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How to cite this publication
Please cite the final published version:


Publication metadata

Title: The Prevalence and Antecedents of Employee Stock Ownership in Denmark
Author(s): Simon S. Torp
Journal: Economic and Industrial Democracy
DOI/Link: 10.1177/0143831X14537355
Document version: Accepted manuscript (post-print)
The prevalence and antecedents of Employee Stock Ownership in Denmark

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Acknowledgements:
Financial support from Arhus University and Copenhagen Business School for collecting the field survey data is gratefully acknowledged.

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ABSTRACT

The article tests the prevalence and antecedent of ESO companies in Denmark. Based on a survey among the top 500 Danish companies, the article finds that the financial crisis has affected non-managerial workers willingness to invest in their company. While narrow based schemes covering only to-management has increased since 2000, the prevalence of broad-based schemes has declined. The article also finds that the antecedents of ESO companies are highly dependent on the type of ESOP. While companies with narrow-based schemes are smaller companies with a traditional view on strategy and planning and reluctance toward employee involvement, companies with broad based schemes are large, listed companies with a focus on employee involvement. Additionally the findings indicate that non-managerial workers are more reluctant to invest in their company if the company has volatile or low financial performance.

INTRODUCTION

The use of employee stock ownership has increased dramatically since the 1980s in the USA and the 1990s in the EU. 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 et. al., 2010). 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 often spurred by a desire to share wealth, increase equality and support democracy at the workplace and in society in general (Buchele et al., 2009; McCarthy et al., 2010). Companies might introduce ESO as a means to reduce agency costs by reducing slack or sub-optimisation, or by improving employee attitudes and thereby increasing company (Jone et. al., 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 et al., 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 is 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 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 in general, ESO schemes covering only top management (narrow schemes) 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 finding support studies suggesting that the private (non-professional) investor tend to buy shares when the rates are high and sell when they are low. This indicates that the non-managerial workers has a high risk of capital losses on the ESOP, which can cause a more reluctant attitude toward ESOP both specifically among the non-managerial workers who loses money and in society in general.

The findings also reveal that companies employing different kinds of ESO schemes have different types of antecedents. While stock listing is an antecedent of all types of ESO schemes often argued by 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. The top-management in these companies are less willing to involve middle managers and employees in general in strategic decisions and are often smaller companies with an above average historical financial performance. 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. They centralize decision-power and the findings seem to support that high historical financial performance seems to motivate top management to invest in the company. Based on an expected asymmetry of information this could suggest that top-management take advantage of their inside information to invest at an optimal time even though the direction of causality needs to be further tested.

Companies with broad-based ESOP are characterized by involvement of middle managers (and expected employees) in strategic decisions, which have been found to be a determinant of increased financial performance when introducing ESOP’s. 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. Beside the above mentioned organisational factors, broad-based schemes seems to be more prevalent in large companies and less prevalent in well performing companies in dynamic environments. The latter indicates that, either are companies not interested in introducing broad-based schemes in turbulent times even though it can be argued that it could increase motivation and commitment in difficult times reducing the potential negative effects, or employees in general are more reluctant to invest in the company in times of turbulence. This suggests a challenge in the introduction of ESOP’s if employees are only willing to invest in the company in stable, positive periods, since the need of aligning the interest of the employees and
motivating them to act in the best interest of the company is even more urgent in unpredictable periods.

The paper thereby contributes to our knowledge in a number of ways. It enhances our knowledge of the prevalence of different types of ESOP’s at the back of the financial crises. It highlights the need for a distinction between narrow and broad based ESOPs and show that the antecedents of the two types of ESOP are quite different.

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 intention 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 often to attract, keep and motivate 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 (Kabst et al., 2006; Pendleton et al., 2001; 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; Poutsma et al., 2006), listing (Pendleton et al., 2001), sector (Poutsma and Huijgen, 1999), union density (Cheadle, 1989; Festing et al., 1999; Kabst et al., 2006), workforce specialisation and skills (Kabst et al., 2006; Pendleton, 1997), age (Pendleton et al., 2001; Poole and Jenkings, 1990), participative organisations (FitzRoy and Kraft, 1987) and geographical market (Festing et al., 1999).

Firm size: Based on agency theory it is argued 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 (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. 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.

**Stock listing:** A number of studies have found a positive connection between stock listing and ESO (Kabst et al., 2006; Pendleton et al., 2001). 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, valuate 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.

**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 (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 Jenkings, 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 Jenkings (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 (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 et al. (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, 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 exiting inequalities of income and wealth” (Pendleton et al., 2001: page 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 management due to a greater willingness to participate among this 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 (Eisenhart, 1989; Pendleton, 2006) 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 (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; Jones et al., 1997; Kruse, 1996) 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 handle 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 (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 Jenkings (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, 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).

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). 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.

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 et al., 2004). 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 3c: 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 (Koebmandsstandens 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 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 et al. (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 is restricted to cover only top management, while a broad based scheme covers the majority of top and middle management and half the non-managerial workers.

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.

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.

Participative leadership style: Assessment of top management’s leadership style was based on Choi (2004). The instrument focuses specifically on the participatory leadership style – leaving aside other aspects of (a more broadly defined) leadership climate, such as individual work effort, work duration or the like. The resulting four-item measure asked the managers to rate the degree to which the top management was open to middle managers’ ideas and willing to let middle managers experiment with new concepts or products on a 7-point Likert scale (1=fully disagree, 7=fully agree).

Participation: 7-point Likert scales were used on three different activities in relation to which the middle managers could be involved in the strategic decisions (participation). The three items are
formerly used by Andersen (2004) and Andersen and Nielsen (2009) and have exhibited good quality. The factor had a Cronbach’s alpha of 0.880 and high factor loadings on all three items.

TABLE 2 AROUND HERE

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.

Historical financial performance: In companies performing well, the employees can be expected to be more willing to invest in the company. To be independent of different capital structures the average growth in gross-profit growth in the period 2005 – 2009 is applied.

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 three 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 three individual logistic regressions should be conducted. The four logistic regression models were prepared (model 1-3) with each of the three dependent variables, ESO, narrow-based top 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.

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TABLE 3 AROUND HERE

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The three 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. 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.

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TABLE 4 AROUND HERE

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While stock-listing in a number of articles has been reported as an antecedent of ESOP’s, our study reveals that despite a high significant effect in the general and broad model, stock listing was no significant antecedent of companies with narrow ESOP’s covering only top management. This underpin the importance of a distinction between different types of ESOP’s and that the general definition of ESO companies as a company with more than one employee owning shares in the company might not allow a deeper understanding of the characteristics of ESO companies.
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 entailing that hypothesis 2d is rejected.

Companies with narrow-based schemes covering only top management seems to place greater emphasis on centralised strategic planning and lack involvement of middle managers in strategic decisions, thereby supporting 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 to practice a culture, which focuses on involvement and empowerment by allowing middle managers to participate in strategic decisions and by practicing a participative leadership style. The findings suggest that despite an enhanced willingness to involve middle managers in strategic decisions the conducted leadership style fail to support and encourage involvement.

Four interaction effects were tested in model 1a-3a to test the interactions between different incentives, 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 both the financial markets in general and the volatility in company performance 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 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 highlights the need for a distinction between different types of ESOP’s. While narrow based schemes covering only top management seems to be characterized by smaller companies conducting a traditional centralized management style, the companies with broad based ESOP’s covering more than 50 % of the employees, puts more emphasis on involving middle managers and consequently all employees in strategic decisions, combine the ESOP with group bonuses and are often large and stock listed companies.

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; Mathieu, 2009; Pendleton, 1997; Pendleton et al, 2001; PEPPER II) showed large diversification between countries and regions, suggesting that the antecedents found in this study may only be valid in terms of the Danish marked 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, also supported by the finding that low historical financial performance and volatility in performance seems to hamper non-managerial workers willingness to invest in the company through an ESOP. The paper also increases our knowledge on the antecedents of ESO employing companies, highlighting that the antecedents depend largely on the type of ESO scheme applied, by testing the antecedent of both narrow based schemes covering only top management and broad based schemes covering more than 50% of the employees.

Multiple evidences favours the view, that the effect of ESO is mediated by involvement of employees in decision-making, the study reveals that only companies with broad based schemes seems more willing to allow middle managers to participate in strategic decisions, while companies with narrow based schemes seems more reluctant to involve middle managers. 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.
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TABLE 1: SECTORS BASED ON NACE CODES

<table>
<thead>
<tr>
<th>Sector</th>
<th>Sector number</th>
<th>NACE codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw material</td>
<td>1</td>
<td>0100 - 0999</td>
</tr>
<tr>
<td>Production</td>
<td>2</td>
<td>1000 - 3400</td>
</tr>
<tr>
<td>Electricity and supply</td>
<td>3</td>
<td>3500 - 3999</td>
</tr>
<tr>
<td>Construction</td>
<td>4</td>
<td>4000 - 4499</td>
</tr>
<tr>
<td>Transport</td>
<td>5</td>
<td>4500 - 5499</td>
</tr>
<tr>
<td>Information and telecom</td>
<td>6</td>
<td>5500 - 6399</td>
</tr>
<tr>
<td>Financial services</td>
<td>7</td>
<td>6400 - 6899</td>
</tr>
<tr>
<td>Service sector</td>
<td>8</td>
<td>6900 - 8399</td>
</tr>
<tr>
<td>Public companies</td>
<td>9</td>
<td>8400 - 8999</td>
</tr>
</tbody>
</table>

TABLE 2: FACTOR LOADINGS AND RELIABILITIES

<table>
<thead>
<tr>
<th>Dimensions and variables</th>
<th>n</th>
<th>Cronbach’s alpha</th>
<th>Extracted variance</th>
<th>Factor loadings</th>
</tr>
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<tbody>
<tr>
<td>Planning</td>
<td>238</td>
<td>0.753</td>
<td>67.07%</td>
<td></td>
</tr>
<tr>
<td>Formulating company mission</td>
<td></td>
<td>0.812</td>
<td></td>
<td></td>
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<tr>
<td>Defining financial goals</td>
<td></td>
<td>0.788</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluating strategic goals</td>
<td></td>
<td>0.855</td>
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<td></td>
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<td>Leadership style</td>
<td>238</td>
<td>0.85</td>
<td>69.05%</td>
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<tr>
<td>Top management actively seeks MM opinions and ideas on</td>
<td></td>
<td>0.872</td>
<td></td>
<td></td>
</tr>
<tr>
<td>strategic issues</td>
<td></td>
<td>0.835</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top management are open to new ideas and initiatives from</td>
<td></td>
<td>0.773</td>
<td></td>
<td></td>
</tr>
<tr>
<td>all employees</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top management appriciate that MM experiments with new</td>
<td></td>
<td>0.841</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ideers and products</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top management ensure that the interest of MM are</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>considered when making strategic decisions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation in decisions (MM participate in the decisions of)</td>
<td>238</td>
<td>0.880</td>
<td>81.49%</td>
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<tr>
<td>Activities aiming at enhancing market position</td>
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<td>0.927</td>
<td></td>
<td></td>
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<tr>
<td>Sales to new segments or markets</td>
<td></td>
<td>0.942</td>
<td></td>
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<tr>
<td>Development of important new products</td>
<td></td>
<td>0.836</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TABLE 3: DESCRIPTIVE STATISTICS AND CORRELATIONS

| Variable                  | Mean | SD  | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   |
|---------------------------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Raw material              |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Production                |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Electricity and supply    |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Construction              |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Transport                |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Information and telecom |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Financial services        |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Service sector           |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Public companies         |      |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

n = 238. Significance of correlations: *** p < .01; ** p < .05; * p < .1 (two-tailed test).
**TABLE 4: LOGISTIC REGRESSION**

<table>
<thead>
<tr>
<th>Dimensions and variables</th>
<th>B</th>
<th>Wald test</th>
<th>B</th>
<th>Wald test</th>
<th>B</th>
<th>Wald test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed</td>
<td>2.145 ***</td>
<td>23.657</td>
<td>0.447</td>
<td>0.606</td>
<td>2.423 ***</td>
<td>13.281</td>
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<tr>
<td>Dynamism</td>
<td>-0.146</td>
<td>1.220</td>
<td>-0.341</td>
<td>1.259</td>
<td>-1.908 **</td>
<td>4.173</td>
</tr>
<tr>
<td>Age</td>
<td>0.003</td>
<td>0.410</td>
<td>0.008</td>
<td>2.354</td>
<td>-0.004</td>
<td>0.337</td>
</tr>
<tr>
<td>Size</td>
<td>-0.199</td>
<td>1.000</td>
<td>-0.918 ***</td>
<td>8.651</td>
<td>0.813 **</td>
<td>5.264</td>
</tr>
<tr>
<td>Historic performance</td>
<td>0.083</td>
<td>2.554</td>
<td>0.203 *</td>
<td>2.889</td>
<td>-0.680 *</td>
<td>3.717</td>
</tr>
<tr>
<td>Sector 2</td>
<td>-0.208</td>
<td>0.127</td>
<td>-0.164</td>
<td>0.050</td>
<td>-0.656</td>
<td>0.338</td>
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<td>Sector 3</td>
<td>-19.593</td>
<td>0.000</td>
<td>-19.072</td>
<td>0.000</td>
<td>-382.793</td>
<td>0.002</td>
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<tr>
<td>Sector 4</td>
<td>1.109</td>
<td>2.132</td>
<td>1.086</td>
<td>1.487</td>
<td>0.293</td>
<td>0.044</td>
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<td>Sector 5</td>
<td>0.079</td>
<td>0.017</td>
<td>-0.368</td>
<td>0.234</td>
<td>-0.051</td>
<td>0.002</td>
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<tr>
<td>Sector 6</td>
<td>-1.110</td>
<td>1.867</td>
<td>-1.116</td>
<td>1.147</td>
<td>-2.982</td>
<td>0.598</td>
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<td>Sector 7</td>
<td>-0.539 *</td>
<td>0.451</td>
<td>-20.145</td>
<td>0.000</td>
<td>1.162</td>
<td>0.791</td>
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<tr>
<td>Bonus_individual</td>
<td>0.300 *</td>
<td>3.118</td>
<td>0.409 *</td>
<td>3.408</td>
<td>-0.418</td>
<td>1.463</td>
</tr>
<tr>
<td>Bonus_Group</td>
<td>0.221</td>
<td>1.723</td>
<td>-0.046</td>
<td>0.045</td>
<td>0.765 **</td>
<td>4.557</td>
</tr>
<tr>
<td>Participation</td>
<td>-0.661</td>
<td>0.119</td>
<td>-0.487 **</td>
<td>5.169</td>
<td>0.893 **</td>
<td>4.345</td>
</tr>
<tr>
<td>Leadership style</td>
<td>0.001</td>
<td>0.000</td>
<td>0.090</td>
<td>0.178</td>
<td>-0.615 *</td>
<td>2.835</td>
</tr>
<tr>
<td>Planning</td>
<td>0.320 *</td>
<td>3.084</td>
<td>0.590 **</td>
<td>5.585</td>
<td>0.058</td>
<td>0.029</td>
</tr>
</tbody>
</table>

**Chi-square**

<table>
<thead>
<tr>
<th>N</th>
<th>238</th>
<th>238</th>
<th>238</th>
</tr>
</thead>
<tbody>
<tr>
<td>d.f.</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Significance</td>
<td>0.000</td>
<td>0.001</td>
<td>0.000</td>
</tr>
<tr>
<td>Nagelkerne R2</td>
<td>0.288</td>
<td>0.259</td>
<td>0.503</td>
</tr>
<tr>
<td>Cox &amp; Snell R2</td>
<td>0.209</td>
<td>0.151</td>
<td>0.226</td>
</tr>
<tr>
<td>Percentage correct</td>
<td>71.40</td>
<td>86.10</td>
<td>92.40</td>
</tr>
</tbody>
</table>

**Chi-square (two-tailed test)**

<table>
<thead>
<tr>
<th>N</th>
<th>238</th>
<th>238</th>
<th>238</th>
</tr>
</thead>
<tbody>
<tr>
<td>d.f.</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Significance</td>
<td>0.000</td>
<td>0.002</td>
<td>0.000</td>
</tr>
<tr>
<td>Nagelkerne R2</td>
<td>0.296</td>
<td>0.282</td>
<td>0.537</td>
</tr>
<tr>
<td>Cox &amp; Snell R2</td>
<td>0.215</td>
<td>0.165</td>
<td>0.241</td>
</tr>
<tr>
<td>Percentage correct</td>
<td>73.10</td>
<td>84.90</td>
<td>93.70</td>
</tr>
</tbody>
</table>

---

**N = 238. Significance levels: *** p < .01; ** p < .05; * p < .10 (two-tailed test).**