



Participating in broad-based share plans

The influence of knowledgeability on incidence of broad-based share plans moderated by the cultural dimension Long-Term Orientation

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I hope you enjoy reading this Thesis.

Aron Geluk

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Abstract

In the first chapter the topic employee share ownership, or more precisely broad-based share plans, is introduced. According to recent studies, employee share ownership could be the new model to finally reduce the gap between poor and rich. Past research mentioned different determinants of ESO, most prominently on a country-level. However, the incidence of firms that participate in employee share ownership stays behind. The main question of this study is as follows: *“to what extent is incidence of broad-based share plans by firms determined by knowledgeability of firms personnel and what will be the moderating effect of the national cultural value Long-Term Orientation on the relationship of knowledgeability and broad-based share plan incidence”*.

Chapter two seeks theoretical background and answers to the main question. This thesis starts with investigating if knowledgeability of personnel on a firm level effects the incidence of firms in broad-based share plans. Based on theory, the relationship is expected to be positive. Indicating that firms with higher knowledgeable personnel are predicted to have higher incidence in broad-based share plans. Chapter two proceeds with the national cultural value Long-Term Orientation. Hypothesized is that LTO positively influences incidence of broad-based share plans, as higher scores of LTO indicate that these nations are more willing to plan for the future and make decisions in the present time that positively influence the future. In the end of chapter two, a third hypothesis is tested. The expectation is that LTO moderates the effect of knowledgeable personnel in a firm on incidence of broad-based share plans.

Based on data of the large HRM network CRANET, a multilevel regression analysis is conducted. The sample contained over 4539 firms in 33 countries. The results only partly support the first hypothesis as education level of the firm and training days employees receive positively affect broad-based share plans. The third indicator, payroll cost spent on training, has a negative influence. The second hypothesis is supported with data, whereas the last hypothesis is only partly supported. There is a slight moderation effect of LTO, only significant for payroll cost spent on training. By testing the relationship between knowledge, Long-Term Orientation and broad-based share plans this research contributes to the employee share ownership literature within the field of HRM.

Keywords

Employee share ownership, broad-based share plans, knowledge, long-term-orientation.

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1. Introduction

In recent years, the inequality in developed countries has not declined, with the top 1 percent owning more than half of the overall country's equity. Share plans and incidence in employee share ownership is expected to decline the inequality gap between the rich and poor by sharing the capital. Research shows that owning a part of a firm makes employees more affected by what the firm does and based on this note it can therefore be expected that the performance of the firm would increase (Braam & Poutsma, 2014). Where sharing the owning of a firm also means sharing the profits, the increase in performance of a firm results in an increase in profits and more wealth for the owners. Still, the gap between rich and poor is not declining and the incidence in share plans in some countries has barely started. The low incidence rates raise questions about why firms participate or do not participate in sharing plans. More research into the antecedents of employee sharing plans is needed to explain low incidence and help the expected increase in welfare.

Carberry (2011) argues that the effect of share plans can be twofold. In one way it is possible that it reduces the gap between lower and high paid workers. In addition to a fixed pay, it can have additional benefits. In contrast, there is also the possibility that it works in the same old established patterns of further increase of income inequality. Incidence in share plans and investigating the differences in share plan incidence has been widely researched in the past. Focusing on employee groups and differences in participation, authors argue that because of monitoring difficulties, employers tend to focus on high-level personnel when allocating or offering shares (Poutsma & Ligthart, 2017). Attempts to retain valuable personnel may result in inequality between groups in terms of their access to and participation in share plans. Highly educated personnel have a higher likelihood of participating and receiving benefits. There are also indications that men have a higher chance of participating and receiving benefits than women. Additionally, there are signs that both participation and benefits are related to income. In other words, broad-based employee share plans tend not to minimize inequalities. Instead, they seem to increase the gap between high- and low-paid employees, despite the possibility that share plans and profit sharing increase the wealth of lower-paid employees compared to those who do not have access to such share plans.

1.1 Current Literature and relevance

The incidence in share plans is one of the two main streams of financial participation, next to profit-sharing (Pendleton, Poutsma, & Ligthart, 2018). Considerable research to the phenomena of participation has been performed on the demographic antecedents. Research by Poutsma and Ligthart (2017) for example shows that higher educated employees, men and income are related to higher participation rates. Less research is focused on organizational and national level variables influencing incidence in share plans. First, a distinction has to be made between the different forms of financial plans and who is included and excluded in this plan.

This thesis focuses on employee share plans (ESO), profit sharing is beyond the scope of this thesis. Employee share plans are categorized in two different groups, broad- and narrow-based share plans. The latter refers to share plans that are only open to management and executives. The narrow focus results in a small group of employees participating in share plans and will therefore only enhance the welfare of this small group, mostly already; higher paid employees.

Broad-based share plans reach a much broader spread of employees within a firm, are more collective and tend to be more focused on increasing identification with the firm. A big comparative research on the incidence of firms in broad-based share plans was done in 2003 to explain determinants and incidence of employee share ownership (Pendleton, Poutsma, Ommeren, & Brewster. 2003). Several conclusions can be drawn. First, country level factors are key. Tax and Equity market factors are shown to be important. Second, the set of organizational features such as, size and domestic ownership are significant. Determinants of employees participating in broad-based share plans are less explored. With the introduction of ESO, a decrease of inequality was expected between poor and rich. However, share plans open to most employees does not reveal the big promise as expected. One assumption of not living up the big promises is the low and unequal participation rate of employees in broad-based share plans. The low and unequal participation rate raises the question, why are there differences in incidence of broad-based share plans between employee groups?

The use and effectiveness of incidence of broad-based share plans can differ between organizations and nations (Kang & Kim, 2019). This seems logical because there are organizational- and national-level differences between firms and between nations influencing the behavior of employees. Lusardi (2018) pointed out that a serious lack of knowledge has serious implications for retirement planning, the design of retirement plans and financial education programs. The characteristics of low-knowledgeability of financial plans are low education, low income and gender. This results in those who

can invest less in retirement plans are also the ones that are least informed (Tomas & Henry, 2010). The same implications occur with illiteracy and participation in 401K plans, employer-sponsored retirement plans in the United States, discovered by Howlett & Kemp (2008). The findings indicate a relation on an individual level between knowledge of employees and participation in financial plans. Moreover, the participation on employee level argued by Ligthart, Poutsma & Schouteten (2005) is that training employees has a positive effect on participation in broad-based share plans. This indicates that increasing the knowledge of employees positively affects participation in broad-based share plans.

On an organizational level, the incidence effect might differ between different organizations. As different firms obtain different workforces and therefore different education levels within the firm, correlation between knowledgeability, educational workforce, and incidence in broad-based sharing plans might be assumed. Indicating higher levels of knowledgeability effect the incidence of firms in broad-based share plans. This is in line with the earlier stated theory of Kang and Kim (2019).

Moreover, on a national level Kim & Patel (2017) found a significant relation between participation of employees in share plans and cultural/institutional motivations. Culture defined by Hofstede is “the collective programming of the mind that distinguishes the members of one group or category of people from another”. In International Business studies, the National Culture Theory of Hofstede, is often used to describe certain norms and beliefs of a nation and the effect on business decisions. National cultural theory states that cultural norms are powerful forces shaping perception and behavior. Recent scholars like (Briole & Caramelli, 2007; Yoon & Sengupta, 2018; Kim & Kang, 2018) refer a lot to culture as a moderator in employee share ownership. Based on earlier research on culture as a moderator this research dives deeper in the effect of Long-Term Orientation and broad-based sharing. Long-Term orientation is the fifth dimension of national cultures added by Hofstede. LTO implies that people of such culture tend to put higher value on the future and that they are more likely to be patient (Hofstede, 1991). Long vs Short Term orientation is a cultural difference in persistence and thrift vs personal stability and tradition focusing more on the past. In Chapter 2, Long-Term Orientation and the effect on incidence in broad-based sharing is further elaborated. This research also takes LTO into account as a moderator on the relation between knowledgeability and broad-based share plans.

In recent years more scholars started writing on the subject of employee share ownership and particularly broad-based sharing. The underlying mechanisms of incidence of firms in broad-based sharing is less known, especially considering different cultural dimensions (Briole & Caramelli, 2007; Yoon &

Sengupta, 2018; Kim & Kang, 2018). Past research focused a lot on employee share ownership and the effects on firm performance, while little research is concerned with the antecedents of firm's incidence in broad-based sharing. In Europe there are big differences in incidence of broad-based share plans, 30 % in the UK compared to 4% in Germany (Kaarsemaker, 2006). Unfortunately, there is not much academic research into the incidence of broad-based share plans by firms. Why do certain firms and policy makers participate in broad-based share plans and some not? This thesis tries to partly answer this question by looking at the effect of knowledgeable personnel at the firm level and the influence of national culture on incidence of broad-based sharing of firms. Moreover, in this thesis's theoretical evidence and lack of theory as shown in Chapter 2 is supplemented with empirical and statistical evidence to see how broad-based sharing is influenced by firm's knowledgeable personnel moderated by LTO.

1.2 Objective and research question

In this chapter the research question and the central theme of this thesis is discussed. Furthermore, the relevance and the object of the thesis will be outlined.

The main research questions that will be answered by this study is: *“to what extent is incidence of broad-based share plans by firms determined by knowledgeable personnel and what will be the moderating effect of the national cultural value Long-Term Orientation on the relationship of personnel's knowledgeability and broad-based share plan incidence”*.

The objective of this Master's thesis is to explore the influence of firm's knowledgeable personnel on the incidence of firms in broad-based share plans, measuring the moderating effect of Long-Term Orientation. This is combined with the search to provide new insights in the differences of national culture and the effect of the national cultures on the relationship of knowledge and broad-based share plans. By investigating the mechanisms between incidence of broad-based share plans and personnel's knowledgeability, a contribution is made to the literature on employee share ownership and HRM field broadly.

1.4 Thesis outline

The thesis starts with a literature review forming a theoretical background of the fundamental variables in this research. In the literature review the most related theories will be combined to give an overview of the existing research. The third part will be the research question, chosen methodology and problem at hand. In this part the general part of research is formulated, how to go about the problem at hand. This

is followed by the results and conclusion. In this part the main takeaways are discussed. The last part consists of a discussion, limitations and suggestions for further research.

2. Theoretical background

In this chapter the existing theories, key concepts, central cause-and-consequences and assumptions will be discussed to create a theoretical framework. Based on theories and perspectives, hypotheses will be formulated. This chapter begins with a discussion on broad-based share plans, in the next chapter the effect of knowledgeability on the incidence of broad-based share plans by firms is discussed. This chapter ends with a discussion on the effect of Long-Term Orientation on incidence of broad-based share plans, incorporating an analysis of the moderating effect on knowledgeability and broad-based share plans by LTO. The chapters end with the formulation of hypotheses and establishing the relationship between the variables through a conceptual framework.

2.1 Incidence of broad-based share plans

In this paragraph the incidence of firms in broad-based share plans is further explained. What are broad-based share plans and why do firms participate in these plans? First, a short explanation of the concept of employee share ownership as an intro into the topic of broad-based share plans will be discussed. Then, more elaborate broad-based sharing will be discussed.

There are many different forms of employee share ownership according to Kaarsemaker, Pendleton & Poutsma (2010). Employee share ownership exists when employees hold the majority, substantial minority, or small minority of the organization's shares. The relation between employees owning a majority stake in the organization and the firm's performance, looking at responsibility and higher involvement in the firm is becoming a more pronounced topic in the last few years. Another form of employee share ownership is when employees have a minority of shares, also known as mainstream ownership. With the use of a minority stake ESO employees usually are not involved in governance and management of the firm (Poutsma, Ligthart & Veenema, 2017).

Kaarsemaker and Poutsma (2006) distinguish employee share ownership in two different forms: broad- and narrow-based share plans. Broad-based share plans are fundamentally different from narrow-based share plans. Broad-based focuses on the whole firm incorporating all employee groups instead of focusing only on the management layer of the firm, as in the narrow-based share plans (Pendleton, Poutsma, Van Ommeren, & Brewster, 2001). In this research, the focus is on broad-based share plans because this includes alle groups of employees and better reflects the knowledge intensity of the firm through all layers and not only the top managers that are mostly highly educated. The question here is what determines the broad-share plans and why do firms participate in employee share plans.

Broad-based share plans are a form of share ownership or employee stock ownership where employees acquire shares of the firm, becoming shareholders (Kaarsemaker, Pendleton & Poutsma, 2010). Firms offer mainly a small minority of the firm's shares to the employees. Using this last form, offering a minority of stakes in the firm is mostly used in payment packages by a firm (Poutsma, Ligthart & Veersma, 2017). Another reason why share ownership plans are used in firms is the belief that when workers have a stake in the firm this increases the financial performance of the firm. Paying employees in shares often increases effort, commitment and willingness to share information. A positive side effect is decreased turnover and absenteeism (Blasi, Freeman & Kruse 2010). A different reason for increasing productivity is that in workplaces where supervision of employees is costly, broad-based share plans incentivize the employee to more closely align with firm performance (Kruse 1996).

The theories of participating in share plans were recently studied by Poutsma & Ligthart (2017) addressing in the study the main question "Who participates in share plans?". Focusing on the employer and employee perspective. Focusing on the employer level, ESO is used from an agency perspective, by means for monitoring and control. Shares are allocated differently between the workforce to ensure control of the employees. From this agency perspective, employees face different expectations of the returns of investment. On the employee level there tends to be a risk aversion creating a tradeoff between insurance and incentives, where share plans mean bearing risk for employees. The risk aversion of employees has an important influence on their willingness to participate in such share plans. Research shows that employees that are; risk-averse or have lower risk preferences are associated with lower participation in share plans (Aubert & Rapp, 2010; Daly, Diaye, & Koskievic, 2016; Kurtulus, Kruse, & Blasi, 2011). Knowledge of employees might play an important role in risk aversion and willingness to participate in ESO plans. With high knowledgeability comes less uncertainty of share plans and less risk of participating in ESO. Knowledge might mitigate the effect of risk aversion and incidence in share plans. Suggesting that knowledge and knowledgeability of firms play a role in the incidence of broad-based share plans.

2.2 Knowledgeability and incidence in broad-based share plans

This paragraph continues with the determinant knowledgeability mentioned in the literature as earlier stated. What is knowledge and what is the effect of firm level knowledge on incidence of broad-based share plans will be further explained in this paragraph.

Stock market participation in general has become increasingly popular in the U.S., as well as in Europe (Guiso, Sapienza, Zingales, 2006). However, due to high entry and information costs, direct stock market

participation is highly correlated with education and financial wealth. It also increases with age (Alessie & Hochguertel, 2003; Alessie et al., 2004; Guiso et al., 2003a). There seems to be a high correlation between participation in stock options and knowledge levels. Lusardi (2018) pointed out that a serious lack of knowledge has serious implications for financial planning. The characteristics of low knowledge of financial plans are determinants like low education, low income and gender. This resulting in those who can invest less are also the ones that are least educated (Tomas & Henry, 2010). A study on the relationship between the preferences and perceptions of employees regarding an ongoing share ownership plan on the one hand, and the employees' affective organizational commitment on the other showed higher incidence in organizations where those employees were highly educated (Kuvaas, 2003). Additionally, individuals who lack financial literacy are less likely to participate in the stock market (van Rooij, Lusardi, & Alessie, 2011). These findings are in line with empirical research on incidence of ESO that shows a decreased propensity for participation of those with a lower level of education (Babenko & Sen, 2014; Bassett, Fleming, & Rodrigues, 1998).

Moreover, the incidence of broad-based sharing plans, on the firm level there seems to be an educational gap on offering of broad-based share plans by American firms (Kedia & Rajgopal, 2009). The authors showed a significant relation when controlling for the educational level of the workforce. Granting greater broad-based options to the higher educated firm workforces than lower levels of education in firms. This indicates that there is a relation between the knowledgeability of personnel of the firm and incidence of broad-based sharing.

Therefore, in this study it is expected that the more knowledgeable an organization is the higher the incidence of broad-based share plans. The following hypothesis can be derived.

Hypothesis 1: Higher knowledgeable personnel in the firm increases incidence of broad-based share plans.

Looking at other factors that are relevant for incidence in broad-based share plans, literature links a lot to the state as the main parameter (Kabst, Matlaske and Schmelter, 2006). Prevalent here is the role of the political environment formed by history and culture. The role of the state and their attitude towards financial participation and political goals to potentially support ESO will be key to explain incidence in broad-based share plans.

Moreover, the US and many other countries give tax incentives to promote employee share ownership. In French for example there is a law that obligates firms to participate in broad-based share

plans and the EU directed attention to profit sharing and employee ownership in its 1991 Promotion of Employee Ownership and Profit-Sharing report (the “Pepper Report”). It called on member states to promote participation by employees in profits and enterprise performance. France requires that some firms pay part of wages in profit shares. This is in line with earlier stated differences in incidence between countries.

So there seems to be a link with the institutional environment of a country and the policies made to influence ESO and incidence in broad-based share plans. This is supported by work of Kaarsemaker, Pendleton & Poutsma (2009), who stated that there are deeper reasons for why governments pursue policies in favor of broad-based share plans. Indicating that different countries or different regions have different incidence of broad-based share plans because there are differences between these countries. Most authors wrote about the influence of the liberal market, well developed stock markets and privately owned companies vs public-owned companies (Uvalic 1991; Vaughan-Whitehead 1995; Poutsma 2001; Poutsma et al. 2003). Fewer authors studied the differences in culture between countries.

On a country-level the influence of culture and the established institutions of a country is expected to mitigate the difference between high and low; paid employees and incidence in broad-based share plans. Different authors like Hofstede (1980), Denison and Mishra (1995) and Jackson and Schuler (2005) argue that practices of employee participation, such as employee share options/stock ownership plans, are more likely to be prevalent in low Power Distance countries than in high Power Distance countries. Hofstede (1980) suggested that in highly Individualistic societies employee’s involvement with an organization is calculative, i.e., based on an evaluation of what a person contributes and what is received in return. The results suggest that share options and stock-ownership plans may be more congruent in countries with higher levels of Individualism, and lower levels of Uncertainty Avoidance and Power Distance. Culture mitigates the incidence of broad-based share plans. Following this reasoning future orientation, looking into the future, might be of influence on broad-based share plan participation. On the national level future orientation is categorized as the cultural variable Long-Term Orientation of Hofstede’s famous cultural dimensions.

2.3 Long-Term Orientation and incidence in broad-based share plans

In this paragraph the influence of the cultural value Long-Term Orientation is based on theory further discussed. Additionally, the effect of LTO as a moderator on the earlier hypothesized relation between personnel’s knowledgeability and broad-based share plans is derived from theory.

In recent decades, we have witnessed an increase in the use of broad-based employee financial incidence. At the end of the last century the phenomenon of employee financial participation has gradually emerged as a 'normal' attribute of the employment relationship in important corners of the world and of the workforce (Poutsma, Blasi & Kruse 2012). In the explanation of this development of broad-based sharing plans and employee financial incidence at large, the agency paradigm and firm specific assets are mainly pointed out. In addition, the literature suggests that determinants of participation employee sharing plans adopt contextual factors. Little is known about how institutional context matters to the decision of participating in broad-based share plans. Institutions are formally built upon the culture of a nation; therefore, it is expected that culture and specifically Long-Term Orientation effects the incidence of broad-based sharing.

There is no definition of culture that is consensually used by social scientists (Koopman, Hartog & Konrad, 1999). The most popular definition is certainly the one proposed by Hofstede (1983, pp. 76): "culture is a mental programming: it is that part of our conditioning that we share with other members of our nation, region or group but not with members of other nations, regions or groups. Long-Term orientation is the fifth of the existing six cultural dimensions added by Geert Hofstede ". The six dimensions are used to describe the National Culture of a country. The cultural dimensions represent independent preferences for one state over another that distinguish countries (rather than individuals) from each other (Hofstede, 1991). The LTO dimension is first discovered in a Chinese Culture study under the name of the Confuchian Work Dynamism. Hofstede changed this name in his cultural work to Long-Term Orientation. LTO stands for the fostering of virtues oriented towards future rewards, in particular, perseverance and thrift. Its opposite pole, Short-Term Orientation, stands for the fostering of virtues related to the past and the present, in particular, respect for tradition, preservation of face and fulfilling social obligations (Hofstede, 2001, p. 359). Long-term orientation is related to various types of virtues, such as self-command, temperance, patience, perseverance, and foresight (prudence) (Graafland, 2020)

Nations that are Long-Term Oriented tend to have higher saving rates Shoham & Malul (2012). Moreover, Ashkanasy et al. (2004) state that present oriented individuals and cultures strive to simplify their lives and rely more on others. They also claim, based on previous studies that LTO emerges as a key factor guiding human behavior. This results in nations with a higher LTO having higher saving rates. There seems to be a relation between a high LTO culture and investing money for the future, this orientation might be applicable on broad-based sharing where a form of payment is not in fixed pay but in shares. Shares are a form of investment in a company and might become more valuable over time.

Culture as earlier stated is reflected into institutions and firms in a formal and informal way. Businesses in LTO cultures tend to build strong positions for the future and do not expect immediate results. LTO in the national environment can press managers to engage in practices that will pay out only in the future (Graafland & Noorderhaven 2020). Participating in broad-based share plans in not directly influencing the firm, this is a decision that is for the long term. In countries where there is a high score on LTO it is expected that employees are more willing to invest in the future. Combine this with managers that take into account long term success, the incidence of firms in broad-based share plans is expected to be positively influenced. As a result, hypothesis 1 is derived and formed as follows:

Hypothesis 2: Higher level of the national culture value Long-Term Orientation positively influences the incidence of broad-based share plans.

The second hypothesis suggests an effect between the culture of a nation and the incidence of firms in broad-based sharing plans. Earlier research finds significant relations between culture mediating the relationship between determinants of employee share ownership and incidence in these plans (Briole & Caramelli, 2007; Yoon & Sengupta, 2018; Kim & Kang, 2018). The effect of culture is, as earlier stated, reflected in the institutions and regulation of that specific country (Kim & Patel, 2017), indicating that culture is reflected into the workforce of a firm and therefore incubated in the behavior of a firm. This reasoning suggests that the effect of knowledgeability is affected by culture, indicating that higher scores of LTO, looking more into the future, strengthen the effect of knowledgeability on broad-based share plans incidence of firms.

Moreover, the moderating effect of LTO. In recent years more research is dedicated to cultural phenomena. Recent studies show that higher scores on LTO, nations more focused on the future, tend to make decisions that positively influence the future. For example, shown by Shoham & Malul (2012) relating LTO to higher saving rates. Saving money in the present time to have financial freedom in the future. LTO is also linked to health and education (House, et al. 2004), as long-term oriented people are able to plan more into the future, they are more likely to invest in their education and health as well. Another significant relation was found by Graafland (2020), relating long-term oriented people to be more able to anticipate future consequences and adjust their behavior accordingly. An argument for the moderation of LTO is that a good regulatory institutional framework is not enough for firms to participate in ESO. Other conditions need to be in place to have firms participating in broad-based share plans. If firms have virtues and knowledge of investing and planning into the future, they will use the institutions that are in place to make the investments for future welfare. For firms this means sacrificing current profit for

future development of the firm, recognizing the positive effects of ESO and participating in broad-based share plans (Graafland, 2020).

A firm with a high level of knowledgeable personnel recognizes the potential of broad-based share plans earlier and better than low; knowledgeable firms. Expected is that LTO positively strengthens this effect. Interfering in this relationship as a moderator. This results in countries that score higher on LTO have higher incidence in broad-based share plans. The following hypothesis can be derived:

Hypothesis 3: Long-Term Orientation will positively influence the relationship between firm’s knowledgeable personnel and incidence in broad-based share plans.

2.4 Conceptual model

The first relation being discussed is that personnel’s knowledgeable positively influences incidence of broad-based share plans. As shown by the long arrow in figure 1 the conceptual model. Both these variables are on a firm level. Another relation that is examined is the relation between LTO and incidence of broad-based share plans. It is expected that this affiliation positively affects each other. Long-Term Orientation is a country level variable and is therefore placed above the two firm level variables. LTO is also hypothesized to moderate the effect of knowledgeable of personnel on incidence of broad-based share plans. The relationship is visualized by the arrows.

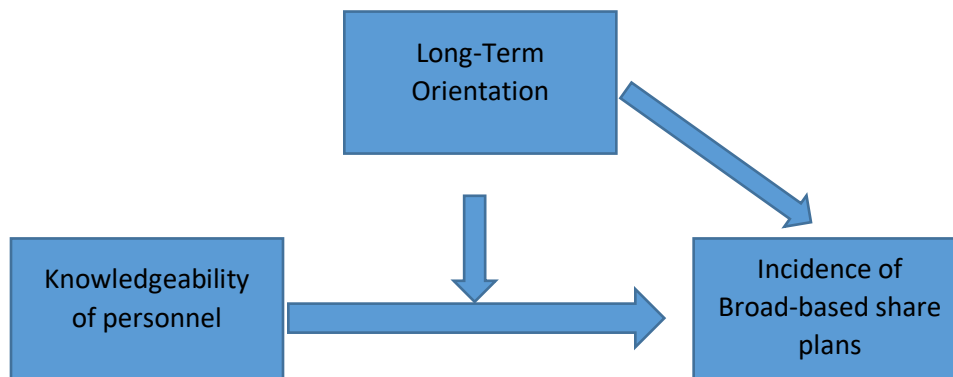


Figure 1 Conceptual model

3. Methodology

In this chapter the ethics, codes of conduct of research, data source and dataset are addressed. The first part of this chapter will discuss the integrity of a researcher and what the norms and values of proper research entails. In the second part the variables are operationalized and discussed. The last part of this chapter discusses the technical parts of research, including reliability, validity, measurement of variables and analyzing procedures.

3.1 Research design

The basis of this research is formed by theory. From theory, hypotheses are derived and explained and tested afterwards. This process follows a deductive research approach (Bleijenbergh, 2015), explaining the hypothesis with quantitative data in a descriptive way. The relations between variables are examined and established (Mertler, 2018) to systematically describe a population, culture and phenomenon (Sekaran & Bougie 2016). This research focuses on the causal relation between variables. To test the hypothesis the dataset of the large international survey of CRANET is used. The secondary data source of CRANET is at the moment the largest HRM dataset collecting comparative data of different firms in different countries. Participating firms are of at least 100 employees, in different industries across 40 countries (CRANET, 2014).

3.2 Ethics

Research is the quest for knowledge obtained through systematic study and thinking, observations and experimentation (European Code of Conduct for Research Integrity, 2017). Different research all share the same motive to extend our understanding of ourselves and the world. The Netherlands code of conduct for research integrity is applied to set specific ethical standards for this research (Netherlands Code of Conduct for Research Integrity, 2018). The code provides standards for what a good researcher does and what integrity of researcher means.

The code is based on five principles, honesty, scrupulousness, transparency, independence and responsibility. A researcher should report the research process accurately, taking alternative opinions and counter arguments seriously. Also taking uncertainty into account and reporting this, refrain from fabricating or falsifying data. Working with methods that are scientific, trying to take best possible care of design and reporting. During this work it is important to ensure that data is clear to others, how it is obtained and how results are achieved from data. Making sure that scientific work is not guided by other means than scientific or scholar related considerations. Guaranteeing impartiality during the whole

research process. A researcher does not work isolated and should take consideration of the legitimate interest of human and animal subjects into account.

To ensure the confidentiality of the dataset of CRANET, the researcher should take reasonable precautions to protect the information that is not allowed to be spread or widely shared. Therefore, the data is not used for any other purpose than this Master Thesis. In addition, not the whole dataset will be available for research, only the selected country data will be made available by CRANET via Dr. Paul Ligthart. To use the data an agreement of confidentiality is signed to ensure protection of the data. The data will be analyzed with SPSS and stored on the researcher's laptop. Only data that is referred to in the proposal and is useful for the thesis is requested. In order to ensure safe storage of data it will only be used on the laptop it is stored on and will not be shared with others. Assuming that the data is collected in an appropriate and accurate way, upholding the firm's right to confidentiality. As author of this research and complying to the code of conduct I am responsible for the research process, information processed and data used to report findings. The research work provided in the Master Thesis is original, work of others will be referred to with references following the APA standards.

3.3 Data

As explained earlier, the international dataset of the Cranfield Network on European Human Resource; CRANET is used to perform the empirical analysis. CRANET used an email survey directed to the head of personnel of each participating firm. Additionally, in this study the relation between culturally different values of Long-Term orientation and incidence is explored.

The national cultural values of the research of Hofstede are combined with the CRANET dataset. The total number of firms presented in the dataset is 6.801. For this research all firms of all countries with Cultural Value scores are taken into account. This excludes the countries with no scores on the cultural value LTO, as shown in table 1 this only excludes Cyrus. The remaining dataset represents 34 countries covering 6.218 firms. Firms are categorized as public sector, private sector or both. Firms active in the public sector and active in the not-for-profit sector usually do not have employee share ownership and are therefore not included in the sample. To ensure validity and generalizability only the private firms active in a country with a score on LTO are taken into account. This reduces the number of firms in the analysis to 4,539, which is still a large sample size. The large sample size ensures external validity and is an important assumption for some variables (Field, 2018).

3.4 Operationalization

In this thesis, 2 independent variables, LTO and Knowledgeability, and 1 dependent variable incidence in Broad-based share plans are hypothesized. This study follows the incidence of broad-based share plans by firms from the dataset of CRANET. Incidence in broad-based share plans is theoretically a simple variable, a form of Employee Share Ownership plans offered to all/most of the employees. The CRANET survey asked respondents the following question in relation to incidence: *“Do you offer Employee Share Ownership and to who?”* There are three nominal groups to offer these plans to Managers, Professionals and Clericals. To analyze this variable, it is considered to be ordinal and of 4 levels.

Level 0 none of the categories

Level 1 only management

Level 2 management + professionals

Level 3 all employee groups.

Firms offering only to clericals or to professionals and clericals or clericals and managers are considered in this study as broad-based sharing. This group is very small (0.9%, 0.5% and 0.4%) and is probably due to the characteristics of the firm.

A total of 408 (9.0 %) firms offer broad-based share ownership to their employees while 405 (8.9%) firms offer only to managers. 3% of the firms (134) offer to managers and professionals. The value “none of the categories” is the biggest group (79.1%) and are the firms that generally do not offer any form of ESO. The variable has a high number of missing values, 317 cases. Furthermore, in this paragraph the two independent variables and control variables are further elaborated and operationalized.

3.4.1 Knowledgeability

Knowledgeability is applicable to all types of variable levels (National, Firms and Employee). This thesis focuses on the firm-level variable, to indicate the personnel’s knowledgeability of a firm and the influence of this on incidence of broad-based share plans by firms. To assess the knowledgeability of a firm, two indicators are used: education and training. Multiple studies refer to education as an indicator of knowledgeability to assess incidence in share plans (Babenko & Sen, 2014; Bassett, Fleming, & Rodrigues, 1998). This is supported by work of Kedia & Rajgopal (2009) who found that the education gap of a firm is key in influencing the granting of broad-based shares. In the CRANET survey a specific question was set out to examine the education level of the workforce. Firms indicate in which degree their workforce is schooled as higher educated/has a university degree. The variable education is unequal divided and

therefore class midpoints are calculated. To use this variable in the analysis and test for moderation effects the variable is mean centered. Mean centering does not affect the results but makes interpretation of mean values of each cluster easier (Hair, Black, Babin & Anderson, 2014). The variable is of scale level.

The second indicator of knowledgeability is the training of staff in a firm. More training of employees increases the participation in broad-based share plans as shown by (Ligthart, Poutsma & Schouteten, 2005). Indicating that the more trained the employee is the higher the knowledgeability of the firm. In the CRANET survey 3 questions were asked in coherence with training.

1. Do you systematically estimate the need for training of personnel in your organization?
2. What proportion of the annual payroll costs is currently spent on training?
3. How many days training per year do employees in each staff category below receive on average?

The first question is a strategic question and has two categories, yes or no and is therefore nominal. The second question is of metric level, ranging from 0% up to >10%. This question has a high number of missing values, the values are imputed with the most frequent value (the mode) answered. The last question is divided into three workforce groups, where for each group a number of days can be filled in. The three workforce groups of the third question are combined into one variable showing the approximate numbers of days on which all employees received training. When controlling for outliers, which are observations extremely different from other observations (Field, 2018) a large number of cases was found. 419 cases scored as outliers. An outlier is a value that is outside the 3rd or the 1st quartile with at least 1.5 times the interquartile range. To address this, "Winsorizing " is used. Winsorizing means replacing the values of outliers with the nearest value that fits the data. The outliers are replaced with the value 52 which is the highest value that is not indicated as an outlier.

Both the annual proportion spent on training and the days employees receive training are not normally distributed, therefore a log transformation is used. Data is considered normal when skewness and kurtosis are less than -1 or +1 (Field, 2013). Annual payroll spend has a skewness of 5.62 and a kurtosis of 135.04 and days training employees receive a skewness of 11.25 and a kurtosis of 254.49. After log transformation both variables meet the assumption of skewness and kurtosis less than -1 and +1. All three variables are mean centered.

3.4.2 Long Term-Orientation

As indicated before, the context and environment of the firm matters as this influences the incidence of broad-based share plans. There are deeper reasons why certain regulations are in place, this study refers to national culture as an independent variable influencing the incidence of broad-based share plans. Particularly the national culture of Long-Term Orientation is used in this study as an independent variable and as moderating variable of a national level as shown in the conceptual model. In statistical terms the variable is characterized as an interaction effect (Field, 2018). It is a quantitative variable that affects the relation between the knowledgeability and incidence in broad-based share plans. This means it can weaken/strengthen the relation or effect the direction of the relation. In this research the effect is hypothesized to strengthen the relationship between the independent and dependent variable. As explained earlier, the data used for cultural values is secondary and retrieved from Hofstede's, Culture and Organizations (Hofstede, Hofstede & Minkov, 2010). The cultural values are often used in international business literature. Another commonly used dataset to assess the influence of culture is the GLOBE set. In this research Hofstede is used due to the fact that GLOBE has less countries available in their dataset matching the CRANET data than Hofstede. The LTO scores are shown in table 1, Cyprus does not have any cultural scores available and will therefore be excluded in the sample.

The variable is of metric scale and has a possible range of 1 up to 100 calculated per country. The higher the score on LTO the more the country is focused on the Long-Term. Therefore, as hypothesized high scores on the culture LTO positively influence the incidence in broad-based share plans. The variable is mean centered to avoid multicollinearity.

Organisations with more than 100 employees		Observations	Long Term-Orientation
Country	1 Austria	169	60
	2 Belgium	130	82
	4 Cyprus	0	0
	6 Denmark	125	35
	7 Estonia	66	82
	8 Finland	91	38
	9 France	144	63
	10 Germany	225	83
	11 Greece	159	45
	12 Hungary	170	58
	14 Italy	126	61
	15 Latvia	49	69
	16 Lithuania	90	82
	19 Netherlands	128	67
	22 Romania	155	52
	23 Slovakia	239	77
	24 Slovenia	99	49
	25 Spain	82	48
	26 Sweden	152	53
	27 United Kingdom	147	51
	34 Croatia	130	58
	36 Iceland	57	28
	43 Norway	126	35
	44 Russia	117	81
	46 Serbia	105	52
	47 Switzerland	165	74
	48 Turkey	135	46
	56 China	171	87
	58 Indonesia	85	62
	61 Israel	65	38
	77 Philippines	112	27
	98 USA	170	26
	101 Brazil	289	44
	111 Australia	224	21
	115 South Africa	42	34
Total		4539	53

Table 1 Countries is the dataset and their LTO scores

3.4.3 Control Variables

Control variables are variables used in constant control for effects that might influence the hypothesis but are left out of the analysis (Hair et al., 2014). In other words, control variables are certain characteristics that are expected to influence the results. Control variables used in this study are presented in the dataset of CRANET and are as follows: internationalization, trade unions, firm size, industry, firm performance and private sector. In this paragraph the control variables used in the study are further elaborated.

Internationalization

The first control variable in this study is the international characteristic of the firm. In the survey, respondents were asked whether their part of the firm belongs to an international organization or a national organization and can be classified as headquarters, subsidiary or independent. These aspects are important because it moderates the national institutions of a firm and the culture of a firm. It might be that the high scoring LTO of one country influences the low scoring LTO in another country and therefore moderate the results. This is in line with results found by Luo and Wang (2012), that overseas strategies are influenced by home-country parameters indicating that home country culture plays a role in strategy of multinationals. Supported by work of Drogendijk and Holm (2015), who argued that the relationship between nationally based cultural characteristics of subsidiaries and headquarters decrease the cultural distance making it important to control for this variable. The variable is of nominal level and is transformed into a dummy variable representing the international organization. Including the values “Corporate HQ of an international organization” and “subsidiary of an international organization”. The other category represents the national firms including the 4 other categories. The national level is used as a reference category and therefore the international variable is of nominal level.

Trade unions

The second control variable is trade Unions. Trade unions have a big impact in some countries on the negotiations of salary and payment schemes. The use of trade unions is different across countries and so are the reactions on the use of employee share ownership. Theoretically the influence of trade unions is negative on employee share ownership as they may attempt to discourage the pay of individual performance. This is especially true for employee share ownership where the fundamental difference between capital and labor is blurred on which a trade union is based (Pendleton, Poutsma, van Ommeren & Brewster, 2001). This argument is further developed by Poutsma, Blasi & Kruse (2012) who argued that trade unions are dominant actors in influencing the extent, practice and characteristics of financial participation at company level. Therefore, it is expected that trade unions have influence on the incidence

of broad-based share plans in firms and therefore are trade unions added as control variables in this study. In the CRANET survey multiple questions are concerned with trade unions. The first question, union density, is as follows: what proportion of the total number of employees in your organization are members of a trade union? Due to unequal divided groups the class midpoints are used in the analysis. A Dummy of the high missing values is created to control for in the analysis. This is a scale level variable. The second question is concerning the influence of trade unions within the firm. The scores range on a 5-point Likert scale from “not at all” up to “to a great extent” which is an ordinal variable. The third and last control variable in CRANET asked respondents if the firm has work councils or consultative committees, this is the nominal variable.

Firm size

The third control variable, firm size, measured as the total number of full-time employees could effect the incidence of share plans by firms. It might be expected that small firms do not have big HRM departments and therefore lack the benefits of scaling. Regarding the cost of set up, small firms participate less often in broad-based share plans than bigger firms where HRM departments and scaling benefits are part of the firm. Chen and Huang (2009) found that organizational characteristics such as firm size can impact the way in which participation of employees in broad-based share plans is organized. So there seems to be a relation of firm size to organization and incidence of broad-based share plans. Therefore, in this study the firm's size is controlled for. In the survey of CRANET the firm's size is accounted for by the total number of employees on payroll. The scores are free for firms to fill in and are metrically scaled. Important is to take into account that firms only bigger than 100 employees are in the dataset of CRANET. The variable is log transformed due to data not being normally distributed. Winsorizing is used to deal with outliers (field, 2013).

Industry

The fourth control variable is industry level. Previous research into financial participation has suggested that there are industrial differences in the incidence of financial participation. In the UK, for example, Poole (1989) found that broad-based share plans are most common in the finance sector, followed by the services sector, manufacturing and finally retail and distribution. Kruse, Blasi & Park (2006) argued that higher participation might be due to the profession of the industry, showing some evidence that industries with higher proportions of professionals are more likely to participate in broad-based sharing. Another argument that participation in the finance sectors and service sectors generally is higher, is due to high monitoring cost (Jones et al. 2006) increasing the demand for other agency mechanisms. In the dataset of

CRANET firms are asked to choose out of 20 options to indicate the main sector of the firm. To make a clearer analysis the 20 industries are narrowed down as shown in appendix 3. Having a range of 6 industries treated as a nominal variable is based on the ACE Rev. 2 – Statistical classification of economic activities.

Firm performance

Firm performance is an overarching concept consisting of different indicators. In line with the research of CRANET in this study firm performance as control variable is measured in the same way. CRANET asked respondents the two following questions: “compared to other organizations in your sector, how would you rate the performance of your organization in relation to the following?” and “if you are a private sector organization, would you say the gross revenue over the past 3 years has been?”. To analyze the control variable, firm performance, a factor analysis is conducted. The construct consists of 6 ordinal variables: service, productivity, profitability, innovation, stock market performance and environment matters. Principal Axis Factoring is used to analyze the underlying variables that are reflected into the construct firm performance. Extracting the factor with all six ordinal variables results in low valid cases and high missing values. Following an iterative process of excluding a variable to find an optimal solution. In appendix 4 the results of the factor analysis are shown. Four variables are reflected in the construct firm performance (n=4057, KMO .759 & Bartlett’s test $p < .000$). The four variables have higher loadings than .5 indicating high loadings (Field, 2013).

The second question “gross revenue” is an ordinal scale of 5 levels, ranging from “so low as to produce large losses” to “well in excess of costs”. To address the high missing values a dummy variable is created.

Listed Companies

Public listed firms already have the knowledge of sharing and developing shares making it easier to participate in broad-based share plans. So therefore, the specific knowledge of listed firms might influence firms participating in broad-based share plans. This is supported by Pendleton, Poutsma, van Ommeren and Brewster (2001) who stated that “tendency for share schemes to be more common in listed companies” and by Kaarsemaker, Pendleton & Poutsma (2009), who stated that employee ownership in privately-owned companies is often far more substantial than in public-traded companies. In the CRANET survey firms are asked to indicate if they are in the private or public sector. If they are in the private sector, they are asked if the firm is publicly listed. The sample only contains firms of the private sector, the

variable “listed company” is a nominal variable. The missing values are imputed with the value “not public listed”.

3.6 Validity and Reliability

Validity simply means, does the instrument measure what it is supposed to measure (Vennix, 2019). Validity can be separated into two different forms, internal validity and external validity. The first refers to the logical consistency of the research design and the extent to which certain conclusions can be drawn on the basis of that design. The latter, external validity, refers to the generalization of research results. This research follows the standards of APA, ensuring validity and reliability in the process of the design.

In this study the data from the large organization CRANET was used, this dataset has been used previously in different aspects of HRM and employee-share ownership studies. The data is measured at a single point in time (Field, 2018) and is cross-sectional. The CRANET data collection methodology is set up in a consistent way, this ensures transparency and reliability (Lazarova, Morley, & Tyson, 2008). In the process of this Master Thesis there will be direct supervision by Dr. Erik Poutsma. Poutsma is an expert in the field of employee share ownership and HRM practices. This ensures validity and control during the process.

Moreover, the measurement data needs to meet according to Huselid and Becker (2000) the following requirements: firm size, the ability of the respondents to answer questions, and the clarity of the survey items must be examined. These data requirements are controlled by CRANET, ensuring a large database giving a big sample size. The database contains answers from questionnaires that are filled in by the HRM manager who ought to be compatible to properly answer the questions. CRANET partners with countries to suit the use of methods most applicable to specific countries ensuring clarity and reliability in the process of data collection.

3.7 Statistical Analyze

As stated earlier, this research design consists of the hypotheses of two independent variables of scale level, one dependent variable of scale and several control variables. Assessing the dependent variable via the independent variables will be performed by a multilevel regression analysis. Multilevel regression analysis is used to examine relations between variables measured at different levels (Field, 2018). Important for the decision to use multilevel analyses is that differences between countries are of importance in this study. It is necessary to include at least twenty countries in the multilevel regression analysis (Field, 2013), this assumption is met with a sample of 33 countries.

Another important aspect of multilevel regression analysis is that variables of different levels can be measured. Within multilevel regression analysis it is possible to analyze for a moderator effect as is the case in this study. Statistically a moderation effect is analyzed as an interaction effect. When there is an interaction effect the variable x is no longer constant but depends (linearly) on the moderator variable z (Field, 2018). The analyses can be conducted in SPSS using the procedure linear mixed model. The different hypotheses are analyzed and significant at an alpha of 0.05, meaning that the effects found are significant when $p < 0.05$. In this study a multilevel regression analysis will be performed for all three hypotheses.

Using the mixed model procedures there are some assumptions that need to be met. The phenomenon needs to be linear; residuals that have a constant variance are independent and are normally distributed (Field, 2018). In appendix 5 and 6 the results of the plots, distribution and multicollinearity are shown. Multiple regression sample size should be above 50 as a bare minimum and preferably above 100. When the sample size increases this gives more degrees of freedom improving the generalizability of the results. The larger the sample size the more the results are representative of the population. A large sample size in this study is guaranteed with $n=4539$.

The first assumption of linearity means that the relationship between independent and dependent variables is linear (Hair et al., 2014). This can be checked with the scatter plot indicating a linear pattern. The second assumption is that residuals that have a constant variance are independent and normally distributed. The first residual assumption means that the variance is homoscedastic, indicating that the residuals are equally distributed at each level of the independent variable. Homoscedasticity is checked in a scatter plotter indicating that variance is equally distributed and does not follow certain patterns. The scatter plots are shown in appendix 5 showing a linear and positive relation. The spread of residuals is fairly equal; therefore, both the assumptions are met.

The third assumption of residuals is independent, so called multicollinearity, meaning that one independent variable does not correlate with another independent variable in predicting the dependent variable. This can be assessed with the VIF score, usually given in SPSS which should be below 5. If the largest VIF is above 10, there is a serious problem (Bowerman & O'Connell, 1990; Field, 2018). As shown in appendix 6, test for multicollinearity, all the VIF scores are below 2. Therefore, assumption three is met.

The last assumption of the residuals is normality which is checked via de skewness, drawing upon a residual histogram. If the distribution is not skewed the assumption is met. According to Field (2018)

significance test for normality should not be used with large sample sizes, as normality is less important. In appendix 5 the skewness of the variables is shown; however, this is less important due to the large sample size.

The three hypotheses will be tested with a multilevel regression analysis. The standard equation of a multilevel regression is as follows:

$$Y_{ij} = \beta_0j + \beta_1X_{1ij} + \epsilon_{ij}$$

In the multilevel regression equation Y is the dependent variable and is represented by β_0j the intercept, β_1X_{1ij} the independent variable with his slope and ϵ_{ij} the error term. In the equation j is the level of the variable in which the intercept varies. The figure i in this equation stands for the level 1 variable.

In the linear mixed model procedure random effects are taken into account. In this analysis's country is the random effect and is specified as subject in the model. The effects of control variables discussed above are included in the model. Using multilevel regression analysis in SPSS with mixed models does not show the determination coefficient r^2 . The determination coefficient is used for determination of the explained variance in the dependent variable by the independent variable(s).

The fit of a multilevel regression analysis is tested with chi-square likelihood. The test statistic in SPSS is the -2 log-likelihood, the lower the statistic the better the fit. The model will be specified with first only the control variables included. The second model includes the country level variable LTO. Then in the third model the independent variable education and training are included. If there are significant results the interaction effect of LTO on the independent variables will be tested in the fourth model. The mixed model procedure uses listwise deletion as a default option in case of missing values. This means that if a case scores a missing value on one of the variables the case will be deleted from the sample (Field, 2018). Pairwise deletion is not an option in the mixed model procedure.

4. Findings

In this chapter the results of the study are presented. The chapter starts with the discussion and analysis of the descriptive variables (preliminary analysis), then the assumptions are discussed. This chapter ends with a discussion on the findings by answering the hypotheses.

4.1 Descriptive statistics

In the analyses the metric and nominal variables are separated for a clearer view and because the nominal variables do not have useful means, standard deviation and correlations. As stated earlier only public firms with a score on LTO are included in this study, reducing the total number of firms in this study to 4539. In the dataset most of the firms do not use employee share ownership ($n=3592$) and are active in the manufacturing industry ($n=1204$) and the service industry ($n=1515$). Table 2 shows the descriptive variables with their mean value, minimum and maximum score.

Variable	Mean	Min	Max
Broad-based share plans	0.449	.000	3.000
Education level of employees	36.351	.000	88
Estimation of need for training	.720	.000	1
Received days training for employees after log and winzorzing	2.272	.000	5.100
Payroll spent on training after log	1.368	.000	4.605
Long-Term Orientation	55.616	21	87
Public Limited Company	0.323	.000	1
Internationalization	0.384	.000	1
Industry	2.699	.000	6
Estimation for need of employee training	0.720	.000	1
Influence of trade Unions	1.310	.000	4
Works Councils or consultative committees	0.500	.000	1
Union Density	25.442	.000	88
Firm Size log	6.217	2.8	9.5
Firm Performance	15.040	4	20
Gross Revenue	3.932	.000	5

Table 2 Descriptive analyze

In table 3 the metric variables are summarized. The correlations are presented with Pearson's correlation; this is a statistical measure for the linear correlation between the two variables. The r explains the strength of relationship between 2 variables. In table 3 the correlations between the dependent variable and the independent/control variables are given. Broad-based share plans are positively correlated with the independent variable educated workforce ($r=.105$ & $p<.01$) and LTO ($r=.068$ & $p<.01$). Also, the control variable firm size has a significant and positive relationship ($r=0.077$ & $p<.01$) with broad-

based share plans. There is no significant correlation between annual payroll spent on training and training days employees receive on incidence of broad-based share plans.

Variable	Mean	SD	Pearson (r)
Broad-based share plans	0,42	0,92	-
Educated Workforce	36,35	28,87	.105**
Annual payroll cost spent on training log	1,37	0,63	-.011
Number of days training employees log	2,28	1,29	.025
Estimation of need for training	.000	.451	.010
Long-Term Orientation	2,88	18,98	.068**
Union Density	25,44	30,48	-.004
Trade Union Influence	1,31	1,31	.004
Firm Size log	6,23	1,48	.077**
Firm Performance	15,04	2,78	.030

Table 3 Correlation table (Pearson correlation, * $p < .05$ ** $p < .01$)

4.2 Assumptions

Before running the multilevel regression model several assumptions need to be tested, as was described in chapter 3. The first assumption of normal distribution is due to a large sample size less relevant because the test shows significant results for small and unimportant effects (field, 2013). Variables that are skewed are log transformed, if variables are not equally divided class midpoints are used. With the use of boxplots, variables are checked for outliers. If outliers are visible in the boxplot these are replaced with the highest score that is not an outlier, this technique is called winsorizing (field, 2013). The boxplots and Q-Q plots are shown in appendix 4. `

The second assumption is multicollinearity. A measure of multicollinearity among variables is conducted to test if the independent variables do correlate with each other in predicting the dependent variable. The VIF score is used to assess multicollinearity, a higher degree of the VIF score means higher degrees of multicollinearity. The threshold is a VIF score of 10 (hair et al., 2014). As shown in appendix 6 all VIF scores are below 2 and therefore below the threshold, indicating no multicollinearity. The third assumption, linearity is checked with the scatterplot by examining the relation between each of the independent and dependent variables. The last assumption of homoscedasticity is also checked with the scatterplot. Given that the plot does not show discrepancies and the residuals are not biased this assumption is met.

4.3 Multilevel regression analyses

The multilevel regression analyses are conducted in SPSS via a linear mixed model procedure. Country is selected as a subject in this study. Furthermore, in this section the hypothesis, results, acceptance and rejections are discussed.

The linear mixed model shows standardized beta coefficients and standardized error of the beta coefficients of each variable per model. Via mixed models in SPSS 4 models are created to analyze the hypotheses. In the first model all control variables are tested. As shown in table 5, internationalization and joint consultative committee are significant predictors of broad-based sharing in model 1. Results show that being an international firm is a positive predictor of broad-based sharing ($\beta = .259$ $p < .001$) and consultative committee a negative predictor of broad-based sharing ($\beta = -.120$ $p < 0.01$). Also, the financial industry and firm size show significant and positive relationships with broad-based sharing ($\beta = .661$ $p < .001$) and ($\beta = .051$ $p < .01$). Missing values of gross revenue and union density are excluded from the model due to being redundant.

Model 2 includes the direct effect of Long-Term Orientation on broad-based share plans. There is a significant and positive relationship ($\beta = .003$ $p < .05$) as shown in table 5. Indicating that for a higher score on LTO the incidence of broad-based share plans by firms increases. In model 3 the direct effects of knowledgeability are added. The independent variables education, training, payroll cost and need for training are tested. The first three variables all show significant results. The latter variable estimation of the need for training has a positive beta but is non-significant. Education level of employees and training days employees receive have a positive effect ($\beta = .004$ & $p < .001$) and ($\beta = .049$ & $p < .01$) while payroll cost spent on training shows a negative effect ($\beta = -.097$ & $p < .01$).

In model 4 the moderation effect of LTO is tested. The interaction effect of LTO on education level of employees, training days employees receive, payroll cost spent on training and estimation for need of training is tested in the model. There seems to be only a significant interaction effect of LTO on payroll cost spent on training. The other interaction effects show a non-significant relation. The interaction effect of LTO and payroll cost on broad-based share plans is negative ($\beta = -.006$ & $p < .001$).

DV= Broad-based sharing								
	Model: 1		Model: 2		Model: 3		Model: 4	
	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Control variables								
Industry: Chemicals (reference)								
Industry: Manufacturing	.288	.154	.244	.155	.327	.175	.332	.173
Industry: Services	.287	.153	.263	.153	.310	.173	.306	.172
Industry: Transportation	.160	.159	.128	.160	.212	.180	.220	.179
Industry: Financial	.661***	.169	.621***	.169	.709***	.192	.513***	.190
Industry: Agriculture & Food	.172	.161	.132	.162	.247	.182	.257	.181
Public listed company	-.026	.045	-.025	.045	-.022	.051	-.013	.051
International organization	.259***	.044	.256***	.044	.246***	.050	.238***	.050
Gross revenue	.009	.021	.010	.021	-.023	.024	-.020	.024
Union Density	-.001	.000	.000	.000	.000	.001	.001	.001
Firm size	.051**	.016	.049**	.016	.060**	.019	.042**	.019
Joint consultative committee	-.120**	.044	-.130**	.044	-.142**	.051	-.105**	.051
Trade union influence	.009	.020	.007	.020	-.020	.022	-.013	.022
Firm Performance	.001	.008	.004	.009	.004	.009	.001	.009
Country level variables								
Long-Term Orientation			.003**	.001	.005***	.001	.004***	.001
Firm-level variables (independent)								
Education level of the firm					.004***	.000	.004***	.000
Training days employees receive					.049*	.023	.037*	.023
Payroll cost spent on training					-.097*	.041	-.088*	.041
Estimation for the need of training					-.058	.058	-.054	.058
Cross-level interactions (moderator)								
LTO*Education level of the firm							.000	.000
LTO*Training days employees receive							.001	.001
LTO*Payroll cost spent on training							-.006***	.002
LTO*Estimation for the need of training							-.003	.002
Model statistics								
N	2927		2927		2716		2716	
Intercept	.178	.206	-.154	.206	-.180	.237	-.226	.169
Walid Z	38.256***		38.256***		36.851***		36.581***	
-1 log likelihood	8003.43		7992.52		7331.68		7310.36	

DV=dependent variable; *p<.05;**p<.01;***p<.001; 33 countries

Table 4 Results Linear Mixed model SPSS

Hypothesis 1 predicted a positive relationship between firm’s knowledgeable personnel and broad-based sharing. As shown in model 3 there is a significant effect of variables: education level of employees, training days employees receive and payroll cost spent on training on broad-based sharing. Estimation for need for training does not show a significant effect. Education and training days show a positive effect indicating that the higher the personnel’s knowledgeability of a firm the higher the incidence in broad-based share plans, however payroll cost spent on training shows a negative relationship. Therefore hypothesis 1 is partly supported by empirical findings.

Hypothesis 2 predicted a positive relationship between LTO and broad-based share plans. As shown in model 2 there is a significant and positive relationship between LTO and broad-based sharing. For higher scores on LTO higher incidence in broad-based share plans is predicted. Therefore hypothesis 2 is supported. The predicting effect of LTO becomes stronger when adding the variables of knowledgeableability and the interaction effect into the model. Also, the significance level becomes higher ($\beta=.003$ $p<.05$ to $\beta=.005$ $p<.001$).

The third hypothesis predicted a moderation effect of LTO on the effect of firm's knowledgeable personnel on broad-based sharing. Hypothesized is that LTO positively influences the effect, however as earlier tested not all variables show a significant relationship with broad-based sharing. Only the significant effects can be further analyzed. Education level, training days of employees and payroll cost spent on training show significant effects and therefore the interaction effect of these variables can be analyzed. Only the interaction effect of LTO*payroll cost spent on training of employees shows a significant result ($\beta=-.006$ $p<.001$). The effect is negative and therefore the results indicate that for higher scoring LTO countries the moderation effect shows a negative relationship with payroll cost spent on training. For higher scores on LTO the effect of payroll cost spent on training becomes less strong. Indicating that LTO positively influences the negative effect of payroll cost spent on incidence of broad-based share plans. Therefore, hypothesis three is partly supported.

5. Discussion

This study assesses the relationship between incidence of firms in broad-based share plans and their firm-based knowledgeable personnel acquired by educated personnel and training of employees. This study further explores the contextual setting of the cultural dimension Long-Term Orientation on incidence of broad-based share plans and as a moderator on the relationship between firm's knowledgeable personnel and incidence of broad-based sharing. First a discussion of results is given (section 5.1), in this discussion the answers on the hypothesis, research question and conclusion are given. In section 5.2 the theoretical implications are given followed up in section 5.3 with the practical implications. In section 5.4 the limitations are given, this all leading to a number of suggestions for future research in section 5.5.

5.1 Conclusion

In order to answer the research question: *“to what extent is incidence of broad-based share plans by firms determined by knowledgeable personnel and what will be the moderating effect of the national cultural value Long-Term Orientation on the relationship of personnel's knowledgeability and broad-based share plan incidence”*. Three hypotheses were tested, using data from CRANET and Hofstede.

Earlier work and theory in the HRM field hypothesized a positive effect of firm personnel's knowledge on broad-based sharing, based on data of the world's biggest HRM network, CRANET, this relationship was tested. This study found empirical data supporting this relationship, however this is only applicable to the educational level and days training employees receive of the firm, the other knowledge variable used in this study found negative results; payroll cost spent on training. While the estimation for need of training shows non-significant results. Therefore, this hypothesis is partly accepted.

The second hypothesis was based on the theory that countries with high LTO scores tend to invest and plan more into the future and therefore have higher incidence in broad-based share plans. The findings of the analysis supported the hypothesis. The third hypothesis expected that higher scoring LTO countries would positively moderate the effect of knowledgeable personnel on incidence of broad-based share plans because the more future orientated and the more knowledgeable the firm's personnel are the more the benefits of broad-based share plans would be recognized. Only the effect of payroll cost spent on training shows significant results. The effect becomes less negative with the moderation of LTO, therefore hypothesis 3 is partly supported.

H1: Higher knowledgeable personnel in the firm increases incidence of broad-based share plans. **PARTLY SUPPORTED**

H2: A high indication of the national culture Long-Term Orientation positively influences the incidence of broad-based share plans. **SUPPORTED**

H3: Long-Term Orientation will positively influence the relationship between firm's knowledgeable personnel and incidence in broad-based share plans. **PARTLY SUPPORTED**

The overall conclusion of the study is in line with the majority of existing theory and as follows: knowledgeability of firm's personnel has favorable effects on the incidence of broad-based share plans by firms. New theory on the effect of Long-Term Orientation on broad-based sharing was derived. Incidence is affected by a nation's culture. However there seems only a slight moderation effect of LTO, indicating that personnel's knowledge of a firm is slightly affected in predicting incidence of firms broad-based share plans by LTO. This study showed that incidence of broad-based share plans varies across countries over the world.

5.2 Theoretical implications

Prior research in the field of employee share ownership found different effects of different contextual factors on incidence in broad-based share plans yet a majority of determinants are not explored. Earlier research found significant relations between education and financial participation (Babenko & Sen, 2014; Bassett, Fleming, & Rodrigues, 1998; Kuvaas, 2003). While Poutsma, Ligthart & Schouteten (2005) found a significant relationship between training of employees and participation in broad-based share plans. Yet the knowledgeability of a firm's personnel on incidence of broad-based share plans is unexplored. Prior scholars discussed whether HRM theories can be generalized across countries (Kim & Kang, 2019), as the same practice could have different effects across different countries. More research on country-level variables is needed to explore the effectiveness of practices across countries (Poutsma, Blasi, & Kruse, 2012). This study aimed at exploring the effect of knowledgeability at the firm's personnel level on incidence of broad-based share plans at the broader level considering culture at the country level.

With the empirical evidence of over 2900 firms, this research is a contribution to the literature on employee share ownership, focused on broad-based sharing, within the field of HRM. Results showed that the level of education is positively related to broad-based share ownership in the firm context. Contextual effects, in this study particularly culture, plays a role in incidence of firms in broad-based share ownership as argued by management scholars. There is no evidence found that the effect of education is moderated by LTO.

5.3 Practical implication

The results of this research shows that cultural values slightly influence the incidence of broad-based share plans. The finding can be used by managers who are considering the implementation of broad-based share plans. The findings are descriptive but indicate that education level and training of employees is significant when considering broad-based share plans. Therefore, training days should be considered to increase the education level of the firm before implementing broad-based share plans. Country-level effects might differ from firms as international firms have multiple cultures in one firm and therefore have different effects. Studying the employment base and the culture of the firm might be important before participating in broad-based share plans.

5.4 Limitation

Several limitations are applicable to this study. First of all, the data retrieved from CRANET is cross-sectional instead of longitudinal. Longitudinal research collects data repeatedly from the same subject over time showing cause-and-effect relationships while cross-sectional measurements at one point makes it hard to show causality (Field, 2018). There might even be reverse causality as the cause and effect are measured at the same time (Levin, 2006).

Secondly, in the multilevel analyze listwise deletion is used to handle missing values. This means that every case is removed completely with one missing value on all of the variables in the study. Using pairwise deletion cases with missing values will not be omitted from the analyzes and therefore may not lose large contents of data (Field, 2018). In this research listwise deletion is used, because using linear mixed models only listwise deletion is possible, which decreased the total number of cases from 4539 to 2716 in the final model. Using pairwise deletion would have decreased the number of cases to 4222.

This study uses personnel's knowledgeability as a firm level variable based on data of CRANET. First the data of the survey is subjectively filled in by HRM managers where it would be better to objectively measure the personnel's knowledgeability of a firm (Schotte, 2016). Additionally, the measure of knowledge of a firm's personnel might be reflected in more variables than only education, training days and payroll cost spent on training. The construct of knowledgeability has been discussed by academics over a long period of time, with no clear distinction between firms with high knowledgeable personnel and firms with low knowledgeable personnel (Alvesson, 1993). Knowledge can be on the subjective level to individuals, bound to time circumstances or habitual in the form of skills (Krogh & Roos, 1995). Therefore, does knowledgeability not only reflect the employee's knowledge about financial matters and

investing in shares. Assessing the construct knowledge of a firm personnel more in depth and objectively measuring this variable would increase the reliability and generalizability of the study. At the country level only the effect of the national cultural value Long-Term Orientation is measured. Other national cultural values and underlying institutional factors have not been taken into account.

5.5 Future research

In the view of this study and its limitations a number of suggestions for future research can be mentioned. First of all, institutional factors were used in this study as control variables while the cultural variable Long-Term Orientation was used as a moderating variable. Although in the past years more papers and studies have shown their light on institutional factors influencing employee share ownership, future research should further examine these phenomena. Checking for culture and institutions influencing incidence in broad-based share plans can lead to new insights, leading to practical solutions for more participation of firms in ESO. Especially the political and regulatory institutions are interesting to investigate further on their influence on broad-based sharing and ESO in general. Also, the market economy of a country and the nation's culture might be interesting to examine their influence on ESO.

Further research might also investigate other cultural values. Kang & Kim started with country-level uncertainty avoidance and trust, while this research went further on the cultural value LTO of Hofstede. Future research might also look at other cultural values of Hofstede, examples might be: indulgence, masculine, individualism and power distance but also the project of GLOBE might be interesting to examine further.

Although institutions and cultural values are very interesting, future research should also examine organizational factors further. As mentioned in the limitations, starting with operationalization of knowledgeability of firm's personnel and how to objectively measure this concept. As training days employees receive is significant and positively correlating with broad-based sharing, future research might also examine if training in financial planning might be even more effective. Also, the concept of internationalization which correlated significantly with broad-based sharing might be interesting to examine in future research. For example, the degree in which firms are internationalized and how this effect ESO or financial participation in general. The last suggestion for future research is to start with looking at the employees as more than just human capital and resources. A study from the perspective of the employees might show different issues and aspects. Specific research into the numbers of employees participating in ESO might be interesting for future research. As the CRANET dataset only asks firms if they offer any form of ESO, this is not related to participation rates on employee level. Employees might not

be able to buy shares of a firm, while ESO ultimately could be an efficient way to increase everyone's wealth. Looking in more detail at the perspective of the employee might help governments to put policies in place that bring the less wealthy people in reach of employee share ownership.

6. Reference

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7. Appendix

I. Appendix: Planning

Submission of research proposal	26 March 2021
Assessment of research proposal	9 April 2021
April 9 – 12 April	Operationalization and list of Variables; Hand in 12 April; Feedback by email
April 9 – April 26	Processing feedback on research proposal, revising chapter 1, 2 and 3, and making of chapter 4, findings Submit April 26
May 3, 15:30	Feedback on ch 1-4
May 3 – May 19	Processing feedback on chapter 1 – 4, and the making of chapter 5 (conclusion and discussion) Submit May 21
May 27 15:30	Feedback on ch 1 – 5
May 27 – June 3	Revising of chapter 1 – 5; submit June 3
June 7 15:30	Feedback ch 1-5
June 7- June 14	Processing final feedback on thesis
Deadline submission master thesis	14 June 2021
Defense of master thesis	End of June begin of July

II. Appendix: CRANET Variables

In this appendix a summarization of the variables used from the dataset of CRANET is given. It is excluded with the variable LTO that is retrieved from Hofstede's dataset.

Variable	CRANET survey	
Dependent variable		
Incidence of broad-based share plans	Do you offer Employee Share Ownership and to who? Three workforce groups (Managers, Professionals and Clericals)	S4v2
Independent variable		
Knowledgeability of a firm's personnel	What is the proportion of the workforce with a higher education/ university qualification?	S6v13
	Give the proportions of the workforce groups?	S1v2
	Do you systematically estimate the need for training of personnel in your organization?	S3v4
	What proportion of the annual payroll costs is currently spent on training?	S3v5
	How many days training per year do employees in each staff category receive on average?	S3v6
Control variables		
National vs International	Is your organization (or part that you are answering for): Corporate HQ, Subsidiary, Independent and national/international	S6v16
Trade Union	What proportion of the total number of employees in your organisation are members of a trade union?	S5v1
	To what extent do trade unions influence your organization?	S5v2
	Do you have a joint consultative committee or work council?	S5v4
Firm size	Approximately, how many people are employed (on the payroll) by your organization?	S1v1
Industry type	Please indicate the main sector of industry or services in which you operate	S6v1
Private or public organization	Is your organization: private sector, public sector, not for profit or mixed?	S6v2a
Public listing of firms	Is your organization a Public Limited Company?	S6v2a

Performance of the organization (private sector)	If you are a private sector organization, would you say the gross revenue over the past 3 years has been?	S6v4
Performance of the organization (public and private)	Compared to other organizations in your sector, how would you rate the performance of your organization in relation to the following?	S6v5

III. Appendix: Control variable industry

New industry types	Industries from CRANET
Manufacturing	
4	Manufacture of basic metals and metal products, plastic and other non-metallic products
5	Manufacture of computer, electronic products, electrical equipment
6	Manufacture of machinery and equipment
7	Manufacture of transport equipment
9	Electricity, gas, steam, and water supply, waste management
10	Construction
8	Other manufacturing
Services	
13	Accommodation and food service activities, publishing, broadcasting activities
14	Telecommunications, IT and other information services
16	Accounting, management, architecture, engineering, scientific research, and other administrative and support service activities
17	Public administration and compulsory social security
18	Education
19	Human health services, residential care and social work activities
20	Other industry or services
Financial	
15	Financial and insurance activities
Transportation	
12	Transportation and storage
11	Wholesale and retail trade
Chemical	
3	Manufacture of chemicals, pharmaceuticals, and medicinal chemical products
Agriculture and food	
1	Agriculture, hunting, forestry, fishing, mining and quarrying
2	Manufacture of food, beverages, textiles, wood and paper, coke and refined petroleum, and related products

IV. Appendix: Principal axis factoring

	Mean	Std. Deviation	Analysis N
s6v5a Rating of service quality	4,00	,894	1601
s6v5b Rating of level of productivity	3,76	,882	1601
s6v5d Rating of Rate of innovation	3,59	1,058	1601
s6v5c Rating of Profitability	3,57	1,030	1601
s6v5e Rating of Stock market performance	3,34	1,119	1601
s6v5f Rating of	3,65	,997	1601

	Mean	Std. Deviation	Analysis N
s6v5a Rating of service quality	4,00	,893	1653
s6v5b Rating of level of productivity	3,76	,886	1653
s6v5d Rating of Rate of innovation	3,59	1,059	1653
s6v5c Rating of Profitability	3,58	1,030	1653
s6v5e Rating of Stock market performance	3,35	1,119	1653

	Mean	Std. Deviation	Analysis N
s6v5a Rating of service quality	4,09	,810	4057
s6v5b Rating of level of productivity	3,77	,858	4057
s6v5d Rating of Rate of innovation	3,61	1,004	4057
s6v5c Rating of Profitability	3,56	,967	4057

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		,759
Bartlett's Test of Sphericity	Approx. Chi-Square	3974,004
	df	6
	Sig.	,000

Communalities

	Initial	Extraction
s6v5a Rating of service quality	,314	,413
s6v5b Rating of level of productivity	,416	,602
s6v5d Rating of Rate of innovation	,258	,343
s6v5c Rating of Profitability	,346	,457

Factor Matrix

	Firm performance
s6v5a Rating of service quality	,643
s6v5b Rating of level of productivity	,776
s6v5d Rating of Rate of innovation	,585
s6v5c Rating of Profitability	,676

Extraction Method: Principal Axis Factoring.

Extraction Method: Principal Axis Factoring.
a. 1 factors extracted. 9 iterations required.

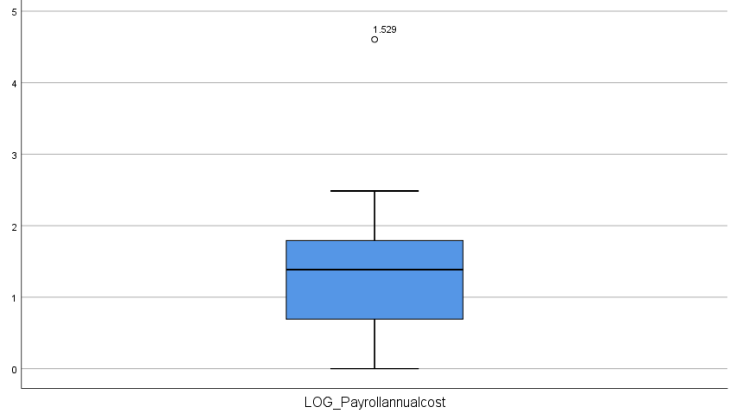
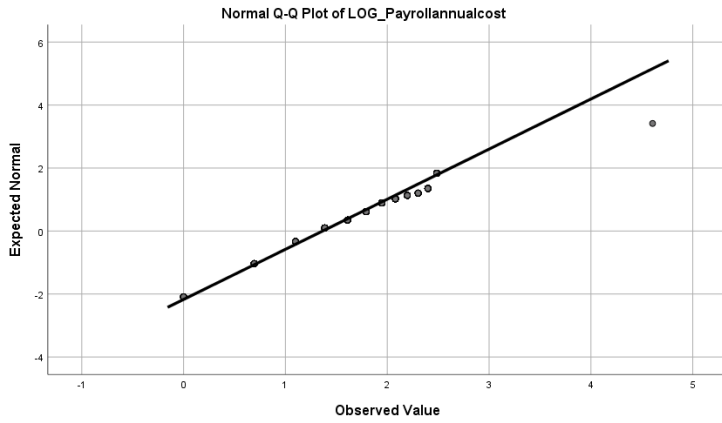
Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,347	58,672	58,672	1,815	45,376	45,376
2	,626	15,655	74,327			
3	,605	15,119	89,446			
4	,422	10,554	100,000			

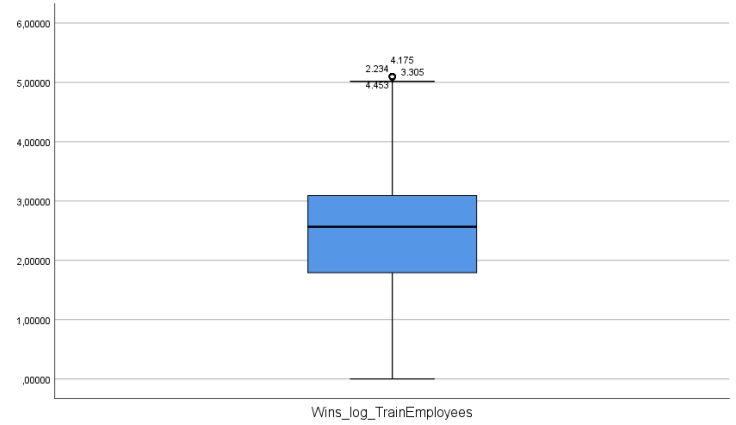
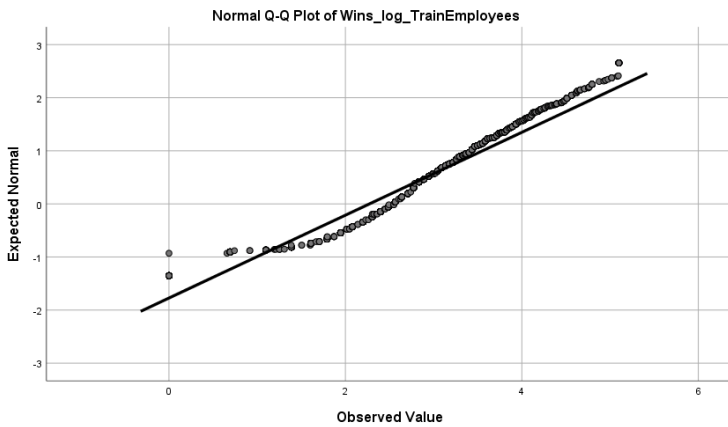
Extraction Method: Principal Axis Factoring.

V. Appendix: Variable distribution

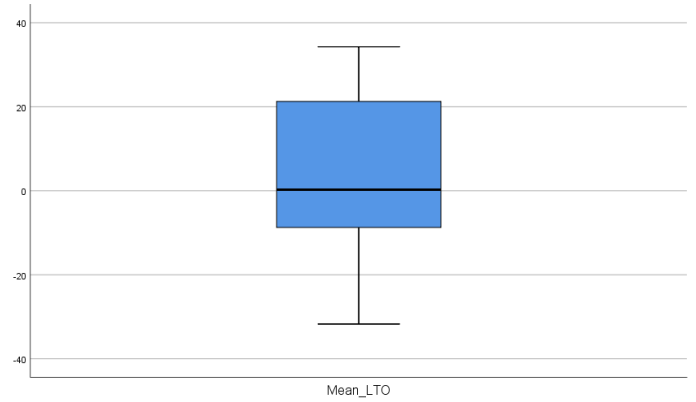
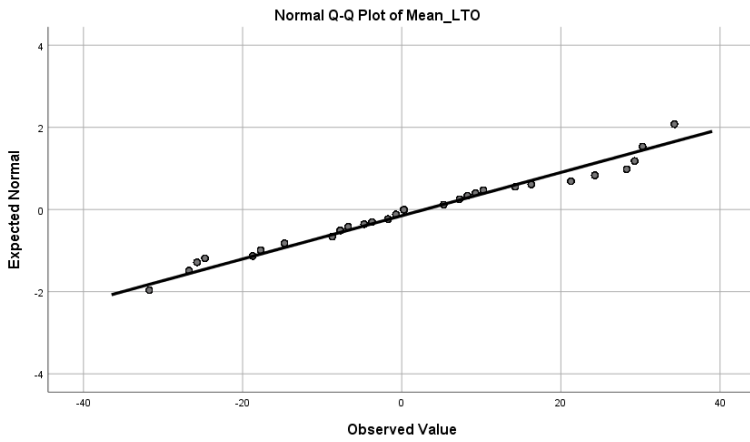
ANNUAL PAYROLL COST SPENT ON TRAINING AFTER LOGARITHM



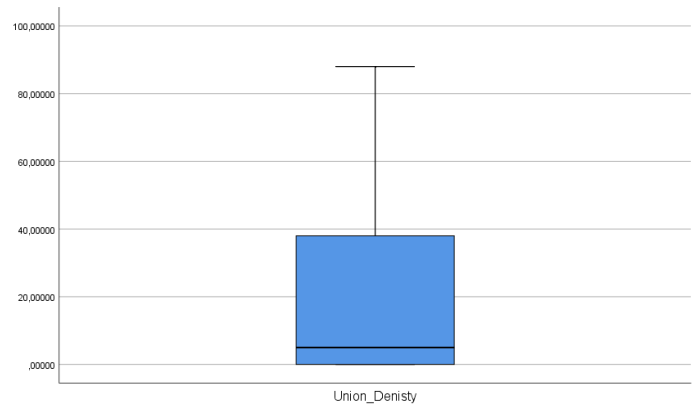
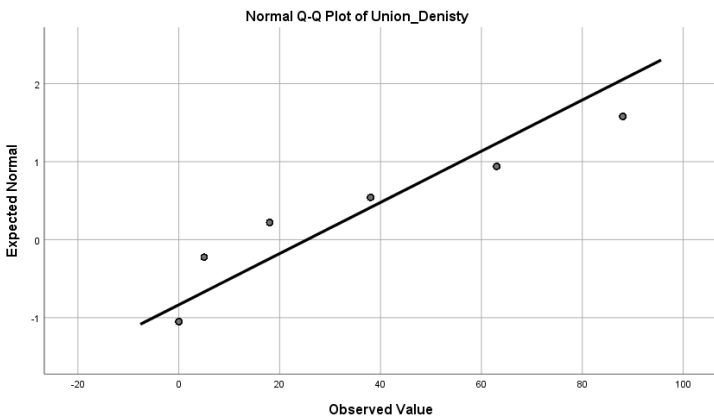
TRAINING EMPLOYEES AFTER WINSORIZING AND LOGARITHM



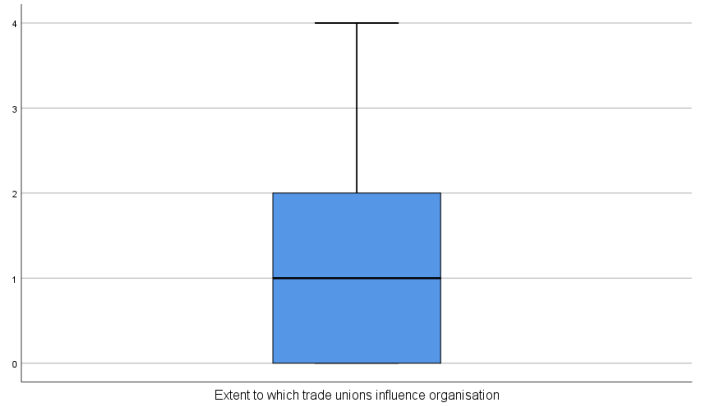
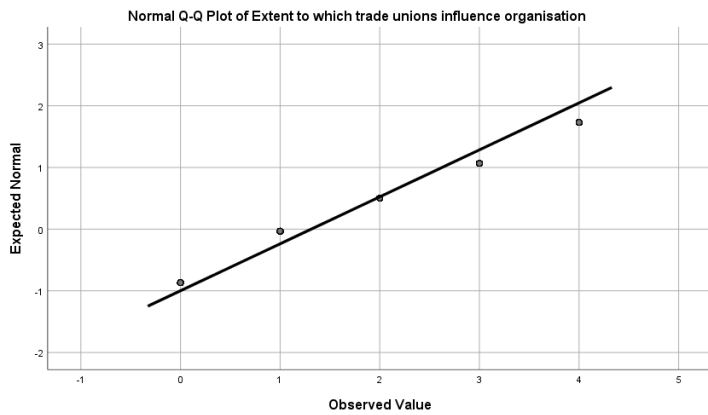
LONG-TERM ORIENTATION AFTER MEAN SENTERED



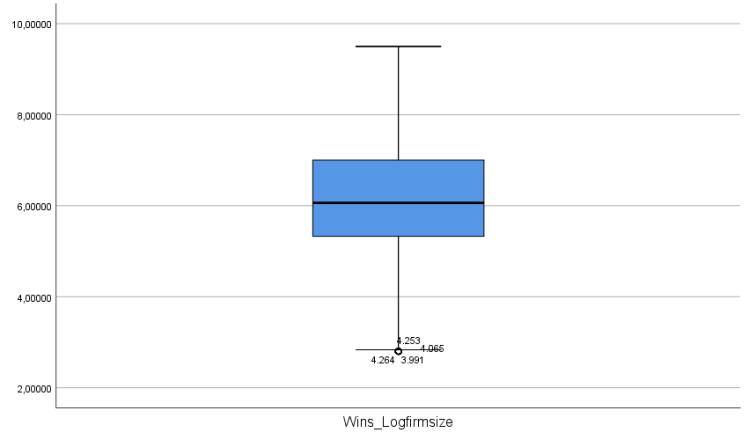
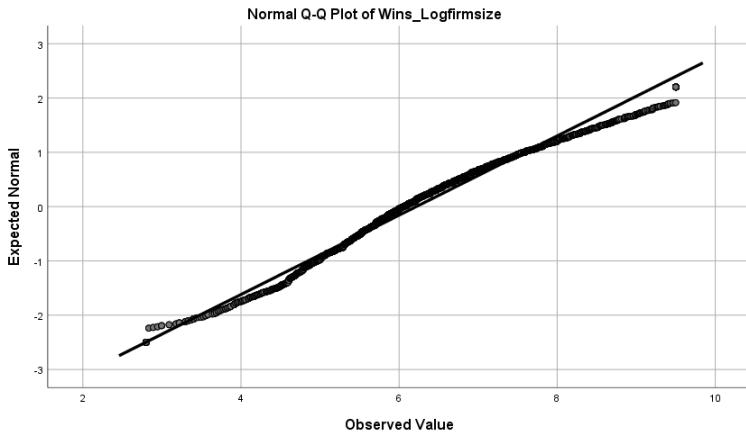
UNION DENSITY



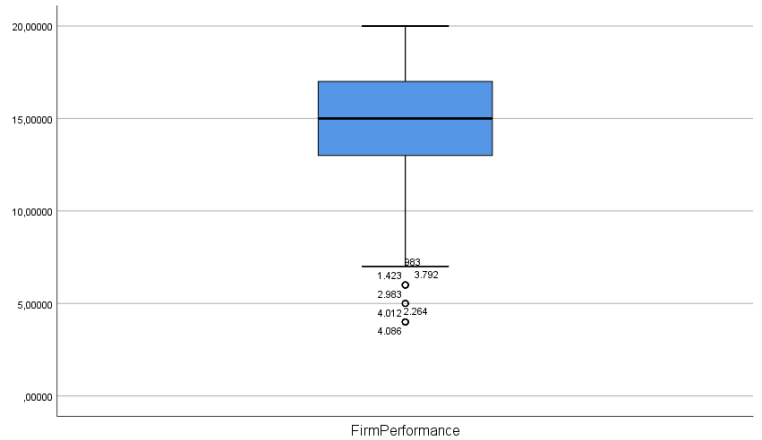
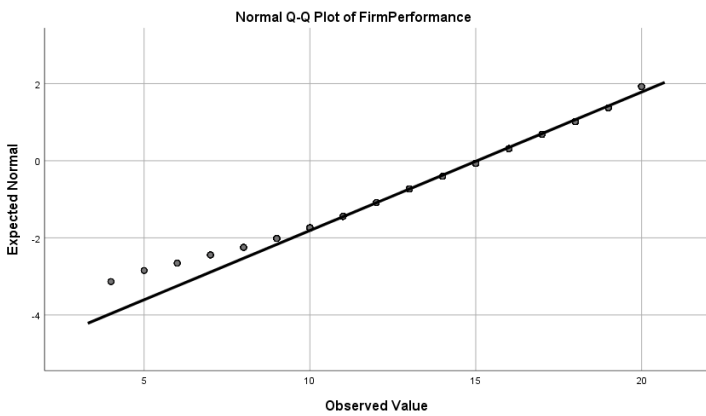
TRADE UNION INFLUENCE



FIRM SIZE AFTER WINSORIZING AND LOGARITHM



FIRM PERFORMANCE



Skewness

VARIABLE	Internation alization	Publi listening	Gross Revenue	Union Denisty	LTO	Estemation for training	Payroll cost spent on training	Training employees receive	Education level	Firm Performance	Firm size	Trade union influence
Skewness	.473	.757	-.965	.975	-.032	.957	.134	-.511	.619	-.376	.476	.610
Std. Error of Skewness	.036	.043	.038	.039	.036	.036	.041	.036	.038	.038	.037	.037

VI. Appendix: Test of Multicollinearity

Multicollinearity

	VIF
Firm Performance	1,280
Payroll annual cost	1,168
Educated Workforce	1,148
Long-Term Orientation	1,067
Union Density	1,673
Gross Revenue	1,226
Firm size	1,166
Training Employees	1,122
Do you have a joint consultative committee or works council?	1,151
Extent to which trade unions influence organization	1,702
Do you systematically estimate the need for training of personnel in your organization	1,078
Internationalization Is your organization national or international	1,038
Industry Type of industry	1,017

a. Dependent Variable: Broad-based share plans

VII. Appendix: Reflection

I started my student time at the HAN University of Applied Sciences in Nijmegen, following the bachelor Logistics management. After 4 years and finishing my bachelor degree I knew I wanted to follow a master course. First, I followed the Pre-master Business Administration at the Radboud University to be allowed into the master course. This means that writing this Master thesis project is the first academic paper I had to write. I was very happy to hear that my first choice for this subject was accepted. Mostly because I imagined that HRM-master students had more chances to be admitted.

The Master thesis project started with the research proposal, which in my experience took a lot of time especially because the deadline was right in the last exam. Reading a lot of papers, searching for interesting information but most of all righting this in a structured way was quite a test. During this process the feedback and help of dr. Erik Poutsma as my supervisor was very useful. Getting familiar with a subject not covered in the pre-master degree was time consuming but after a while this became easier as the papers started to make more sense. Therefore, after reaching the first step, setting up a good research proposal, I was very happy to continue with the research phase.

The research phase as I can summarize it in one word, iterative. As the first course in the pre-master told us, research is an iterative process, I totally agree. Recoding the variables in SPSS, testing and then recording them again to make sure that the data is normally distributed and ready to analyze was a time-consuming process. I can say after this Master Thesis process I definitely learned a lot about academic research and research in general. Also, writing and structuring the paper is something I had to pay attention to the whole time but I know next time this would be easier to do.

Finally, I can say that my knowledge on the particular subject really attracted my attention and that I learned a lot by reading. To conclude this Master Thesis project, I can say it was not easy and sometimes a bit rough. But after all I can say I am contented with the paper and results.