on the individual level. The authors call for further research in the area to extend the model to include involvement of all employees. Before introducing our model, we first review the literature on middle management involvement, formal ownership, participative leadership style and psychological ownership.

INVOLVEMENT OF MIDDLE MANAGERS IN STRATEGY PROCESSES

Involvement of middle managers has received increasing attention within strategy research and practice and a number of scholars have identified a trend among companies towards greater involvement of especially middle managers in strategy processes (Guth and MacMillan, 1986; Hickson, Butler, Cray, Mallory and Wilson, 1986; Imai, 1986; Mintzberg, 1990; Rhyne, 1986; Wooldridge and Floyd, 1990). While no consensus exists on how and how much middle managers should be involved, it is generally accepted that too little involvement could lead to poorly developed strategies (Floyd and Wooldridge, 2000) or difficulties with implementation (Mintzberg, 1994). Involvement of middle managers can either take the form of allowing middle managers to participate in the strategy process and advocate

their ideas to top management, referred to as *participation in decisions* (Andersen, 2004), or take the form of distributing the strategic decision authority to middle managers, referred to as *autonomy* (Burgelman, 1984). Some of the arguments in favour of involving middle managers are difficulties with strategy implementation (Galbraith and Kazanjiam, 1986; Huy, 2002; Rouleau, 2005; Sillince and Mueller, 2007; Vilá and Canales, 2008) and an increasing rate of environmental change (Ansoff, 1979), while others refer to the growing importance of intrapreneurship for innovation and corporate success (Burgelman, 1984; Kuratko, Montagnor and Hornsby, 1990; Laine and Vaara, 2006; Ling, Floyd and Baldrige, 2005; Mair, 2005; Mantere, 2005; Mantere and Vaara, 2008; Pappas and Wooldridge, 2007; Quinn, 1985).

The middle management perspective in strategy research emerged from the recognition of middle managers' unique position of access to both top management and front-end managers. Middle managers thereby became essential as sources of organisational information to top management and agents of change distributing and facilitating information on and implementation of strategic initiatives from top management (Nonaka, 1994). As important sources of information to top management, middle managers' championing or *issue selling* activities have attracted a substantial amount of work (Dutton, Asford, O'Neil and Lawrence, 2001, Ling, Floyd and Baldrige, 2005). Through issue selling, middle managers shape and influence the strategic agenda by choosing which information should be presented to top management. As sources of information, middle managers also act as *facilitators* encouraging lower level management and workers to participate in idea generation or experiments and thereby drive innovations (Rouleau and Balugun, 2010; Wooldridge et al., 2008). Middle managers, however, are only inclined to actively engage in the strategy process if they feel that their opinions and

arguments matter and that top management is willing to negotiate and compromise (Jarzabkowski and Balogun, 2009).

While issue selling addresses the bottom-up information stream, middle managers also engage in a top-down information stream in that they promote strategic change and help employees at lower organisational layers make sense of strategic change and initiatives (Conway and Monks, 2010; Huy, 2002; Yang et al., 2010). Middle managers thereby act as agents of change and support strategy implementation by increasing information on and acceptance of the company strategy. Involving middle managers in the strategy process can build a shared understanding and acceptance of the company strategy, enhancing middle managers' ability and commitment to support implementation of the strategy. Ketokivi and Castaner (2004) found that involvement increased motivation and commitment among middle managers and reduced the tendency to pursue subunit goals; thus, it brought in its train increased goal convergence and coordination between managers.

Research on the effect of middle management involvement on strategy implementation, commitment and financial performance reveals strong evidence supporting smoother strategy implementation and increased information sharing (Kellermanns, Walter, Floyd, Lechner and Shaw, 2010; Wooldridge and Floyd, 1990) while the effect on financial performance is more limited. Mair (2005) found increased unit level growth in a large financial service firm due to middle manager strategic behaviour, while Wooldridge and Floyd (1990) in an analysis of 25 organisations found that middle manager involvement was associated with increased financial performance. A more diverse result was reported by Andersen (2004) who performed a cross-sectional analysis of 185 American corporations. He found that autonomous strategic actions in a dynamic environment lead to increased financial performance while participation was insignificant when testing for dynamism and combined effects. Additionally, he

did not succeed in finding any significant direct effects of participation and autonomy, indicating that the effects are limited in more stable environments.

These less consistent findings of a relationship between involvement and company performance are supported by a number of studies addressing potential negative effects of participation and autonomy. Laine and Vaara (2007) reported how middle managers, due to a lack of acceptance of the company strategy, developed their own strategy and pursued their own goals, while Burgelman (1983, 1994, 2005) in a number of articles reported how units at Intel continued to develop certain products in contravention of the overall strategy of the company. Guth and MacMillan (1986) also report how middle managers obstructed strategy implementation through foot-dragging and sabotage, while Meyer (2006) found that middle managers' self-interest lead to destructive interventions causing strategy implementation to fail.

The above-mentioned findings suggest that to better understand how to ensure a positive effect of middle management involvement, gaining a greater appreciation of the motivational aspects of involvement seems crucial. Mantere and Vaara (2008) found that different discursive practices either constrained or enabled participation. They discovered that mystification, disciplining and technologisation reduced or constrained involvement by creating the impression that strategy is confined to an inner circle and constrains the possibility to become involved due to organisational or technological routines. On the other hand, self-actualisation, dialogisation and concretisation were found to enable involvement. These findings suggest that to promote involvement, top management needs to conduct an encouraging leadership style that signals that involvement is not only accepted and appreciated but expected by all employees. These initiatives need to be combined with middle managers investing themselves in the company by reflecting on the organisation and their role in it;

hence, middle managers need to be committed to the company and accept and support company goals and needs above their own needs and wishes. Caramelli and Briole (2007) list three theoretical models of the effects of decision-making participation: a cognitive model, an affective model and a contingent model.

The cognitive model of participation suggests that participation in decision-making enhances the flow and use of important information in organisations. Since workers and lower level managers are closer to the market, production, customers and the products, they typically have a better and more up-to-date knowledge of their environment than top management does. By involving the employees in the decision-making process, decisions will be based on higher quality information and decisions will be more easily implemented if the employees feel an ownership to the decision (Miller and Monge, 1986). Including the employees in the decision-making clarifies expectations regarding instrumentalities (Mitchel, 1973) and provides the opportunity for employees to affect the reward system and thus make a better match between effort, performance and reward.

The affective model of participation is based on the human relation school of management (Hertzberg, 1966; Maslow, 1954; McGregor, 1960) and refers to the effect of participation on job satisfaction. When managers involve employees in the decision-making process and provide them with leverage and decision power, they automatically feel important, trusted and intelligent. This leads them to fulfil high level needs such as recognition, independency, respect, equality and self-esteem and creates higher job satisfaction and motivation (French, Israel and As, 1960). Participation may also lead to higher organisational commitment. The perception of control and influence encourages workers to identify themselves with company values and goals and to become more loyal and more active on behalf of the company (Styskal, 1980; Tannenbaum 1962).

The contingent model of participation stresses that the effect of participation in decision-making is determined by individual variables such as personality and values (White, 1978). The lack of trust between management and workers or a political perception of the worker-manager relationship may prevent a fruitful outcome of participation in the decision-making process and implementation of the decisions.

Each of the three models highlights the need for motivation among middle managers to enhance the effect of involvement. However, it is also clear that although the need for motivation is recognised, the matter is either widely neglected or it is assumed that allowing middle managers to involve in strategic decisions automatically creates motivation. Based on self-determination theory, an internalisation of the extrinsic motivation will fail unless middle managers develop a sense of affinity with the company i.e. in the form of psychological ownership (Ryan and Deci, 2000). This requires the support from a top management who encourages involvement through clear organisational structures guiding involvement and feedback in the form of a participative leadership style. Involvement is also seen to be supported by allowing middle managers to gain a formal ownership to the company through an employee stock ownership plan (ESOP), signalling an intention to include the middle managers and giving them access to a part of the company profit and influence. The following section will address how participative leadership style and employee stock ownership are interrelated with the inclusion of middle managers in the strategy process and how they all interact as determinants of psychological ownership

EMPLOYEE STOCK OWNERSHIP

More than 30 studies of employee stock ownership (ESO) have addressed the question of the effect of ESO on company performance (Kruse and Blasi, 1997; Kruse et al., 2008; McNabb and Whitfield, 1988; Ohkusa and Ohtake, 1997; Smith et al., 1997). The literature on ESO generally limits the definition of ESO to stocks offered through an employee stock ownership plan (ESOP) initiated by the company. The findings are divided between a positive relationship between ESO and company performance and neutral relationships; none of the studies found a negative relationship (Jones, Kalmi and Mäkinen, 2010; Kramer, 2010). The findings indicate that the effect of ESO is multidimensional and moderated by a number of factors: possibility to exercise the formal ownership rights (Klein, 1987; Long, 1977, 1978; Rosen and Quarrey, 1987), creation of psychological ownership (Klein, 1987), ownership expectations (Steers, 1977), management's philosophical commitment to employee ownership (Hambrick and Mason, 1984) and participation in decision-making (Long, 1977, 1978). On average, introducing an ESOP will improve productivity by 4-5% in the year of ESOP introduction and the increased productivity will remain at that level in subsequent years (Kruse, 2002; Logue and Yates, 2001). The calculation is based on an average of identified performance effects based on 33 different articles (Kruse, 2002). Other studies have indicated a higher growth in the number of employees after adopting ESO, especially among companies with high levels of employee participation in decision-making (Logue and Yates, 2001; Quarrey and Rosen, 1993; Winther and Marens, 1997). An analysis of all privately held ESO companies in 1988 indicates that introducing ESO also increases the survival rate of the companies (Kruse, 2002). Another study followed all public listed companies in the USA from 1983 to 1995 and concluded that ESO companies had a 20% higher survival rate compared with public listed companies not employing ESO. Similar results have been found in a long-term study of French worker cooperatives (Estrin and Jones, 1992).

The agency theory constitutes the main theoretical background for explaining the effects of ESO; it states that the interests of the utility-maximising employees are incongruent with those of the firm (Pendleton, 2006) and that there is a risk of discretionary behaviour, moral hazard and adverse selection (Eisenhardt, 1989; Holmstrom, 1979). It has been argued that collective incentive programmes like profit sharing or employee ownership can reduce the agency costs by aligning employee interests with those of the firm.

A number of studies have analysed the effects of ESO on employee behaviour, commitment and job satisfaction (Beatty, 1994; Drago and Heywood, 1995; Jones and Pliskin, 1997; Kruse, 1996; McCarthy, Reeves and Turner, 2010), information sharing and bargaining costs (Cramton, Mehran and Tracy, 2010) while another body of analyses focus, as earlier mentioned, on the effect on company performance (Addison and Belfield, 2000, 2001; McNabb and Whitfield, 1998; Sesil et al., 2002). Still, the two areas are connected in the sense that the effect on employee behaviour triggers the effect on company performance by reducing or eliminating the agency costs and by increasing commitment and participation in decisions, thereby creating internalised extrinsic motivation. This indicates that it is not the expected financial bonus per se which aligns the interests of the middle managers with those of the company but the perception of being valued and allowed to participate in the decision-making process. This is also in keeping with findings reporting that the ownership share has either no effect on company performance or even a negative relation to commitment or performance (Kim, 2009; Pendleton, 2010a; Sauser, 2009). Yet, the potential positive effects on employee behaviour or attitudes are mediated by a number of factors:

Possibility to exercise the formal ownership. Formal ownership is normally defined as the possibility to exercise three rights: a) the right to possess some share of the owned object's physical being and/or

financial value b) the right to exercise influence (control) of the owned object and c) the right to information about the status of that which is owned (Pierce, Rubenfeld and Morgan, 1991). Long's analyses (1977, 1978) showed that the formal ownership alone only had a weak effect on job attitudes, such as job satisfaction and commitment, while perceived participation in decision-making and influence creating an internalisation of the company was a much stronger predictor of job attitudes. This indicates that if ownership is to have an effect on job attitudes, there must exist a **psychological perception of ownership** and thus influence on the company and the actions taken on the operational and strategic level (Hammer, Landau and Stern, 1981; Long, 1978). This is also congruent with the concept of controllability, indicating that employees need to feel that they can affect the measures used to calculate the bonus; otherwise the extrinsic incentive has no effect. The perception of influence and importance as a key variable is also in line with literature exploring the areas of sensemaking and empowerment as paths to internalised extrinsic motivation (Huang et al., 2010).

The ownership expectations are closely related to the creation of psychological ownership. The cultural norm in most capitalist societies is that formal ownership is linked to equity possession, information and exercise of influence. If these expectations are not congruent with the actual experience, the psychological ownership is likely to become weaker than if there was complete congruency between expectations and experience. There can be a number of reasons for such incongruence between employee ownership and employee control (Blasi, 1988; Gunn, 1984; Russel, 1988; Tannenbaum, 1983); one being that we traditionally accept that the *“legitimate authority rest with property rights, which management either holds or represents”* (Blasi, 1988, p. 217). This concept of *“legitimate authority”* may prevent formal ownership from creating a sense of psychological ownership and thus the expected effects on job attitudes, commitment and involvement. Since the

above concept places the authority with management, it is management's responsibility to create a sense of legitimacy to employee involvement and mediate the creation of psychological ownership. This creation of legitimacy of employee involvement is highly dependent on **management's philosophical commitment to employee ownership** i.e. *"the extent to which management sees employee ownership as a part of the company's overall culture, human relations policy and/or commitment to employees"* (Rosen et al., 1986, p. 64). Hambrick and Mason (1984) have argued that management's philosophical commitment to employee ownership plays a significant role in the creation of organisational systems that encourage employee participation and legitimise employee influence. Management's commitment to the scheme is highly related to the reasons for introducing ESO. Caramelli and Briole (2007) list a number of reasons for implementing ESO: some companies want to benefit from advantageous tax structures or have other financial reasons, while others are more focused on the effect on the employees. Klein (1987) found that the strength of management's philosophical commitment to employee ownership was significantly connected to employee attitudes (satisfaction, commitment and turnover intentions). The interpretations of the analysis indicate that the more worker influence incorporated in the ESOP, the better are the results of the ESOP (Long, 1982; Rosen and Quarrey, 1987). Management's attitude will affect the employees' possibilities to 1) become owners 2) access information and 3) exercise influence. The above-mentioned four factors: possibility to exercise the formal ownership rights, creation of psychological ownership, congruency with ownership expectations and management's philosophical commitment to employee ownership may all lead to a higher level of **employee participation in decision-making**. Some studies indicate a higher level of employee participation in ESO companies (Conyon and Freeman, 2001; Dube and Freeman, 2001; Tannenbaum, Kavcic, Rosner, Vianello and Wieser, 1974), while other studies indicate that ESO

does not automatically entail higher participation (Zwerdling, 1978; Hammer and Stern, 1980; Ivancic and Rosen, 1986, Toscano, 1983).

As presented above, a number of similarities exist between the research stream of middle management involvement in strategy processes and the employee stock ownership literature. The effect of both involvement and ESO is mediated by a participative leadership style that encourages and supports involvement by legitimising and expecting middle management involvement. ESO is seen to increase middle management involvement and the effect of both concepts is considered to be highly dependent on the creation of a psychological ownership. The participative leadership style and the determinants and creation of psychological ownership and their effects on employee behaviour and organisational outcomes have received increasing attention in research streams of their own and will be presented in the following sections.

PARTICIPATIVE LEADERSHIP STYLE

A participative leadership style supports the involvement of employees in organisational decision-making by consulting employees before decisions are made, by asking their opinions and taking them into consideration (Kaufman, 2001; Kim, 2002). This is done by creating a culture that signals that the opinion and participation of the employee is acknowledged, valued and expected (Emery, 1995; Stanton, 1993). The leadership style supports empowerment, defined as the delegation of the decision authority to the lowest level in the organisation capable of making a competent decision (Conger and Kanungo, 1988; Seibert, Silver and Randolph, 2004). The effect of a participative leadership style is argued to be based on either the motivational model or the exchange model (Dirks and Ferrin, 2002;

Spreitzer, 1995). The motivational model focuses on the motivation created by being allowed to participate in decision-making, thus assuming that participation in itself is motivating (Thomas and Velthouse, 1990), while the exchange model states that the experience of trust, confidence and respect from top management induces the employee to exhibit a higher level of work performance (Zallars and Tepper, 2003). Huang et al. (2010) found that middle managers were mainly motivated by the prospect of being able to influence decisions (motivational model), suggesting that the creation of motivation is crucial when middle managers participate in decision-making or have decision authority distributed to them. Spreitzer (1995) found that the effect of a participative leadership style was mediated by the creation of psychological empowerment defined as *“an individual’s experience of intrinsic motivation that is based on cognitions about him- or herself in relation to his or her work role”*. The construct is composed by four cognitions: meaning, competence, self-determination and impact (Conger and Kanungo, 1988; Spreitzer, 1995) and it can be seen that involvement in strategic decision-making involves all four cognitions and therefore supports the creation of psychological empowerment.

Although involvement of employees in the strategy process is a top management desideratum, it may still create systems and a culture that constrain involvement. In their analysis of 12 Nordic organisations, Mantere and Vaara (2008) found that mystification, disciplining and technologisation impeded involvement, while self-actualisation, dialogisation and concretisation promoted involvement. This suggests that top management needs to create systems where employees can see how they are able to participate, it needs to actively seek the opinion of the employee and engage in constructive controversy in the form of open-minded discussions of opposing positions (Ekaterini, 2010; Tjosvold, 1998). To create such a culture, the employee must to feel safe and top management must be curious and make an effort to understand the position of the employee (Poon et al., 2001).

The effects of a participative leadership style are reported to be increased quality of decisions (Scully, Kirkpatrick and Locke, 1995), increased employee motivation (Locke and Latham, 1990), commitment (Armenakis, Harris and Mossholder, 1993; Yiing and Ahmad, 2009), satisfaction (Smylie, Lazarus and Brownlee-Conyers, 1996) and psychological empowerment (Eby et al., 1999). The effect on performance has been reported to be mediated by psychological empowerment (Careless, 2004; Seibert et al., 2004; Zhang and Bartol, 2010) suggesting that a participative leadership style and involvement alone will not increase performance; this requires that the creation of internalised extrinsic motivation of the employee is brought into the equation.

When analysing the three research streams presented above, it becomes evident that they all have a strong theoretical foundation supporting the effect, while the empirical evidence of a performance effect seems more chequered. Similarly, they all seem to be mediated by the creation of internalised extrinsic motivation in the form of organisational citizenship behaviour, psychological empowerment and psychological ownership. This raises the question of whether the performance effect is caused by the creation of psychological ownership and whether ESO, involvement of middle managers in the strategy process and a participative leadership style are determinants of the creation of this internalised extrinsic motivation. In addition, there seems to be a close interrelation between the three concepts in the sense that they influence, moderate and enhance each other; this suggests that scrutiny into the combined effects is highly warranted. In the following section, the independent research stream of psychological ownership, its determinants and effects will be reviewed followed by development of a new behavioural model combining the research streams.

PSYCHOLOGICAL OWNERSHIP

The concept of psychological ownership has been investigated within the contexts of consumer behaviour (Belk, 1988), child development (Isaacs, 1933; Kline and France, 1899), philosophy (Heidegger, 1927; Sartre, 1943) and organisations (Dirks, Cummings and Pierce, 1996; Pierce, Kostova and Dirks, 2001; Pierce, Jussila and Cummings, 2009; Pratt and Dutton, 2000; Van Dyne and Pierce, 2004; Wagner, Parker and Christiansen, 2003). Pierce et al. (2003, p. 86) define it as “*the state in which individuals feel as though the target of ownership or a piece of that target is “theirs”*”. When middle managers experience psychological ownership, they will act as if the organisation were theirs and therefore act in the best interest of the company. Psychological ownership in organisations is thus linked to increased organisational commitment (O’Driscoll et al., 2006; Pendleton, 1998; VandeWalle et al., 1995), stewardship (Dirks et al., 1996; Pierce et al., 2003) and enhanced company performance (O’Driscoll et al., 2006; Pierce and Rodgers, 2004). The theoretical foundation of psychological ownership is rooted in five human motives that drive people to become psychologically attached to an organisation, an idea or a number of other objects. The five motives are: a) efficacy and effectance, b) self-identity, c) having a place, d) territoriality and e) accountability (Avey et al., 2009; Pierce et al., 2003).

Efficacy and effectance address the human need to feel in control and capable of fulfilling a specific task (Bandura, 1977). Since ownership is the ultimate control of an object, humans are drawn towards a feeling of ownership; the more important it is to be able to control the object or to complete the task, the greater is the desire to gain ownership. Since the capability to successfully complete job related tasks is important to many people, the drive towards gaining psychological ownership of a work place or an organisation is expected to be high. Self-identity is created through the interaction with others and

viewing oneself from the perspective of others (Dittmar, 1992; Mead, 1934) and is partly created by the objects which we own or control and the meaning and importance ascribed to them by society (McCracken, 1986; Mead, 1934; Pierce et al., 2003). By controlling objects generally accepted as important, people create a self-identity based on control and power driving middle managers towards a sense of psychological ownership of the company. Having a place or belongingness is based on the need for feeling safe and having a territorial core or reference point around which people structure their daily lives (Porteus, 1976; Weil, 1949, 1952). Kron (1983) referred to having a place as having a home, a place of refuge and one's roots, stating that humans need to create feelings of ownership towards an object to feel safe and achieve a sense of belongingness. Territoriality combines the need for control with belongingness and addresses the human need for not only having a sense of ownership, but for having the feeling that ownership is accepted by other humans. By "*communicating ownership to potential threats and the social unit as a whole*" (Avey et al., 2009) employees experience acceptance by the surrounding society in terms of the feeling of ownership to the object. Accountability is "*the implicit or explicit expectation that one may be called on to justify one's beliefs, feelings and actions to others*" (Lerner and Tetlock, 1999, p. 255). Accountability is based on the human need for respect and being considered important and valued. By feeling ownership towards an object, people gain control and therefore need to be included in decisions regarding the object, increasing the level of accountability.

The creation of psychological ownership is supported by organisational settings, worker and job characteristics and their influence on the employee's personal experience of the job. Pierce et al. (1991) found that equity possession, information sharing and influence supported the creation of psychological ownership. These findings suggest that both formal ownership like ESO and involvement are

determinants of psychological ownership. As stated above, ESO needs to be combined with involvement and the possibility to exercise formal ownership rights in order to create a sense of ownership, indicating that the combined effect is higher than the sum of its parts. A number of analyses also indicate that the company cannot achieve the motivation and participation effect without financial participation, as referred to in Blasi, Kruse and Bernstein (2003, p. 176): *“telling employees to take ownership of their jobs rings hollow if management doesn’t offer actual financial ownership or some share in the improved performance... without wealth sharing in some form, it feels like the company is just trying to con you into working harder”*. These findings suggest that involvement in itself or ESO in itself is not enough to create psychological ownership but needs to be combined somehow.

Worker characteristics are also found to mediate the creation of psychological ownership. Kuvaas (2006) reported that highly educated workers more easily developed psychological ownership due to interesting work and organisations that appreciate their work effort. It was also reported that highly educated workers with high base salaries were more motivated by involvement and intrinsic incentives than by bonuses and other extrinsic motivation systems. Similarly, Gagné and Deci (2005) reported that intrinsic motivation created through autonomy, trust and involvement had a higher impact on commitment and job efforts than extrinsic motivation. Pierce et al. (2001, 2003) found that the personal sense of control of the target, intimately knowing the target and investing oneself in the target all were pathways to the creation of psychological ownership. This means that formal ownership, distributing authority, trust and a participative leadership style all are pathways to psychological ownership. Pierce et al. (2009) found that job characteristics like skill variety, task identity, task significance, autonomy and feedback supported the perception of control and willingness to dedicate oneself to the task, thereby facilitating the creation of psychological ownership.

Pierce et al. (2009) similarly found that the need for and effect of psychological ownership among middle managers were higher in knowledge intensive sectors owing to the fact that the characteristics of the “product” in these sectors are based on highly specialised knowledge or because the “product” is specialised knowledge. Knowledge intensive workers also maintain a certain control over (ownership to) key resources in the company indicating a need for delegation and involvement and a possibility of exercising control and influence by the workers (Grant, 1996).

While most of the literature on the effect of psychological ownership has focused on the possible positive effects, Brown et al. (2005) stress that territorial behaviour caused by psychological ownership can be both functional and dysfunctional. The dysfunctional territorial behaviour materialises when employees engage in defensive actions to defend or regain control of the organisation. Dysfunctional defensive territoriality can sabotage strategy implementation or prevent development and innovations if they challenge existing power structures. The positive effects of psychological ownership mainly address the effect on employee behaviour while only a few analyses test the effect on company performance.

O’Driscoll et al. (2006) tested the mediating effect of psychological ownership on 239 New Zealand workers reporting that less structured work environments mediated by psychological ownership increased employee citizenship behaviour and organisational behaviour. Thus, they deduced that the work environments need to allow employees to take initiatives to support the effect of psychological ownership. Van Dyne and Pierce (2004) tested 800 workers from three different companies and found that the creation of psychological ownership improved employee attitudes like organisational commitment, job satisfaction and organisation-based self-esteem, organisational citizenship behaviour and company performance. Conceptual research by Pierce et al. (2001, 2003) suggests that

stewardship, personal sacrifice and risk, promotion of organisational change and caring and protective behaviour towards the organisation all are enhanced by the creation of psychological ownership. While the behavioural effects of psychological ownership are addressed in a number of studies mentioned above, only a few studies have tested the direct effect on company performance. Van Dyne and Pierce (2004) tested the effect of psychological ownership on employee performance in three field samples from the USA. A positive correlation was reported between psychological ownership and employee performance, but no significance was found in the model when accounting for demographic controls.

The review of the literature on middle management involvement in strategy processes, employee stock ownership, participative leadership style and psychological ownership has revealed a number of overlaps and similar theories that can complement and enrich our understanding of all four areas. Below, we develop our model which combines the areas and discuss the implications of the model.

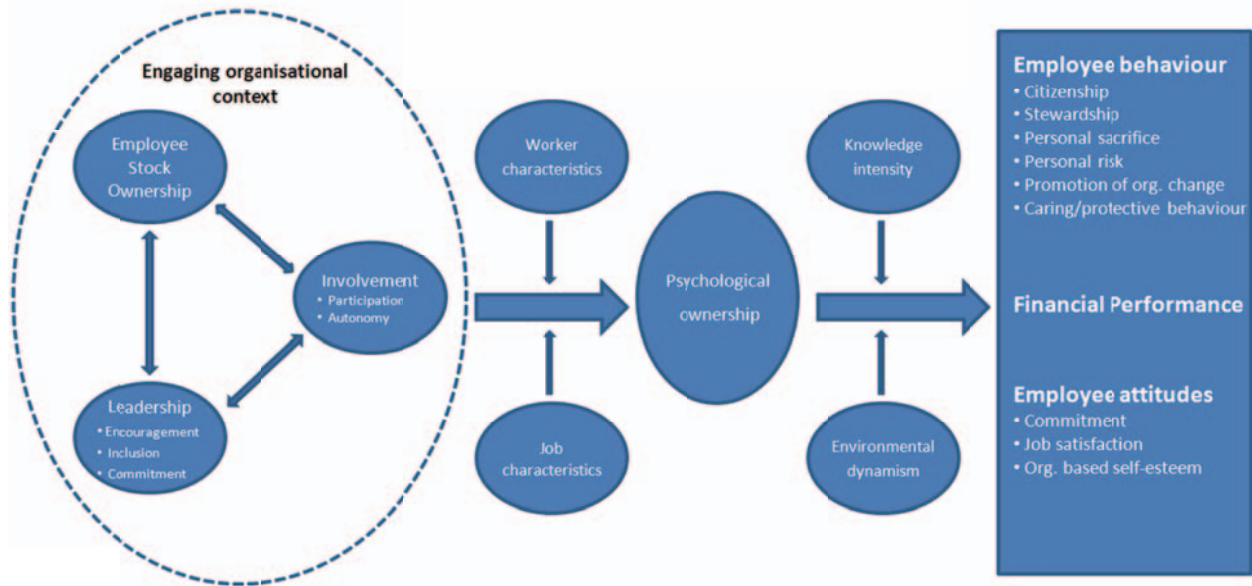
A BEHAVIOURAL MODEL OF INVOLVEMENT, LEADERSHIP STYLE AND FORMAL OWNERSHIP

In this section, we formulate our model and provide theoretical and empirical evidence to support its propositions. The model is based on the review of the literature on employee stock ownership, involvement of middle managers in strategy and the participative leadership style. The review reveals that despite a strong theoretical foundation in all three streams supporting the importance and effect on company performance, the empirical evidence is inconclusive. The review also demonstrates that all concepts are mediated by the creation of internalised extrinsic motivation i.e. in the form of psychological ownership. This raises the question of whether the positive performance effect is a result

of the introduction of ESO, the involvement of middle managers in strategy or the adoption of a participative leadership style, or whether it is caused by psychological ownership whose determinants count, among others, the former concepts. The review also found that all three concepts are interrelated and that the effects of one concept are moderated by the other two. This suggests that future research should include all three areas and not be limited to one or two due to expected interaction and moderating effects. The review on psychological ownership finds that this partly independent research stream has argued that ESO, involvement and leadership style are important but not the only determinants of the concept. The creation of psychological ownership has been found to be moderated by worker and job characteristics while the effect on company performance is enhanced by knowledge intensity and environmental dynamism; indeed, this enriches our knowledge of the effects of the three determinants and becomes the lodestar for future research in all three areas.

While some of the arguments and evidence used apply to involvement of all employees or employee stock ownership plans covering all employees, the focus of the model is restricted to middle managers; that is, the involvement of middle managers in strategy processes, middle management participation in ESOPs and top management's participative leadership style addressing middle managers. Similar types of relationships may exist at lower hierarchical levels in the organisation and the authors call for further research extending the model to cover the behavioural effects of involvement and formal ownership on all employees.

Figure 1: A behavioural model of involvement and Employee Stock Ownership



In the following sections, we explore the model, develop related propositions and discuss their implications for future research.

Employee stock ownership and involvement

Involvement of middle managers in strategy processes can be divided into participation in decision-making and distribution of strategic decision authority to middle managers, referred to as autonomy (Andersen, 2000, 2004; Burgelman and Grove, 2007). To encourage middle managers to participate in the strategy process and prevent middle managers from pursuing own or subunit goals as part of autonomous strategic actions, an incentive system may be established. It can be argued that the

incentive system should support internalised extrinsic motivation due to difficulties measuring the effect of strategic initiatives and the long-term perspective of the initiatives. Such an incentive can be achieved by allowing middle managers to gain formal ownership of the company through an ESOP if introduced in a way that allows middle managers to exercise formal ownership rights (Pierce et al., 1991). Research has shown that middle and top management are more willing to participate in an ESOP than employees at lower levels because of their investment experience and more diversified portfolios (Markowitz, Blasi and Kruse, 2010; Pendleton, 2010b). Blasi et al. (2003) also found that middle managers might regard top management's attempt to involve middle managers in the strategy process in an effort to infuse them with a feeling of ownership to and responsibility for the entire organisation as half-hearted if it at the same time denies them access to a part of the profit. It can therefore be seen that companies involving middle managers and middle managers being involved alike will be motivated to introduce ESO. Companies wanting to involve middle managers may also have a higher prevalence of ESOPs including middle managers due to a more democratic view on management and ownership and an ambition to distribute the wealth more equally. They may pursue an objective of agency cost reduction by creating both an economic incentive to act in the best interest of the company and enhance internalisation of extrinsic motivation by signalling that "this is our company" supporting relatedness and a sense of ownership. Middle managers being involved in strategy processes can similarly be expected to demand a part of the profit to compensate for an expected extra workload due to participation (Conway and Monks, 2010).

Proposition 1a: Companies involving middle managers in strategy processes more often employ employee stock ownership plans covering middle managers.

Introduction of an ESOP can be motivated by a desire to distribute wealth more democratically, tax reasons or the wish to reduce agency costs and align the interests of the middle managers with the interests of the firm (Buchele, Kruse, Rodgers and Scharf, 2009). A number of studies have shown that the effect of ESO on company performance is highly dependent on the company's willingness to allow middle managers to participate in strategic decisions (Kruse, 2002; Quarrey and Rosen, 1993) suggesting that companies employing ESO are more willing to allow middle managers to participate in strategic decision-making. Middle managers owning a part of the company will also expect to be able to exercise the formal ownership rights: possession of shares, access to information about the company and influence on decisions (Pierce et al. 2001).

Proposition 1b: Companies with employee stock ownership plans covering middle managers more often involve middle managers in strategic decisions-making.

Employee stock ownership and leadership style

Hambrick and Mason (1984) argued that management's reason for introducing ESO highly affects the performance implications of the plan. If the reason was to benefit from tax advantages or if the introduction was based on the assumption that ESO in itself would increase company performance by eliminating agency costs or increase commitment, the ESOP had no effect on commitment or company performance. The introduction needed to be prompted by a wish to involve middle managers in the decision-making process, thereby conducting a leadership style that encourage, appreciate and expect middle management involvement. Klein (1987) found that a participative leadership style combined with the introduction of an ESOP was significantly connected with the creation of increased employee

satisfaction, commitment and financial turnover. If the ESOP is introduced based on a wish to have a more equal distribution of wealth, it could be triggered by a democratic culture in the company. This would imply that the leadership style conducted would be democratic, suggesting a participative leadership style.

Proposition 2a: Companies with employee stock ownership plans covering middle managers more often exercise a participative leadership style.

When a participative leadership style leads to empowerment of middle managers, decision authority is distributed to the lowest possible level in the organisation capable of making a competent decision, usually the middle management level (Seibert et al., 2004). This requires that middle managers are motivated and aligned to act in the best interest of the company. This motivation and alignment can be accomplished by allowing middle managers to gain formal ownership of the company through an ESOP. This would satisfy the need for an incentive system that matches the long-term perspective of strategic actions, covers the performance of the entire company and signals that middle management contribution is valued. Since middle managers are mainly motivated by having the opportunity to influence the company and feeling trusted, as referred to in the motivational model (Spreitzer, 1995), combining involvement with formal ownership can be expected to facilitate the creation of psychological empowerment. Allowing middle managers to acquire ownership of the company can also underpin the sincere wish to involve middle managers and ensure that involvement is not constrained by mystification (Mantera and Vaara, 2008). It can therefore be expected that companies employing a participative leadership style more often allows middle managers to gain formal ownership of the company.

Proposition 2b: Companies exercising a participative leadership style more often have employee stock ownership plans covering middle managers.

Leadership style and involvement

The leadership style conducted by top management to support involvement highly affects the level of middle management involvement in strategy. Without top management support and willingness to involve middle managers, involvement of middle managers will mainly be informal and ad-hoc. Research at the individual level of strategy processes reveals that it always takes place in a specific social context and therefore is socially structured (Hendry, 2000; Wittington, 1993), suggesting that the participative leadership style should be tailored to the specific culture and the employees in the company. The possibility to successfully motivate middle managers to involve themselves in the strategy process highly depends on tradition, routines and the strategic discourse established by top management (Mantere and Vaara, 2008). The leadership style must allow middle managers to understand the goals of the organisation and the role which they play in achieving these goals. The leadership style should support dialogue allowing middle managers to advocate different views and an accepting environment for differences of opinions, theoretically in an atmosphere of equality, but as a minimum devoid of restraints and fear of penalties. The top management should establish clear processes and practices that ensure “*meaningful social and organizational actions*” (Mantere and Vaara, 2008) without setting up routines that constrain involvement. Mantera and Vaara (2008) found that if middle managers did not communicate clearly how and why middle managers should participate, participation would be impeded. This included clear rules on which decisions could be influenced,

when decision authority was distributed and at what point in the process middle managers were to be included. However, structures could also restrain involvement if they were unclear, bureaucratic or perceived as pseudo procedures devoid of any real influence; in the terminology of Mantera and Vaara (2008) referred to as disciplining. If top management is able to conduct a participative leadership style that allows and supports middle management involvement in strategic decision-making and creates a culture where middle managers perceive that their contribution is valued, cared for and expected, the company will experience increased involvement of middle managers.

Proposition 3a: Companies with a top management exercising a participative leadership style have a higher level of middle management involvement in strategic decision-making.

The fact that top management's willingness to involve middle managers in strategy processes affects the level of involvement may seem clear, but involvement of middle managers can also be seen to affect the leadership style conducted. If companies want to involve middle manager in strategic decisions, they might encounter middle managers who do not want to get involved, who pursue own goals based on involvement or who are less committed than expected. This can prompt an evaluation of procedures, incentive systems, communication or organisational structures with a view to developing a more participative leadership style adapted to the specific context in the company. Thus, involvement of middle managers in strategy processes can be seen to transform the leadership style conducted into a participative leadership style more suitable for the context.

Proposition 3b: Companies involving middle managers in strategy processes more often exercise a participative leadership style.

Creation of psychological ownership

The creation of psychological ownership is based on the human need for efficacy and effectance, self-identity, belongingness, territoriality, accountability and a personal experience of control, intimately knowing the target and investing oneself in the target (Pierce et al., 2001, 2003). While involvement, formal ownership and a leadership style that supports involvement and is based on trust and feedback all can be seen as determinants of psychological ownership, none of them are able to create it alone. As discussed above, each concept enhances and is dependent on the two others suggesting that all three need to be employed contemporaneously to create psychological ownership. It can also be seen that none of the three concepts can positively affect company performance by itself. Mantere and Vaara (2008) found that middle management involvement was only successfully implemented if middle managers understood the goals of the company and their role in achieving these goals. This self-actualisation called for profound personal reflection concerning one's role, identity and future in the organisation. This suggests that involvement of middle managers in strategy processes affects company performance through the creation of psychological ownership. Klein (1987) found similar relations of ESO stating that introducing ESO in itself had no performance effect; only through the creation of psychological ownership. Additionally, a participative leadership style that fails to involve middle managers or even constrains involvement can hardly be expected to positively affect company performance. The model presented in this article thus combines research in middle management involvement, ESO and psychological ownership by proposing that middle management involvement in strategy, ESO and a participative leadership style have no direct effect on company performance but have an impact through the creation of psychological ownership. Psychological ownership has been related to increased performance but more strongly to employee behaviour and attitudes. Further

research into the indirect effect of psychological ownership on company performance through improved employee behaviour and attitudes is highly warranted.

Proposition 4a: Employee stock ownership, middle management involvement in strategy processes and a participative leadership style combined create a higher level of psychological ownership among middle managers than employing the three areas separately.

Proposition 4b: The effect of employee stock ownership, middle management involvement in strategy processes and a participative leadership style on company performance is mediated by psychological ownership.

Moderating effects on the creation of psychological ownership

The possibility to create psychological ownership depends on a number of worker and job characteristics enhancing or constraining the creation. As reported by Kuvaas (2006), highly educated employees develop psychological ownership more easily indicating that companies in knowledge intensive sectors are more likely to benefit from middle management involvement and employment of ESOPs. It can be argued that knowledge intensive sectors are more inclined to encourage middle management involvement and accustomed to competing in a more turbulent environment which necessitates innovations and strategic responsiveness. Knowledge intensive companies that succeed in creating psychological ownership through a successful combination of involvement, ESO and a participative leadership style are able to gain vital competitive advantages. As suggested by Pierce et al. (2009), job characteristics like skill variety, task identity, task significance, autonomy and feedback

all mediate the creation of psychological ownership. These job characteristics can be regarded as parts of organisational settings caused by the leadership style or seen as sector or company characteristics that mediate the creation.

Proposition 5a: The creation of psychological ownership among middle managers is moderated by the educational level of middle managers.

Proposition 5b: The creation of psychological ownership among middle managers is moderated by the job characteristics of middle managers.

The importance of participation and autonomy should increase as environmental dynamism increases the need for strategic responsiveness (Andersen, 2004). In dynamic environments, the ability to adapt to changing conditions and respond to changed market demands becomes crucial. By successfully implementing middle management involvement, top management will more rapidly receive information and ideas from frontline managers and will be able to implement responses by having middle managers facilitate the change (Wooldridge et al., 2008). By engaging in autonomous strategic actions, the responsiveness increases even further due to the distributed decision authority allowing middle managers to act without former approval by top management.

Additionally, the effect of psychological ownership on company performance tends to be enhanced in sectors with high knowledge intensity. In these sectors, the “product” will be based on or consist of knowledge, often within the employee, and the competitive advantage is highly dependent on the employees’ willingness to develop, apply, share and distribute this knowledge in the best possible manner. This willingness is enhanced by a high level of psychological ownership and thus moderates the effect of psychological ownership on company performance.

Proposition 5c: The effect of psychological ownership among middle managers on company performance is significantly higher in dynamic environments.

Proposition 5d: The effect of psychological ownership among middle managers on company performance is significantly higher in sectors with high knowledge intensity.

IMPLICATIONS AND FUTURE RESEARCH

The model outlined here offers important theoretical insights by combining the research streams on employee stock ownership, involvement of middle managers in strategy and participative leadership style. The model synthesises the findings by revealing that the effects of the concepts all are mediated by the creation of internalised extrinsic motivation. Ryan and Deci (2000) found in their self-determination theory that internalisation of extrinsic motivation is based on a need for competence, autonomy and relatedness. Based on this framework of motivation and the research on psychological ownership, the model contributes to our understanding of how ESO, involvement of middle managers in strategy and participative leadership style interact in the creation of psychological ownership. The model creates a theoretical frame that explains why all of the three research streams have failed to produce conclusive findings when testing the effect on company performance and why all find that the effect is mediated by the creation of organisational citizenship behaviour, psychological empowerment or psychological ownership; each representing internalised extrinsic motivation prompted by a sense of relatedness to the company.

The model also enriches our understanding of how different worker and job characteristics moderate the creation of psychological ownership. Kuvaas (2006) found that highly educated employees more easily develop psychological ownership on account of the fact that they engage in more interesting work and that their organisations appreciate their work. This emphasises that the focus on middle managers, who in general will be more educated than the average employee, can be expected to generate psychological ownership if applied correctly, and thereby create a competitive advantage over companies who do not have this focus. The model also implies that job characteristics like skill variety, task identity, task significance, autonomy and feedback support the creation of psychological ownership (Pierce et al., 2009). This gives insights into which type of employee that most easily develops psychological ownership and how to develop middle management jobs which feature tasks that involve the mentioned characteristics.

Finally, the model conceptualises that the effect of psychological ownership on company performance will be moderated by the knowledge intensity in the sector and the environmental dynamism. This implies that the need for and effect of internalised extrinsic motivation are higher in knowledge intensive sectors, since the “product” is often based on or consists of knowledge and tied to the middle managers’ willingness to develop, apply and share this knowledge. Similarly, highly dynamic environments call for a high responsiveness to environmental change based on middle managers either reporting changes in market conditions to top management and participate in decisions or on middle managers making rapid autonomous strategic decisions.

The model spawns a number of questions and relationships to be further explored and refined in future research. Firstly, the model provides a new framework that combines the research conducted within the areas of employee stock ownership, involvement of middle managers in strategy and the participative

leadership style with the motivational theory based on self-determination theory and psychological ownership. A further investigation of the combined effects of the three concepts and how they create internalised extrinsic motivation in the form of psychological ownership seems highly warranted. A more sophisticated understanding of how the three areas interrelate and affect each other at the individual level would enrich our understanding of the micro level processes and practices of strategy and strategising as addressed in the strategy-as-practice literature (Whittington, 2006). This would contribute to our understanding of how different people in different contexts are motivated differently and react differently to involvement, leadership style and the possibility to own a share of the company.

The model also gives voice to the need for a further understanding of how different worker and job characteristics can moderate the creation of psychological ownership and how this moderation might be determined by the mix of the three determinants. The model thereby calls for both a theoretical refinement and an empirical testing of different work settings, cultures and different mixes of the three concepts. A better understanding of the creation of psychological ownership and how other factors might influence, enhance or restrain the creation would further sophisticate the model and develop a number of moderating or mediating effects.

The model assumes that psychological ownership has a direct effect on company performance despite the few and inconsistent findings of such an effect while the effect on employee behaviour and attitudes has been tested in a number of analyses. Research needs to be conducted to test if a direct effect exists or if the effect is only indirect; that is, mediated by the positive effect on employee behaviour and attitudes. If only an indirect effect exists, more research should be instituted into the importance of the different behaviour and attitudes in terms of company performance and the previously reported positive effects of middle management involvement, ESO and a participative leadership style.

The model only addresses involvement and formal ownership of middle managers and their creation of psychological ownership. Further research is called upon to extend the model to address involvement of all employees and investigate if the creation of psychological ownership is supported by involvement, formal ownership and leadership style at lower organisational levels as well.

CONCLUSION

In response to strategy scholars' (e.g. Wooldridge et al., 2008) request for more research on the effect of middle management involvement on company performance, we present a model that combines the research streams on middle management involvement in strategy processes, employee stock ownership and psychological ownership. We propose that middle management involvement, formal ownership and a participative leadership style combined support the creation of psychological ownership and only through this creation affect company performance. The model thereby contributes to our understanding of the effect of the three concepts by creating a framework which combines the research streams with the motivational theory imbedded in the self-determination theory and the theory on psychological ownership. This enables us to present theoretical insights that offer an explanation to the inconclusive findings of earlier research and to direct future research toward a combined and motivational approach to the three areas.

Hence, the model carries a need for further research into the creation of psychological ownership and into how the three determinants can be supported by other factors, thereby fine-tuning our capability to measure and define the concept. Psychological ownership has been found to promote positive employee behaviour and attitudes and further inquiry into the direct and indirect effects of

psychological ownership through this positive change in behaviour and attitudes seems highly warranted.

3. The prevalence and antecedents of Employee Stock Ownership in Denmark⁴

INTRODUCTION

The use of employee stock ownership has increased dramatically since the 1980s in the USA and the 1990s in the EU. Sharing ownership often takes the form of an employee stock ownership plan (ESOP) initiated by the company. The growth in companies employing ESO is driven both by government incentives or legislation and by a company wish to align the interest of the employee with the interest of the firm, improving commitment, employee performance and reducing opposition to company reforms (McCarthy, Reeves and Turner, 2009). Government initiatives support an increased use of ESO through tax incentives, privatisation programmes or through legislation forcing companies to share ownership with employees. These initiatives are spurred by a desire to share wealth, increase equality and support democracy at the workplace and in society in general (Buchele, Kruse, Rodgers and Scharf, 2009; McCarthy et al., 2009). Companies might introduce ESO as a means to reduce agency costs by reducing slack or sub-optimisation in the economic literature, or by improving employee attitudes and thereby increasing company performance in the organisational literature (Jones, Kalmi and Mäkinen, 2010; Kramer, 2010).

Whereas the effects of introducing ESO have been analysed empirically for a number of different geographical locations and types of ESO (Blasi et al., 2003; Jones et al., 2010; Kalmi, Pendleton and

⁴ The chapter corresponds to a single-authored article submitted to Economic and Industrial Democracy, which was returned with instructions to *revise and resubmit* and which is currently under revision. An earlier draft of the article was presented at the 2010 EURAM conference in Rome and the author would like to thank the participants at the conference for helpful comments. The author would also like to thank Professor Torben Juul Andersen and PhD fellow Stefan Linder for helpful comments in the development of the article.

Poutsma, 2005), analyses of the prevalence and antecedents of different kinds of ESO companies are either limited to the USA, restricted to stock listed companies, failing to distinguish between different kinds of ESO or are based on data collected before the dramatic changes of the last decade.

The prevalence of ESO in the USA has been analysed in a number of studies (Blasi et al., 2003; Buchele et al., 2009; Kruse et al., 2008) and continues to be so by the National Center for Employee Ownership (NCEO). Among the few studies looking at ESO use outside a US context are the PEPPER I, II and III studies conducted by the European Commission and the investigation by Pendleton et al. (2001) based on the CRANET data. Since 2007, the European Federation of Employee Share Ownership (EFES) has conducted an annual survey of employee stock ownership mainly based on stock listed companies with a market value exceeding 200 million euro. The different surveys report significantly different antecedents and shares of prevalence, mainly due to varying definitions of what constitutes an ESO employing company and/or because the investigators have chosen to focus on company types who traditionally have high ESO prevalence. Some studies define an ESO employing company as a company with more than one employee receiving payments from an ESOP (Sengupta et al., 2007), other studies distinguish between narrow and broad-based schemes with a cut-off point stating that 50% employees must be covered by the scheme (Pendleton et al., 2001, Robinson and Zhang, 2005). A number of studies address the characteristics of wholly employee-owned companies (Kramer, 2010; Pendleton, 2010a; Sauser, 2009) or the characteristics of the employees participating in the schemes (Pendleton, 2010b).

The above-mentioned diversity in definitions, scopes and methods underlines that an analysis of the present prevalence of ESO employing companies among all companies and the antecedents of companies employing different kinds of ESO is highly warranted. While the use of ESO is supported

by strong tax incentives in USA, legislation in France and affected by a privatisation plan in the new EU member states, the government influence in Denmark may be considered neutral. This allows us to analyse how the prevalence is affected by the financial crisis in a setting where only market trends and company and employee wishes to introduce and participate in an ESOP influence the prevalence. It also provides for a better understanding of the antecedents of companies employing different kinds of ESOPs based on the assumption that only companies which expect to benefit from the plan or have other characteristics supporting an ESOP will ultimately introduce the plan.

The current paper will contribute to our knowledge of the prevalence and antecedents of ESO by conducting a large-scale cross-sectional survey among the 500 largest companies in Denmark. In doing so, the survey covers all companies with more than 235 employees and thus both medium-sized and large companies from a number of different sectors. The analysis will investigate the antecedents and prevalence of companies with ESO schemes covering only top management, schemes covering both top and middle management and broad-based schemes covering a majority of all employees. The paper finds that the prevalence of ESO companies in Denmark has increased since 2000 to a total of 31% of all companies with more than 235 employees employing some form of ESOP. But while the narrow-based schemes covering less than 50% of the employees have increased, the use of broad based schemes has declined. This suggests that the financial crisis and the concomitant significant capital losses at the financial markets have increased the risk averseness among employees without management responsibilities. The findings also reveal that companies employing different kinds of ESO schemes have different antecedents. While stock listing is an antecedent of all types due to the reduced costs of introducing an ESOP as a stock listed company, companies with schemes covering only top management have a strong focus on centralised planning and are more prone to use individual

bonuses. This suggests that these companies have a traditional view on management and strategic processes as hierarchical, top-down processes initiated by and lead by top management. It was expected that companies employing schemes covering middle management would have a proclivity to involve middle management in strategy processes due to a recognition of the importance of middle management involvement as addressed in the middle management literature (Wooldridge et al., 2008). However, this was not the case suggesting that formal ownership among middle managers is no guarantee of a higher level of middle management involvement. Furthermore, contrary to expectations, companies with broad-based schemes have a higher use of group bonuses. While some scholars would recommend supplementing broad-based ESOPs with more individual bonuses, the current survey reveals that companies are not inclined to do so. ESO has been argued to reduce agency costs by aligning the interest of the employee with the interest of the firm and companies employing a broad-based scheme are therefore more willing to distribute strategic decision authority to middle managers and presumably also to employees at lower organisational levels.

The paper is structured as follows: First, it summarises and reviews the existing literature on ESO usage and ESO antecedents. This basis allows for identifying the factors that can be hypothesised to impact ESO adoption among firms. Afterwards, it describes the method used for collecting and analysing the empirical data. Next, the paper presents the results achieved. Finally, it closes with a discussion of the results and conclusions for further research.

EMPLOYEE STOCK OWNERSHIP

The introduction of ESO in companies, especially broad-based schemes, has been supported by a number of government initiatives to increase equality by sharing wealth, consolidate a democratic company leadership style or based on a political desire to move towards employee-owned companies (Buchele et al., 2009). In a number of countries, ESO employing companies have enjoyed the support of tax incentives like the 401k plan in the USA, while France, among other countries, forces companies to share ownership with the employees through legislation. ESO has also been promoted in a number of the former Eastern European countries through post-1989 privatisation plans, selling a large number of public owned companies to the employees. In other countries like Denmark, the government is more neutral in the matter of ESO. Companies receive no tax benefits from introducing ESO, employees have the possibility of purchasing shares at a discount price, but have to keep them for at least 5-7 years before capital gains are tax free. Any dividends paid to the employee or if the shares are sold before the 5-7 year holding period are taxed as normal capital gain tax. In some countries, unions also advocate ESO as a means to gain company influence, while some argue that ESO is introduced by the companies to avoid union influence by aligning worker and owner interests. In Denmark, unions have showed no particular interest in ESO; they have signified that in general they are not against ESO while stressing that it cannot replace traditional salaries. Companies might want to introduce ESO as a measure to reduce agency costs by aligning the interest of the employee with the interest of the company, or as a part of a democratic leadership style and culture creating a sense of ownership among employees which, in return, increases commitment, loyalty and citizenship behaviour (McCarthy et al., 2010; Pierce et al., 2001).

Definitions of Employee Stock Ownership (ESO) and Employee Stock Ownership Plans (ESOP) are used in a variety of ways throughout the literature. Distinctions are made between who initiates the

scheme, the employee or the company, and whether the scheme is individual or collective. Some scholars also make a distinction between schemes covering a certain share of employees and schemes covering different organisational levels. Finally, some studies define ESOPs based on the share of the company owned by the employees and on the inclusion or exclusion of different kinds of profit-sharing plans, stock options or warrants.

In listed companies, employees are free to buy stocks in the company and exercise their normal ownership rights, while in unlisted companies, trading of company shares can be limited and restricted by stockowner agreements limiting the circulation of stocks. Since individual stock purchase in listed companies is random and usually not registered by the companies and stock ownership in unlisted companies is always initiated by the company or a limited group of owners, research is usually conducted on ESO initiated by the company either freely or restricted by government laws and *set up with the explicit intension of providing employees with an additional source of income related to enterprise results* (Pendleton et al., 2001). ESO can be individual, where the shares are owned by the individual employee, or collective, where an employee benefit trust is set up to hold the company stocks and exercise the ownership rights through a trustee (Poutsma et al., 1999).

The share of employees covered by the scheme can either define the level of coverage by the percentage of employees covered by the scheme or the groups of employees covered by the scheme. Sengupta et al. (2007) use both a broad definition of ESO including all companies with more than one employee receiving payments from an ESOP and a more rigorous measure, initially used by Robinson and Zhang (2005), requiring a majority (60% to 100%) of the non-managerial employees participating in the scheme. Pendleton et al. (2001) define two kinds of ESO; a narrow-based and a broad-based type of which the latter theoretically covers the entire workforce. Pendleton et al., (2001) however, set the

coverage percentage at 50% since most schemes never have 100% coverage at any given time because participation in the scheme requires a minimum employment period. The purpose of narrow-based schemes is to attract and keep key employees in the company and they are therefore defined as schemes covering less than 50% of the employees. Kabst et al. (2006) make a distinction between different employee groups covered by the scheme, namely management, white-collar and blue-collar employees.

Hammer and Stern (1980) differentiate between the number of shares owned by the employees and they also distinguish between ESOPs based on different employee groups testing the effect on perception of ownership.

Depending on the purpose of the ESOP, it can be argued that similar or enhanced effects could be reached by different kinds of incentives like profit sharing, stock options, stock based pays or warrants and some scholars have investigated inclusive ESO definitions and different or combined effects of different schemes (Pendleton et al., 2001; Kabst et al., 2006; Robinson and Wilson, 2006).

Prevalence of ESO

The prevalence of ESO has been analysed several times during the last two decades using a number of different definitions of ESO. The analyses have been restricted to specific countries and specific sectors and some restrict the survey to large companies or listed companies. The prevalence in the USA has been tested in a large number of different surveys; Kruse et al. (2008) list 15 different analyses conducted since 1993 both on employee and firm level. Freeman and Rogers (1999) report that 24% of US employees participated in an ESOP in 1994/95 while Kruse (1998), using NLSY (National

Longitudinal Survey of Youth) data, finds that in 1993, 21% of US employees owned company stock. Kruse et al. (2008), using the GSS surveys from 2002 and 2006, find that 21% and 18% of US employees owned company stock in 2002 and 2006 respectively, while Buchele et al. (2009) using the same data find that 29% of full-time employees with more than one year of employment owned company shares through an ESOP .

In the European Union, the PEPPER II study, looking at the situation in the “old” EU member states in 1995/96, reported rather low usage rates in the EU: The UK was at the top with 11% of its companies using ESO and at the bottom were France (1%), Sweden (1%), Italy (2%), Portugal (2%), Germany (3%), Ireland (3%), The Netherlands (3%) and Denmark (5%) (Blasi et al., 2003). It should be noted, however, that the ESO definition in PEPPER II was restricted to schemes open to all employees similar to the definition of broad-based schemes. Higher values were obtained by a later study conducted in 1999/2000 on the use of share ownership schemes in companies across 30 countries including 14 EU member states (Pendelton et al., 2001). This study states that the use of ESO in the 14 member states has increased to 31%; with wide variation among the individual member states, however. The UK was still at the top with 45% (of companies with more than 100 employees) and Portugal (5%), Austria (9%), Italy (15%), Spain (19%), Germany (20%) and Denmark (21%) were at the bottom. The numbers are not directly comparable with the PEPPER II figures, though, as the 1999/2000 survey included both narrow-based and broad-based schemes. The PEPPER III report analysed the use of ESO in the new member states in the eastern and central part of Europe and found that while a majority of companies became employee-owned after 1989, the percentage has dropped to an average of 38% across the countries examined (PEPPER III, 2006). This still exceeds the percentages of the “old” member states reported in the 1996 PEPPER II report and in the 1999/2000 analysis based on the CRANET data. In

studies comparable to the US studies, Del Boca et al. (1999) and Jones and Kato (1995) reported that between 15% and 33% of employees in France, Great Britain, Italy and Japan were covered by employee stock ownership schemes. On a more recent note, the European Federation of Employee Share Ownership (EFES) has since 2007 prepared a yearly report on the development of ESO in EU mainly restricted to listed companies. EFES reports that 86% of all listed companies in EU has some kind of ESOP and that the percentage is growing (Mathieu, 2009). In China, Tseo (1996) and in Russia, Blasi et al. (1997) reported a low yet growing level of ESO.

The prevalence of (broad-based) ESOPs can be found to have a cyclical pattern which is partly determined by the environment of the financial markets. In the USA, ESOPs experienced a rapid growth throughout the 1980s and 1990s, whereas Kruse (2008) reports a decline in the use of broad-based ESO schemes from 2002 to 2006, i.e. after the dot-com bubble burst in 2000. A similar effect was seen after the stock market crash of 1929 (D'Art and Turner, 2006). In the EU, an ESOP increase has been reported in most countries between 1991 and 2000 (Pendleton et al. 2001) and among listed companies from 2007 and 2009 (Mathieu, 2009), while D'Art and Turner (2006) found a decline in Ireland from 2000 and onwards based on a broad sample of companies indicating the same cyclical pattern affected by the financial crisis and the increased risk awareness among employees.

Characteristics of ESO companies

The findings on the characteristics of ESO companies are diversified in significance, methodology and definitions. Among the aspects reported are the importance of size (Pendleton, 1997; Wächter and Koch, 1993, Weyer, 1978; Poutsma et al., 2006), listing (Pendleton et al., 2001), sector (Poutsma and

Huijgen, 1999; Festing et al., 1999; Gaugler et al., 1983), union density (Cheadle, 1989; Festing et al., 1999; Kabst et al., 2006; Heywood et al., 1997), workforce specialisation and skills (Pendleton, 1997; Kabst et al., 2006), age (Pendleton et al., 2001; Poole and Jenkins, 1990), participative organisations (Wächter and Koch, 1993; Becker, 1993; Mez, 1991; FitzRoy and Kraft, 1987) and geographical market (Festing et al., 1999).

Firm size: Poutsma et al. (2006) tested the use of a number of incentives in listed companies in Finland, Germany, the Netherlands and the United Kingdom and found an increased use of broad-based ESO schemes in large companies. Pendleton et al. (2001) also reported an increase in the use of broad-based schemes in the “old” EU member states but with large differences from country to country; in some countries, no or even a negative size effect was found. The former (no size effect) was found in the use of narrow-based schemes. Kruse et al. (2008) used the GSS 2002 and 2006 surveys to analyse US firms and found that while only 9% of small companies used ESO, 37% of large companies (more than 1,000 employees) had an ESO scheme. The theoretical argument of the positive size effect can be found in the agency theory which argues that as firm size increases, information asymmetries about work processes and monitoring costs may increase as well which in return may encourage management to organise work and production most efficiently by introducing ESO. The conflict of interest between the two parties and the asymmetric distribution of information allow for pre- and post-contractual agency problems; hidden characteristics leading to adverse selection ex ante and hidden actions by the agent resulting in moral hazard ex post (Holmstrom, 1979; Eisenhardt, 1989). Some authors have suggested that collective incentive programmes like profit sharing or employee ownership may reduce the agency costs by aligning employee interests with those of the firm (Baiman, 1990; Lambert, 2001). Equally, the larger the company, the higher is the risk of a “free rider” effect, suggesting that the individual

incentive effect of ESO is reduced in large organisations while, on the other hand, monitoring by colleagues will increase in order to reduce the free rider risk.

Stock listing: A number of studies have found a positive connection between stock listing and ESO (Pendleton et al., 2001; Kabst et al., 2006). The costs of introducing and maintaining an ESO programme are much smaller in a listed company since the trading and the valuation of the stock can be executed in an efficient market and the company is able to buy the necessary stocks needed for the scheme. In unlisted companies, the company must create the market place itself, set the rules for trading, value the stocks and create the necessary funds to handle the trading. Especially in a financially turbulent period, it can be difficult to set a fair and continued market price and avoid insider stock trading.

Workforce unionisation: Kabst et al. (2006) reported a positive connection between union density and ESOPs in companies in terms of both white-collar and blue-collar employees. The opposite finding was reported by Festing et al. (1999) who found a significant negative effect of union density among the examined companies in Germany, France, Great Britain and Sweden. The theoretical union density factor argumentation is twofold: One is based on the argument that ESO schemes are introduced by the company to avoid influence of the union and reduce the worker/employer conflict (Ackers et al., 1992; Gates, 1998), while the second argument propounds that strongly unionised companies are more likely to adopt ESO plans for the purpose of increasing union and worker influence on the company and partly distributing the surplus of the company to its workers (Cheadle, 1989; Festing et al., 1999; Kabst et al., 2006; Heywood et al., 1997; Kruse, 1996).

Sector: The sector and the level of workforce skills and specialisation are highly correlated. Poole (1989) found that broad-based ESO schemes were more common in the financial sector than in the service and retail sector. Pendleton et al. (2001) argued that financial participation would be more widespread in the financial sector due to the wider knowledge of the characteristics of the schemes and more generally in sectors with a high concentration of non-manual employees who may be more familiar with the use and concept of stock savings. In sectors and work situations where individual output and performance are difficult to measure because of the complexity and interdependency of work tasks (Alchian and Demsetz, 1972; Ben-Ner et al., 2000), the use of ESO could prove more prevalent. This has been observed in advanced manufacturing companies and in some service and creative companies (Fama, 1991, Pérotin and Fakhfakh, 1993).

Firm age: The use of ESO has been argued to be higher in young and growing companies where it is instrumental in supporting the need for commitment and growth in the company (Poole and Jenkins, 1990). Young companies also use ESO to reduce labour costs or as a tool for attracting key employees who would normally demand a high salary but who may be persuaded by a combination of a (low) salary and part ownership. While Poole and Jenkins (1990) reported a negative age effect, Pendleton et al. (2001) found no age effect but pointed out that due to the company size restriction in the survey, young and small companies (like IT companies who often use ESO) were excluded from the survey.

Employee participation: Participative companies have been found to be more inclined to adopt ESO as a measure for increasing worker motivation and participation (Wächter and Koch, 1993; Becker, 1993; Mez, 1991; FitzRoy and Kraft, 1987). A number of analyses indicate that the company cannot achieve the motivation and participation effect without financial participation as referred to in Blasi, Kruse and Bernstein (2003:176): “*telling employees to take ownership of their jobs rings hollow if management*

doesn't offer actual financial ownership or some share in the improved performance... without wealth sharing in some form, it feels like the company is just trying to con you into working harder".

Internationalization: Festing et al. (1999) found that companies with export activities used ESO to a higher extent than companies only addressing the domestic market.

Although previous research on ESO usage and its antecedents has already increased our understanding of the phenomenon considerably, some gaps remain as the following discussion will show.

Firstly, whereas the positive effects of ESO have been analysed empirically for a number of different geographical locations, the use and antecedents of ESO have in general received less attention and are mainly analysed in terms of the US market (Blasi et al., 2003, Buchele et al., 2009) and stock listed companies (Mathieu, 2009). Since our understanding of the ESO phenomenon can be said to be partial at best, lacking in understanding of usage and antecedents outside the US context, this situation calls for further investigation.

Secondly, most of the existing research on the prevalence of ESO outside a US context is dated by now due to the cyclical pattern of the use of ESO. Given that the use of ESO plans is often considered to increase growth, profitability and survival rates of firms and given that differences in ESO adoption rates therefore may impact the competitive balance between different countries, the lack of more recent evidence on ESO usage in the "old" EU member states is even more dissatisfying.

Thirdly, the findings of the antecedents of ESO employing companies are mostly based on one definition of ESOP and fail to diversify between different types of ESO schemes. It seems relevant to

investigate if there are differences between companies employing ESO schemes covering only top management, companies with schemes including middle management and schemes covering the majority of the employees.

Thus, it is of high importance to gain insights into the current prevalence of ESO usage and to further our understanding of the antecedents of adoption/non-adoption by companies. The present paper therefore presents a set of hypotheses on ESO usage and tests these on the basis of empirical data collected in one of the “old” EU member states, namely Denmark. By analysing Denmark, any change in prevalence and the antecedents of the different types of ESOPs can be argued to be unaffected by government legislation and thereby influenced only by the market, the perception of the employees and the willingness and perception of effectiveness among companies.

HYPOTHESES

The prevalence of companies employing ESO schemes has increased in Denmark during the 1980s and 1990s according to the PEPPER I and II reports (1991 and 1996) and the CRANET survey (1999/2000). The survey indicated an increase from 5% to 21% from 1991 to 1996, while the development steadied from 1996 to 2000. Among large listed companies, the ESO prevalence has increased from 82% (2007) to 89% (2009). From 1996 to 2000, share schemes for management increased from 19% to 22%, professional staff share schemes remained at 17% while both clerical and manual personnel experienced a decline in the percentage from 17% to 16% for clerical and from 12% to 10% for manual personnel (Pendleton et al., 2001). According to the PEPPER II report, it is the objective of the European Commission to increase the use of ESO and to encourage the member states

to reduce legislation that might impede or prevent implementation of ESO schemes. The report also raises the question of whether an increase in the use of ESO restricted to subgroups of the company workforce is a desirable policy due to the fact that it will “*increase rather than reduce existing inequalities of income and wealth*” (Pendleton et al., 2001: p. 12).

Pendleton (2010a) found that higher-income employees were more willing to participate in an ESOP due to a more comprehensive knowledge about investments and a more diversified portfolio (Markowitz et al. 2010). Similarly, employees and especially (low-paid) employees without managerial responsibilities tend to avoid participating in ESOPs in financially turbulent times. This was reported after the 1929 depression and is reported by D’Art and turner (2006) with respect to the Irish market. This indicates that risk averseness increases during a financial crisis. It can thereby be seen that companies are more inclined to introduce broad-based ESOPs to increase commitment and effort and this trend is supported by the EU indicating an increase in the use of ESOP. The legislation in Denmark can on the other hand be considered neutral toward ESO and lower level employees has become more risk averse due to the financial crises indicating a decrease in the use of ESO among lower level employees. This indicates that a general increase in the use of ESO can be expected to increase commitment and loyalty among employees, but these schemes will only be narrow schemes covering top and middle management due to a greater willingness to participate among these employee groups.

Hypothesis 1a: The prevalence of ESO employing companies has increased in Denmark since 2000.

Hypothesis 1b: The prevalence of broad-based ESO schemes has declined in Denmark since 2000.

Seeing that it has been based on a number of different definitions of ESO, research on the antecedents of companies employing an ESOP has produced diverse findings. Based on a broad definition of an

ESO employing company as presented by Sengupta et al. (2007), any company with more than one employee receiving payments from an ESOP is considered an ESO employing company. The majority of the theory on ESO is rooted in the agency theory (Pendleton, 2006; Holmstrom, 1979; Eisenhart, 1989) which propounds that the interests of the utility-maximising employees are not congruent with those of the firm (Pendleton, 2006) and that employees run the risk of discretionary behaviour, moral hazard and adverse selection (Holmstrom, 1979; Eisenhardt, 1989). In the literature, collective incentives such as ESO have been seen as an alternative to individual incentive programmes and are in some studies found to be a weaker incentive due to the risk of allowing for free-riders and the fragile connection between the individual performance and the financial gain. A broad incentive like an ESOP, however, has been advocated in companies where the individual employee performance is costly to monitor because of the type of job design or work organisation (Cheadle, 1989; Kruse, 1996; Jones, Kato and Pliskin, 1997) or where individual incentives are costly to operate (Jones and Pliskin, 1997). Additionally, other studies suggest that knowledge intensive sectors such as the financial, IT and telecommunication or biotech sectors more often use ESO because these sectors employ more educated workers with higher salaries and more knowledge about investments and have a job content where the individual motivation and commitment is a key competitive factor (Pendleton et al., 2001; Poole, 1989).

Hypothesis 2a: The use of employee stock ownership plans is higher in knowledge intensive sectors.

A number of studies have tested the effect of being listed on the use of ESO (Pendleton et al., 2001) and reported that while 21% of Danish companies in general used ESO, 33% of the listed companies had an ESO scheme. Out of the 33% of the listed companies having an ESO scheme, 76% were broad-based schemes while only 70% of the companies in general used broad-based schemes. The EFES

survey reported that 89% of the large stock listed companies in 2009 had an ESOP and that the share was growing (Mathieu, 2009). Kabst et al. (2006) tested the use of ESO in Britain, France and Germany and found that stock listing was a significant indicator of ESO use. Listed companies are in a position to more easily and cost efficiently introduce and maintain an ESOP due to the existence of a market place for the shares. Consequently, the company escapes establishing their own fund to for handling stock trading and a valuation system that can be questioned and maybe abused. The shareholders of a listed company might also be more willing to introduce an ESOP to reduce agency costs, since the majority of owners are unable to closely monitor the daily activities of the company. In small and medium-sized or family-owned companies, the founder or majority shareholder will traditionally be in close contact with the company as CEO or as president of the board.

Hypothesis 2b: The use of employee stock ownership plans is higher in listed companies.

While introducing an ESOP is expected to reduce agency costs by aligning the interest of the employee with the interest of the company, some scholars have argued that due to the lack of controllability, the financial incentive of an ESOP is weak. Offhand, this could trigger the introduction of an individual based incentive in order to create controllability and thereby a direct connection between the individual actions and outcomes and the incentive. However, this may prove difficult in sectors where the individual performance is difficult to measure or where the tasks are multidimensional (Holmstrom and Milgrom, 1991; Kaplan and Norton, 1996). It can be argued that combining a broad-based group incentive like an ESOP with individual incentives could reduce some of the distortion effects (Prendergast, 1999). Distortion effects arise when employees have multiple tasks with different levels of measurability and the use of ESO will encourage the employees to focus on a broader range of

outcomes and factors than incorporated in an individual incentive program focusing on short-term financial and output goals.

Hypothesis 2c: Companies using individual incentives more often employ stock ownership plans.

While ESO in large and established firms can be used to reduce agency costs, young and growing companies might use ESO to attract and retain key employees in that the stocks offered could act as a compensation for the lack of a high salary. This would allow the company to both attract highly qualified employees and at the same time reduce costs, saving money for growth and investments. This is supported by the findings of Poole and Jenkins (1990) who reported that the prevalence of ESO was higher in young and growing companies. Pendleton et al. (2001) found the same effect, arguing that the introduction of ESO increased employee commitment, supported company growth and attracted high quality workers without dramatically increasing the salaries.

Hypothesis 2d: Young companies more often employ employee stock ownership plans.

The above hypothesis relates to the broad definition of ESO employing companies (Sengupta et al., 2007). Still, there are large differences between the different schemes applied in the companies. Some schemes only cover a few or all top managers, some schemes cover top and middle managers but not employees at lower organisational levels, while others cover the majority of employees. In a number of recent analyses, a differentiation is made between narrow-based schemes and broad-based schemes (Mathieu, 2009; Robinson et al., 2005). The distinction is made between schemes covering a majority of the employees (broad-based) and schemes covering a limited share of the employees (narrow-based). Robinson and Zhang (2005) established that more than 60% of the non-managerial employees were to be covered by the scheme in order for it to be labelled a broad-based scheme, while others have set the

cut off point at 50% of all employees. Some studies have made distinctions between management, white and blue-collar employees (Kabst et al., 2006), while other make distinctions between management, professional staff and clerical and manual personnel (Pendleton et al., 2001). It can be expected that the antecedents of ESO employing companies depend on the definition and kind of ESO. While the narrow-based schemes signal a focus on retaining key personnel and stress the importance of these employees, broad-based schemes indicate a more democratic leadership style or a culture focusing on involvement and commitment. A broad-based scheme covering more than 50% of all non-managerial employees owning stocks in the company can be expected to include all schemes directed at a majority of the employees since most schemes never have a 100% coverage at any given time. Some schemes also require a minimum employment period of 1 year before stocks are offered to the employee. The narrow-based schemes thus encompass all schemes covering less than 50% of the employees. These schemes are mostly covering much less than 50%, since findings suggest that schemes are either very narrow or very broad (Pendleton et al., 2001). The narrow schemes can be divided into two types of plans; one type covering only top management and one type covering both top and middle management. The two types represent different views on management and can therefore be expected to be present in companies with differing characteristics. This will be further discussed below.

Hypothesis 3a: The antecedents of an ESO employing company depend on the type of ESOP employed.

Companies employing an ESOP which covers only top management can be expected to have a traditional view on managerial processes and organisational structures; initiatives are typically launched by top management and lower level employees are only involved to a limited degree. This mirrors an increased focus on centralised planning and a view on strategy as a normative or prescriptive

process primarily defined and conducted by top management (Ansoff and McDonell, 1990; Chandler, 1962; Porter, 1980, 1985). Planning will include vision and mission formulation, detailed budgeting and a structured process in developing, implementing and evaluating strategic plans.

Hypothesis 3b: Companies with a higher focus on centralised planning more often employ ESO schemes covering only top management.

Companies with ESOPs covering both top and middle management but few or none of the non-managerial employees are anticipated to have recognised the importance of middle manager participation in strategy processes. The unique position of middle managers, being a beachhead between top management and lower level employees, allows them to act as agents of change, facilitating implementation of strategic actions (Wooldridge et al., 2008) and through issue selling, they are able to shape and influence the strategic agenda by choosing which information should be presented to top management (Rouleau and Balugun, 2010; Wooldridge et al., 2008). Involvement of middle managers can either take the form of allowing middle managers to participate in the strategy process and advocate their ideas to top management, referred to as *participation in decisions* (Andersen, 2004), or take the form of distributing the strategic decision authority to middle managers, referred to as *autonomy* (Burgelman, 1984). A key problem in involvement of middle managers is how to motivate them to participate and to do so in the best interest of the firm. This motivation and alignment of interests can be achieved through ESO. Companies introducing ESOPs covering both top and middle management can be expected to be more prepared to involve middle managers in strategic actions.

Hypothesis 3c: Companies involving middle managers in strategy processes more often employ ESO schemes covering only top and middle management.

When companies choose to employ ESOPs covering all or the majority of employees, it can be based on a number of reasons. Some stock listed companies use ESOPs solely as a part of the salary and the scheme has no influence on the leadership style conducted or equality and wealth sharing in the company. Other companies introduce the scheme based on a political wish to share wealth and ownership but with no implications for the leadership style. Finally, some companies (probably the majority) introduce an ESOP covering the majority of employees to reduce agency costs and increase commitment and loyalty. This can be based on a wish to create a culture that involves employees in decision-making, that focuses on empowerment of employees and is supported by a participative leadership style supporting and encouraging employees to see the company as “ours”. The arguments of introducing the plan can also feature combinations of the three above-mentioned motivational factors. Empowerment is defined as delegating the decision authority to the lowest level in the organisation capable of making a competent decision (Conger and Kanungo, 1988; Seibert, Silver and Randolph, 2004; Thomas and Velthouse, 1990). The concept of empowerment is very similar to the concept of autonomy in the middle management literature measuring the degree of decision authority distribution. This suggests that companies employing ESOPs covering all employees more often distribute decision authority to lower level employees. While some would argue that decision authority in general could be distributed to non-managerial employees, the lowest level capable of making a competent strategic decision would often be the middle management level (Wooldridge et al., 2008). Hence, the distribution of strategic decision authority to middle managers can be seen as a proxy for the level of distributed decision authority to all employees.

Hypothesis 3d: Companies that distribute strategic decision authority to middle managers more often employ employee stock ownership plans covering more than 50% of non-managerial employees.

METHODS AND DATA COLLECTION

Data for the present study was collected through multiple sources by means of a cross-sectional mail survey as part of a larger research project and by collecting financial and industrial data from official national databases. The 500 largest Danish firms as measured by the number of employees listed in the KOB database (Købmandsstandens Oplysningsbureau) were approached with a two-page survey instrument in late 2009. The 500 firms cover a broad set of industries, including basic material, manufacturing, utilities, retailing, financial services and other services. Besides the number of employees, the database also contains information about the companies' financial figures from 2004 to 2009, information about the companies' main area of business, stock listing and founding year.

To ensure content-related validity, all constructs and relationships are based on a theoretical foundation and all items are based on former tests used to measure the specific construct. To increase the content-related validity, all questionnaires were pretested on a sample of 3 middle managers to test whether the items were intelligible, clear and precise which led to small linguistic adjustments. After the initial pretest, the questionnaire was pretested again on a group of 66 middle managers and 21 CFOs to test the validity of the constructs. None of the respondents in this pretest formed part of the final main survey. To further test the content-related validity, all constructs were tested in an exploratory factor analysis to ensure factor loadings exceeding 0.7 and similarly, an analysis ensured a Cronbach's alpha exceeding 0.7. All tests supported a sufficient content-related validity.

In a first step of the main study, the respective companies' CFO or head of accounting was contacted by means of a *personalised* cover letter and a questionnaire instrument. The CFO was addressed as a

member of the top management team having access to knowledge about the strategy process and the knowledge of the finance department about the different ESO schemes; i.e. which employees own stock in the company and how large a share of the company do they own. About a week later, a second letter enclosed with the questionnaire was sent to those who had not yet responded to the initial letter. These two waves produced a total of 149 responses. In a third step, the remaining individuals who had not reacted to the mailed survey were contacted by phone and asked to participate in the survey. Out of these, 167 were willing to participate and responded to the questionnaire items over the telephone. Careful inspection for completeness and plausibility of the responses led to the elimination of 19 answers (one firm had received and answered the questionnaire twice, one firm was in the process of liquidation, three firms had severely reduced the number of employees during the fall of 2009, thus no longer exhibiting the required number of employees, eight of the respondents were public companies and the remaining responses were severely incomplete or implausible). In conclusion, a total of 297 answers from a broad set of industries were collected (i.e. a response rate of 59.4%).

Measures

The study builds, as far as possible, on existing scales from the literature.

ESO usage: Following the different definitions of ESO usage found in the literature, multiple items were used to capture company practices. A binary item asked firms whether more than one employee owned stocks in the company. This item thus captures the broad definition of ESO use found in the literature (Sengupta et al., 2007). A second set of questions used a five-item scale (none, some, half, majority or all (value 1 to 5)) to measure the level of stock ownership among top management, middle management and non-managerial workers. The definition of ESO is based on previous definitions

considering a company with at least one employee receiving payment from employee share ownership schemes an ESO employing company (Sengupta et al., 2007) or it may be based on a more restricted definition requiring that a majority (60%-100%) of the non-managerial employees participate in the schemes for the company to be considered ESO employing (Robinson and Zhang, 2005). The characteristics of the companies using ESO in general, narrow-based or broad-based ESO are found to differ (Pendleton et al., 2001). We intend to initially use the Sengupta (2007) definition and thus include all companies in which at least one employee (not the CEO) receives payment from an ESO scheme to identify the general characteristics of ESO companies.

The article will conduct more refined tests to analyse if any differences in characteristics can be found between companies employing narrow-based or broad-based schemes. It is presumed that companies with narrow schemes mainly focus on attracting and motivating key personal and might have a greater focus on planning or are located in sectors with traditional hierarchical organisational settings. Companies applying more broad ESO schemes can be expected to be operating in sectors where all employees need to be involved and motivated or form part of more participative cultures. A narrow scheme can be divided into schemes covering only top management and schemes covering both top and middle management.

A total of four different definitions of ESO employing companies will be applied; 1) a broad-based definition covering all companies with more than one employee receiving payments from an ESOP, 1) a narrow scheme covering only top management, 3) a narrow scheme covering both top and middle management (and few or none non-managerial employees), and 4) a broad-based scheme covering more than 50% of all non-managerial employees and all or the majority of top and middle managers. Accordingly, the last type covers more than 50% of all employees and is therefore in keeping with the

definition of a broad-based scheme as used by a number of former studies (Pendleton et al, 2001; Robinson and Zhang, 2005).

Stock listing: Information about whether a firm is listed or not was obtained from the KOB database (CD-DIRECT) which was also used for identifying respondents. It is a binary variable (no stock listing=0; stock listing=1). No differentiation was made in terms of whether the respective companies' stocks were part of larger indices, like for instance the index of the 20 largest Danish firms (OMX C20).

Firm size: Firm size is measured by the natural logarithm of the total amount of assets (Aldrich and Auster, 1986). Other studies have used the log of the number of employees (Poutsma et al., 2006; Pendleton, 1997) or a dummy variable for large firms (more than 2,500 employees) (Cheadle, 1989).

Sector: The respective standard industry code (NACE) digits for each of the firms in the sample were derived from the KOB database (CD-DIRECT). The digit codes were divided into 9 sectors. Respondents from sector 9 (public companies or organisations) were removed from the dataset and the two companies reported in sector 1 was merged into sector 2, leaving sector 2-8 for the analyses in the models.

TABLE 1: SECTORS BASED ON NACE CODES

Sector	Sector number	NACE codes
Raw material	1	0100 - 0999
Production	2	1000 - 3400
Electricity and supply	3	3500 - 3999
Construction	4	4000 - 4499
Transport	5	4500 - 5499
Information and telecommunication	6	5500 - 6399
Financial services	7	6400 - 6899
Service sector	8	6900 - 8399 + 9000 - 9899
Public companies	9	8400 - 8999

Emphasis on formal planning: CFOs were asked to assess their organisations' emphasis on formal planning using an existing five-item scale from the literature. This scale is inspired by a scale used by Andersen (2004) and Andersen & Nielsen (2009) and has exhibited good quality with prior datasets (Cronbach's alpha of 0.84 in the Andersen & Nielsen 2009 dataset). Responses were collected using 7-point Likert scales (1=no emphasis; 7=strong emphasis). For our dataset, the revised scale exhibited a Cronbach's alpha of 0.753 and the factor analysis identified a single factor with an eigenvalue of 2.012.

Participation and autonomy: 7-point Likert scales were used on five different activities in relation to which the middle managers could be either involved in the decision (participation) or allowed to make decisions without prior approval by top management (autonomy). The five items are formerly used by Andersen (2004) and Andersen and Nielsen (2009) and have exhibited good quality. Initially, an explorative factor analysis was conducted on all ten items to test if one single involvement factor could be said to apply. The factor analysis reported three factors with eigenvalues above one, reporting two factors based on items 1-3 on participation and autonomy and a third factor based on items 4-5 on both

participation and autonomy. An analysis of items 4 and 5 revealed that they both were measuring internal strategic processes, while items 1-3 were measuring external or market orientated strategic actions. This combined theoretical and statistical evidence supported one factor based on items 1-3 on participation and one factor based on items 1-3 on autonomy. Items 4 and 5 are abandoned as recommended by Costello and Osborne (2005). The two factors had a Cronbach's alpha of 0.880 and 0.858 respectively and high factor loadings on all five items.

TABLE 2: FACTOR LOADINGS AND RELIABILITIES

Dimensions and variables	n	Cronbach's alpha	Extracted variance	Factor loadings
Planning	297.00	0.753	67.12%	
Formulating company mission				0.812
Defining financial goals				0.792
Evaluating strategic goals				0.852
Participation in decisions	297.00	0.880	81.49%	
Activities to increase market share				0.927
Sales to new segments or markets				0.942
Development of important new products				0.836
Autonomy (MM can make decisions alone without prior approval)	297.00	0.858	77.96%	
Activities to increase market share				0.872
Sales to new segments or markets				0.913
Development of important new products				0.863

Use of reward systems for innovative and adaptive behaviour: Respondents were asked to indicate their company's use of two types of rewards for innovative and adaptive behaviour: Individual-based financial rewards and group-based financial rewards. The two variables were registered as two dummy variables.

Firm age: Firm age is calculated as the number of years passed since the company was founded.

Methods

In keeping with previous research (e.g. Chen and Hennart, 2002) and due to the nature of the dependent variable, a binary logistic regression was applied to test the hypotheses. Each of the four dummies represents a type of ESO applying company with expected individual characteristics. The antecedents cannot be expected to progress as the share of employees covered by the ESOP increases from covering only a few key employees to covering the majority of all employees.

This suggests that four individual logistic regressions should be conducted. The four logistic regression models were prepared (model 1-4) with each of the four dependent variables, ESO, narrow-based top management, narrow-based top and middle management and broad-based ESO, testing the models using all variables. Multicollinearity between two variables was tested in the correlation matrix with no set of variables having a correlation above 0.45 (except between the different types of ESO which do not occur in the same equation) and by calculation of VIF factors. Average VIF of the entire model was 1.53 with a maximum VIF of 2.92 indicating no multicollinearity.

A Harman's single factor test was conducted to test for common method bias and it yielded five factors with an eigenvalue above 1 and an explanation rate of 10-30 % for each factor. Similarly, the data is collected from different sources as recommended by Podsakoff et al. (2003) and the dependent variable is objective in the sense that the share of employees covered by the ESOP can be accurately measured. This raises no concern for common method bias.

All constructs reported high factor loadings and Cronbach's alphas above 0.7 ensuring good reliability of the constructs (Hair et al., 2006) (see table 2). The 297 respondents have been tested for non-

response bias based on size, response time, growth rates and performance and none of the tests raised any concern.

RESULTS

Out of 297 companies, 103 companies employed ESO in the broad definition (more than one employee owning stocks in the company), implying that 34.68% of Danish companies are using ESO. This can be compared with a 5% share in 1991 (PEPPER I), a 21% share in 1996 (PEPPER II) and a 21% share in 1999/2000 (Pendleton et al., 2001), supporting hypothesis 1a. Out of the 103 companies, 75 (73%) were narrow-based (44 (43%) covered only top management) and 31 (30%) covered both top and middle management) and 28 (27%) were broad-based. This also implies that 25% of all companies use a narrow-based ESO scheme while 10% use a broad-based scheme. This indicates a decline in the use of broad-based schemes from 15% in 2000 to 10% while narrow-based schemes have increased from 6% to 25%, underpinning hypothesis 1b.

TABLE 3: DESCRIPTIVE STATISTICS AND CORRELATIONS

Variable	Mean	SD	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1 ESO	0.35	0.48	0.00	1.00	1																		
2 Narrow_top	0.15	0.36	0.00	1.00	.57 ***	1																	
3 Narrow-MM	0.10	0.36	0.00	1.00	.47 ***	-.14 **	1																
4 Broad	0.09	0.29	0.00	1.00	.44 ***	-.14 **	-.11 *	1															
5 Age	55.27	46.98	3.00	385.00	.12 **	-.03	.02	.21 ***	1														
6 Listed	0.19	0.39	0.00	1.00	.36 ***	.00	.16 ***	.43 ***	.19 ***	1													
7 Sector_2	0.38	0.49	0.00	1.00	-.05	.03	-.06	-.04	.10 *	-.03	1												
8 Sector_3	0.01	0.12	0.00	1.00	-.09	-.05	-.04	-.04	-.07	-.06	-.09	1											
9 Sector_4	0.06	0.23	0.00	1.00	.13 **	.10 *	.01	.07	-.06	-.01	-.19 ***	-.03	1										
10 Sector_5	0.25	0.43	0.00	1.00	.01	-.04	.08	-.03	.12 **	-.07	-.45 ***	-.07	-.14 **	1									
11 Sector_6	0.08	0.28	0.00	1.00	-.09	-.02	-.06	-.06	-.07	.02	-.24 ***	-.04	-.08	-.18 ***	1								
12 Sector_7	0.08	0.27	0.00	1.00	.03	-.12 **	-.02	.21 ***	.19 ***	.23 ***	-.23 ***	-.03	-.07	-.17 ***	-.09	1							
13 Sector_8	0.12	0.33	0.00	1.00	.09	.10 *	.07	-.05	-.01	-.02	-.30 ***	-.04	-.09	-.22 ***	-.11 **	-.11 *	1						
14 Bonus individ.	0.40	0.49	0.00	1.00	.17 ***	.12 **	.08	.04	.01	.03	.01	.02	-.11 *	.02	-.03	-.03	.04	1					
15 Bonus group	0.31	0.46	0.00	1.00	.12 **	.09	.03	.06	.10 *	.03	.15 ***	-.02	-.04	-.02	-.02	-.11 *	-.06	.33 ***	1				
16 Participation	0.00	1.00	-3.34	1.52	.08	-.05	.02	.17 ***	.08	.17 ***	-.04	.08	.06	-.11 *	-.03	.10	.07	.15 **	.02	1			
17 Autonomy	0.00	1.00	-1.62	2.56	-.02	-.06	-.02	.07	.00	-.01	-.03	.00	.09	.03	-.08	-.09	.09	-.02	-.11 *	.44 ***	1		
18 Planning	0.00	1.00	-3.47	1.39	.13 **	.12 **	.01	.06	-.01	.05	.03	.03	.02	-.02	.01	.06	-.02	.14 **	.03	.31 ***	.09	1	
19 Size	13.43	1.61	9.24	19.28	.14 **	-.19 ***	.11 *	.34 ***	.26 ***	.43 ***	.01	.04	-.10 *	-.05	-.14 **	.55 ***	-.18 ***	.13 **	.01	.18 ***	.04	.08	1

n = 297. Significance of correlations: *** *p* < .01; ** *p* < .05; * *p* < .10 (two-tailed test).

The correlation matrix in table 3 shows a significant positive connection between the broad definition of ESO, narrow-based schemes covering both top and middle management and broad-based schemes and stock listing. This supports earlier findings (Pendleton et al., 2001; Kabst et al., 2006) suggesting

that listed companies are more inclined to use ESO than unlisted companies are on account of the reduced administrative costs of introducing an ESOP in a listed company. No significant connection was found between the narrow-based ESO schemes covering only top management and stock listing indicating that narrow-based schemes are more evenly distributed among companies. This is also supported by the significant negative correlation between the narrow-based ESO scheme covering only top management and size, indicating that small and medium-sized companies more often use schemes covering only top management.

In the broad definition of ESO employing companies, the companies seem to be older than expected which is contradictory to the assumption that some companies would use ESO to attract and retain key employees; however, this can be explained with the significant correlation between age and stock listing and age and size. In addition, the use of ESO seems to be more prevalent in sector 4 (construction); this is at variance with the supposition that ESO would be more prevalent in knowledge intensive sectors and specifically in the financial sector. Companies with ESOPs also seem to more frequently use other incentives like individual and group-based bonuses, most likely to complement the more weak economic incentive of a broad-based incentive like ESO. Companies employing ESO seem to place a greater emphasis on both participation of middle managers in strategy formulation and centralised planning; the two may be considered opposites but some scholars have advocated that a combination of participation and a centralised planning perspective distributing new ideas and setting a strategic direction increases company performance (Andersen, 2004).

Companies with narrow ESO schemes covering only top management seem to be more widespread in sector 4 (construction) and sector 8 (service) and less so in sector 7 (finance). With a significant negative correlation between sectors 4 and 8 and size, the finding suggests that companies in these

sectors are mainly small and medium-sized companies organised under joint ownership between a few people in the top management team, while companies in the financial sector more frequently are listed companies and therefore adopt broad-based schemes. The companies also seem to have a greater focus on individual incentives and centralised planning, suggesting that they might have a traditional view on management and strategy conceiving it to be a task led and performed by top management.

Companies with ESO schemes covering both top and middle management are only significantly correlated with stock listing and size. This implies, contrary to expectations, that companies in which middle managers have gained a formal ownership are not necessarily more inclined to involve middle managers in strategic decisions. Yet, this is to be further investigated in the logistic regressions.

Companies applying broad-based ESO schemes covering more than 50% of all employees are seen to be older, larger and more often stock listed. Large companies can be expected to have higher agency costs due to complex organisational structures and the risk of free riders; furthermore, stock listing is seen to reduce the costs of introducing an ESOP. Broad-based schemes also tend to be more prevalent in the finance sector (sector 7) which is in line with earlier findings (Poole, 1989). The introduction of a broad-based ESOP also testifies to a culture which encourages employee involvement and motivation and expects effort and initiatives by all employees. This is supported by a significant positive correlation between the broad-based scheme and participation. The measure only gauges the involvement of middle managers in strategy processes, but a culture focusing on empowerment would entail involving all employees in operational decisions and mainly middle managers in strategic decisions.

TABLE 4: LOGISTIC REGRESSION

Dependent variable	Model 1		Model 2		Model 3		Model 4	
	ESO		Narrow Top management		Narrow top and middlemanagement		Broad ESO	
Dimensions and variables	B	Wald test	B	Wald test	B	Wald test	B	Wald test
Age	0.004	1.490	0.003	0.407	-0.003	0.284	0.008 *	3.727
Listed	2.165 ***	26.378	0.817	2.394	1.132 **	4.655	2.096 ***	14.337
Sector 2	-0.371	0.578	0.152	0.065	-0.469	0.462	0.026	0.001
Sector 3	-20.345	0.000	-19.030	0.000	-19.172	0.000	-17.746	0.000
Sector 4	1.152 *	2.914	0.986	1.661	0.164	0.029	1.434	1.571
Sector 5	-0.097	0.037	-0.101	0.026	0.181	0.069	-0.011	0.000
Sector 6	-1.211 *	2.865	-0.581	0.515	-1.262	1.134	-0.082	0.004
Sector 7	-0.365	0.191	-18.021	0.000	-1.257	1.134	0.857	0.458
Bonus_individual	0.735 **	5.308	0.800 **	3.916	0.573	1.552	-0.307	0.303
Bonus_group	0.365	1.187	0.159	0.145	-0.076	0.025	1.153 *	3.701
Participation	-0.051	0.086	-0.195	0.856	-0.004	0.000	0.415	1.718
Autonomy	-0.097	0.328	-0.204	0.872	-0.143	0.361	0.259	0.848
Planning	0.253	2.532	0.402 *	3.610	-0.055	0.066	0.092	0.105
Size	-0.080	0.395	-0.558 ***	8.481	0.150	0.839	0.236	1.465
Intercept	-1.532	0.915	3.824	2.799	-4.825 **	5.258	-8.486 ***	10.737
N	273		273		273		273	
Chi-square	63.47		32.69		14.98		59.54	
d.f.	14		14		14		14	
Significance	0.000		0.003		0.380		0.000	
Nagelkerne R2	0.285		0.198		0.110		0.412	
Cox & Snell R2	0.207		0.113		0.053		0.196	
Percentage correct	73.60		86.40		89.70		91.60	

Significance levels: *** $p < .01$; ** $p < .05$; * $p < .10$ (two-tailed test).

Dependent variable	Model 1a		Model 2a		Model 3a		Model 4a	
	ESO		Narrow Top management		Narrow top and middlemanagement		Broad ESO	
Dimensions and variables	B	Wald test	B	Wald test	B	Wald test	B	Wald test
Age	0.004	1.478	0.002	0.234	-0.003	0.354	0.009 **	4.268
Listed	2.168 ***	26.272	0.864	2.574	1.154 **	4.764	2.069 ***	12.355
Sector 2	-0.368	0.560	0.240	0.159	-0.497	0.496	-0.276	0.081
Sector 3	-20.332	0.000	-19.111	0.000	-19.272	0.000	-17.759	0.000
Sector 4	1.193 *	3.069	1.155	2.129	0.104	0.011	1.461	1.561
Sector 5	-0.082	0.026	-0.172	0.074	0.280	0.160	-0.003	0.000
Sector 6	-1.213 *	2.872	-0.632	0.595	-1.272	1.130	0.114	0.007
Sector 7	-0.390	0.213	-17.905	0.000	-1.407	1.355	0.530	0.143
Bonus_individual	0.771 **	5.823	0.969 **	5.056	0.541	1.380	0.242	0.142
Bonus_group	0.386	1.313	0.179	0.180	-0.153	0.091	1.196 *	3.445
Participation	-0.049	0.077	-0.275	1.493	-0.023	0.008	0.504	2.232
Autonomy	-0.108	0.391	-0.194	0.745	-0.105	0.184	0.213	0.516
Planning	0.258	2.614	0.434 **	4.114	-0.100	0.002	0.087	0.086
Size	-0.082	0.409	-0.576 ***	8.922	0.191	1.253	0.262	1.544
G_Bonus X Autonomy	0.105	0.503	0.162	0.720	-0.224	0.989	0.172	0.384
I_Bonus X Planning	-0.111	0.493	-0.148	0.500	-0.332	2.364	0.209	0.485
I_Bonus X Participation	-0.056	0.124	0.271	1.797	0.023	0.011	-0.734 **	5.749
Intercept	-1.561	0.931	3.757	2.683	-5.257 **	5.716	-9.681 ***	11.112
N	273		273		273		273	
Chi-square	64.64		36.09		18.66		66.08	
d.f.	17		17		17		17	
Significance	0.000		0.004		0.348		0.000	
Nagelkerne R2	0.290		0.217		0.137		0.452	
Cox & Snell R2	0.211		0.124		0.066		0.215	
Percentage correct	73.60		86.10		90.10		91.90	

Significance levels: *** $p < .01$; ** $p < .05$; * $p < .10$ (two-tailed test).

The four models show great differences in the significant variables and a large difference in R^2 suggesting that the type of ESO plays a significant role in defining the antecedents of ESO and that the model describing the antecedents of a broad-based ESO scheme is more significant than the models describing the two types of narrow-based schemes or a more broad definition due to a higher variance in the characteristics of these companies. This underpins hypothesis 3a and suggests that when discussing the characteristics of ESO employing companies, the type of ESO needs to be included in the discussion.

Model 3 and 3a is insignificant diminishing the quality of the conclusions that can be drawn on the basis of these models. The insignificance of the model is caused by the fact that only stock listing is a significant antecedent. When testing on the entire sample, the stock listed companies with either a broad scheme or a narrow scheme covering only top management is counted as a 0 (a non-narrow scheme covering both top and middle management). This reduces the explanatory power of stock listing. If the model is tested only on companies without ESO and companies with the narrow-based type covering top and middle management, the models become significant due to the explanatory power of stock listing (see table 5 in the appendix).

Three of the models corroborate that ESO is more prevalent among listed companies due to the lower administration costs of the scheme supporting hypothesis 2b. The significance levels, however, indicate that there is a stronger connection between broad-based and broadly defined types of ESO and stock listing.

It was expected that the use of ESO schemes would be more prevalent in some sectors like the finance or IT and telecommunication sector due to knowledge intensive jobs and wider investment knowledge.

None of the knowledge intensive sectors emerged significant. Sector 6 (IT and telecommunication) even had a significant negative B-value rejecting hypothesis 2a. Some scholars have argued that ESO is a weak economic incentive due to the lack of controllability and that it needs to be combined with an individual incentive to create both an individual economic incentive based on the core job tasks and a more broad incentive based on the long-term overall development of the company. Model 1 and 1a confirm that companies employing ESO schemes more often use individual incentives, thus supporting hypothesis 2c. However, the prevalence was expected to be higher in companies with broad-based schemes due to the lack of controllability among employees at lower organisational levels. Model 2 and 4 though show that while companies with narrow schemes covering only top management more frequently use individual incentives, companies with broad-based schemes have a higher prevalence of group-based incentives.

ESO has been argued to support growth and commitment among employees and it is often used to attract competent employees, especially in young companies (Pendleton et al., 2001). It was therefore expected that a significant negative connection would be found between age and ESO use. This is, however, not the case since only model 4 has a significant positive connection between age and the use of broad-based ESO schemes; this entails that hypothesis 2d is rejected.

Companies with narrow-based schemes covering only top management place greater emphasis on centralised strategic planning which is in support of hypothesis 3b. This indicates a traditional view on top management's role in strategy processes as a centralised top-down activity. Conversely, companies employing a broad-based scheme were expected, but not found, to practice a culture, which focuses on involvement and empowerment by distributing strategic decision authority to middle managers, thus rejecting hypothesis 3d. A similar connection was expected but not found in terms of narrow-based

schemes covering both top and middle management on the backdrop of the findings in the ESO literature propounding that the effect of introducing ESO is mediated by involvement of employees in the decision-making process (Wooldridge et al., 2008).

Three interaction effects were tested in model 1a-4a to test the interaction between different incentives and involvement and planning. The models revealed that the interaction between individual bonuses and participation reduced the use of broad-based schemes. That is, companies tend to use individual incentives to motivate middle managers to participate in strategic decision-making instead of motivating them through formal ownership.

DISCUSSION

The present paper has revealed that since 2000, the use of ESO among Danish companies has increased from 21% to 35% of all companies with more than 235 employees. The prevalence of narrow-based schemes with less than 50% of the employees covered by the scheme has increased from 6% to 25%, while broad-based schemes have experienced a 15% to 10% decline. This can be compared with the EFES analysis reporting an increase in the use of broad-based schemes among listed companies (Mathieu, 2009). With a neutral government policy on ESO, the change in the use of ESO reflects a change in companies' readiness to introduce ESOPs and the willingness among employees to participate. The findings suggest that top and middle managers are more prepared to invest in the company owing to the fact that they receive higher salaries, are more knowledgeable about investments and have a higher level of controllability due to their influence on company performance. The findings also suggest that the development is mainly driven by the employees' willingness to participate in the

ownership. If the development was driven by a company wish to increase motivation and participation among employees, it would be expected that companies with narrow-based schemes also would involve middle managers in strategy processes more often. These conclusions are likewise supported by the decline in broad-based schemes. This decline can be explained by an increase in risk averseness among non-managerial employees. The financial crisis and the substantial capital losses on the financial markets have directed employees' attention to the fact that money can be lost on stocks, even when bought at a discount. Thus, ESO is not simply a safe tax-free salary, but a risky investment with potential up and down sides. Consequently, the development in the prevalence of ESOPs in a neutral government setting is strongly affected by employees' willingness to participate in the scheme which, in return, is influenced strongly by the development on the financial markets especially with respect to the non-managerial employees.

The use of ESO has been argued to be more prevalent in knowledge intensive sectors like IT and telecommunication or in the financial sector due to a more comprehensive investment knowledge among the employees in these sectors. This is not supported by the present study. Despite a strong positive correlation between the finance sector and ESO employing companies, the connection is not significant when controlling for stock listing. This suggests that the higher prevalence in the finance sector reported in earlier studies (Pendleton et al., 2001; Poole, 1989) can be explained by a larger share of stock listed companies in this sector, indicating that the explanatory factor is stock listing and the appurtenant lower costs of administrating the scheme and not a greater knowledge of investments. The study even found a significant negative effect of sector 6 (IT and telecommunication) and the prevalence of the general broad-based definition of ESO employing companies; this rejecting hypothesis 2a.

Stock listing has been reported to be an antecedent of ESO in a number of studies due to lower costs of managing the scheme (Kabst et al., 2006). This is also supported by the present study regarding the broad definition of ESO, narrow schemes covering both top and middle management and the broad-based schemes. It is, however, not a significant antecedent of companies employing a narrow-based scheme covering only top management. Juxtaposed with a significant negative effect of size on the prevalence of narrow-based schemes covering only top management, it can be seen that these schemes are mainly used in small and medium-sized companies. This can be explained by the fact that the SME sector is dominated by top management owned companies and to a great extent use ESO to attract and retain top management. This partly supports hypothesis 2b, but it also extends and sophisticates our knowledge of the effect of stock listing on the use of ESO. It also supports hypothesis 3a which advances that the antecedents of ESO employing companies depend on the definition of and type of ESO scheme employed by the company. This suggests that future analyses of the antecedents of ESO employing companies need to distinguish between the type of ESO and that the effect of introducing different types of ESO might be determined by the characteristics of the company and the external factors.

The arguments for introducing ESO are often borne out of a political wish to share wealth based on a democratic leadership style and culture or out of a wish to align the interest of the employees with the interest of the company by increasing commitment and loyalty. This is also supported by research reporting that the effect of introducing ESO is mediated by involvement and the creation of psychological ownership among employees (Pierce et al., 2001, Pendleton, 1998). This would imply that ESO employing companies would practice a more democratic leadership style and more often involve employees in decision-making. The findings of the present study suggest that although

theoretical and empirical data indicate that the effect of ESOPs is mediated by involvement, companies seem to act differently. Especially companies with narrow-based schemes covering only top management are seen to have a greater focus on centralised planning and more frequently use individual bonuses. This, combined with the finding that they are mainly small and medium-sized companies, indicate that these companies have a traditional view on leadership and strategy processes as a central, top-down process that focuses on the tasks and motivation of top management and key employees. Companies with an ESO scheme covering both top and middle management could be expected to more often involve middle managers in strategic decisions prompted by a demand from middle managers to be able to exercise the traditional ownership rights. Yet, the findings of the survey imply that this is not the case. The model testing ESO schemes covering both top and middle management failed to find a significant higher prevalence of neither participation nor autonomy. Thus, despite the formal ownership, middle managers do not get involved and thereby do not realise the potential to exercise their ownership rights. Also companies employing a broad-based scheme covering more than 50% of the employees were not found to have a higher use of autonomous strategic actions. This indicates that despite a wish to practice a more democratic leadership style, companies are not more willing to grant employees formal ownership. Accordingly, these findings support hypothesis 3b, while rejecting hypothesis 3c and 3d.

A number of interaction effects were tested in the model revealing that combining individual incentives with participation reduced the use of broad-based ESO schemes. This suggests that companies more often use individual incentives to motivate middle managers to participate in strategic actions and to reduce agency costs which is in keeping with the argument that ESO is a weak economic incentive inducing companies to employ a more direct and individual incentive. This, however, can support a

short-term focus of the middle managers and a focus on the measures of the incentive instead of a more broad-based focus on the long-term development of the company and the more intangible activities that might develop the company and increase its competitive advantages.

Limitations and future research

The contribution of these findings must be viewed in context. The sample encompasses large and medium-sized Danish companies and cannot be expected to automatically apply to small companies as well. The use of ESO in companies has been seen as a dynamic process (D'Art and Turner, 2006) indicating that the prevalence will change over time and that the findings of the present paper therefore merely mirror the current situation on the Danish market. A number of studies (Kabst et al., 2006; Logue and Yates, 1999; Mathieu, 2009; PEPPER II; Pendleton, 1997; Pendleton et al, 2001) showed large diversification between countries and regions, suggesting that the antecedents found in this study may only be valid in terms of the Danish market since other antecedents can be expected in other countries and regions.

The conclusions on involvement of employees in decision-making are limited by the use of involvement of middle managers in strategy as a proxy of the general level of empowerment. A wider analysis based on answers from a wide range of employees from the different companies might alter or refine the findings. The scope of the analysis is limited to testing the antecedents of companies employing schemes covering different organisational layers in the company. A more refined understanding might evolve by analysing the antecedents of companies employing ESO schemes covering different functions in the organisation. The analysis only tests the antecedents and prevalence

of traditional employee stock ownership, leaving similar incentives like stock options or warrants and characteristics of wholly employee-owned companies out of the equation.

While a number of reasons exist for introducing ESOPs, the present analysis does not address the effect of the reasons for introducing the plan on the type of plan employed and the share of the company owned by the employees.

As many of the presented earlier findings on antecedents of ESO companies are now dated, a more extensive analysis, focusing in particular on the issue of different types of ESO schemes, of the prevalence and antecedents of ESO companies viewed in the light of the current financial situation in other countries seems necessary. Such an analysis could better our understanding of how different national settings influence the prevalence of the different types of ESO and how employees' willingness to participate is influenced both by governmental actions and changes on the financial markets.

CONCLUSION

The present paper has contributed to our knowledge on the prevalence of ESO employing companies in Denmark. The Danish context allows us to investigate how the prevalence is affected in a neutral governmental setting. The prevalence has increased from 21% to 35%, but while the narrow-based schemes have increased from 6% to 25%, the broad-based schemes have declined from 15% to 10% of all companies. This can be explained by increased risk averseness among non-managerial employees. The paper also increases our knowledge on the antecedents of ESO employing companies, highlighting that the antecedents depend on the type of ESO scheme applied.

While earlier findings have reported that knowledge intensive sectors and financial sectors more often used ESO to align the interest of the employees with the interest of the company or due to a higher knowledge of investments among employees in the financial sector, no positive connection could be found. A negative prevalence in the IT and telecommunication sector was reported, suggesting that the higher prevalence reported in earlier analyses can be explained by the larger share of stock listed companies in these sectors and the fact that the prevalence is neutral or negative when adjusting for stock listing.

Despite multiple evidence favouring the view that the effect of ESO is mediated by involvement of employees in decision-making, the study reveals that none of the different types of ESO employing companies had a higher use of a democratic leadership style involving middle managers in strategic decisions. Companies with schemes covering only top management seemed to have a traditional view on leadership and strategy processes focusing on centralised planning and individual incentives.

The paper hereby provides new insights into the prevalence and antecedents of ESO employing companies and directs future research into how governmental and market settings affect the prevalence of ESOPs and how the antecedents of ESO employing companies depend on the type of scheme employed.

APPENDIX

TABLE 5: LOGISTIC REGRESSION

Dependent variable	Model 1		Model 2		Model 3		Model 4	
	ESO		Narrow Top management		Narrow top and middlemanagement		Broad ESO	
Dimensions and variables	B	Wald test	B	Wald test	B	Wald test	B	Wald test
Age	0.004	1.490	0.003	0.310	-0.008	1.375	0.009 *	2.973
Listed	2.165 ***	26.378	1.509 **	6.429	2.205 ***	11.650	2.938 ***	19.985
Sector 2	-0.371	0.578	0.027	0.002	-0.777	1.163	-0.114	0.011
Sector 3	-20.345	0.000	-19.308	0.000	-19.737	0.000	-17.716	0.000
Sector 4	1.152 *	2.914	1.161	2.005	0.109	0.100	2.570 *	3.441
Sector 5	-0.097	0.037	-0.047	0.005	0.005	0.000	0.272	0.057
Sector 6	-1.211 *	2.865	-0.581	0.490	-1.463	1.376	-0.242	0.025
Sector 7	-0.365	0.191	-18.562	0.000	-1.427	1.168	0.589	0.142
Bonus_individual	0.735 **	5.308	0.883 **	4.527	0.678	1.865	0.173	0.072
Bonus_group	0.365	1.187	0.298	0.466	0.184	0.127	1.608 **	4.946
Participation	-0.051	0.086	-0.177	0.631	0.051	0.038	0.576	2.644
Autonomy	-0.097	0.328	-0.166	0.493	-0.047	0.031	0.299	0.815
Planning	0.253	2.532	0.394 *	3.257	0.096	0.159	-0.099	0.091
Size	-0.080	0.395	-0.426 **	4.910	0.166	0.684	0.289	1.235
Intercept	-1.532	0.915	2.026	0.749	-4.855 *	3.495	-10.560 ***	8.521
N	273		218		205		204	
Chi-square	63.47		32.45		26.63		72.14	
d.f.	14		14		14		14	
Significance	0.000		0.003		0.022		0.000	
Nagelkerne R2	0.285		0.223		0.222		0.549	
Cox & Snell R2	0.207		0.138		0.122		0.298	
Percentage correct	73.60		81.70		87.80		92.60	

Significance levels: *** $p < .01$; ** $p < .05$; * $p < .10$ (two-tailed test).

Dependent variable	Model 1a		Model 2a		Model 3a		Model 4a	
	ESO		Narrow Top management		Narrow top and middlemanagement		Broad ESO	
Dimensions and variables	B	Wald test	B	Wald test	B	Wald test	B	Wald test
Age	0.004	1.478	0.002	0.217	-0.008	1.353	0.010 *	3.111
Listed	2.168 ***	26.272	1.565 ***	6.610	2.183 ***	11.002	2.876 ***	17.998
Sector 2	-0.368	0.560	0.099	0.025	-0.749	1.035	-0.294	0.066
Sector 3	-20.332	0.000	-19.337	0.000	-19.765	0.000	-17.663	0.000
Sector 4	1.193 *	3.069	1.290	2.351	0.200	0.033	2.577 *	3.445
Sector 5	-0.082	0.026	-0.117	0.032	0.070	0.009	0.297	0.065
Sector 6	-1.213 *	2.872	-0.659	0.604	-1.485	1.400	0.020	0.000
Sector 7	-0.390	0.213	-18.571	0.000	-1.336	0.988	0.252	0.023
Bonus_individual	0.771 **	5.823	1.044 **	5.623	0.697	1.976	0.791	1.103
Bonus_group	0.386	1.313	0.293	0.440	0.185	0.121	1.500 **	3.884
Participation	-0.049	0.077	-0.262	1.205	0.024	0.008	0.792 *	3.781
Autonomy	-0.108	0.391	-0.137	0.299	-0.019	0.005	0.207	0.331
Planning	0.258	2.614	0.428 *	3.740	0.123	0.245	-0.163	0.225
Size	-0.082	0.409	-0.452 **	5.313	0.154	0.571	0.318	1.401
G_Bonus X Autonomy	0.105	0.503	0.122	0.375	-0.050	0.044	0.185	0.321
I_Bonus X Planning	-0.111	0.493	-0.191	0.778	-0.270	1.281	0.204	0.350
I_Bonus X Participation	-0.056	0.124	0.264	1.645	-0.021	0.007	-0.788 **	4.511
Intercept	-1.561	0.931	2.097	0.786	-4.769 *	3.232	-11.774 ***	9.124
N	273		218		205		204	
Chi-square	64.64		35.39		28.05		77.38	
d.f.	17		17		17		17	
Significance	0.000		0.006		0.044		0.000	
Nagelkerne R2	0.290		0.242		0.233		0.582	
Cox & Snell R2	0.211		0.150		0.128		0.316	
Percentage correct	73.60		83.00		86.80		91.70	

Significance levels: *** $p < .01$; ** $p < .05$; * $p < .10$ (two-tailed test).

4. Determinants of psychological ownership – Leadership, involvement and formal ownership; new empirical evidence⁵

INTRODUCTION

The concept of psychological ownership has been the subject of increased attention within the field of management research as a key to unlocking improved employee behaviour (Pierce, Jussila and Cummings, 2009), positive employee attitudes (Van Dyne and Pierce, 2004) and increased company performance (Van Dyne and Pierce, 2004). The importance of psychological ownership lies in its potential ability to reduce agency costs by aligning the interest of the employees with the interest of the company and having them make decisions that are in the long-term interest of the company (Avey, Avolio, Crossley and Luthans, 2009). Pierce, Kostova and Dirks (2003, p. 86) define it as “*the state in which individuals feel as though the target of ownership or a piece of that target is theirs*”. The concept has formerly been studied within the realms of child development (Isaacs, 1933) and philosophy (Heidegger, 1927) and was introduced to management studies through psychology and organisation studies (Kuvaas, 2006; Pierce et al., 2003). Due to the diverse research areas focusing on psychological ownership, a number of definitions and research methods have been used in the pursuit of capturing the concept, its determinants and effects. Pierce et al. (1991) developed a conceptual model of the effects of employee stock ownership on individual outcomes arguing that psychological ownership had a mediating effect. Van Dyne et al. (2004) tested 800 employees from three different companies and found that psychological ownership could be seen as a determinant of organisational

⁵ The chapter corresponds to a single-authored article submitted to the Journal of Organizational Behavior which is currently under review. An earlier draft of the article was presented at the 2009 SMS conference in Washington and the author would like to thank the participants at the conference for their helpful comments. The author would also like to thank Professor Torben Juul Andersen for helpful comments and PhD fellow Stefan Linder for collaboration in our joint survey.

commitment and job satisfaction, while O'Driscoll et al. (2006) reported a mediating effect of psychological ownership in the creation of organisational commitment and citizenship behaviour in an analysis of 239 New Zealand workers from seven different companies. Similarly in two discursive analyses, both Laine and Vaara (2007) and Mantere and Vaara (2008) stressed the importance of psychological ownership as a moderator in participative strategy processes. This diversity has enriched us with a number of conceptual, anecdotal and discursive analyses that view psychological ownership as a path to improved employee attitudes and behaviour (Pierce et al., 2009; Wagner et al., 2003), as mediating the effect of employee stock ownership on company performance (Hammer, Landau and Stern, 1981; Long, 1978; Pierce et al., 1991) or as moderating the effect of employee involvement (Laine and Vaara, 2007). Despite a number of research avenues addressing the determinants of psychological ownership (Kuvaas, 2006; Pierce et al., 2009), our knowledge of the effects of the different determinants of psychological ownership and their interrelations remains imperfect. To enhance our understanding of the effects, importance and interrelations of the different determinants, a broader cross-sectional analysis is warranted. This study endeavours to fill that gap by testing involvement in strategy processes, leadership style and formal ownership as determinants of psychological ownership in a cross-sectional analysis of 297 Danish companies. Involvement of middle managers in strategy processes can be seen either as allowing middle managers to participate in strategic decision-making, referred to as *participation in decisions* (Andersen, 2004) or as distributing the strategic decision authority to the middle managers, referred to as *autonomy* (Burgelman, 1984). The importance of involvement in strategy processes as a determinant of psychological ownership is reported by Pierce et al. (1991) who argue that the perception of influence supported the creation of psychological ownership. Pierce et al. (2009) also found task significance and autonomy to be

determinants of psychological ownership stressing the importance of involvement in strategic decisions.

The leadership style conducted by top management can be seen to enable or constrain the creation of psychological ownership. Mantera and Vaara (2008) reported in a discursive analysis that while a discourse based on mystification, disciplining and technologisation constrained involvement due to reduced psychological ownership, a strategy discourse based on self-actualisation, dialogisation and concretisation promoted involvement and the creation of psychological ownership.

Pierce et al. (2001) has conceptualised that formal ownership through an employee stock ownership plan (ESOP) as a determinant of psychological ownership is moderated by the possibility to exercise formal ownership rights, such as access to information about the company and exertion of influence on the company. Klein (1978) found in his intrinsic model that formal ownership in itself supported the creation of psychological ownership and not the size of the ownership share, indicating that it is not the potential financial reward that triggers the creation. This indicates that to increase psychological ownership in the organisation, the share of employees covered by the scheme is more important than the share of stocks open for purchase.

The above-mentioned research streams reveal that despite a strong theoretical foundation explaining the potential positive effects of involvement of middle managers in strategy, a participative leadership style and introduction of an ESOP, the effects all seem to be mediated by psychological ownership. Psychological ownership can be seen as a state in which the goals and the success of the company have been internalised by the employee or as internalised extrinsic motivation as addressed by Ryan and Deci (2000) in their self-determination theory (SDT). This calls for a better understanding of how the

three areas can enhance internalised extrinsic motivation and their individual and combined effects on internalisation.

This study tests the interrelated effects between the expected determinants and explores whether any combined effects can be reported. The study reveals that a participative leadership style and middle management participation in strategy alike are determinants of psychological ownership, with leadership style as the most significant and influential determinant. Furthermore, it reveals that formal ownership is an indirect determinant mediated by participation, and that autonomy has no direct or indirect effect on the creation of psychological ownership. It was also tested if any interaction effects could be found; however, neither of the interaction effects was successful in improving the model.

In the following, the literature streams on ESO, leadership style, middle management involvement and psychological ownership will be presented, followed by a development of the model, hypothesis development, tests and finally, results and conclusion.

EMPLOYEE STOCK OWNERSHIP

The research stream on employee stock ownership (ESO) is mainly rooted in agency theory (Eisenhart, 1989; Jensen and Meckling 1976) arguing that by allowing employees to participate in the ownership of the company, the interests of the company and the employee are aligned. Despite the strong theoretical foundation, the empirical findings are less conclusive, pointing out a need for more research in the area (Kruse et al., 2008). The findings either indicate a positive or a neutral relationship between introducing an employee stock ownership plan (ESOP) and company performance and an analysis of 33 articles on ESO calculated an average increase in productivity of 4-5% (Kruse, 2002). Despite the

foundation in agency theory and the argument that employees are motivated by the expected economic reward, the effect of ESO is seen to be mediated by a number of factors opposing this argument. The mediating effects have been found to be: (1) Possibility to exercise the formal ownership rights (Klein, 1987; Long, 1977, 1978; Rosen and Quarrey, 1987), (2) creation of psychological ownership (Klein, 1987; Pendleton et al., 1998), (3) ownership expectations (Steers 1977), (4) management's philosophical commitment to employee ownership (Hambrick and Mason, 1984) and (5) participation in decision-making (Jones, Kalmi and Mäkinen, 2010; Long, 1977, 1978).

The formal ownership rights and ownership expectations are the rights to possess shares, exert influence on and receive information about the company (Pierce, Rubinfeld and Morgan, 1991) and, in combination with participation in decision-making, they have been found to be some of the determinants of psychological ownership (Pierce et al., 1991). Management's philosophical commitment to ESO addresses the reasons for introducing an ESOP and management's readiness to include employees in the decision-making process. Caramelli and Briole (2007) found that some ESOPs are introduced due to tax benefits and other financial arguments, while others are introduced against the backdrop of a management focus on employee participation and a wish to increase commitment and loyalty. ESOP introduction prompted by the first category of reasons has been found to have no effect on company performance and employee attitudes, while introducing ESOPs based on the latter is seen to positively affect employee satisfaction, commitment and turnover intentions (Pendleton, 2010). It can be argued that management's philosophical commitment to ESO corresponds to conducting a participative leadership style that encourages, supports and expects involvement and initiatives from employees at all organisational levels. Hambrick and Mason (1984) have argued that management's philosophical commitment to employee ownership plays a significant role in creating

organisational systems that encourage employee participation and legitimate employee influence. While the ESO literature conceives the creation of psychological ownership as a factor that mediates the positive effect of ESO on company performance, Pierce et al. (1991) found formal ownership to be one of the determinants of psychological ownership. It can be argued that the effect of ESO on company performance is not mediated by the creation of psychological ownership but through its effect on the creation of psychological ownership. This theory is supported by the fact that the aforementioned mediating effects, namely the possibility to receive information about and exercise influence on the company and a participative leadership style, all support the creation of psychological ownership. Thus, the mediating effect of the factors does not manifest itself in the effect of ESO on company performance, but in ESO's effect on the creation of psychological ownership. In the following sections, we will test if similar conclusions can be drawn by reviewing the literature on middle management's involvement in strategy processes, the participative leadership style and the general research stream on psychological ownership.

MIDDLE MANAGEMENT INVOLVEMENT IN STRATEGY PROCESSES

While participation in decisions in general is expected to produce higher company performance, participation in strategic decisions may be assumed to have a stronger impact on performance than participation in more operational decisions. Moreover, while involving all levels of employees in the decision-making process creates a higher performance, the effect of involving middle managers will, using the same argumentation as above, be greater than involving employees without management authority (disregarding involving top management based on the assumption that due to its

organisational power, it is always (if it wants to) involved in decisions). Hence, the greatest individual effect of involvement can be expected to be created by involving middle managers in strategic decisions. This can be realised either by allowing middle managers to advocate their ideas to the top managers and try to get them to incorporate these ideas in the overall strategy of the company, in the literature referred to as *participation* in decisions (Andersen, 2004; Ansoff, 1987; Bourgeois and Broadwin, 1984; Hart, 1992; Mintzberg, 1973) or by assigning the strategic decision-making authority to the employees, referred to as *autonomy* (Ansoff, 1987; Bourgeois and Broadwin, 1984; Burgelman, 1984; Hart, 1992; Mintzberg, 1978; Nonaka, 1988). Arguments in favour of involving the employees are, among others, the difficulties with strategy implementation experienced by many firms (Galbraith and Kazanjiam, 1986; Huy, 2002; Rouleau, 2005; Sillince and Mueller, 2007; Vilá and Canales, 2008), an increasing rate of environmental change (Ansoff, 1979) and the growing importance of intrapreneurship for innovation and corporate success (Laine and Vaara, 2006; Ling, Floyd and Baldrige, 2005; Mair, 2005; Mantere, 2005; Mantere, 2008; Pappas and Wooldridge, 2007). The different research streams view middle management involvement either as a top-down or a bottom-up process. In the top-down process approach, middle managers act as *facilitators* supporting strategy implementation or encouraging lower-level managers or workers to participate in idea generation and thereby drive innovations (Wooldridge et al., 2008). In this connection, middle managers act as agents of change by furthering information about and acceptance of the company strategy. By involving middle managers in implementation of the strategy, Ketokivi and Castaner (2004) also found increased motivation and commitment among middle managers, a reduction in the pursuit of subunit goals and increased goal convergence and coordination between managers. The bottom-up stream addresses middle managers' championing or *issue selling* activities (Dutton, Asford, O'Neil and Lawrence, 2001; Ling, Floyd and Baldrige, 2005). Through issue selling, middle managers are able to shape and

influence the strategic agenda, by choosing which information should be presented to top management, and promote ideas from lower organisational levels, increasing information sharing and strategic responsiveness (Jarzabkowski and Balogun, 2009; Pappas and Wooldridge, 2007; Wooldridge et al., 2008).

Despite the profusion of literature on middle management involvement, only a few analyses have addressed the effect on company performance and then only with inconclusive results. Meir (2005) found increased unit performance due to the strategic actions of middle managers in one large American company, while Andersen (2004) in a cross-sectional study of 185 American companies reported an interaction effect on autonomy, environmental dynamism and company performance, while no significant effect of participation was reported. Wooldridge et al. (2008) conclude in their literature review that although some evidence of a positive link between middle management's involvement in strategy and performance exists, much more research on the individual effects of involvement is needed. Our understanding of the individual level of involvement is enriched by the s-a-p literature which views strategy as a social practice (Johnson et al., 2003; Whittington, 2006) and seeks a *"better understanding of the microlevel processes and practices constituting strategy and strategizing"* (Mantere and Vaara, 2008). The s-a-p literature has greatly contributed to our understanding of how different discursive practices enable or constrain participation (Jarzabkowski, 2005) and of how top management can legitimate participation or retain centralised decision power through the language of strategy (Knights and Morgan, 1991).

While most scholars have addressed the expected positive effects of middle management involvement, a number of potential negative effects of involvement have been reported. Laine and Vaara (2007) report how middle managers, due to a lack of acceptance of company strategy, developed and pursued

their own strategy. In addition, Guth and MacMillan (1986) relate how middle managers obstructed strategy implementation through foot-dragging and sabotage, while Meyer (2006) found that middle managers' self-interest lead to destructive interventions causing strategy implementation to fail. To prevent these potential negative effects of involvement and motivate middle managers to participate in the best interest of the company, a psychological sense of ownership needs to be created (Laine and Vaara, 2007; Mantere and Vaara, 2008).

As presented above, the middle management perspective on strategy has addressed a number of potential positive effects of middle management involvement but it is lacking in conclusive empirical findings supporting the effect. This calls for further research on how middle managers are motivated to participate in the best interest of the company. The s-a-p literature has analysed strategy processes at the individual level in a number of case studies highlighting the importance of motivating middle managers through the creation of psychological ownership and the support of that creation by conducting a participative leadership style (Ekaterini, 2010; Zhang and Bartol, 2010; Whittington, 2006).

The article will continue by reviewing the literature on the participative leadership style and psychological ownership. Finally, it combines the theories from ESO, the middle management perspective, participative leadership literature and the literature on psychological ownership in a model. The model regards ESO, middle management involvement and a participative leadership style as determinants of psychological ownership and tests the direct and indirect effects of the three factors on the creation of psychological ownership.

PARTICIPATIVE LEADERSHIP STYLE

Participative leaders support the involvement of employees in decision-making by consulting employees before decisions are made (Kaufman, 2001; Kim, 2002). Especially a participative leadership style supporting empowerment, defined as delegating decision authority to the lowest level in the organisation capable of making a competent decision, has been given pride of place (Seibert, Silver and Randolph, 2004). Management support for involvement in decisions (participation) and empowerment (autonomy) have both been proven to increase company performance through the creation of psychological empowerment (Spreitzer, 1995). Huang et al. (2010) found that especially middle managers experienced increased motivation through involvement, while lower-level employees were more motivated by the experience of trust from their superior. Despite an intention to motivate and involve middle managers, top management might still impede involvement through the leadership style conducted. Mantera and Vaara (2008) found that different leadership styles could both constrain or support involvement, notwithstanding a wish to involve middle managers. Top management may constrain involvement through mystification, disciplining and technologisation and thereby create the impression that participation in strategy processes is limited to an inner circle. To support involvement, top management should support middle managers' self-actualisation, promote dialogue between organisational levels and create a structure and a culture in which middle managers are aware of how to participate and which not only allows for participation, but encourages and expects it (Mantere and Vaara, 2008).

A participative leadership style can increase internalised extrinsic motivation among middle managers by creating meaning in the task, by supporting autonomy and by meeting the middle managers with trust, respect and feedback (Ryan and Deci, 2000). The leadership style thereby fulfils basic human

needs and fosters a sense of relatedness, referred to in the literature as psychological empowerment. Psychological empowerment is composed by four cognitions: meaning, competence, self-determination and impact (Spreitzer, 1995). This underlines that by involving middle managers in strategic decisions, through participation or autonomy, the cognitions of competence and impact are normally met. Thus, the leadership style also needs to support the sense of meaning and self-determination experienced by the middle managers in order to honour all four cognitions. This requires access to information about the company and a willingness among top managers to engage in open-minded discussions of opposing positions on equal terms with the middle managers (Ekaterini, 2010).

By creating systems that guide the middle manager in terms of how to participate and by creating a culture that supports and expects involvement through the leadership style conducted, the company can enhance the creation of psychological empowerment. Mediated by psychological empowerment, the participative leadership style has then been found to increase decision quality (Scullu, Kirkpatrick and Locke, 1995), commitment (Yiing and Ahmad, 2009) and company performance (Zhang and Bartol, 2010).

When analysing the research streams on ESO, involvement of middle managers in strategy and the participative leadership style, a number of similarities are found. They all have strong theoretical arguments supporting an expected positive effect on company performance, while the empirical findings of the effect are more diverse. They all address the need for involvement, top management support and an incentive like ESO to fulfil their potential. Empirically, all concepts are found to be mediated by the creation of an internalised extrinsic motivation referred to as psychological empowerment, citizenship behaviour or psychological ownership. This raises the question of whether the effect on performance is caused by involvement, leadership style and ESO or by their motivational

impact on the creation of psychological ownership. If the latter is the case, future research needs to address how the three areas create motivation and how they are interrelated.

To further understand the concept of psychological ownership, the literature on the concept will be analysed. This allows us to create a model that combines the four areas and develop a number of hypotheses to be empirically tested.

PSYCHOLOGICAL OWNERSHIP

Psychological ownership has been scrutinised for the purpose of finding a path to increased motivation and fulfilment of a number of human needs within the areas of consumer behaviour (Belk, 1988), child development (Isaacs, 1933), philosophy (Sartre, 1943) and organisations (Pierce, Jussila and Cummings, 2009; Pratt and Dutton, 2000; Van Dyne and Pierce, 2004; Wagner, Parker and Christiansen, 2003). Pierce et al. (2003:86) define it as *“the state in which individuals feel as though the target of ownership or a piece of that target is “theirs”*”. If middle managers experience psychological ownership, they are expected to act as if the organisation was theirs and supposedly act in the best interest of the company. This underlines the importance of gaining an understanding of how psychological ownership is developed and enhanced through organisational settings, incentive systems and the leadership style conducted. The creation of psychological ownership has been found to improve employee behaviour, such as citizenship, personal sacrifice and promotion of organisational change, employee attitudes, such as commitment, job satisfaction and organisationally based self-esteem and financial performance (O’Driscoll et al., 2006; Pierce et al., 2009).

The creation of psychological ownership is rooted in five human needs: a) Efficacy and effectance, b) self-identity, c) having a place, d) territoriality and e) accountability (Avey et al., 2009; Pierce et al., 2003). These needs are very similar to the three human needs which SDT identifies as precursors to internalised extrinsic motivation. The three human needs are competence (accountability), relatedness (self-identity, having a place and territoriality) and autonomy (efficacy and effectance) (Ryan and Deci, 2000). The theories of psychological ownership can thereby be linked to the need theories addressing how to release the “*natural processes of self-motivation and healthy psychological development*” (Ryan and Deci, 2000). By combining the research streams on psychological ownership and SDT, it becomes evident that equity possession (ESO), involvement in strategy and a participative leadership style all can be seen as determinants of psychological ownership, and that the three areas have the potential to influence and enhance each other (Avey et al., 2009; Pierce et al., 2009; Ryan and Deci, 2000).

Pierce et al. (1991) found that equity possession, information sharing and influence supported the creation of psychological ownership, while Pierce et al. (2009) found that the creation was moderated by organisational settings, worker and job characteristics and the employee’s experience of influence, control and recognition. Pendleton et al. (1998) tested the determinants of psychological ownership in four wholly employee-owned bus companies and found that the number of shares owned and involvement were significant determinants of psychological ownership, the latter being the most influential factor; line-managers encouraging employees to communicate their views, however, was found to be insignificant. Highly educated employees and employees at higher organisational levels tend to develop a sense of psychological ownership more easily, indicating that middle managers,

especially in knowledge intensive sectors, are more susceptible to develop such organisational attachment (Kuvaas, 2006; Pierce et al., 2009).

Pierce et al. (2009) also found that job characteristics like skill variety, task identity, task significance, autonomy and feedback promoted the perception of control and willingness to dedicate oneself to the task, ultimately leading to increased psychological ownership.

The effect of psychological ownership is mainly tested on employee behaviour and attitudes. O'Driscoll et al. (2006) found that the creation of psychological ownership in less structured work environments increased employee citizenship, while Pendleton et al. (1998) reported a significant positive influence on commitment, behaviour and satisfaction. Similarly, in an analysis of 800 workers from three different companies, Van Dyne and Pierce (2004) reported of increased organisational commitment, job satisfaction, organisation-based self-esteem and organisational citizenship behaviour. They were also successful in establishing a positive correlation between psychological ownership and employee performance. However, no significance was found in the model when controlling for demographic factors.

Based on the literature on psychological ownership and SDT, it seems clear that when analysing the effects of ESO, involvement of middle managers in strategy and a participative leadership style, a better understanding of their motivational effects is very much in demand. While all the three areas can be theoretically argued to increase company performance, empirical evidence testifies to the fact that the direct effect is limited and mediated by the creation of internalised extrinsic motivation. The empirical evidence also shows that without this internalised extrinsic motivation in the form of psychological ownership, the effects of the three concepts can be neutral or even negative. The

motivational literature indicates that all three concepts are determinants of psychological ownership through the satisfaction of a number of human needs. This highlights the existence of a gap in our understanding of how the three concepts are interrelated, the size of any interaction effects and the individual and combined effects of the three concepts on the creation of psychological ownership. These gaps will be addressed and empirically tested in the next sections.

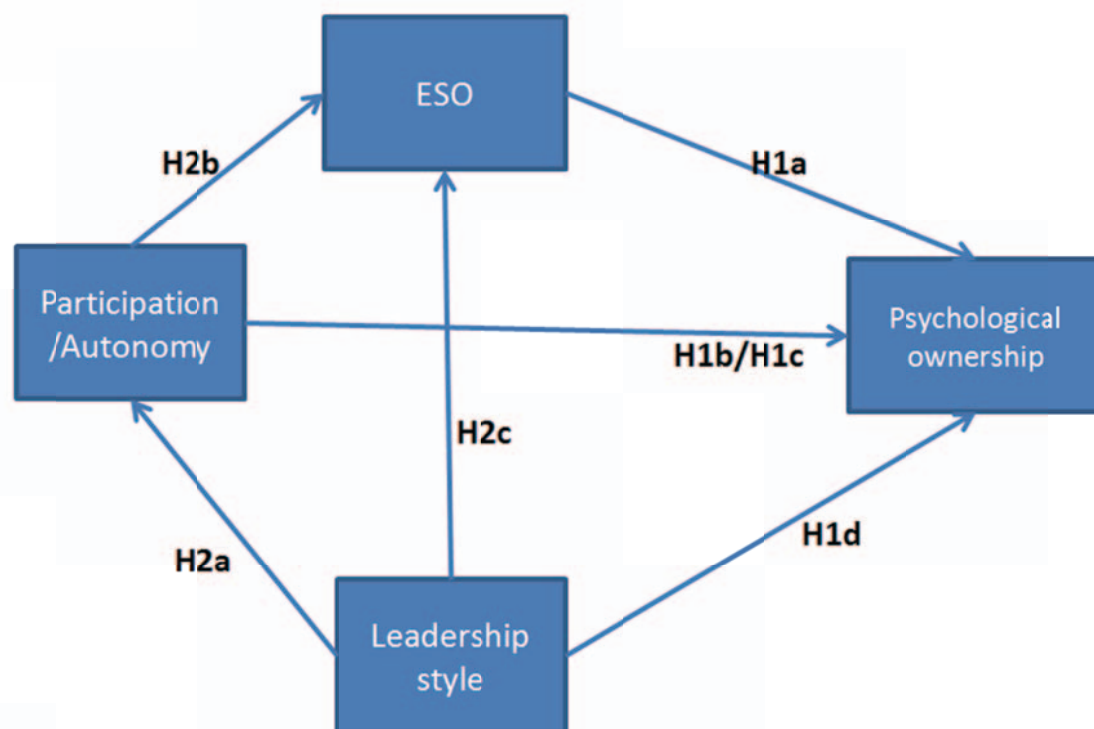
MODEL AND HYPOTHESIS DEVELOPMENT

Model development

Combining the theoretical and empirical evidence from the research streams on ESO, involvement of middle managers in strategy and the participative leadership style, it appears that they all have strong theoretical foundations, while the empirical evidence is more diverse. Similarly, the effect of all three concepts seems to be mediated by the creation of internalised extrinsic motivation in the form of psychological empowerment, organisational citizenship behaviour or psychological ownership. Despite slightly varying definitions of the three motivational concepts, they all imply a motivational stage where the values and the goals of the company are internalised in the employee. When analysing the independent research stream on psychological ownership, a range of conceptual and empirical evidence provides support to the view that ESO, involvement of middle managers in strategy and a participative leadership style are determinants of psychological ownership (Mantera and Vaara, 2008; Pierce et al., 2001, 2003; Pierce et al., 2009).

The model presented in this article combines the research streams presented above and tests the individual effects of the three concepts on the creation of psychological ownership, the indirect effects and a number of interaction effects.

Figure 1: Model and hypotheses



The arrows represent the relationships being tested in SEM. The arrowheadings depict the proposed hypotheses

Hypothesis development

Pierce et al. (1991) conceptualised that formal ownership was one of the determinants of psychological ownership. By allowing employees to gain formal ownership through an ESOP, the company acknowledges the importance of trusting the employee. The company thereby supports the notion of “having a place” as one of the roots to psychological ownership and the feeling of “relatedness” as one of the human needs addressed in SDT leading to internalised extrinsic motivation (Avey et al., 2009; Ryan and Deci, 2000). The motivational effect can be argued to be supported by the mere ownership (Klein, 1987), based on the perception that being a part owner per se will motivate employees to work harder and become more committed. Others argue that the motivational effect only materialises if the formal ownership is combined with the possibility to exercise formal ownership rights (Pendleton et al., 2010). Thus, it may be argued that without formal ownership, the creation of psychological ownership is expected to be weaker as quoted by Blasi, Kruse and Bernstein (2003:176): *“telling employees to take ownership of their jobs rings hollow if management doesn’t offer actual financial ownership or some share in the improved performance...without wealth sharing in some form, it feels like the company is just trying to con you into working harder”*. Since especially middle managers are motivated by the experience of trust and confidence by being allowed to gain formal ownership and being able to influence the company by participating in decisions, it can be expected that the sense of psychological ownership in the company increases by the number of middle managers owning shares in the company.

Hypothesis 1a: The more middle managers who own shares in the company, the higher will be the level of psychological ownership among middle managers.

Influence on decisions and task significance are reported to be determinants and moderators of psychological ownership implying that involvement of middle managers in the strategy process supports the creation of psychological ownership (Pierce et al., 1991; Pierce et al., 2009). In the middle management literature, involvement is seen both as participation in decisions (Andersen, 2004) and autonomy (Burgelman, 1984). Both meet some of the human needs creating internalised extrinsic motivation as defined in SDT and the needs supporting the creation of psychological ownership (Avey et al., 2009; Pierce et al., 2003; Ryan and Deci, 2000). By being involved, middle managers feel trusted by top management, they experience competence, control, influence and autonomy and with that, they develop a sense of relatedness and ownership to the organisation and the company.

While participation in decisions still allows for top management to control and influence the process, potentially creating an experience of pseudo participation, autonomy distributes the decision authority to the middle manager and may be expected to promote a stronger feeling of trust, control and accountability. Accordingly, it can be expected that autonomy will have a stronger impact on the creation of psychological ownership than participation does.

Hypothesis 1b: Companies which have middle managers participating in strategic decisions increase the level of psychological ownership among middle managers.

Hypothesis 1c: Companies which have distributed strategic decision authority to middle managers increase the level of psychological ownership among middle managers.

Creating a feeling of ownership to the company is highly dependent on the leadership style conducted. If top management is able to conduct a leadership style that includes feedback, communication and a

structure supporting middle manager involvement, the creation of psychological ownership is expected to be enhanced. The leadership style has a strong influence on the culture in the organisation and the perception of competence, accountability and influence among middle managers. To facilitate and enhance the creation of psychological ownership, top management needs to signal that involvement from middle managers is supported, appreciated and expected. Mantera and Vaara (2008) stated that this could be accomplished by providing intelligible information on how middle managers can participate, by increasing information sharing and by allowing for an open-minded eye-to-eye level discussion about plans and decisions. Additionally, the leadership style should support the personal development of middle managers by allowing them to extend their capabilities through interesting and challenging tasks. Especially middle managers are found to be motivated by a participative leadership style and by being given the opportunity to influence the development of the company (Huang et al., 2010); lower level employees, on the other hand, are more motivated by the experience of being trusted by their immediate superior.

Hypothesis 1d: Companies with a top management employing a participative leadership style have a higher level of psychological ownership among middle managers.

Hypotheses 1a-1d all state that ESO, involvement and participative leadership styles are determinants of psychological ownership. A number of interrelations and indirect effects can be expected to exist between the variables. Mantere and Vaara (2008) tested the effect of different strategic discourses on involvement of employees and found that mystification, disciplining and technologisation all constrained involvement. Mystification of the strategy process gives the employees the impression that strategy work has a special status (Hendry, 2000) and a difficult-to-grasp tenor and that it is only open to a select few (Fairclough, 2003). Disciplining can both constrain and facilitate involvement since

some discipline and structure are needed in strategy work; however, if the discipline and structures prevent involvement by stressing ranks and not viewing employees as resources of new ideas and potential, disciplining will constrain involvement. Similarly with technologisation; the use of reporting and evaluating systems like balanced scorecard (Mantera and Vaara, 2008) was found to alienate employees and reduce the willingness to involve. While these discourses typically constrain involvement, self-actualisation, dialogisation and concretisation were found to support involvement. By conducting a leadership style that supports the individual development of employees and communicating in a language that encourages involvement and in-depth reflections concerning the identity of the organisation and the employee's role in it, managers are able to support involvement (Mantera and Vaara, 2008). Dialogisation refers to an integration of top-down and bottom-up approaches creating an organised social dialogue (Habermas, 1981) that increases information sharing and stresses the rights and the roles of all groups in the organisation. These rights and roles formalise that involvement is allowed, supported and expected by all groups and employees in the organisation. Concretisation is the positive side of disciplining setting the social grounding and the organisational settings that allow employees to understand how and why they should become involved in the strategy process. By conducting a leadership style that encourages, supports and expects involvement from middle managers, top management can increase the level of involvement in strategy among middle managers.

Hypothesis 2a: Companies with a top management team conducting a participative leadership style have higher levels of middle management involvement in strategy processes.

As previously stated, it can both be argued that employees with formal ownership through an ESOP would pursue a higher level of involvement by exercising their formal ownership rights and that

companies with a high level of involvement of middle managers have a higher prevalence of ESOP due to a demand for a piece of the action. While some studies have reported increased involvement in companies employing ESOPs (Conyon and Freeman, 2001; Dube and Freeman, 2001; Tannenbaum, Kavcic, Rosner, Vianello and Wieser, 1974), other studies indicate that introducing an ESOP does not automatically lead to higher involvement (Ivancic and Rosen, 1986; Toscano, 1983; Zwerdling, 1978). Since the reasons for introducing ESO can be manifold (Rosen et al., 1986), the mere introduction of ESOPs might not increase the level of involvement despite a wish to exercise formal ownership rights. This lack of involvement can be explained by the concept of “*legitimate authority*” that lies with top management (Blasi, 1988). Conversely, in companies with high middle management involvement in strategy processes, introducing ESOPs might be supported both by top and middle management. Top management would be encouraged to introduce ESOPs in order to entice middle managers to become involved in strategy processes in the best interest of the company and thus reduce potential agency costs. Middle managers would pursue formal ownership enabling them to profit from their efforts. It can therefore be argued that involving middle managers in strategy processes leads to a higher prevalence of ESOPs.

Hypothesis 2b: Companies with high levels of middle management involvement in strategy processes have a higher prevalence of employee stock ownership among middle managers.

Rosen et al. (1986) have argued that management’s philosophical commitment to employee ownership, i.e. “*the extent to which management sees employee ownership as a part of the company’s overall culture, human relations policy and/or commitment to employees*” (Rosen et al., 1986, p. 64), highly influences the effect which introducing an ESOP has on company performance. Klein (1987) found that the more involvement and worker influence incorporated in the ESOP, the higher was the effect on

employee attitudes like satisfaction, commitment and turnover intentions. Mason (1984) argued that companies which consider employee stock ownership to be a natural part of the overall culture more easily create systems that encourages employee participation and legitimates employee influence. As an overall conclusion of the findings, it can be seen that top managers who want to promote and encourage middle manager involvement in strategy are more willing to introduce ESOP as a natural part of the company's culture and HR policy. It is also seen that ESOPs can be introduced to support and moderate the effect of middle management involvement.

Hypothesis 2c: Companies with a top management team conducting a participative leadership style have a higher prevalence of employee stock ownership.

The model and related hypotheses are shown in figure 1.

DATA COLLECTION, MEASURES AND METHODS

Data for the present study was collected by means of a cross-sectional mail survey as part of a larger research project. The questionnaire was initially tested on three middle managers to test how the questions were perceived. Subsequently, the questionnaire was tested on a sample not included in the main dataset of 87 managers from 57 firms to test the robustness of the constructs. The pre-tests raised no concerns. The 500 largest Danish firms as measured by the number of employees listed in "Kobmandsstandens Oplysningsbureau" were approached with a two-page survey instrument in late November 2009. The 500 firms cover a broad set of industries, including basic material, manufacturing, utilities, retailing, financial services and other services and employ at least 225 full-time employees. In addition to the number of employees, the database also provides information about

the firms' financial figures from 2004 to 2009, the industry code of their main business, stock listing and founding year.

In a first step, the respective firm's CFO or head of accounting was contacted by means of a personalised cover letter and a questionnaire instrument capturing ESO usage, involvement and autonomy, leadership style, individual and organisational psychological sense of ownership and some additional questions which serve control purposes in the present analysis (see below). About a week later, a second letter enclosed with the questionnaire was sent to the ones that had not yet responded to the initial mailing. These two waves of enquiry produced a total of 149 responses. In a third step in December, the remaining individuals who had not reacted to our mailed survey were contacted by phone and asked to participate in the survey. Out of these, 167 were willing to participate and responded to the questionnaire items on the phone. Careful inspection for completeness and plausibility of the responses led to the elimination of nineteen answers (one firm had actually received and answered the questionnaire twice, one firm was in the process of liquidation, three firms had severely reduced the number of employees during the autumn of 2009, thus no longer exhibiting the required number of employees, the remaining 14 responses were severely incomplete or implausible). Thus, a total of 297 answers from a broad set of industries were retained (i.e. a response rate of 59.4%).

To increase the validity and reliability of the answers, a new questionnaire was sent by mail to heads of marketing/sales in the 297 companies in February 2010, a second letter was sent two weeks later to the non-respondents and finally, the remaining companies were contacted by phone, resulting in a total of 207 answers (i.e. a response rate of 69.7% of the initial 297 companies). Similarly, a randomly chosen middle manager in each of the 297 companies was contacted by phone and asked to answer a one-page questionnaire, thus collecting answers from different organisational layers and retrieving multiple

answers from the companies. A total of 210 middle managers from the 297 companies answered the questionnaire (i.e. a response rate of 70.7% of the initial 297 companies).

Measures

To the greatest extent possible, the study builds on existing scales from the literature. Furthermore, all measurement instruments were pretested on a sample of managers from 57 firms (not included in the main dataset) prior to the main study resulting in a few linguistic improvements.

ESO usage: The definitions of ESO employing companies are diverse throughout the literature. Some scholars use a broad definition stating that if more than one employee receives payment from an ESOP, the company is considered an ESO employing company (Sengupta et al., 2007). Pendleton et al. (2001) distinguish between narrow and broad-based schemes; the latter being schemes where more than 50% of the employees are covered by the scheme and the former are schemes covering less than 50% of the employees. It could also be argued that the share of the company owned by the employees could be used as a measure, indicating that the higher percentage of the company owned by the employees, the higher is the effect on the creation of psychological ownership. This, however, is rejected by Hammer and Stern (1980) who found that the size of the employees' equity stake in the company had no influence on the level of motivation and commitment. This suggests that the more employees covered by the scheme, the higher is the effect on the creation of psychological ownership. Since the involvement in the strategy process focuses on top and middle management, the share of top and middle managers covered by the scheme will be measured using two five-item Likert scales measuring the share of top managers and middle managers holding a stake in the company (none, some, half,

majority or all (value 1 to 5)). A total score is then calculated by adding up the two values. A number of different combinations of the shares can be found, but in general, the share is seen to be in decline at lower organisational levels. This indicates that a combination of no top managers owning shares and all middle managers owning shares will not occur.

Leadership style: Assessment of top management's style of reaction to and climate for middle manager involvement was facilitated by an instrument for identifying leadership style and climate specifically developed for the present study on the basis of previous research conducted by Choi (2004). The instrument took the limited time available for top and middle managers to answer a questionnaire into account and therefore concentrated on the leadership climate for involvement/autonomous strategic action only – leaving aside other aspects of (more broadly defined) leadership style and climate in terms of individual work effort or work duration or the like. The resulting four-item measure asked middle managers to rate to which degree their superiors were open to their ideas and willing to let them experiment with new concepts or products on a 7-point Likert scale (1=fully disagree, 7=fully agree). Cronbach's alpha was 0.859 and the factor analysis identified a single factor with an eigenvalue above one (eigenvalue of 2.814). The confirmatory factor analysis indicated that the items loaded with 0.812 to 0.864 on this factor (see table 1).

Involvement in strategy processes: Involvement of middle managers in strategy processes can be realised by allowing middle managers to *participate* in strategic decisions (Andersen, 2004) or by granting middle managers the *autonomy* to make strategic decisions without prior approval by top management. The measurement of participation was based on five questions using a 7-point Likert scale previously used by Andersen (2004) exploring the frequency of middle management participation in different strategic actions. The measurement of autonomy examined the frequency of middle

manager autonomy in strategic actions based on the same five strategic decisions used for measuring participation. The autonomy items used a 7-point Likert scale measuring the frequency from never to always which is similar to a scale used by Andersen and Nielsen (2009). To test if the concepts could be considered one or two variables, a rotated explorative factor analysis was conducted on all ten items. The factor analysis returned three factors with an eigenvalue above one. Questions 1-3 on participation loaded on one factor measuring participation in market-oriented strategic actions, while questions 1-3 on autonomy loaded on another factor measuring market-oriented autonomous strategic actions. Questions 4-5 on participation and 4-5 on autonomy loaded on the third factor measuring involvement in internal strategic actions. To strengthen the test, similar rotated factor analyses were conducted on the answers from the heads of marketing and the middle managers; these produced identical results.

The two factors measuring involvement in market-oriented strategic actions will be applied on the grounds that the two items of internal strategic actions are found to theoretically differ from the market-oriented items and can be eliminated as recommended by Costello and Osborne (2005).

A confirmatory factor analysis of the three participation items exhibited a satisfactory Cronbach's alpha of 0.815, a single factor with an eigenvalue above one (eigenvalue=2.217) and factor loadings between 0.749 and 0.918. A similar confirmatory factor analysis of the three autonomy items also exhibited a satisfactory Cronbach's alpha of 0.840, a single factor with an eigenvalue above one (eigenvalue=2.275) and factor loadings between 0.822 and 0.901 (see table 1).

TABLE 1: FACTOR LOADINGS AND RELIABILITIES

Dimensions and variables	n	Cronbach's alpha	Extracted variance	Factor loadings	Indicator reliability
Leadership style	295.00	0.859	70.34%		
Top management actively seeks MM opinions about strategic issues				0.864	0.746
Top management is open to new ideas and initiatives from all employees				0.832	0.692
Top management appreciates that MM experiments with new ideas and products				0.812	0.659
Top management takes into account MM when significant decisions are made				0.846	0.716
Psychological ownership	296.00	0.862	70.71%		
I feel this is MY company				0.926	0.857
The majority of employees feel that this is OUR company				0.806	0.650
I feel an ownership to and responsibility for the development of the company				0.767	0.588
I have a hard time seeing this as MY company (reversed coded)				0.856	0.733
Participation in decisions (MM participate in the decisions of)	296.00	0.815	73.90%		
Activities aiming at increasing market share				0.902	0.814
Sales to new segments or markets				0.918	0.843
Development of important new products				0.749	0.561
Autonomy (MM can make decisions alone without prior approval)	296.00	0.840	75.82%		
Activities aiming at increasing market share				0.888	0.789
Sales to new segments or markets				0.901	0.812
Development of important new products				0.822	0.676

Psychological sense of ownership: Four questions measuring both the respondents' perception of psychological ownership to the company and the organisational level of psychological ownership were based on a former study by Dyne and Pierce (2004). A 7-point Likert scale (1=fully disagree, 7=fully agree) was employed. Cronbach's alpha was 0.862 and factor analysis identified a single factor with an eigenvalue above one (eigenvalue of 2.829). Confirmatory factor analysis found that the items loaded with 0.767 to 0.926 on this factor. This indicates a strong connection between the respondents' individual perception of ownership and the respondents' perception of the entire organisation's perception of ownership. The strength of the construct would have increased if more than two responses were obtained from employees at different organisational levels within the same company. This problem is partly addressed by measuring the respondents' individual sense of ownership, of which they have a direct perception, and their perception of the organisation's sense of ownership and by collecting two responses from two different organisational layers (see table 1).

Control variables: The level of psychological ownership and the conception that the company is *my* company can be expected to increase concurrently with the period of employment. The tenure of the respondent is therefore used as a control variable. Successful companies are also more easily

internalised by the employees; consequently, a sector adjusted average ROA 2004-2008 is used as a proxy for past performance. The use of size as a control variable has been widely discussed and potential endogeneity problems have been used to argue against controlling for size.

Methods

To avoid common method bias, data from multiple sources will be applied as recommended by Podsakoff et al. (2003). The performance measure is based on financial data collected from an official national database, while involvement, ESO, leadership style and psychological ownership are based on answers from the CFO and the middle manager. This means that an average of two answers should represent the perception of the company; incontrovertibly, an increased number of answers from each company would have strengthened the analysis.

The validity of the responses was tested by conducting a paired sample t-test on the leadership style responses provided by heads of sales/marketing in 207 of the initial 297 companies who returned the initial questionnaire. The test has been conducted both on the mean of the sum of the four questions and on each question. An average of the 199 paired companies measured 5.09 from the CFO and middle manager and 5.03 from heads of sales/marketing with std. dev on 0.07 and 0.09, respectively. This yields a significance level of 0.587 rejecting the hypothesis that any difference exists and thus providing evidence to suggest that the answers given by the CFOs and middle managers are representative for the company. All four questions in the construct were tested individually and turned out insignificant, again supporting the expectation that the initial answers were representative for the company. A factor analysis was also conducted on the 207 answers from the heads of sales/marketing

reporting only one factor with an eigenvalue above 1 (eigenvalue=2.607), a Cronbach's alpha of 0.819 and factor loadings between 0.748 and 0.850. Similar analyses were conducted on the items and averages of participation and autonomy but with less conclusive results. In terms of both participation and autonomy, the perception of the head of marketing is significantly higher than the perception of the CFO and middle manager.

A test for non-response bias was conducted on sector, size, turnover, age, capital structure, legal form, employee growth and a number of other financial data comparing the 297 respondents with the population of the 500 largest companies in Denmark. None of the tests gave rise to concern. A Harman 1 factor test was conducted on all items reporting five factors with variance explained between 6.0% and 34.0% which confirms the validity of the constructs. The correlation matrix in table two shows that all correlations are below 0.7 implying no cause for multicollinearity concern. A correlation matrix at the construct level is seen in the appendix (see table 2A), also raising no concern. To additionally test for multicollinearity, a number of OLS were conducted with psychological ownership as dependent variable and ESO, participation/autonomy, leadership style as independent variables. The variance inflation factors on all items were not higher than 1.9 and well below 9.5 (Kleinbaum et al., 1998; Lomax, 1992) suggesting no concern for multicollinearity. These findings will support the analysis of the fit indices on the measurement model. Adequate fit indices on the measurement model also predict no problems with multicollinearity.

The hypothesis is tested in a Structured Equation Model (SEM) using AMOS SEM software in a two stage procedure recommended by Anderson and Gerbing (1988). The first stage involves estimation of the measurement model using confirmation factor analysis to determine convergent and discriminant validity. The second stage involves comparing the theoretical model with the measurement model.

Based on the results of the test, the theoretical model will be used to provide path coefficients for the hypothesis test. Fit measures like Goodness of Fit Index (CFI) and Root Mean Square Residual (RMR) will be calculated to test the model fit as recommended by Gerbing and Anderson (1992). Before running the model, a test of normality was conducted as recommended by Hult et al. (2006). All variables were significantly normally distributed within the 0.001 level using the Kolmogorov-Smirnov test of normality. The model is tested on raw data from the survey imported from PASW 18 and tested in AMOS 18. Reliability and validity of the constructs have been tested earlier using confirmatory factor analysis, all reporting reliable Cronbach's alphas and factor loadings above 0.7 as recommended by Fornell and Larcker (1981). The fit of the models was tested using Normed Fit Index (NFI), Tucker-Lewis Index (TLI) and Root Mean Square Error of Approximation (RMSEA) as recommended by Hult et al. (2006) and Gerbing and Anderson (1992). The Chi-Square test of model significance is disregarded due to large sample sizes (Tabachnick and Fidell, 1996).

RESULTS

Confirmatory factor analyses were used to test the validity and reliability of the constructs. Table 1 displays the factor loadings, Cronbach's alphas and Average Variance Extracted (AVE). With factor loadings between 0.75 and 0.93, adequate Cronbach's alphas and $AVE > 0.50$ combined with a measurement model with good fit ($CFI > 0.95$ and $RMSEA < 0.05$), validity and reliability of the constructs seem to be achieved. Table 2 shows the descriptive statistic and correlation among all items and none of the correlations between items loading on different constructs reported correlations > 0.70 , suggesting adequate discriminate validity. The measurement model tests the quality of the constructs

and with CFI=0.9905 and RMSEA=0.0336 on participation and CFI=0.9849 and RMSEA=0.0415 on autonomy, the construct shows good fit (Kline, 2005).

TABLE 2: DESCRIPTIVE STATISTICS AND CORRELATIONS

Variable	Mean	SD	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1 Participation1	4.96	1.25	1.00	7.00	1																					
2 Participation2	4.77	1.38	1.00	7.00	.81 ***	1																				
3 Participation3	4.67	1.42	1.00	7.00	.48 ***	.52 ***	1																			
4 Autonomy1	3.56	1.48	1.00	7.00	.49 ***	.50 ***	.31 ***	1																		
5 Autonomy2	3.22	1.47	1.00	7.00	.41 ***	.50 ***	.26 ***	.74 ***	1																	
6 Autonomy3	2.84	1.33	1.00	7.00	.18 ***	.23 ***	.40 ***	.57 ***	.60 ***	1																
7 Leadership style1	5.04	1.27	1.00	7.00	.35 ***	.35 ***	.27 ***	.18 ***	.15 **	.18 ***	1															
8 Leadership style2	5.51	1.11	1.00	7.00	.28 ***	.26 ***	.28 ***	.14 **	.16 ***	.12 **	.63 ***	1														
9 Leadership style3	4.97	1.16	1.50	7.00	.32 ***	.36 ***	.33 ***	.28 ***	.24 ***	.24 ***	.57 ***	.59 ***	1													
10 Leadership style4	4.85	1.13	1.00	7.00	.27 ***	.29 ***	.26 ***	.22 ***	.15 **	.22 ***	.68 ***	.57 ***	.58 ***	1												
11 Psyc ownership1	5.68	1.11	1.00	7.00	.34 ***	.34 ***	.27 ***	.19 ***	.11 *	.08	.53 ***	.48 ***	.43 ***	.51 ***	1											
12 Psyc ownership2	5.04	0.98	1.00	7.00	.32 ***	.30 ***	.28 ***	.17 ***	.11 *	.08	.46 ***	.48 ***	.40 ***	.45 ***	.68 ***	1										
13 Psyc ownership3	5.78	0.89	2.00	7.00	.33 ***	.32 ***	.27 ***	.18 ***	.13 **	.08	.41 ***	.34 ***	.30 ***	.42 ***	.63 ***	.48 ***	1									
14 Psyc ownership4	6.25	0.96	1.00	7.00	.26 ***	.25 ***	.22 ***	.26 ***	.16 ***	.17 ***	.41 ***	.40 ***	.41 ***	.42 ***	.78 ***	.56 ***	.51 ***	1								
15 ESO	0.00	1.00	-0.57	2.71	.09	.14 **	.09	.07	.06	.05	.09	.02	.09	.06	.13 **	.07	.10 *	.11 *	1							
16 ESO_Lead_Style	0.08	0.95	-5.11	5.27	-.04	-.01	.01	-.02	-.05	-.04	-.08	-.05	-.06	-.03	-.05	-.02	.03	-.07	.18 ***	1						
17 ESO_Autonomy	0.07	1.01	-4.08	5.73	-.10 *	-.08	-.09	-.01	.03	.00	-.04	.00	-.05	-.05	-.04	.02	-.07	-.06	.15 **	.17 ***	1					
18 ESO_Particip.	0.12	0.88	-4.44	2.77	-.17 ***	-.15 ***	-.08	-.15 **	-.15 **	-.02	.01	-.08	-.04	.05	-.06	-.05	-.04	-.07	.24 ***	.51 ***	.35 ***	1				
19 Lead_Autonomy	0.26	1.17	-3.45	6.07	-.12 **	-.11 *	-.10 *	.01	.07	.02	-.22 ***	-.21 ***	-.16 ***	-.16 ***	-.20 ***	-.17 ***	-.10	-.18 ***	-.04	.05	.02	-.01	1			
20 Lead_Particip.	0.42	1.31	-4.73	11.29	-.18 ***	-.15 ***	-.11 *	-.12 **	-.10	-.08	-.20 ***	-.22 ***	-.22 ***	-.17 ***	-.23 ***	-.11 *	-.05	-.22 ***	-.01	.06	-.01	-.02	.63 ***	1		
21 Tenure	9.28	6.68	0.10	35.00	.10 *	.06	.03	.09	.05	.07	.09	.14 **	.12 **	.08	.22 ***	.11 *	.20 ***	.21 ***	.09	-.05	.03	-.06	.10 *	-.01	1	
22 Past performance	0.00	0.99	-4.79	4.02	.08	.00	.07	.02	-.04	.00	.06	.03	.05	.05	.03	.10 *	.08	.08	.13 **	.06	-.07	.08	-.02	-.02	.12 **	1

n = 297. Significance of correlations: *** p < .01, ** p < .05, * p < .10 (two-tailed test).

The structural model is used to test the structures among latent variables and does not test for causality. To ensure the validity of the model, all models should be derived from theory. The models are presented in table 3. To ensure that more appropriate models are not overlooked, the models in between the models in table 3 are tested by only removing or adding one relationship at a time. The first model tests the three variables of leadership style, involvement and ESO as determinants of psychological ownership. The fit indices on both participation and autonomy showed good fit (CFI>0.95; RMSEA<0.08). In the participation model, the direct effect of ESO was insignificant and the fits improved by removing this relationship. In the autonomy model, the direct effect of autonomy on psychological ownership was insignificant and the fits of the model improved by removing this relationship. This indicates that these direct effects should be removed and that ESO might be a determinant of psychological ownership but that the effect is expected to be moderate.

In model 2, the direct effect of autonomy/ESO on psychological ownership was replaced with a path from autonomy to ESO in an attempt to assess the argument that companies with a high level of middle management autonomy in strategy have a higher prevalence of ESO. The model showed better fits and

still reported good fit. Similarly, a path from ESO to participation was added suggesting that companies with a high share of middle managers owning stocks in the company have a higher level of middle management participation in strategy. This model also showed improved fits.

In model 3, a path from leadership style to involvement is added to examine the argument that companies with a top management which conducts a leadership style that promotes and encourages middle management involvement also achieves higher middle management involvement.

TABLE 3: Structural Equation Models (AMOS)

Participation/autonomy	Participation								Autonomy							
	χ^2	$\Delta\chi^2$	df	NFI	Delta2	TLI	CFI	RMSEA	χ^2	$\Delta\chi^2$	df	NFI	Delta2	TLI	CFI	RMSEA
0: Measurement model	65.34		49	0.9637	0.9907	0.9849	0.9905	0.0336	74.01		49	0.9574	0.9852	0.976	0.9849	0.0415
1: All three direct effects	121.45		52	0.9325	0.9603	0.9395	0.9597	0.0672	94.38		52	0.9457	0.9748	0.9617	0.9744	0.0525
2: Two direct effects and INV->ESO	118.58		52	0.9341	0.9619	0.9420	0.9613	0.0658	93.19		52	0.9463	0.9756	0.9628	0.9752	0.0517
3: Direct effects and two indirect	69.58	***	51	0.9613	0.9894	0.9835	0.9892	0.0351	75.19	***	51	0.9567	0.9857	0.9777	0.9854	0.0400
4: Direct effects and three indirect	67.15		50	0.9627	0.9902	0.9845	0.9900	0.0340	74.02		50	0.9574	0.9858	0.9774	0.9855	0.0403
5: Model 3 + interaction ESO_Lead	86.97		62	0.9554	0.9858	0.9788	0.9855	0.0369	110.87		62	0.9375	0.9715	0.9574	0.9710	0.0516
6: Model 3 + interaction ESO_INV	108.33		62	0.9411	0.9739	0.9611	0.9735	0.0502	92.59		62	0.9472	0.9819	0.9730	0.9816	0.0408
7: Model 3 + tenure	83.78		62	0.9541	0.9877	0.9816	0.9874	0.0344	89.79		62	0.9491	0.9837	0.9756	0.9834	0.0389

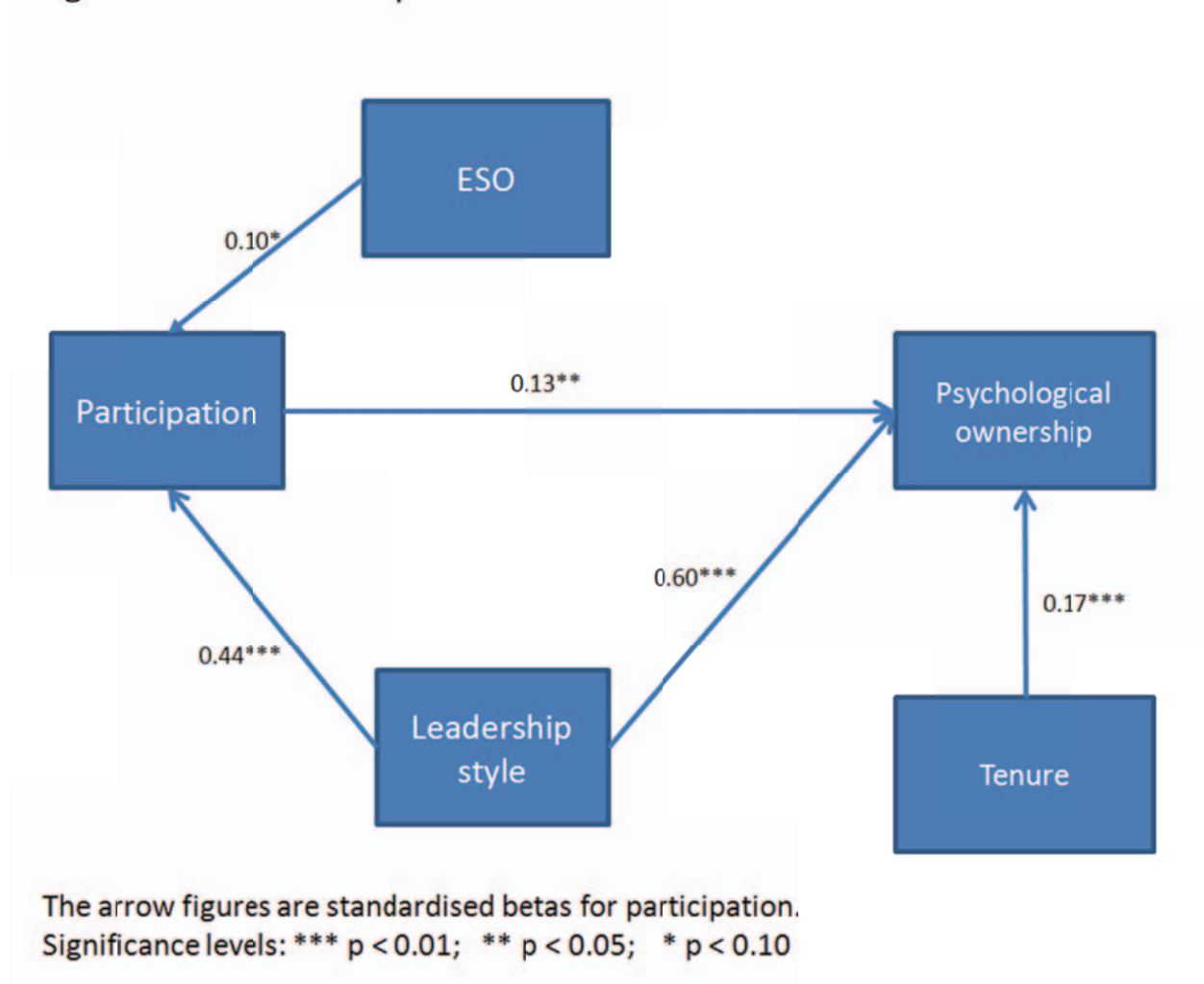
Significance levels: *** $p < .01$; ** $p < .05$; * $p < .10$ (two-tailed test).

Model 3 reported good fit on all participation and autonomy indices ($CFI/NFI/TLI > 0.95$ and $RMSEA < 0.05$).

In model 4, a path from leadership style to ESO was added suggesting that companies conducting a participative leadership style have a higher prevalence of ESO. Fits on the model reported good fits and the test of delta χ^2 shows no significant difference between the fits indicating that both models have the same fit on the data. Since the regression coefficient on the added path from leadership style to ESO was reported to be insignificant, model 3 will be preferred. Four interaction effect variables were calculated by multiplying the standardised variables; tenure and past performance were used as control variables. None of the interaction effects improved the fits of the model. Past performance, measured as

a sector adjusted average ROA from 2004-2008, did not improve the fits of the model, whereas tenure seems to be an antecedent of psychological ownership implying that long-tenure employees appear to have a higher level of psychological ownership. It can, however, be argued that the employees have a long tenure due to their level of psychological ownership.

Figure 2: Structural Equation Model



The model 3 coefficients on participation are depicted in figure 2, while the autonomy figures are reported in figure 2A in the appendix.

DISCUSSION AND LIMITATIONS

The present paper has contributed to our knowledge in a number of areas. Within the different research traditions, the terms involvement, participation and autonomy have been used in a variety of ways, including measuring different degrees of influence on the individual's own work setting and company decisions. This paper has highlighted that by using the middle management literature distinction between participation and autonomy, different effects emerge. The participative leadership style's effect on participation and autonomy is divergent, indicating that when top management exercises a participative leadership style, it is more inclined to let middle managers participate in the decisions than to distribute decision authority. It may seem natural that top management wants to maintain control with decisions, but it runs the risk of becoming a decision bottleneck with reduced decision speed as a consequence.

Formal ownership was expected to be a determinant of psychological ownership, but the paper fails to find a significant direct effect; in fact, the paper demonstrates that ESO only increases psychological ownership when mediated by participation; this implies that hypothesis 1a is rejected. This is in keeping with earlier findings suggesting that ESO is mediated by involvement (Klein, 1987; Pendleton, 2010) but the view is sophisticated by the finding that the effect is mediated by participation but not by autonomy, thus supporting hypothesis 1b while rejecting hypothesis 1c. This is somehow surprising since it would be expected that autonomy would enhance the perception of influence on the company and the experience of trust from top management. The distribution of decision power might create

independent sections in the company, alienating the middle managers from the rest of the company and creating a sub-focus on a division or a department.

Mantera and Vaara (2008) reported how the leadership style conducted could constrain or impede involvement and thereby influence the creation of psychological ownership. This paper finds that the leadership style conducted is the most influential determinant of psychological ownership and in doing so, it confirms hypothesis 1d. This underlines that despite the importance of specific organisational settings, such as involvement, as determinants of psychological ownership, the culture created by and the communication and signals from top management are the most important determinants of psychological ownership.

A participative leadership style aims to support and encourage involvement for which reason it is expected that conducting such a leadership style would increase both participation and autonomy. This relationship is indeed highly significant and supports hypothesis 2a. The effect is though strongest on participation with a standardised beta of 0.44 in contrast to 0.28 on autonomy. ESO was found to enhance participation but not autonomy implying that hypothesis 2b is rejected, while a participative leadership style was found not to increase the use of ESO implying that hypothesis 2c is rejected.

Implications for research

The study enriches our understanding of the concept of psychological ownership. As one of the first large-scale cross-sectional studies, the paper quantifies the effects of three of the determinants of psychological ownership. This allows for a more sophisticated discussion of the different determinants and their effects. Additionally, the paper makes a distinction between participation and autonomy and

finds that while participation seems to be a determinant of psychological ownership, autonomy is not. This calls for a future exploration of the different motivational effects of participation and autonomy and a more distinct development of the concepts.

In the literature, most articles have been focusing on one of the three determinants, occasionally controlling for one or two of the others. This study finds that all three concepts, ESO, involvement and participative leadership style, are interrelated and that all three must be combined in order to successfully pursue internalised extrinsic motivation in the form of psychological ownership.

By highlighting the importance of the motivational effects of the concepts, a better understanding of the individual level factors is highly warranted. Kuvaas (2006) found that highly educated people more easily developed psychological ownership, while Pierce et al. (2009) analysed the importance of job characteristics. This suggests that individual and job related factors as well as sector specific characteristics play a significant role in the creation and effect of psychological ownership, and the author calls for future research in the area.

Implications for practice

The paper indicates that companies, who plan to introduce an ESOP or want to involve middle managers in strategy, need to focus on how to support internalisation of extrinsic motivation in the form of psychological ownership. The paper demonstrates that companies need to combine formal ownership with participation and a participative leadership style and that a positive outcome is determined mainly by the leadership style conducted and the ability to create psychological ownership.

This implies that companies, when planning to involve middle managers in strategy, especially need to focus on the leadership style conducted and ensure that the signals, procedures and cultures all support involvement through self-actualisation, dialogisation and concretisation (Mantera and Vaara, 2008). The reported indirect effect of ESO mediated by participation also suggests that by combining participation with an incentive like ESO, the company is able to project that the contribution from middle managers is important and middle managers become motivated to participate in the best interest of the company spurred by both the potential economic reward and the experience of trust and confidence from top management.

Limitations and future research

The present study suffers from a number of limitations. The study is cross-sectional and does not examine if the effects are consistent across different sectors. Furthermore, it focuses on involvement of middle managers; the effect of involving employees on other organisational levels and the creation of psychological ownership among all employees would enrich our understanding of the concepts and their relationships. The paper only focuses on the effect of ESO on the creation of psychological ownership and motivation; replacing or combining ESO with other incentives could refine our understanding of the effects.

The study is limited to Danish companies and different effects could be expected in other countries and cultures due to different traditions of involvement, management attitudes and educational levels. Thus, it would be highly relevant to conduct a longitudinal cross-country analysis to reveal if the effect is consistent across cultures.

The measurement of especially psychological ownership is linked to the individual and the proxy of the average level of psychological ownership in the company based on only two respondents from each company limits the robustness of the measurement. A large number of respondents at different organisational layers from each company would have boosted the reliability of the analysis and conclusions.

CONCLUSION

The present paper has tested three determinants of psychological ownership, ESO, involvement of middle managers in strategy and participative leadership style. Based on survey among 297 of the 500 largest companies in Denmark, the paper concludes that a distinction needs to be made between participation and autonomy and that only the first is a determinant of psychological ownership. ESO has been conceptualised as a determinant of psychological ownership but the effect seems to be mediated by participation. Despite the direct and indirect effects of participation and ESO, the most significant determinant of psychological ownership is a participative leadership style. This highlights the importance of conducting a leadership style that encourages and supports involvement and signals that the contribution of middle managers is needed, appreciated and expected.

This paper is, to the best of the author's knowledge, the first to quantify the effects of the determinants of psychological ownership based on a large-scale cross-sectional survey. The study quantifies the effects of the three determinants and highlights the need for combining ESO, involvement and leadership style in the pursuit of psychological ownership.

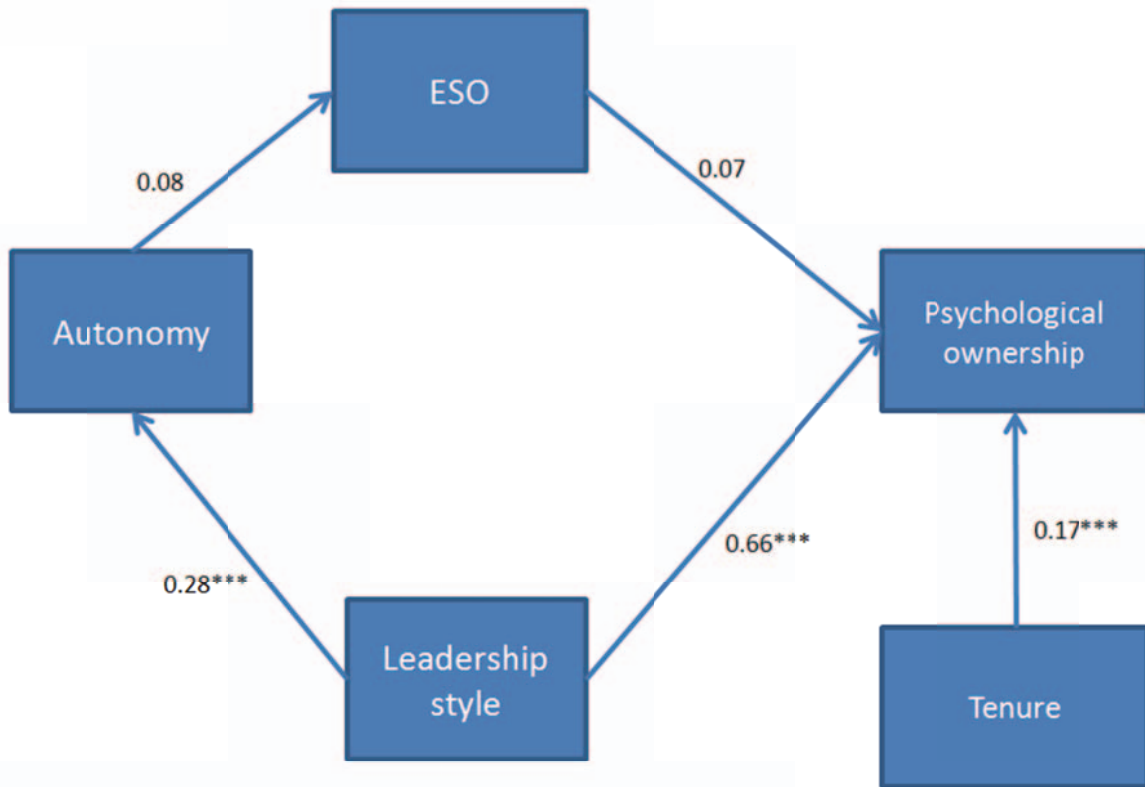
APPENDIX

TABLE 2A: DESCRIPTIVE STATISTICS AND CORRELATIONS CONSTRUCT LEVEL

Variable	Mean	SD	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12
1 Participation	0.00	1.00	-3.30	1.89	1											
2 Autonomy	0.00	1.00	-1.77	2.79	.49 ***	1										
3 Leadership style	0.00	1.00	-3.43	1.95	.42 ***	.26 ***	1									
4 Psyc. Ownership	0.00	1.00	-4.15	1.57	.40 ***	.20 ***	.61 ***	1								
5 ESO	0.00	1.00	-0.57	2.71	.12 **	.07	.08	.12 **	1							
6 ESO_Lead. Style	0.08	0.95	-5.11	5.27	-.02	-.05	-.06	-.04	.18 ***	1						
7 ESO_Autonomy	0.07	1.01	-4.08	5.73	-.11 *	.01	-.04	-.05	.15 **	.17 ***	1					
8 ESO_Particip.	0.12	0.88	-4.44	2.77	-.16 ***	-.12 **	-.02	-.07	.24 ***	.51 ***	.35 ***	1				
9 Lead_Autonomy	0.26	1.17	-3.45	6.07	-.13 **	.04	-.22 ***	-.20 ***	-.04	.05	.02	-.01	1			
10 Lead_Particip.	0.42	1.31	-4.73	11.29	-.17 ***	-.11 *	-.24 ***	-.18 ***	-.01	.06	-.01	-.20	.63 ***	1		
11 Tenure	9.28	6.68	0.10	35.00	.07	.08	.13 **	.22 ***	.09	-.05	.03	-.06	.10 *	-.01	1	
12 Past performance	0.00	0.99	-4.79	4.02	.05	-.01	.06	.09	.13 **	.06	-.07	.08	-.02	-.02	.12 **	1

n = 297. Significance of correlations: *** *p* < .01; ** *p* < .05; * *p* < .10 (two-tailed test).

Figure 2A: Structural Equation Model



The arrow figures are standardised betas for autonomy.
Significance levels: *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$

5. Management attitudes to middle management involvement and formal ownership as determinants of psychological ownership⁶

INTRODUCTION

Extrinsic motivation spurred by incentives like employee stock ownership (ESO) and intrinsic motivation driven by involvement have been seen as potential sources to higher company performance. The argument of incentives is mainly rooted in agency theory, aligning the interests of employees with the interests of the company, while the argument of involvement is founded on higher consensus, increased information sharing and improved dynamic capabilities. In most of the literature, it is assumed that economic incentives or involving employees per se lead to higher performance. Despite the theoretical arguments supporting the effect of incentives and involvement, the empirical findings are rather unclear and call for a more thorough understanding of the effects on the micro level. In recent years, increased attention has been paid to the creation of psychological ownership (e.g. O'Driscoll et al., 2006; Van Dyne and Pierce, 2004; Pierce et al., 2009) and it has been argued that the positive effect of ESO is mediated by the creation of psychological ownership (Pendleton et al., 1998; Sesil et al., 2002) while involvement has been identified as one of the determinants of psychological ownership (Pierce et al., 2009). As the economic incentive of ESO decreases at lower organisational levels due to a minimal effect on the economic reward of making an extra effort, agency theory becomes less useful as an explanation to the ESO effect. Furthermore, Hammer and Stern (1980) find that the size of the employees' equity stake has no influence on motivation and commitment, indicating

⁶ The chapter corresponds to a single-authored article presented in an earlier draft at the 2010 SMS conference in Rome and the author would like to thank the participants at the conference for helpful comments. The author would also like to thank Professor Torben Juul Andersen for helpful comments and PhD fellow Stefan Linder for collaboration in our joint survey.

that the positive effects of ESO on company performance are prompted by the creation of psychological ownership and the effects on job attitudes and commitment and not an expected economic reward.

In the involvement literature, especially involvement of middle managers in strategy processes has been the subject of growing attention (e.g. Jarzabkowski and Balugan, 2009; Pappas and Wooldridge, 2007; Currie and Procter, 2005). The potential positive effects of involving middle managers in the strategy process have been proven to be easier strategy implementation (Conway and Monks, 2010; Vilá and Canales, 2008), higher responsiveness to environmental change (Ansoff, 1979) and middle managers acting as a source of new innovations due to their close contact with the market and front-end managers (Mantare, 2008; Pappas and Wooldridge, 2007; Yang et al., 2010). The involvement of middle managers in strategy processes can also be seen to greatly facilitate the creation of psychological ownership. Kuvaas (2006) found that highly educated workers more easily developed psychological ownership due to interesting work and job influence, while Pierce et al. (2001, 2003, 2009) found that task significance, autonomy and feedback all constitute paths to psychological ownership. This suggests that by involving the (more) educated middle managers in the significant task of strategy-making and allowing them to exercise influence on their job would lead to the creation of psychological ownership.

Psychological ownership in organisations has been seen to mediate citizenship behaviour and performance (e.g. O'Driscoll et al., 2006; Van Dyne and Pierce, 2004; Pierce et al., 2003), job satisfaction and organisational commitment (O'Driscoll et al., 2006; VandeWalle et al., 1995) and stewardship, personal sacrifice and risk, and caring and protective behaviour toward the company (Dirks et al., 1996; Pierce et al., 2003). This article argues that the positive effects of ESO, a

participative leadership style and involvement of middle managers in strategy processes are not prompted by the economic incentive effects of ESO or the fact that involvement in itself creates more innovations or better strategy implementation, but evolve from the possible creation of psychological ownership and its positive effects on job attitudes, loyalty and commitment.

The level of involvement, autonomy, feedback and perception of control at the middle management level is generated by a top management leadership style that encourages and supports involvement and autonomy, allowing middle managers to experiment with new ideas and accepting and communicating that errors are to be expected in a dynamic organisation which needs to constantly innovate and change (Choi, 2004). This article tests the effect of ESO, involvement of middle managers in strategy and a participative leadership style on the creation of psychological ownership and company performance in 297 of the top 500 Danish companies. The paper uses structural equation to test both the direct effect of ESO, involvement and leadership style on company performance and the indirect effect by testing the three factors as determinants of psychological ownership and psychological ownership's effect on company performance. The tests reveal that no direct effect of ESO, involvement and leadership style can be found when including psychological ownership as an explanatory factor indicating that, in themselves, neither ESO nor involvement nor a participative leadership style are able to drive higher company performance but only have an effect through the creation of psychological ownership.

The study also finds that psychological ownership is a strong predictor of company performance and significantly reports that an increase in psychological ownership boosts company performance with 12%. This paper's contribution lies in its augmentation of our understanding of the effects of ESO and involvement of middle managers by suggesting that the concepts per se have no direct effect on company performance but may be seen as determinants of psychological ownership. The findings also

underline the importance of psychological ownership as a significant mediating source to company performance. Based on the results, the author calls for more research on combining involvement of middle managers and ESO with other initiatives supporting the creation of psychological ownership. If involvement and ESO primarily work through the creation of psychological ownership, the possible positive effects such as increased information sharing, innovations and improved strategy implementation can be expected to be moderated by organisational settings, worker and job characteristics and the personal experience of the job; all determinants of psychological ownership.

The paper starts with a review of the existing literature on employee stock ownership, involvement of middle managers in strategy, the participative leadership style and the concept of psychological ownership, followed by hypothesis development, a method section and a discussion and conclusion section.

EMPLOYEE STOCK OWNERSHIP

The use of ESO in companies has increased over the last three decades from only a few companies in the 1970s to a reported 24% of all American workers being covered by an employee stock ownership plan (ESOP) in 1999 (Rogers, 1999). Based on agency theory, ESO is found to align the interest of the employee with the interest of the company increasing effort, commitment and loyalty (Jensen and Meckling, 1976; Pendleton, 2010). It has been discussed if the effect of formal ownership through an employee stock ownership plan (ESOP) is caused by the mere ownership, the intrinsic motivation of exercising formal ownership rights like involvement and information, or the potential economic reward of the stocks (Klein, 1987; Pendleton, 2010). A majority of the research supports the intrinsic

motivation theory, while only a few analyses support the other two. This suggests that the performance effect of ESO is somehow linked to the creation of internalised extrinsic motivation as discussed in the self-determination theory (SDT) developed by Ryan and Deci (2000).

The effect of ESO on company performance has been tested in 33 different studies (Blasi et al., 2003) reporting positive as well as neutral findings. On average, productivity is improved by 4-5% in the year of ESOP introduction and the improvement is sustained in the following years. The effect of ESO on company performance is moderated by 1) the possibility to exercise formal ownership rights, 2) management's philosophical commitment to the plan, 3) employee participation in decision-making and 4) the creation of psychological ownership. The formal ownership rights refer to possession of shares, influence on the company and access to information (Klein, 1987; Long, 1977; Pierce, Rubinfeld and Morgan, 1991), while management's philosophical commitment to the plan addresses management's willingness to grant employees access to influence on jobs and decisions (Hambrick and Mason, 1984). All four of the moderating factors stress that when introducing ESO in a company, the expected positive effect on company performance is created not through a reduction of agency cost due to an economic incentive, but mediated by increased involvement, information sharing and allowing employees to exercise control and influence on their own tasks as well as on more general company procedures and strategic actions.

INVOLVEMENT OF MIDDLE MANAGERS IN STRATEGY

Involvement of middle managers in strategy processes has been the subject of growing attention due to the middle managers' unique access to both top management and front-end managers. The importance

of middle managers in strategy processes was recognised by Mintzberg and Waters (1985) defining realised strategy as the combined effect of deliberate strategy by top management and emergent strategic actions performed by middle managers. The effect of middle management involvement is considered multidimensional and may consist of increased issue selling activities (Conway and Monks, 2010; Ling, Floyd and Baldrige, 2005; Yang et al., 2010), middle managers acting as agents of change (Huy, 2002), increased innovation (Floyd and Wooldridge, 1999), easier strategy implementation (Boyett and Currie, 2004; Floyd and Wooldridge, 1992; Jarzabkowski and Balogun, 2009) and increased company performance (Wooldridge and Floyd, 1990; Mair, 2005). However, the potential effects of middle management involvement are not purely positive as they are seen to increase the risk of foot-dragging and sabotage (Guth and MacMillan, 1986), destructive interventions (Meyer) and opportunism (Sillince and Mueller, 2007). Moreover, only a few large-scale empirical analyses have tested the effect of involvement on company performance and with varying results. Meir (2005) found increased business unit performance due to middle managers' strategic actions, but only used one large company as test unit, while a cross-sectional analysis by Andersen (2004) on 185 American companies unearthed an interaction effect of autonomy and environmental dynamism on company performance, while no significant effect of participation was reported. Wooldridge et al. (2008) conclude that even though some evidence is found to support a positive organisational performance caused by middle management involvement, much more research is needed to understand the relationships and the motivational effects on the individual level of the phenomenon.

The previously discussed concepts of ESO and middle management involvement can be found to potentially increase company performance if middle managers are motivated to act in the best interest of the company. Earlier research is mainly based on the assumption that introducing ESO or involving

middle managers in strategy processes created the desired extrinsic or intrinsic motivation in itself even though the empirical evidence of the expected effects on company performance was more ambiguous. This indicates that implementing ESO or involvement needs to be combined with actions that increase middle management motivation and create a perception of “this is my company” measured as psychological ownership. The motivation to get involved and the internalisation of extrinsic motivation are highly dependent on the leadership style conducted which has the potential to both support and constrain the willingness to get involved (Mantera and Vaara, 2008). This highlights the need for a participative leadership style that supports, encourages and expects involvement.

PARTICIPATIVE LEADERSHIP STYLE

A participative leadership style supports the involvement of employees in organisational decisions by consulting them before decisions are made (Kaufman, 2001). Additionally, the leadership style encourages empowerment in that it distributes the decision authority to the lowest possible level capable of making a competent decision (Seibert, Silver and Randolph, 2004). This is accomplished by creating a culture and an organisational setting which make provision for, value and expect the opinion from and participation of the employee (Emery, 1995). Especially middle managers are found to be motivated by involvement (Hyang et al., 2010) due to the possibility to influence their own work settings and the development of the company.

The participative leadership style is reported to increase decision quality (Scully et al., 1995), increase employee motivation and commitment (Locke et al., 1990; Yiing and Ahmad, 2009) and enhance psychological empowerment (Eby et al., 1999). The effect on company performance is found

to be mediated by psychological empowerment (Zhang and Bartol, 2010) highlighting the need for internalised extrinsic motivation.

Spreitzer (1995) defines psychological empowerment as *“an individual’s experience of intrinsic motivation that is based on cognition about him- or herself in relation to his or her work role”*. The construct is composed by four cognitions: Meaning, competence, self-determination and impact (Conger et al., 1988; Spreitzer, 1995) and it can be seen that involvement in strategic decisions meets all four.

Despite a desire to involve middle managers, top management might still restrain involvement due to an organisational setting that creates obstacles for involvement, unclear rules on how to participate or systems that only allow employees with specific skills to participate (Mantera and Vaara, 2008). To avoid this, rules and the systems alike need to be clear, flexible and easy to understand by all employees. Additionally, top management needs to actively seek the opinions of the employees and engage in constructive controversy in the form of open-minded discussions of opposing positions (Ekaterini, 2010). This can only be done in a safe environment which has clear rules of participation and which is built on a relationship based on trust and respect.

When analysing the three research streams presented above, it emerges that despite a strong theoretical base, the empirical evidence of the performance effects is more diverse. Similarly, the performance effects of all three concepts seem to be mediated by internalised extrinsic motivation in the form of organisational citizenship, psychological empowerment or psychological ownership. This raises the question whether the effect of the three concepts is caused by the potential creation of psychological ownership. To further analyse this relationship, a better understanding of the concept of psychological

ownership and the motivation of middle managers seems warranted and will be addressed in the following section.

PSYCHOLOGICAL OWNERSHIP

The concept of psychological ownership has been investigated within consumer behaviour (Belk, 1988), child development (Isaacs, 1933; Kline and France, 1899), philosophy (Heidegger, 1927; Sartre, 1943) and within organisations (Dirks, Cummings and Pierce, 1996; Pierce, Kostova and Dirks, 2001; Pratt and Dutton, 2000; Van Dyne and Pierce, 2004; Wagner, Parker and Christiansen, 2003; Pierce, Jussila and Cummings, 2009). Pierce et al. (2003:86) define it as “*the state in which individuals feel as though the target of ownership or a piece of that target is “theirs”*”. Psychological ownership has been linked to a number of positive effects like increased organisational commitment (O’Driscoll et al., 2006; VandeWalle et al., 1995), stewardship (Dirks et al., 1996; Pierce et al., 2003) and increased company performance (Pierce and Rodgers, 2004; O’Driscoll et al., 2006). The research on psychological ownership explores three main areas: the roots of psychological ownership, defined as the human motives for creating a feeling of psychological ownership toward an object or an idea, the organisational and personal determinants and the organisational effect of increasing the level of psychological ownership.

The roots of psychological ownership are found in five human motives that describe the human need of creating a sense of ownership toward an object or an idea. Pierce et al. (2003) define three: a) Efficacy and effectance, b) self-identity and c) having a place, while Avey et al. (2009) add d) territoriality and e) accountability.

Efficacy and effectance focus on the human need to feel in control and capable of successfully completing a specific task (Bandura, 1977). By creating a sense of ownership, people feel that they gain total control of the object and thereby increase the possibility of successfully completing any task related to the object (Dittmar, 1992).

Self-identity is created through the interaction with others and viewing oneself from the perspective of others (Dittmar, 1992, Mead, 1934); it is partly created by the objects which we own or control and the meaning and importance ascribed to them by society (McCracken, 1986; Mead, 1934; Pierce et al., 2003). *“Thus, it is through our interaction with our possessions, coupled with reflection on their meaning, that our sense of identity, our self-definition, are established, maintained, reproduced and transformed”* (Dittmar, 1992, p. 86; Pierce et al., 2003). Thus, people need to feel ownership to and exercise control of objects valued by society to create self-identity.

Having a place or belongingness is based on the need for feeling safe and having a territorial core or reference point around which people structure their daily lives (Porteus, 1976; Weil, 1949, 1952). Kron (1983) referred to having a place as a home and a place of refuge and ones roots stating that humans need to create feelings of ownership toward an object to feel safe and achieve a sense of belongingness.

Territoriality is closely related to belongingness and encompasses actions taken to protect territories and to *“communicate ownership to potential threats and the social unit as a whole”* (Avey et al., 2009). Territoriality is addressed by Brown et al. (2005, p. 577) stating that *“Organizational members can and do become territorial over physical spaces, ideas, relationships and other potential possessions in organizations”* and refers to a human need for experiencing acceptance by the surrounding society in

terms of the feeling of ownership to the object. Thus, territoriality is seen as both a root to psychological ownership and a potential behavioural outcome of the concept.

Accountability is “*the implicit or explicit expectation that one may be called on to justify one’s beliefs, feelings and actions to others*” (Lerner and Tetlock, 1999, p. 255). Accountability is based on the human need for respect and being considered important and valued. By feeling ownership toward an object, people gain control and therefore need to be included in decisions regarding the object, increasing the level of accountability.

The five human motives from the research stream on psychological ownership are closely related to the three needs addressed by Ryan and Deci (2000) leading to internalised extrinsic motivation. These needs are competence (accountability, self-identity), relatedness (having a place, territoriality) and autonomy (Efficacy and effectance). This allows us to draw on the findings from self-determination theory (SDT) in order to gain a deeper understanding of how middle managers get motivated and how they internalise the goals and the success of the company and thereby create psychological ownership.

The determinants of psychological ownership found in the literature can be divided into organisational settings, worker and job characteristics and the personal experience of the job. The organisational settings are addressed by Pierce et al. (1991) who state that equity possession, information sharing and influence on the organisation promote the creation of psychological ownership. While the formal equity possession in itself has been found not to create psychological ownership, the combination of formal ownership with the experience of exercising the expected ownership rights: 1) the right to possess some shares of the object’s physical being and/or financial value 2) the right to exercise influence on the object owned and 3) the right to information about the status of the object (Pierce et al. 1991) has been

found to create psychological ownership. Klein (1987) demonstrated that it is not the share of the company owned by the employee that creates employee attitudes like psychological ownership; just owning some stocks (combined with experienced ownership expectation) has an effect. No significant effect was found between the share owned and employee attitudes. Information sharing and influence on the organisation were also found to mediate psychological ownership, based on Long's (1978) findings suggesting that influence on (participation in) decision-making increased the perception of influence among employees, in turn affecting employee attitudes and behaviour. These observations are also in keeping with the roots of psychological ownership suggesting that efficacy (control) and accountability (being included in the decision process) are the human experiences that promote the creation of psychological ownership; this hints that the three organisational determinants need to be combined in order to create psychological ownership.

The worker and job characteristics are addressed by Kuvaas (2006) reporting that highly educated workers more easily develop affective unit commitment without bonus pay due to the creation of intrinsic motivation caused by interesting work content and appreciative organisations valuing the employees' work efforts. Pierce et al. (2009) extended the job characteristic model by testing the effect of the characteristics of the job design on the creation of psychological ownership. Kuvaas (2006) tested the effect of base pay on affective commitment and found that highly educated employees with high base pays had a higher intrinsic motivation and affective commitment than low-educated employees with low base pays. He also found that variable pay to highly educated employees did not affect company performance while the high base pay had a significantly positive effect on company performance, indicating that highly educated employees (i.e. knowledge workers) are more motivated by intrinsic motivation like autonomy, self-regulation and trust than by extrinsic motivation like

variable pay. Similar findings were reported by Gagné and Deci (2005). The above findings imply that the creation of psychological ownership prompted by autonomy, trust and involvement is mediated by the educational level of the employees; this suggests that sectors with high task complexity and knowledge intensity are able to create a sense of psychological ownership more easily. It can also be argued that the need for creating psychological ownership is higher in specific sectors. Pierce et al. (2009) extended the job characteristic model by testing the effect of the characteristics of the job design on the personal experience of control, intimate knowing and investment of oneself. They found that skill variety, task identity, task significance, autonomy and feedback all supported one or more of the three personal paths to psychological ownership. At the individual level, Pierce et al. (2001, 2003) found that the experience of exercising control of the target of ownership, coming to know the target intimately or through an investment of one's self in the target lead to the creation of psychological ownership. Thus, they found that specific organisational settings and worker and job characteristics can be controlled by the company to support the personal experiences leading to the individual creation of psychological ownership.

While most of the recent literature has been focusing on the positive effects of psychological ownership, the work of Brown et al. (2005) sophisticates our view on the effects by introducing territorial behavioural effects as an effect of psychological ownership. These behavioural effects can be seen as both functional (positive) or dysfunctional (negative) depending on whom they are directed at and when and how they are applied. Brown et al. (2005) describe territorial behaviour as: *“Communication of the boundaries of one's territory to others, behavior to maintain an attachment to an object and behavior to defend the territory”*. Especially the defensive behaviour may prompt dysfunctional actions, both as anticipative defensive actions meant to prevent an infringement and

reactionary defensive behaviour to attack the infringement and regain the territory. Particularly when the employees' self-identity is defined by the object of ownership and the employees have "invested themselves" into the object, the defensive behaviour can become destructive from the organisation's point of view. While the explorations of the negative effects of psychological ownership are limited and call for further investigation, the positive effects have been addressed in a number of ways. O'Driscoll et al. (2006) tested the effect of work environment structure on 239 New Zealand workers and their managers and found that less structured work environments mediated by psychological ownership increased employee citizenship behaviour and organisational commitment. Using three case studies involving more than 800 employees, Van Dyne (2004) found a positive effect on employee attitudes (organisational commitment, job satisfaction and organisation-based self-esteem) and work behaviour (performance and organisational citizenship). Other positive effects have been conceptualised by Pierce et al. (2001, 2003) linking stewardship, personal sacrifice and risk, promotion of organisational change and caring and protective behaviour toward the target of ownership with psychological ownership. While the behavioural effects of psychological ownership are addressed in a number of studies mentioned above, only a few studies have tested the direct effect on company performance. Van Dyne and Pierce (2004) tested the effect of psychological ownership on employee performance in three field samples from the USA. A positive correlation was reported between psychological ownership and employee performance, but no significance was found in the model when accounting for demographic controls.

In conclusion, the roots to psychological ownership are generally based on five human motives (efficacy and effectance, self-identity, having a place, territoriality and accountability), while the determinants studied are companies' organisational settings (equity possession, information sharing

and influence), worker and job characteristics (skill variety, task identity, task significance, autonomy and feedback) and the personal experience of the job (control, intimate knowing and investment of self). The effects of psychological ownership can be found to be either negative or positive leading to destructive territoriality actions or increased commitment, job satisfaction, loyalty and company performance. This calls for further individual-level research into the process of creating psychological ownership as a mediating factor increasing the positive effects of ESO, involvement of middle managers in strategy and a participative leadership style.

HYPOTHESIS DEVELOPMENT

The main theoretical background explaining the effect of ESO is found in agency theory, where the interests of the utility-maximising employees are not congruent with those of the principal (Pendleton, 2006) and where employees might engage in discretionary behaviour, moral hazard and adverse selection (Holmstrom, 1979; Eisenhardt, 1989). It has been argued that collective incentive programmes like profit sharing or employee ownership can reduce the agency costs by aligning employee interests. A number of studies have analysed the effect of ESO on employee behaviour, commitment and job satisfaction (Beatty, 1994; Drago and Heywood, 1995, Kruse, 1996; Jones and Pliskin, 1997) while another body of analyses focus on the effect on company performance (McNabb and Whitfield, 1998; Addison and Belfield, 2000, 2001; Sesil et al., 2002). The two areas are connected in the sense that the effect on employee behaviour is seen to affect company performance by reducing or eliminating the agency costs and increasing commitment and participation. In the literature, collective incentives like ESO have been seen as an alternative to individual incentive programmes and

are in some studies found to be a weaker incentive due to the risk of free riders and the weak connection between the individual performance and the pay. However, the collective incentives have been advocated in companies where the individual employee performance is costly to observe because of the type of job design or work organisation (Cheadle, 1990; Kruse, 1996; Jones, Kato and Pliskin, 1997) or if individual incentives are costly to operate (Jones and Pliskin, 1997). Some studies have analysed the combined effect of individual and collective incentives and found that a combination of the two might reduce some of the distortion effects (Prendergast, 1999). Distortion effects arise when employees have multiple tasks with different levels of measurability; the use of ESO will encourage the employees to focus on a broader range of outcomes and factors than incorporated in an individual incentive programme which focuses on short-term financial and output goals (Kaplan and Norton, 1996).

While most extrinsic motivational instruments demonstrate a positive connection between the motivational effect and the size of the possible reward, analyses of ESO have shown that the size of the employees' equity stake in the company had no influence on the level of motivation and commitment (Hammer and Stern, 1980). This suggests that it is not the possible financial reward that generates the effect of employee stock ownership plans. Instead, it is the psychological sense of ownership, the experience of trust from the employer and the possibility to influence one's own work situation which create the motivation, loyalty and desire to participate. A number of analyses find that the company is unable to achieve the motivation and participation effect without the financial participation, as referred to in Blasi, Kruse and Bernstein (2003:176) *"telling employees to take ownership of their jobs rings hollow if management doesn't offer actual financial ownership or some share in the improved performance... without wealth sharing in some form, it feels like the company is just trying to con you*

into working harder". It is therefore seen that ESO, if combined with the possibility to exercise formal ownership rights, increases the creation of psychological ownership. This leads to the development of hypothesis number 1:

Hypothesis 1: Employee stock ownership increases the level of psychological ownership among middle managers.

Influence, autonomy, educational level of the employees and task significance were found to be some of the determinants of psychological ownership (Kuvaas, 2006; Pierce et al., 1991; Pierce et al., 2009) indicating that involvement of middle managers in strategy processes may be expected to have a high impact on the creation of psychological ownership due to involvement and high task significance. Earlier theoretical and empirical analyses of the effect of involving middle managers in the strategy process have reported easier strategy implementation in firms with middle managers acting as agents of change (Rouleau, 2005; Sillince and Mueller, 2007; Vilá and Canales, 2008) or increased intrapreneurship due to middle managers' close contact with customers, front-end managers and easy access to top management (Mantere, 2008; Laine and Vaara, 2007; Pappas and Wooldridge, 2007). Despite the reported positive effect of middle management involvement, research has failed to deliver strong proof of the effect on company performance implying that we need to increase our knowledge of the individual level of involvement. A key problem is how to motivate middle managers to become involved in strategic processes and to do so in the core interest of the company. Guth and MacMillan (1986) reported increased foot-dragging and sabotage due to involvement while other scholars have demonstrated increased occurrence of destructive interventions or opportunism (Mair, 2005; Sillince and Mueller, 2007). The use of economic incentives or even promotions can be argued only to have a limited effect due to the long-term perspective of the actions and the lack of possibility to identify the

outcome. To create a positive effect of involvement, the company needs to create internalised extrinsic motivation among middle managers encouraging them to act as if the company was theirs, i.e. create a sense of ownership. This sense of ownership can be expected to develop by not only allowing middle managers to be involved in the strategy process, but by doing it through a leadership style that signals that middle management involvement and the implied participation and autonomous actions are not only accepted, but expected, appreciated and supported by top management. Pierce et al. (2009) find that feedback from top management is instrumental in creating an intimate association between employees and their jobs and that distributing decision authority to the employees creates a sense of autonomy that supports both a feeling of control and investment of oneself in the work, all of which support the creation of psychological ownership. Management attitudes toward involvement and autonomy can therefore be seen as a formal distribution of decision authority and a support of employees' autonomous decisions. This is enhanced by an attitude signalling acceptance of the fact that a significant part of all decisions will fail or be less successful than expected and that it is better to have tried and failed, than to have never tried at all. Such a management style will increase the employees' sense of importance and the trust experienced from top management. In addition, this increases the employees' self-identity in that they sense that they are considered important and given responsibilities and increases the feeling of territoriality within the job. The effect of a leadership style that supports participation and autonomy can then be expected to mediate the creation of psychological ownership on the individual level by supporting the individual experiences of involvement and importance. This leads to hypothesis number 2:

Hypothesis 2: Middle managers employed in companies with a leadership style that supports and encourages involvement and autonomy have a higher level of psychological ownership.

Involvement in strategic decisions increases the perception of influence, control and accountability and has been found to be a route to increased motivation (Pierce et al., 2009). The literature on psychological ownership and SDT alike stresses the importance of involvement as a determinant of psychological ownership and internalised extrinsic motivation (Avey et al., 2009; Ryan and Deci, 2000). Involvement in strategy is also argued to be instrumental in easing strategy implementation (Vilá and Canales, 2008) and increasing innovations and entrepreneurship in companies (Mantera, 2008; Pappas and Wooldridge, 2007). Based on the latter, involvement can be expected to increase company performance and a number of analyses have tested this relationship. Despite strong empirical evidence supporting a number of positive effects of involvement, the empirical proof of performance effects is limited and diverse. Wooldridge et al. (2008) concluded in their analyses of the middle management literature that although some evidence of a positive relationship between involvement and performance existed, much more research was warranted. Mantera and Vaara (2008) reported that the effect of involvement seems to be mediated by psychological ownership, suggesting that without the creation of internalised extrinsic motivation, the positive effects of involvement are limited. This leads to the hypothesis that involvement increases psychological ownership and that no direct effect on performance can be expected.

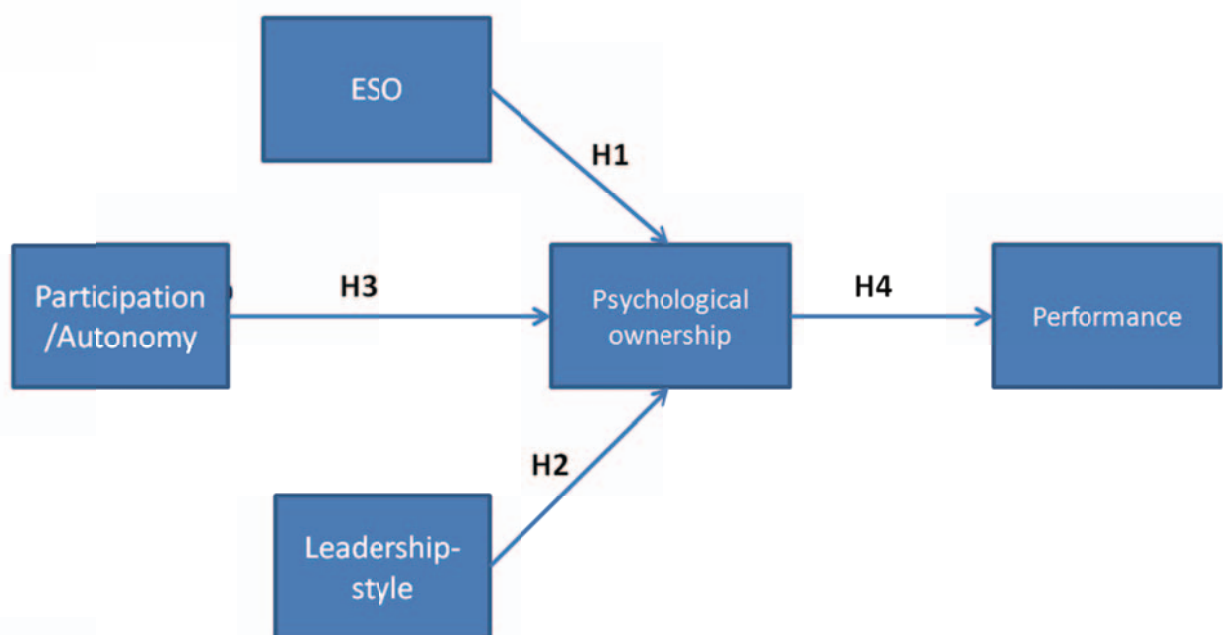
Hypothesis 3: Involvement of middle managers in strategy increases the level of psychological ownership among middle managers.

The effects of psychological ownership are mainly tested on the behavioural outcome on both the individual and the organisational level. The positive behavioural effects have been found to be: acts of good citizenship (O'Driscoll et al., 2006; VandeWalle, Van Dyne and Kostova, 1995; Van Dyne and Pierce, 2004), low levels of alienation (Van Dyne and Pierce, 1993), psychological empowerment

(Avey et al., 2009), organisation-based self-esteem (Van Dyne and Pierce, 2004), job satisfaction and organisational commitment (Avey et al., 2009; O'Driscoll et al., 2006; VandeWelle et al., 1995; Van Dyne and Pierce, 2004). The positive behavioural effects can be expected to positively affect company performance leading to hypothesis 4:

Hypothesis 4: Companies with a high level of psychological ownership among middle managers are associated with higher economic performance.

Figure 1: Structural Equation Model



The arrow headings represent the hypothesis being tested

DATA COLLECTION, MEASURES AND METHODS

Data for the present study was collected by means of a cross-sectional mail survey as part of a larger research project. The 500 largest Danish firms (measured by the number of employees listed in “Kobmandsstandens Oplysningsbureau”) were approached with a two-page survey instrument in late November 2009. The 500 firms cover a broad set of industries, including basic material, manufacturing, utilities, retailing, financial services and other services and have at least 225 full-time employees. In addition to the number of employees, the database also provides information about the firms’ financial figures from 2004 to 2009, the industry code of their main business, stock listing and founding year. The questionnaire was initially tested on three middle managers to receive an impression of how the questions were perceived. Subsequently, the questionnaire was tested on a sample not included in the main dataset of 87 managers from 57 firms to test the robustness of the constructs. The pre-tests raised no concerns.

In a first step, the respective firm’s CFO or head of accounting was contacted by a personalised cover letter and a questionnaire instrument capturing ESO usage, involvement and autonomy, leadership style, individual and organisational psychological sense of ownership and some additional questions which serve control purposes in the present analysis (see below). About a week later, a second letter with the questionnaire was sent to the ones that had not yet responded to the initial mailing. These two waves produced a total of 149 responses. In a third step in December, the remaining individuals that had not reacted to our mailed survey were contacted by phone and asked to participate in the survey. Out of these, 167 were willing to participate and responded to the questionnaire items on the phone. Careful inspection for completeness and plausibility of the responses led to the elimination of nineteen answers (one firm had actually received and answered the questionnaire twice, one firm was in the

process of liquidation, three firms had severely reduced the number of employees during the fall of 2009, thus no longer exhibiting the required number of employees, the other responses were severely incomplete or implausible). Thus, a total of 297 answers from a broad set of industries were retained (i.e. a response rate of 59.4%).

To increase the validity and reliability of the answers, a new questionnaire was sent by mail to heads of marketing/sales in the 297 companies in February 2010, a second letter was sent two weeks later to the non-respondents and finally, the remaining companies were contacted by phone, resulting in a total of 207 answers (i.e. a response rate of 69.7% of the initial 297 companies). Similarly, a randomly chosen middle manager in each of the 297 companies was contacted by phone and asked to answer a one-page questionnaire, thus collecting answers from different organisational layers and retrieving multiple answers from the companies. A total of 210 middle managers from the 297 companies answered the questionnaire (i.e. a response rate of 70.7% of the initial 297 companies).

The hypotheses will be tested in a Structured Equation Model (SEM) using AMOS SEM software in a two stage procedure recommended by Anderson and Gerbing (1988). The first stage involves estimation of the measurement model using confirmation factor analysis to determine convergent and discriminant validity. The second stage involves comparing the theoretical model with the measurement model. Based on the results of the test, the theoretical model will be used to provide path coefficients for the hypothesis test. Additional fit measures like Goodness of Fit Index (CFI) and Root Mean Square Residual (RMSEA) will be calculated to test the model fit as recommended by Gerbing and Anderson (1992).

Measures

To the greatest extent possible, the study builds on existing scales from the literature.

ESO usage: The definitions of ESO employing companies are diverse throughout the literature. Some scholars use a broad definition stating that if more than one employee receives payment from an ESOP, the company is considered an ESO employing company (Sengupta et al., 2007). Pendleton et al. (2001) distinguish between narrow and broad-based schemes; the latter being schemes where more than 50% of the employees are covered by the scheme and the former are schemes covering less than 50% of the employees. It could also be argued that the share of the company owned by the employees could be used as a measure indicating that the higher percentage of the company owned by the employees, the higher is the effect on the creation of psychological ownership. This, however, is rejected by Hammer and Stern (1980) who found that the size of the employees' equity stake in the company had no influence on the level of motivation and commitment. This indicates that the more employees covered by the scheme, the higher is the effect on the creation of psychological ownership. Since the involvement in the strategy process focuses on top and middle management, the share of top and middle managers covered by the scheme will be measured using two five-item Likert scales measuring the share of top managers and middle managers owning shares in the company (none, some, half, majority or all (value 1 to 5)). A total score is then calculated by adding up the two values. A number of different combinations of the shares can be found but in general, the share is seen to be in decline at lower organisational levels. This indicates that a combination of no top managers owning shares and all middle managers owning shares will not occur.

Leadership style: Assessment of top management's style of reaction to and climate for middle manager involvement was facilitated by an instrument for leadership style and climate specifically developed for the present study on the basis of previous research conducted by Choi (2004). The instrument took the limited time available for top and middle managers to answer a questionnaire into account and therefore concentrated on the leadership climate for involvement/autonomous strategic action only – leaving aside other aspects of (more broadly defined) leadership style and climate in terms of individual work effort or work duration or the like. The resulting four-item measure asked middle managers to rate to which degree their superiors were open to their ideas and willing to let them experiment with new concepts or products on a 7-point Likert scale (1=fully disagree, 7=fully agree). Cronbach's alpha was 0.859 and the factor analysis identified a single factor with an eigenvalue above one (eigenvalue of 2.814). The confirmatory factor analysis indicated that the items loaded with 0.812 to 0.864 on this factor (see table 1).

Involvement in strategy processes: Involvement of middle managers in strategy processes can be realised by allowing middle managers to *participate* in strategic decisions (Andersen, 2004) or by granting middle managers the *autonomy* to make strategic decisions without prior approval by top management. The measurement of participation was based on five questions using a 7-point Likert scale previously used by Andersen (2004) exploring the frequency of middle management participation in different strategic actions. The measurement of autonomy examined the frequency of middle manager autonomy in strategic actions based on the same five strategic decisions as used for measuring participation. The autonomy items used a 7-point Likert scale measuring the frequency from never to always which is similar to a scale used by Andersen and Nielsen (2009). To test if the concepts could be considered one or two variables, a rotated explorative factor analysis was conducted on all ten items.

The factor analysis returned three factors with an eigenvalue above one. Questions 1-3 on participation loaded on one factor measuring participation in market-oriented strategic actions, while question 1-3 on autonomy loaded on another factor measuring market-oriented autonomous strategic actions. Questions 4-5 on participation and 4-5 on autonomy loaded on the third factor measuring involvement in internal strategic actions. To strengthen the test, similar rotated factor analyses were conducted on the answers from the heads of marketing and the middle managers; these produced identical results.

The two factors measuring involvement in market-oriented strategic actions will be applied on the grounds that the two items of internal strategic actions are found to theoretically differ from the market-oriented items and can be eliminated as recommended by Costello and Osborne (2005).

A confirmatory factor analysis of the three participation items exhibited a satisfactory Cronbach's alpha of 0.815, a single factor with an eigenvalue above one (eigenvalue=2.217) and factor loadings between 0.749 and 0.918. A similar confirmatory factor analysis of the three autonomy items also exhibited a satisfactory Cronbach's alpha of 0.840, a single factor with an eigenvalue above one (eigenvalue=2.275) and factor loadings between 0.822 and 0.901 (see table 1).

TABLE 1: FACTOR LOADINGS AND RELIABILITIES

Dimensions and variables	n	Cronbach's alpha	Extracted variance	Factor loadings	Indicator reliability
Leadershipstyle	295.00	0.859	70.34%		
Topmanagement actively seeks MM opinions and ideas on strategic issues				0.864	0.746
Topmanagement are open to new ideers and initiatives from all employees				0.832	0.692
Topmanagement appriciate that MM experiments with new ideers and products				0.812	0.659
Topmanagement ensure that the interest of MM are considered when making strategic decisions				0.846	0.716
Psychological ownership	296.00	0.862	70.71%		
I feel that this is MY company				0.926	0.857
The majority of employees feel that this is OUR company				0.806	0.650
I feel an ownership to and responsibility of the development of the company				0.767	0.588
I find it hard to think about this as MY company (reversed coded)				0.856	0.733
Participation in decisions (MM participate in the decisions of)	296.00	0.815	73.90%		
Activities aiming at enhancing market position				0.902	0.814
Sales to new segments or markets				0.948	0.899
Development of important new products				0.749	0.561
Autonomy (MM can make decisions alone without prior approval)	296.00	0.840	75.82%		
Activities aiming at enhancing market position				0.888	0.789
Sales to new segments or markets				0.901	0.812
Development of important new products				0.822	0.676

Psychological ownership: Four questions measuring both the respondents' perception of psychological ownership to the company and the organisational level of psychological ownership were based on a former study by Dyne and Pierce (2004). A 7-point Likert scale (1=fully disagree, 7=fully agree) was employed. Cronbach's alpha was 0.862 and factor analysis identified a single factor with an eigenvalue above one (eigenvalue of 2.829). Confirmatory factor analysis found that the items loaded with 0.767 to 0.926 on this factor. This indicates a strong connection between the respondents' individual perception of ownership and the respondents' perception of the entire organisation's perception of ownership. The strength of the construct would have increased if more than two responses were obtained from employees at different organisational levels within the same company. This problem is partly addressed by measuring the respondents' individual sense of ownership, of which they have a direct perception, and their perception of the organisation's sense of ownership and by collecting two responses from two different organisational layers (see table 1).

Company performance: The company performance can be measured in various ways, for instance, growth in turnover and net profit (Dess and Robinson, 1984), subjective evaluation of organisational performance (Machin and Stewart, 1996; Sengupta et al., 2007; Wall et al., 2004), return on assets (ROA) (Burton et al., 2002) or growth in number of employees (Kraus, Harms and Schwarz, 2006). Due to the fact that data was collected in late 2009/spring 2010, financial data of an earlier date cannot be used as a proxy of performance seeing that it would cause common-method bias. It can, however, be argued that the respondents' perception of involvement, leadership style and psychological ownership is developed over a period of time and that a link can be made to the 2009 ROA. To adjust for sector, a standardised residual is calculated with ROA 2009 as a dependent variable and sector dummies as independent variables.

Control variables: The causal link between psychological sense of ownership and company performance will be controlled for sector based on 8 different sectors using the national NACE codes as referred above. Psychological ownership is controlled for tenure of the respondents as reported in Torp (2011). The use of size as a control variable has been widely discussed and potential endogeneity problems have been used to argue against controlling for size.

Methods

To avoid common method bias, data from multiple sources will be applied as recommended by Podsakoff et al. (2003). The performance measure is based on financial data collected from an official national database, while involvement, ESO, leadership style and psychological ownership are based on answers from the CFO and middle manager. This means that the average of two answers should represent the perception of the company and, incontrovertibly, an increased number of answers from each company would have strengthened the analysis.

Initially, the validity of the responses was tested by conducting a paired sample t-test on the leadership style responses provided by heads of sales/marketing in 207 of the initial 297 companies who returned the initial questionnaire. The test has been conducted both on the mean of sum of the four questions and on each question. An average of the 199 paired companies showed 5.09 from the CFOs and middle managers and 5.03 from heads of sales/marketing with std. dev of 0.07 and 0.09 respectively. This yields a significance level of 0.587 rejecting the hypothesis that any difference exists and thus providing evidence to suggest that the answers given by the CFOs are representative for the company. All four questions in the construct were tested individually and turned out insignificant, again

supporting the expectation that the initial answers were representative for the company. A factor analysis was also conducted on the 207 answers from the heads of sales/marketing reporting only one factor with an eigenvalue above 1 (eigenvalue=2.607), a Cronbach's alpha of 0.819 and factor loadings between 0.748 and 0.850. Similar analyses were conducted on the items and averages of participation and autonomy but with less conclusive results.

A test for non-response bias was conducted on sector, size, turnover, age, capital structure, legal form, employee growth and a number of other financial data comparing the 297 respondents with the population of the 500 largest companies in Denmark. None of the tests gave rise to concern. A Harman 1 factor test was conducted on all items reporting five factors with variance explained between 6.0% and 34.0% confirming the validity of the constructs

The correlation matrix in table two shows that all correlations between independent variables are well below 0.7 raising no concern for multicollinearity. The table shows a significant positive correlation between ESO and psychological ownership, which supports hypothesis 1, and a very high and significant positive correlation of 0.61 between leadership style and psychological ownership, providing support for hypothesis 2. A significant positive correlation is also found between psychological ownership and ROA09, supporting hypothesis 4. The correlation between ESO and company performance is significantly positively correlated with both psychological ownership and ROA. This partly supports the findings of Hammer, Landau and Stern (1981) and Long (1978) stating that ESO by itself only has a weak effect on company performance; only in combination with the creation of psychological ownership is it successful in displaying a significant positive influence on company performance.

TABLE 2: DESCRIPTIVE STATISTICS AND CORRELATIONS

Variable	Mean	SD	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 ROA 09	0.00	0.99	-4.84	3.49	1																
2 Participation1	4.96	1.25	1.00	7.00	.08	1															
3 Participation2	4.77	1.38	1.00	7.00	.02	.81 ***	1														
4 Participation3	4.67	1.42	1.00	7.00	.07	.48 ***	.52 ***	1													
5 Autonomy1	3.56	1.48	1.00	7.00	.04	.49 ***	.50 ***	.31 ***	1												
6 Autonomy2	3.22	1.47	1.00	7.00	-.01	.41 ***	.50 ***	.26 ***	.74 ***	1											
7 Autonomy3	2.84	1.33	1.00	7.00	-.05	.18 ***	.23 ***	.40 ***	.57 ***	.60 ***	1										
8 Leadership1	5.04	1.27	1.00	7.00	.05	.35 ***	.35 ***	.27 ***	.18 ***	.15 **	.18 ***	1									
9 Leadership2	5.51	1.11	1.00	7.00	.00	.28 ***	.26 ***	.28 ***	.14 **	.16 ***	.12 **	.63 ***	1								
10 Leadership3	4.97	1.16	1.50	7.00	.06	.32 ***	.36 ***	.33 ***	.28 ***	.24 ***	.24 ***	.57 ***	.59 ***	1							
11 Leadership4	4.85	1.13	1.00	7.00	.08	.27 ***	.29 ***	.26 ***	.22 ***	.15 **	.22 ***	.68 ***	.57 ***	.58 ***	1						
12 Psyk ownership1	5.68	1.11	1.00	7.00	.09	.34 ***	.34 ***	.27 ***	.19 ***	.11 *	.08	.53 ***	.48 ***	.43 ***	.51 ***	1					
13 Psyk ownership2	5.04	0.98	1.00	7.00	.16 ***	.32 ***	.30 ***	.28 ***	.17 ***	.11 *	.08	.46 ***	.48 ***	.40 ***	.45 ***	.68 ***	1				
14 Psyk ownership3	5.78	0.89	2.00	7.00	.10	.33 ***	.32 ***	.27 ***	.18 ***	.13 **	.08	.41 ***	.34 ***	.30 ***	.42 ***	.63 ***	.48 ***	1			
15 Psyk ownership4	6.25	0.96	1.00	7.00	.13 **	.26 ***	.25 ***	.22 ***	.26 ***	.16 ***	.17 ***	.41 ***	.40 ***	.41 ***	.42 ***	.78 ***	.56 ***	.51 ***	1		
16 ESO	0.00	1.00	-0.57	2.71	.13 **	.09	.14 **	.09	.07	.06	.05	.09	.02	.09	.06	.13 **	.07	.10 *	.11 *	1	
17 Tenure	9.28	6.68	0.10	35.00	.11 *	.10 *	.06	.03	.09	.05	.07	.09	.14 **	.12 **	.08	.23 ***	.11 *	.20 ***	.21 ***	.09	1

n = 297. Significance of correlations: *** *p* < .01; ** *p* < .05; * *p* < .10 (two-tailed test).

A number of OLS were run to test for multicollinearity. The variance inflation factors on all items were not higher than 1.5 and well below 9.5 (Kleinbaum et al., 1998; Lomax, 1992).

Five models were tested in AMOS SEM testing the combined effect of the determinants of psychological ownership and the effect of psychological ownership on company performance. Before running the model, a test of normality was conducted as recommended by Hult et al. (2006). All variables were significantly normally distributed within the 0.001 level using the Kolmogorov-Smirnov test of normality. The models were run on the raw data from the survey imported from PASW 18 and tested in AMOS 18. Reliability and validity of the constructs have been tested earlier using confirmatory factor analysis, all reporting reliable Cronbach's alphas and factor loadings above 0.7 as recommended by Fornell and Larcker (1981). The fit of the models was tested using Normed Fit Index (NFI), Tucker-Lewis Index (TLI) and Root Mean Square Error of Approximation (RMSEA) as recommended by Hult et al. (2006) and Gerbing and Anderson (1992). The Chi-Square test of model significance is disregarded due to large sample sizes (Tabachnick and Fidell, 1996).

Results

Confirmatory factor analysis was used to test the validity and the reliability of the constructs. Table 1 displays the factor loadings, Cronbach's alpha and Average Variance Extracted (AVE). With factor loadings between 0.75 and 0.93, adequate Cronbach's alphas and AVE>0.50 combined with a measurement model with good fit (CFI=0.9872 and RMSEA=0.0341 on participation and CFI=0.9850 and RMSEA=0.0378 on autonomy), validity and reliability of the constructs and the model seem to be achieved. Table 2 shows the descriptive statistics and correlations among all items and none of the correlations between items loading on different constructs reported correlations >0.70 suggesting adequate discriminate validity. In the appendix, table 2A shows the correlations on the construct level which neither constitute grounds for concern.

TABLE 3: Structural Equation Models (AMOS)

Participation/autonomy	Participation								Autonomy							
	χ^2	$\Delta\chi^2$	df	NFI	Delta2	TLI	CFI	RMSEA	χ^2	$\Delta\chi^2$	df	NFI	Delta2	TLI	CFI	RMSEA
0: Measurement model	87.32		65	0.9527	0.9875	0.9793	0.9872	0.0341	92.51		65	0.9521	0.9853	0.9757	0.9850	0.0378
1: Only direct effects on performance	290.92		75	0.8426	0.8782	0.8265	0.8761	0.0986	253.25		75	0.8580	0.8957	0.8514	0.8938	0.0896
2: Only mediated by psyc. Ownership	154.77		75	0.9162	0.9550	0.9359	0.9542	0.0599	126.29	***	75	0.9292	0.0970	0.9572	0.9694	0.0481
3: Lead + inv mediated	153.34		76	0.9154	0.9547	0.9363	0.9539	0.0598	126.44		76	0.9291	0.9705	0.9585	0.9700	0.0474
4: Model 3 + 1 indirect effect	151.30		75	0.9181	0.9570	0.9387	0.9562	0.0586	124.98		75	0.9299	0.9708	0.9583	0.9702	0.0474
5: Model 3 + 2 indirect effects	102.24	***	74	0.9447	0.9841	0.9770	0.9838	0.0359	107.09	***	74	0.9400	0.9806	0.9720	0.9830	0.0389

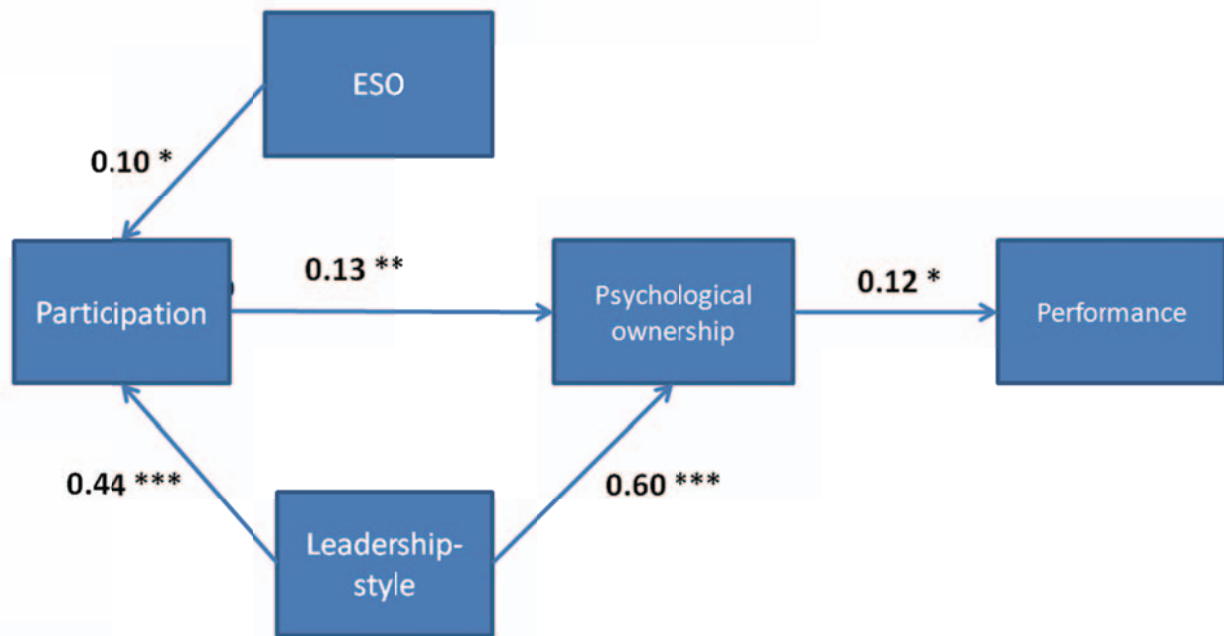
Significance levels: *** $p < .01$; ** $p < .05$; * $p < .10$ (two-tailed test).

The structural model is used to test the structures among latent variables and does not test causality. To ensure validity of the model, all models tested should be derived from theory. Model 1 tests if ESO, a participative leadership and psychological ownership have a direct effect company performance. This would be in agreement with the theoretical foundation of the three concepts which suggests that all of them reduce agency costs or support strategy implementation. The fit indices showed poor fit and the regression weight on leadership style and involvement was insignificant, while psychological

ownership was significant. Model 2 tested the mediating effect of psychological ownership excluding any direct effects from ESO and leadership style on performance. This is based on the literature on psychological ownership, which finds that all three concepts should be determinants of psychological ownership. The model showed better fits, but the effect of ESO was insignificant suggesting that this path should be removed. Model 3 removed the effect of ESO in order to test if ESO should be removed from the model. Model 4 added the indirect effect of ESO on participation based on earlier findings (Pendleton, 2010) suggesting that the effect of ESO is mediated by participation. In model 5, the indirect effect of leadership style on involvement is added owing to the argument that companies exercising a participative leadership style increased the level of involvement among middle managers. To avoid eliminating of a model with a better fit, only one path is added or removed at a time; thus testing all models between the five models reported in the table. The fits are apparent from table 3.

Table 3 shows that models 3, 4 and 5 all displayed good fits with $CFI > 0.95$ and $RSEA < 0.05$; however, a significant improvement in the fits emerges from model 4 to model 5, suggesting that model 5 is the most adequate model. The standardised betas of the participation model are evident from figure 2, while the autonomy betas are shown in figure 2A in the appendix.

Figure 2: Structural Equation Model (Participation)



As performance measure is used ROA 2009. All values are standardized betas.
Significance levels: *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$

DISCUSSION AND LIMITATIONS

The paper has investigated ESO, involvement of middle managers in strategy and a leadership style which supports and encourages middle management participation in strategic decisions and autonomous strategic actions as determinants of psychological ownership and the effect of psychological ownership on company performance. A number of scholars have discussed the effects of ESO on company performance and some have claimed that only in combination with the creation of psychological ownership can ESO be seen to have a positive impact on performance. An empirical

testing of that connection, however, is lacking. The determinants and roots of psychological ownership have been investigated at the personal and organisational level while the importance of management attitudes remains uncharted territory. The effects of psychological ownership on employee behaviour, commitment and citizenship are addressed by a number of scholars assuming a positive effect on company performance while empirical tests and size of this effect constitute a gap in our understanding of the importance of psychological ownership. This research aims to close the above-mentioned gap by empirically testing the determinants of psychological ownership and the effect of psychological ownership on company performance on a large sample of Danish top 500 companies.

Psychological ownership, determinants and effects

The paper argues that to create a sense of psychological ownership among middle managers, formal ownership, involvement of middle managers and implementation of a leadership style that supports and encourages middle management involvement and autonomy in strategy processes need to come into play. The findings are only partly consistent with the findings of Pierce et al. (1991) who have theorised that equity possession is a determinant of psychological ownership, while involvement, autonomy and feedback have been propounded as determinants by Pierce et al. (2009). The paper finds that the effect of ESO on psychological ownership is mediated by participation, thus rejecting hypothesis 1. Autonomy failed to exhibit a mediating effect and no significant effect of ESO was reported. Participation was a significant determinant of psychological ownership which acts to support hypothesis 3 and, similarly, leadership style was a strong significant determinant of psychological

ownership, supporting hypothesis 2. No direct effects of ESO, involvement and participative leadership style were found on performance.

The effects of psychological ownership can be found to be both functional and dysfunctional; they may increase commitment, job satisfaction, citizenship and (assumed) company performance or, on a negative note, lead to dysfunctional territorial actions. Introducing ESO in combination with the organisational settings could counteract such dysfunctional effects by creating an economic incentive to reduce the dysfunctional behaviour triggered by psychological ownership. The paper argues that the expected positive effects on employee attitudes will increase company performance.

The findings suggest that ESO, involvement of middle managers in strategy and a participative leadership style have no effect on company performance per se but only an indirect effect through the creation of psychological ownership. This indicates that earlier reported positive effects of ESO (reduced agency costs or slack) and participation in strategy processes (increased information sharing, innovations, easier strategy implementation) can be argued to be effects of the creation of psychological ownership and increased commitment, job satisfaction and loyalty. These findings challenge our understanding of involvement as a determinant of company performance and suggest that involvement needs to be combined with other actions supporting the creation of psychological ownership. Since involvement in itself can lead to increased job motivation as well as foot-dragging and bureaucracy, an increased understanding of how to motivate employees to participate in strategy processes and to do so in the core interest of the company is pertinent. This study reveals that an increased focus on how to create psychological ownership and the related individual differences is highly warranted. Since psychological ownership has been proven to be a significant strong predictor

of company performance (increasing performance with 12%), a key research area in the new decade would be to investigate how to create, increase and maintain psychological ownership.

Implications for research

The present study suggests that the effect of a participative leadership style supporting middle management involvement in strategy processes is mediated by the creation of psychological ownership and it thereby increases our knowledge about the micro level effects of middle management involvement. The effect of involvement can be seen on information sharing, implementation and innovation alike, but without the creation of psychological ownership, the commitment and citizenship behaviour of middle managers will be lower and the performance effect similarly reduced. The argument that involvement per se increases company performance needs to be re-evaluated and research on middle management involvement needs to combine involvement with other initiatives that support the creation of psychological ownership. The possible downsides of involvement and autonomy addressed in the agency theory, e.g., slack, inefficient decision structures and sub-optimisation, can be addressed by combining an economic incentive like ESO, a leadership style that encourages and supports involvement and autonomy and an increased focus on the creation of psychological ownership in the pursuit of commitment, citizenship and loyalty among middle managers.

Especially in our increasingly dynamic world, one must bear in mind the vital importance of responsiveness, innovativeness and commitment enhanced by the creation of psychological ownership. Additionally, the importance of management attitudes toward involvement needs to be addressed to

investigate the relationship between leadership style and perceived involvement and how attitudes on different areas of involvement, autonomy, innovations and trial and error produce different effects on the creation of psychological ownership.

Implications for practice

The paper suggests that managers need to increase their focus on the creation of psychological ownership in the attempt to create commitment and willingness to be involved and enhance company performance. Especially the effect of management attitudes towards involvement underpins the importance of not only creating an organisational setting that allows for involvement and autonomy, but to combine it with incentives like ESO and to focus on the creation of psychological ownership. The setting needs to be complemented by management attitudes that not only accept involvement, but support, encourage and expect involvement, autonomy and idea testing from the middle managers. The significant effect of psychological ownership on company performance and the major effect reported in this analysis suggest that psychological ownership could be one of the most important factors in the creation of improved company performance.

The paper also indicates that creating a formal ownership in itself through an ESOP has no effect on company performance, whereas introducing ESO in combination with participation has the potential to increase psychological ownership and thereby increase company performance. It can also be seen that the more people that are covered by the ESO scheme, the higher is the effect, suggesting that psychological ownership must be developed throughout the organisation and not only among a few key employees.

Limitations and future research

Qualifying the conclusions, the present study suffers from a number of limitations. While the survey in this study is cross-sectional, an analysis of individual sectors facing different dynamics and different educational levels among employees might foster different or more refined results. Simultaneously, while this study only investigates the effect of psychological ownership among top and middle managers, the effect of ESO and leadership style on the creation of psychological ownership on different organisational levels would enrich our understanding of the concept and allow us to investigate both the determinants and the effects of different factors.

The paper finds a positive effect of ESO in terms of the creation of psychological ownership mediated by participation in general, but refrains from testing if different incentive effects can be recognised among listed and unlisted companies and if the effect differs in bull and bear markets affecting employees' perception of risk. The study is limited to Danish companies and different effects could be expected in different countries and cultures due to different traditions of involvement, management attitudes and educational levels. The need for a longitudinal cross-country analysis which could shed fresh light on the effect in different sectors, different cultures and across different financial environments is highly warranted.

The study is based on only three respondents from both top and middle management; a wider analysis based on more respondents from each company would have strengthened the validity of the conclusions.

The findings call for future research on the motivational effects of ESO, middle management involvement and participative leadership style at the micro level. A better understanding of how different employees are motivated by different activities and how this motivation affects company performance will extend the tested model and enhance our knowledge. Similarly a better understanding of the different dynamics in different sectors will seem highly warranted.

CONCLUSIONS

The paper has tested the effect of ESO, involvement of middle managers in strategy and a participative leadership style on both performance and as determinants of psychological ownership. The analyses are based on a cross-sectional survey among 297 of the 500 largest Danish companies measured by number of employees.

The study is not successful in finding a direct effect of ESO, involvement of middle managers and a participative leadership style on performance. This suggests that despite a strong theoretical foundation supporting the potential positive effects of the concepts, the direct effects on performance are limited. In addition, the study finds that participation and a participative leadership style can be seen as determinants of psychological ownership and, as one of the first studies, it manages to quantify the effect of the different factors. ESO has been conceptualised as an antecedent of psychological ownership, but the effects seem to be mediated by participation, while autonomy had no mediating effect.

Thus, the paper enriches our understanding of the effects of ESO, involvement of middle managers in strategy and a participative leadership style by quantifying their effects on the creation of psychological ownership. Similarly, the findings highlight the importance of creating internalised extrinsic motivation in the form of psychological ownership to support the potential positive effects of involvement and ESO.

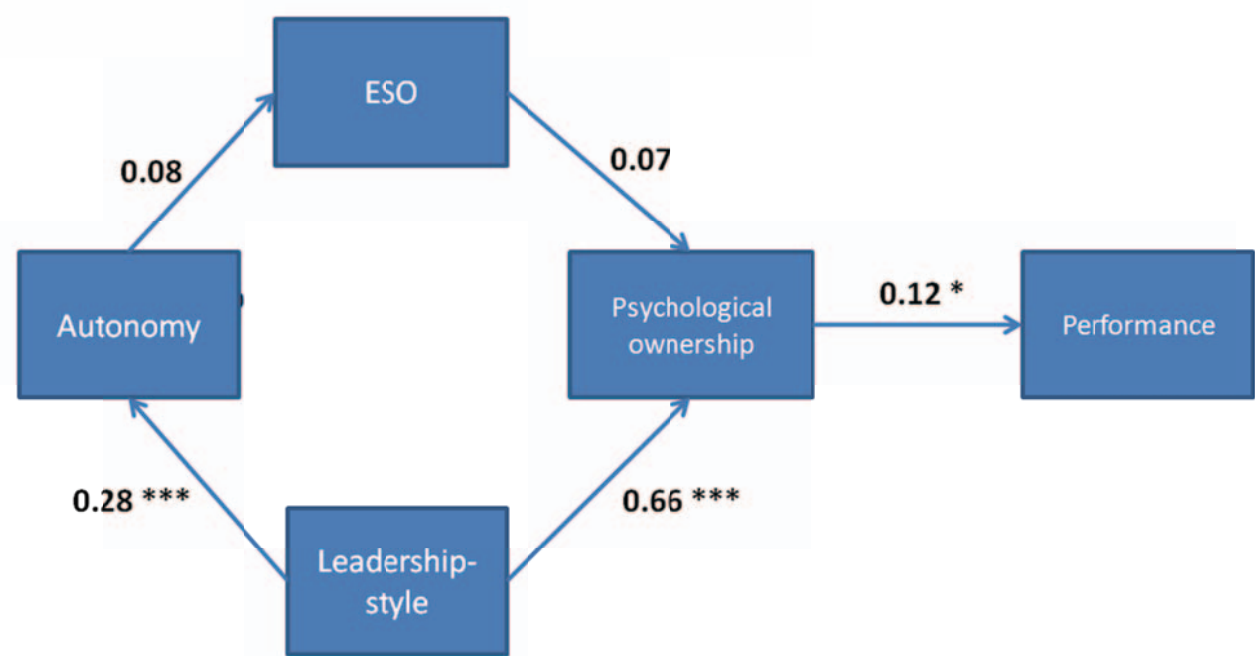
APPENDIX

TABLE 2A: DESCRIPTIVE STATISTICS AND CORRELATIONS CONSTRUCT LEVEL

Variable	Mean	SD	Min	Max	1	2	3	4	5	6	7
1 ROA 09	0,00	0,99	-4,84	3,49	1						
2 Participation	0,00	1,00	-3,30	1,89	,06	1					
3 Autonomy	0,00	1,00	-1,77	2,79	-,01	,49 ***	1				
4 Leadership style	0,00	1,00	-3,43	1,95	,06	,42 ***	,26 ***	1			
5 Psyc. Ownership	0,00	1,00	-4,15	1,57	,14 **	,40 ***	,20 ***	,61 ***	1		
6 ESO	0,00	1,00	-0,57	2,71	,13 **	,12 **	,07	,08	,12 **	1	
7 Tenure	9,28	6,67	0,10	35,00	,11 *	,07	,08	,13 **	,22 ***	,09	1

n = 297. Significance of correlations: *** *p* < .01; ** *p* < .05; * *p* < .10 (two-tailed test).

Figure 2A: Structural Equation Model (Autonomy)



As performance measure is used ROA 2009. All values are standardized betas.
Significance levels: *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$

6. Conclusion

This dissertation started out with the development of a model that combined the literature on employee stock ownership (ESO), middle management involvement in strategy and participative leadership style with the motivational theory of psychological ownership and self-determination theory. The model is based on the recognition that despite a strong theoretical foundation explaining the potential positive effects of ESO, middle management involvement in strategy and participative leadership style, the empirical findings are more diverse and inconclusive. Additionally, the literature review revealed that the performance effects of the three concepts all seem to be mediated by internalised extrinsic motivation in the form of psychological empowerment, organisational citizenship behaviour or psychological ownership. This raised the question of whether the potential positive effects of the three concepts were prompted by their potential motivational effects and whether reduced agency costs, better strategy implementation, enhanced information sharing and more innovation similarly were the effects of the increased motivation. If this indeed was the case, future research in the three areas should have a stronger focus on not only the motivational effects of the individual concepts, but also the combined motivational effects of ESO, middle management involvement and participative leadership style.

This recognition inspired me to look into the literature on motivational theory, especially in the areas of psychological ownership and self-determination theory. Analysing these research streams, a number of similarities with the findings on ESO, middle management involvement and participative leadership style were discovered. Within motivational theory, formal ownership, involvement and participative leadership style were seen as determinants of psychological ownership, and psychological ownership

was found to be the root of a number of improved employee behaviour and attitudes. A number of studies have investigated the effects on employee attitudes and behaviours, while tests of the effect on company performance were limited.

Based on these findings, I developed my model that claimed that ESO, middle management involvement in strategy and a participative leadership style all were determinants of psychological ownership and that they all were interrelated. The model also combined a number of findings from the middle management and motivational literature to include worker and job characteristics as moderators of the creation of psychological ownership, and knowledge intensity and environmental dynamism as moderators of the performance effect. The model suggested raised a number of propositions that needed further analysis and empirical testing. A number of these propositions have been tested in this dissertation, while others are to be tested in the future. The dissertation tests the main relationships in the model, while potential mediating effects, sector, cultural dynamics and a deeper understanding of the motivational effects at the individual level are left to future research. The findings and implications of the dissertation will be discussed in the next section while future research is addressed in the end of this chapter.

The three empirical chapters address three key areas of the model. The first empirical chapter tests the prevalence and antecedents of employee stock ownership. This to investigate if the prevalence, as reported in other countries, has declined despite a growing need for commitment and increased responsiveness in a globalised dynamic world. Similarly, the chapter investigates the characteristics of the companies employing different ESO schemes to test if the companies employing ESO are the companies with the highest expected effect of the scheme. The second empirical chapter tests the determinants of psychological ownership. This chapter quantifies the effects of ESO, middle

management involvement in strategy and a participative leadership style on the creation of psychological ownership. Additionally, the chapter tests the indirect and interaction effects of the three concepts. The last empirical chapter investigates the performance effect of psychological ownership and tests if the effect of ESO, middle management involvement and participative leadership style is merely indirect through the creation of psychological ownership or if any direct effect on performance can be found.

Since 2000, the prevalence of ESO in Denmark has increased from 21% to 35% of all companies employing some kind of ESO scheme. This suggests that companies are becoming increasingly aware of the potential positive effects of ESO on commitment and effort. A closer look on the figures shows that while the narrow-based schemes covering less than 50% of the employees have increased from 6% to 25% of the companies, broad-based schemes have declined from 15% to 10%. This presents two possible scenarios: 1) ESO may be seen as merely a salary item with some tax benefits or 2) the general view among companies may be that only a limited number of key employees need to be motivated or get motivated by an ESOP. The paper also contributed by reporting that the antecedents of ESO employing companies depend on the type of ESO scheme. That is, companies with schemes covering only top management are small companies with a traditional view on management and strategy as a top management task focusing on centralised planning and individual bonuses, whereas companies with broad-based schemes more often used group-based bonuses. These findings oppose the arguments in the incentive literature which indicate a need for combining broad-based incentives with individually focused incentives. This would suggest that companies with narrow-based schemes should complement this individual incentive with group-based schemes, while companies with broad-based ESO schemes should complement the scheme with individual bonuses. The chapter also reported a higher prevalence

of ESO in the construction sector and a significant lower prevalence in the information and telecommunication sector; no higher prevalence was reported in the finance sector when adjusting for stock listing. This is surprising since the prevalence would be expected to be high in dynamic industries with highly educated and highly paid employees like IT and finance and low in a stable sector with relatively low educated employees like construction.

As indicated in the theoretical model, ESO, involvement of middle managers in strategy and participative leadership style were all expected to be determinants of psychological ownership and foreseen to affect and enhance each other. In chapter four, these relationships were tested and quantified. Leadership style and participation were found to be determinants of psychological ownership, with leadership style as the most influential factor. Leadership style also had an indirect effect mediated by participation suggesting that the leadership style conducted has a strong influence on the level of participation. ESO has been conceptualised by Pierce et al. (1991) as a determinant and some scholars have argued that the effect is mediated by involvement. ESO only had an indirect effect on psychological ownership mediated by participation. This suggests that ESO in itself has no motivating effect but needs to be combined with ownership expectations such as influence on the company. When testing the effects of autonomy, the findings were less conclusive. Leadership style was still a strong and significant determinant of psychological ownership and it had a strong influence on the level of autonomy. However, this effect was less pronounced than the effect on participation. Autonomy was not found to be a determinant of psychological ownership, which was surprising since it was expected that autonomy would be perceived as having an even stronger influence on the company and being met with trust from top management. This could suggest that autonomy in its wake might bring a narrow focus on a task, department or a division and alienation from the rest of the company,

ultimately eroding the sense of ownership. Alternatively, the potential effect of autonomy on company performance might be generated, not through an effect on the creation of psychological ownership, but through dynamic interaction effects moderating the effect of psychological ownership on company performance.

A number of studies have set out to investigate if any direct effect of ESO, middle management involvement in strategy, participative leadership style and psychological ownership on performance can be said to exist. Chapter five tested if the three concepts had any direct effect on performance or if the effect was mediated by psychological ownership. If the latter was the case, it would underline the argument in the theoretical model stating that the effect of the three models might be triggered by their motivational effect and not directly by the reduced agency costs, better strategy implementation or increased innovativeness. The tested models supported this by reporting that no direct effect of the three concepts was found and that psychological ownership had a strong impact on company performance.

The dissertation has developed a theoretical model that implies that ESO, middle management involvement in strategy and participative leadership style are interrelated and influence company performance through their impact on the creation of psychological ownership. This coherence is empirically tested and the effects and interrelations have been tested and quantified. Additionally, it is reported that despite the fact that the effect of ESO was expected to be higher in dynamic industries with highly educated and paid employees, the prevalence seems to be higher in construction and lower in IT and telecommunication. The overall relationships in the model seem to be supported by the dissertation; the model and the findings, however, also spotlight a number of questions and

consequences that need to be further tested. These future research areas will be discussed in the next section.

Implications for research

The dissertation highlights the need for a better understanding of how employees and especially middle managers are motivated at the individual level. The findings indicate that ESO, a participative leadership style and involvement of middle managers in strategy are mediated by individual-level internalised extrinsic motivation. Similarly, the three concepts seem to be interrelated, calling for more research combining the three areas to better understand how this interrelation affects the creation of psychological ownership.

The conclusion that different types of companies apply different kinds of ESO schemes calls for a better understanding of the motives underlying the choice of scheme. The changes in the prevalence of different types of schemes might indicate that companies develop from applying narrow schemes to applying more broad-based schemes. Analyses of the effects of external settings like financial climate or national legislation on the prevalence of the different types of schemes also need a stronger focus. Additionally, a better understanding of the effect of the different ESO schemes on company performance in the different types of companies will enhance our knowledge of the “best” type of scheme. It can be argued that the importance of motivating only key employees might be high in some types of companies, while others are able to achieve the highest performance effect by including and hopefully motivating the majority of employees in the scheme.

Underpinning the importance of psychological ownership, a better understanding of how to measure the concept is highly warranted. This includes definitions of the different components of psychological ownership and a conceptualisation and measurement of the importance of the different components. If the expected effects of middle management involvement, such as better strategy implementation, more innovations and enhanced information sharing, are mediated by psychological ownership, it is necessary to pinpoint what is caused by involvement and what is caused by increased motivation. It could be argued that these and a number of similar positive effects, like reduced agency costs or increased strategic responsiveness, are results of internalised extrinsic motivation unlocking the employees' potential to *"be inspired, striving to learn, extend themselves, master new skills and apply their talents responsibly"*. According to SDT, this potential is released by internalised extrinsic motivation in the form of psychological ownership.

The creation of psychological ownership among middle managers can be expected to increase not by the level of involvement, but by the perceived level of involvement. This perception is created by expectations, cultures and specific organisational settings and an understanding of how these expectations, cultures and settings are created is called for.

Implications for practice

The dissertation implies that managers should increase the focus on how to motivate their employees. The findings suggest that companies planning on introducing ESO, involving middle managers in strategy or redefining their leadership style must take into account how the different activities will influence the motivation among their employees. In particular, they should focus on the leadership style

conducted. Some top managers might think that by allowing employees to gain formal ownership through an ESOP or by allowing middle managers to become involved in strategy processes, the employees would automatically become motivated and involved in the best interest of the company. This seems not to be the case and the effect of these activities on the creation of psychological ownership has been found to be less than the effect of the leadership style conducted.

An increased focus on how to create psychological ownership among employees seems necessary on account of its significant effect on company performance. The significant direct effect of psychological ownership underpins that motivation and the concept of psychological ownership are two of the most important factors in the creation of enhanced company performance.

The effect of incentives like ESOPs has been argued to be weak due to a low level of controllability at lower organisational levels and a traditionally low economic importance. Conversely, ESO has been argued to reduce distortion effects caused by multiple tasks with different levels of measurability. This suggests that companies with narrow-based ESO schemes should complement the scheme with group-based bonuses, while companies with broad-based ESO schemes should complement the scheme with individually based incentives. Findings suggest that companies tend to do the opposite which highlights the need for a stronger focus on how employees are motivated through incentives and whether or not the incentives applied support the activities wanted by the company or only part of them.

FUTURE RESEARCH

The model tested in this dissertation has advanced the argument that ESO, middle management involvement in strategy and a participative leadership style influence performance through their

potential effect on the creation of internalised extrinsic motivation in the form of psychological ownership. This raises the question of how different types of employees are motivated by the three factors. It can also be discussed if the motivational effect of especially ESO depends on the climate on the financial markets seeing that it affects the risk averseness of the employees. In the motivational literature, different elements of involvement and leadership style have influenced employees differently and a better understanding of the effects on the individual level is highly warranted.

The empirical part of the dissertation is based on three responses from each company and an analysis based on more responses from each company might have strengthened the reliability of the analysis. Furthermore, some of the dissertation results indicate that there is a difference between the perceptions of top and middle managers regarding the level of involvement, the leadership style employed and the sense of ownership, and this raises the question of who to ask to get the best proxy for the level of involvement and the leadership style conducted.

The expected mediating effects on the creation of psychological ownership and job and worker characteristics also call for an analysis that would enhance our knowledge. Similarly, the expected moderating effects of psychological ownership on company performance, knowledge intensity and environmental dynamism call for future research. The model predicts the existence of a direct effect between psychological ownership and company performance and that effect has been empirically tested in the dissertation. The model, however, also argues that psychological ownership enhances a number of positive employee behaviours and attitudes and an analysis of any mediating or moderating effects of these behaviours and attitudes on company performance could enrich our understanding of the effects.

The empirical part of the dissertation is based on a cross-sectional survey among Danish employees. A more longitudinal analysis would enrich our understanding of the relationships and increase the possibility of testing causality in the relationships. Based on a Danish sample, the findings cannot automatically be expected to apply to other countries with other types of employees and other traditions and cultures regarding involvement and leadership styles. This research therefore calls for future testing of the model in other cultures to better understand how employees are motivated by the three concepts and how the concepts influence the creation of psychological ownership and company performance.

The dissertation also finds significant differences between middle management participation in strategy and middle management autonomous strategic actions, indicating that how motivation and the sense of ownership are influenced by different kinds of involvement should be further explored.

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APPENDIX

Questionnaire CFO⁷

Company number (CVR No.): _____ How many years have you been employed in the company: _____

1: Does more than one employee own shares in the company (incl. the CEO)? (The board is not included)
(If no, please go to question No. 4).

Yes		No	
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2: Which employee groups own shares in the company? (In listed companies, only main share owners and shares sold through an ESOP should be included).

	None	Some	Half	Majority	All
a. Top management					
b. Middle management					
c. Employees without management responsibility					

3. How large a share of the company is owned by the different employee groups? (In listed companies, only main share owners and shares sold through an ESOP should be included).

	Ownership share
a. Top management	
b. Middle management	
c. Employees without management responsibility	

4. How often are middle managers (managers below top management) participating in the following strategic decisions? (Included in making the decision, not only the implementation).

	Never		Sometimes				Always	
Activities aiming at enhancing market position	1	2	3	4	5	6	7	
Sales to new segments or markets	1	2	3	4	5	6	7	
Development of important new products	1	2	3	4	5	6	7	
Development of new competencies	1	2	3	4	5	6	7	
Development of new policies and routines	1	2	3	4	5	6	7	

5. How often are middle managers (managers below top management) autonomously (without prior acceptance by top management) able to make the following decisions?

	Never		Sometimes				Always	
Activities aiming at enhancing market position	1	2	3	4	5	6	7	
Sales to new segments or markets	1	2	3	4	5	6	7	
Development of important new products	1	2	3	4	5	6	7	
Development of new competencies	1	2	3	4	5	6	7	
Development of new policies and routines	1	2	3	4	5	6	7	

6. Please indicate how often your middle managers (to the best of your knowledge) spend time on the following activities:

	Never		Sometimes				Always	
Pay attention to market trends, new technologies etc. that are no part of my daily work but that might be important for the firm.	1	2	3	4	5	6	7	
Wonder how business and the firm's strategic position can be improved through offering new products to new markets/-segments.	1	2	3	4	5	6	7	
Look for opportunities outside the firm's current activities.	1	2	3	4	5	6	7	

⁷ Original scale in Danish. Translated by the author.

Look for innovative techniques that might open up new business opportunities outside what the firm currently does.	1	2	3	4	5	6	7
Develop action plans for how business opportunities in new markets currently not served by the firm can successfully be implemented into the firm's activities.	1	2	3	4	5	6	7
Convince key persons to support an idea on how to capitalize on a business opportunity that is currently outside the official strategy.	1	2	3	4	5	6	7
Mobilize support on the part of upper level managers for selling/producing innovative products to an originating new market.	1	2	3	4	5	6	7
Search for more resources outside regular budgeting processes in order to get and keep initiatives for offering new products to a new markets going.	1	2	3	4	5	6	7
Work on setting the stage for a change in the official strategy by top-management, so that it comprises offering new products to a new market/-segment outside what the firm has been doing so far.	1	2	3	4	5	6	7
Form coalitions inside the firm in order to rally support and approval for going with a new product into an unfolding market/-segment.	1	2	3	4	5	6	7
Study possibilities for increasing sales of existing products within currently served markets.	1	2	3	4	5	6	7
Generate ideas for how the firm can improve its competitive position in the existing markets.	1	2	3	4	5	6	7
Explain and sell the firm's strategy to colleagues and subordinates.	1	2	3	4	5	6	7
Develop ideas for new products/services for the firm's existing markets.	1	2	3	4	5	6	7

7. Does the company make use of economic incentives to employees who develop important new ideas?

	Yes	No
Individual economic incentives		
Group based incentives/profit sharing		
Other economic incentives (Gifts, travels etc.)		

8. How would the following situation affect company production?

	Status quo or increase	5% decline	10% decline	15% decline	20% decline or more
<i>10% of all people were unavailable in the next year due to, for example, a sickness.</i>					
Top management requires the firm to reduce all costs to be reduced by 10 %.					

10. Please indicate to what extent the company attaches importance to the following activities:

	No importance				High importance			
Development of company mission	1	2	3	4	5	6	7	
Long-term plans (3-5 years)	1	2	3	4	5	6	7	
Annual goals (sales, efficiency, market share etc.)	1	2	3	4	5	6	7	
Short-term action plans (campaigns, short-term projects etc.)	1	2	3	4	5	6	7	
Evaluation of the company's strategic objectives	1	2	3	4	5	6	7	
Budgets	1	2	3	4	5	6	7	
Calculation of scenarios and risk analyses	1	2	3	4	5	6	7	
Calculation of financial goals to increase shareholder value (e.g. Economic Value Added, cash flows etc.)	1	2	3	4	5	6	7	
Balanced scorecard (or a similar instrument measuring performance)	1	2	3	4	5	6	7	
Identification and focus on competitive parameters (price, quality, flexibility, service, design, innovation etc.) constituting the foundation of the company model	1	2	3	4	5	6	7	

Formalised follow-up on investments (costs, profit, deviations)	1	2	3	4	5	6	7
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11. Please indicate to what extent you agree with the following statements about top management:

	Totally disagree			Totally agree			
They actively seek managers' opinions and ideas on strategic issues.	1	2	3	4	5	6	7
They are open to new ideas and initiatives from all members in the organization.	1	2	3	4	5	6	7
They appreciate if middle and first-line managers experiment with new ideas and products.	1	2	3	4	5	6	7
They ensure that the interests of middle and front-line managers are considered when making strategic decisions.	1	2	3	4	5	6	7
They expect managers to precisely follow top-management's decisions and instructions.	1	2	3	4	5	6	7
They accept and openly stress their awareness for the fact that the majority of new initiatives and products will turn out not to be economically successful.	1	2	3	4	5	6	7

12. Please indicate to which degree you agree with the following "sense of ownership" to the company:

	Totally disagree					Totally agree	
I feel that this is MY company	1	2	3	4	5	6	7
The majority of employees feel that this is OUR company	1	2	3	4	5	6	7
I feel an ownership to and responsibility for the development of the company	1	2	3	4	5	6	7
I find it hard to think about this as MY company	1	2	3	4	5	6	7

I would like to receive newsletters informing about the results of the survey: Email: _____

Questionnaire to head of marketing

Company number (CVR No.): _____ How many years have you been employed in the company: .

1. Please indicate to what extent you agree that the following statements describe the official company strategy:

	Totally disagree				Totally agree			
	1	2	3	4	5	6	7	
Achieving cost leadership (i.e. achieve low cost relative to competitors).								
Differentiate our products/services from those of our competitors (e.g. by superior product features, quality, customer service, speed of service, responsiveness to/flexibility in accommodating specific customers' wishes) allowing to command a price premium.	1	2	3	4	5	6	7	
Being the first to introduce significantly new products/services or to go into a newly evolving market/market segment.	1	2	3	4	5	6	7	
Increasing our market share in the markets/market segments that we currently serve.	1	2	3	4	5	6	7	
Developing new markets/market segments (note: market does not relate to geography)	1	2	3	4	5	6	7	
Diversifying with entirely new products/services into new/newly unfolding markets	1	2	3	4	5	6	7	
Maximize returns from our currently served markets/market segments, potentially at the expense of market share.	1	2	3	4	5	6	7	

2. How often do middle managers (managers below top management) and front line managers (managers below middle managers) participate in the following strategic decisions? (Included in making the decisions, not only the implementation).

	Middle managers							Front line managers						
	Never		Sometimes			Always		Never		Sometimes			Always	
Activities aiming at enhancing market position	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Sales to new segments or markets	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Development of important new products	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Development of new competencies	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Development of new policies and routines	1	2	3	4	5	6	7	1	2	3	4	5	6	7

3. How often are middle managers (managers below top management) and front line managers (managers below middle managers) autonomously (without prior acceptance by top management) able to make the following decisions?

	Middle managers							Front line managers						
	Never		Sometimes			Always		Never		Sometimes			Always	
Activities aiming at enhancing market position	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Sales to new segments or markets	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Development of important new products	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Development of new competencies	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Development of new policies and routines	1	2	3	4	5	6	7	1	2	3	4	5	6	7

4. Please indicate to what extent you agree with the following statements about the company:

	Totally disagree				Totally agree			
	1	2	3	4	5	6	7	
There are many activities and processes that are not covered by some formal procedure.								
Often existing rules are ignored and informal agreements are reached to handle some situations.	1	2	3	4	5	6	7	
Communication between different hierarchical levels and/or functional areas is commonly in a formal manner and/or in writing.	1	2	3	4	5	6	7	
Planning processes are written down in detail	1	2	3	4	5	6	7	

Within planning we use extensive rules about timeline, content, size and form of documents.	1	2	3	4	5	6	7
Offering new products/services requires to go through formal communication channels first.	1	2	3	4	5	6	7
There are many internal policies and procedures with which one must comply in initiating or maintaining a new product/service offering in the firm.	1	2	3	4	5	6	7
All initiatives for new products or services are subject to extensive review to determine their financial feasibility ex ante.	1	2	3	4	5	6	7
Senior executives closely monitor financial performance of different new product/service offerings.	1	2	3	4	5	6	7
New initiatives are mainly judged and tracked based on non-financial criteria like e.g. contribution to brand perception, customer satisfaction, social or environmental issues.	1	2	3	4	5	6	7

5. Please indicate how often your front line managers (managers below middle managers) spend time on the following activities:

	Never		Sometimes			Always	
Pay attention to market trends, new technologies etc. that are no part of my daily work but that might be important for the firm.	1	2	3	4	5	6	7
Wonder how business and the firm's strategic position can be improved through offering new products to new markets/-segments.	1	2	3	4	5	6	7
Look for opportunities outside the firm's current activities.	1	2	3	4	5	6	7
Look for innovative techniques that might open up new business opportunities outside what the firm currently does.	1	2	3	4	5	6	7
Develop action plans for how business opportunities in new markets currently not served by the firm can successfully be implemented into the firm's activities.	1	2	3	4	5	6	7
Convince key persons to support an idea on how to capitalize on a business opportunity that is currently outside the official strategy.	1	2	3	4	5	6	7
Mobilize support on the part of upper level managers for selling/producing innovative products to an originating new market.	1	2	3	4	5	6	7
Search for more resources outside regular budgeting processes in order to get and keep initiatives for offering new products to a new markets going.	1	2	3	4	5	6	7
Work on setting the stage for a change in the official strategy by top-management, so that it comprises offering new products to a new market/-segment outside what the firm has been doing so far.	1	2	3	4	5	6	7
Form coalitions inside the firm in order to rally support and approval for going with a new product into an unfolding market/-segment.	1	2	3	4	5	6	7
Study possibilities for increasing sales of existing products within currently served markets.	1	2	3	4	5	6	7
Generate ideas for how the firm can improve its competitive position in the existing markets.	1	2	3	4	5	6	7
Mobilize support on the part of upper level managers for selling/producing innovative products to the currently served markets.	1	2	3	4	5	6	7
Explain and sell the firm's strategy to colleagues and subordinates.	1	2	3	4	5	6	7
Develop ideas for new products/services for the firm's existing markets.	1	2	3	4	5	6	7

6. Please indicate to what extent you agree with the following statements about top management:

	Totally disagree					Totally agree	
They actively seek managers' opinions and ideas on strategic issues.	1	2	3	4	5	6	7
They are open to new ideas and initiatives from all members in the organization.	1	2	3	4	5	6	7
They appreciate if middle and first-line managers experiment with new ideas and products.	1	2	3	4	5	6	7
They ensure that the interests of middle and front-line managers are considered when making strategic decisions.	1	2	3	4	5	6	7
They expect managers to precisely follow top-management's decisions and instructions.	1	2	3	4	5	6	7
They accept and openly stress their awareness for the fact that the majority of new	1	2	3	4	5	6	7

initiatives and products will turn out not to be economically successful.							
They monitor the economic performance of new products/services closely	1	2	3	4	5	6	7
They make detailed follow-ups on negative budget deviations (costs, profits)	1	2	3	4	5	6	7
They use the budget as a basis for performance evaluation and performance pay	1	2	3	4	5	6	7

7. Please indicate how the company has performed in the last 3 years compared to the sector in general:

	Significantly worse				Significantly better		
Cost control/cost reduction	1	2	3	4	5	6	7
Adept at taking advantage of new opportunities	1	2	3	4	5	6	7
Maintaining or improving profit (margin) on sales	1	2	3	4	5	6	7
Being able to sell company products/services at higher prices than competitors	1	2	3	4	5	6	7
Maintaining or improving gross profit on products compared to competitors	1	2	3	4	5	6	7
Better product/service functionality, delivery and/or quality	1	2	3	4	5	6	7
Profit measured as Return on Sales (ROS) (profit/turnover)	1	2	3	4	5	6	7
Overall success (financial as well as non financial) for the company as a whole	1	2	3	4	5	6	7
Sales of new products/services to existing customers	1	2	3	4	5	6	7
Increasing market shares	1	2	3	4	5	6	7
Sale of new products/services to new markets/segments	1	2	3	4	5	6	7
Number of new products/services introduced to existing markets/segments	1	2	3	4	5	6	7
Number of new products/services introduced to new markets	1	2	3	4	5	6	7

I would like to receive newsletters informing about the results of the survey: Email: _____

Questionnaire to middle manager

Company number (CVR No.): _____ How many years have you been employed in the company: ____

Sex (M/F): _____

1. How often are middle managers (managers below top management) participating in the following strategic decisions? (Included in making the decision, not only the implementation.

	Never			Sometimes			Always
Activities aiming at enhancing market position	1	2	3	4	5	6	7
Sales to new segments or markets	1	2	3	4	5	6	7
Development of important new products	1	2	3	4	5	6	7
Development of new competencies	1	2	3	4	5	6	7
Development of new policies and routines	1	2	3	4	5	6	7

2. How often are middle managers (managers below top management) autonomously (without prior acceptance by top management) able to make the following decisions?

	Never			Sometimes			Always
Activities aiming at enhancing market position	1	2	3	4	5	6	7
Sales to new segments or markets	1	2	3	4	5	6	7
Development of important new products	1	2	3	4	5	6	7
Development of new competencies	1	2	3	4	5	6	7
Development of new policies and routines	1	2	3	4	5	6	7

3. Please indicate to what extent you agree with the following statements about top management:

	Totally disagree agree						Totally
They actively seek managers' opinions and ideas on strategic issues.	1	2	3	4	5	6	7
They are open to new ideas and initiatives from all members in the organization.	1	2	3	4	5	6	7
They appreciate if middle and first-line managers experiment with new ideas and products.	1	2	3	4	5	6	7
They ensure that the interests of middle and front-line managers are considered when making strategic decisions.	1	2	3	4	5	6	7
They expect managers to precisely follow top-management's decisions and instructions.	1	2	3	4	5	6	7
They accept and openly stress their awareness for the fact that the majority of new initiatives and products will turn out not to be economically successful.	1	2	3	4	5	6	7

4. Please indicate to which degree you agree with the following "sense of ownership" to the company:

	Totally disagree agree						Totally
I feel that this is MY company	1	2	3	4	5	6	7
The majority of employees feel that this is OUR company	1	2	3	4	5	6	7
I feel an ownership to and responsibility for the development of the company	1	2	3	4	5	6	7
I find it hard to think about this as MY company	1	2	3	4	5	6	7

5. Please state how often YOU spend time on:

	Never			Sometimes			Always
convince key persons to support an idea on how to capitalize on a business opportunity that is currently outside the official strategy.	1	2	3	4	5	6	7

I would like to receive newsletters informing about the results of the survey: Email: _____

Descriptive statistics for the population and the sample

	Population	Sample
Number of companies	500	297
Average turnover 2009 (TDKK)	2,165,613	1,984,447
Average gross profit 2009 (TDKK)	458,994	466,301
Average net income 2009 (TDKK)	52,109	88,376
Average Equity 2009 (TDKK)	1,148,696	1,059,274
Average total balance 2009 (TDKK)	7,807,562	5,869,718
Average turnover growth 2008/2009 (%)	5.02	5.87
Number of listed companies	75	54
Sector 1	5	2
Sector 2	175	113
Sector 3	7	4
Sector 4	33	17
Sector 5	131	74
Sector 6	44	25
Sector 7	44	23
Sector 8	61	39

TITLER I PH.D.SERIEN:

– a Field Study of the Rise and Fall of a Bottom-Up Process

2004

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Internet-based Electronic Marketplaces and Supply Chain Management
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