



SCHOOL OF
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***NATIONAL CULTURE AND GENDER: EFFECTS ON
COMPENSATION GAP AND COMPANY PERFORMANCE***

MASTER THESIS

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Abstract

- Title:** National Culture and Gender: Effects on Compensation Gap and Company Performance
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- Authors:** Giovania Kartika and Stefanie Kappel
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- Key Words:** Executive Compensation Gap, Culture, Gender, Tournament Theory, Behavioural Theory
- Purpose:** The purpose of this paper is to study the effect of gender and national culture on the compensation gap between CEOs and other members of top management and the company performance.
- Methodology:** The methodological approach is quantitative and an ANOVA as well as multiple linear regression models were used to analyse the panel data.
- Theoretical Perspectives:** The theoretical framework consists of previous research on gender differences, national culture and effects of compensation gaps on company performance. Furthermore, it is based on theories such as tournament theory and behavioural theory.
- Empirical Foundation:** The paper uses publicly available data from a sample of 29 Swedish companies listed on the OMX Stockholm 30 Index, 28 UK companies listed on the FTSE 100 Index and 30 German companies listed on the DAX 30 Index from year 2014 to 2018. Data is obtained from *Datastream* and annual reports.
- Conclusions:** Results suggest that gender does not have an impact on the decision of the size of the compensation gap or the relationship between the compensation gap and the company performance. Furthermore, tournament theory seems to be partly supported when fixed compensation is concerned. However, national culture acts as a moderator in both relationships and shows that results can strongly differ between countries.

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1. Introduction

Corporate governance has become an important and debated topic all over the world due to many corporate crises that happened during the last years (Clarke, 2007). According to Clarke (2007), good governance of a company has become crucial to the world economy. One of the central topics in corporate governance is the compensation of CEOs and the top management due to effects on company performance (Basu, Hwang, Mitsudome & Weintrop, 2007; Conyon & He, 2011). The reason for this is that, according to agency theory, the goals of the agent and the principal are not necessarily aligned (Fama, 1980). This makes compensation a very strong tool to steer the behaviour of agents in the right direction (Bevilacqua & Singh, 2009). However, there are differences in behaviour, communication and leadership styles between females and males (Howden, 1994) that have to be considered when setting up reward systems. This is an important topic since gender diversity in top management can have a significant influence on company performance (Campbell & Minguez-Vera, 2008; Adams & Ferreira, 2009; Vieito, 2012). That is why this paper will investigate the effects of gender on compensation. To be able to test if the tournament theory by Lazear and Rosen (1981) is supported, the measure used for compensation will be the compensation gap between CEOs and the executives in top management, similar to Vieito (2012). The tournament theory states that people in general like competition and consequently perform better in competitive environments (Lazear & Rosen, 1981). However, the behavioural theory does not support this since it claims differences between females and males.

The compensation gap between the CEO and the top management is a good tool to study the applicability of tournament theory or behavioural theory. Vieito (2012) has focused on United States (US) companies between 1992 and 2004 and how the size of the compensation gap influences company performance. He found that a higher compensation gap leads to better performance which indicates that tournament theory is applicable. These findings are also in line with other researchers like Main, O'Reilly III and Wade (1993), Kale, Reis and Venkateswaran (2009), Henderson and Fredrickson (2001) who investigated mostly US or Chinese companies. However, Vieito (2012) also stated that the applicability of the tournament theory is only true for male executives since females prefer a less competitive environment and hence perform better when the compensation gap to the CEO is low. So far, his research is the only study which indicates

that tournament theory is not generally applicable across genders. Hence, the effect of the compensation gap on company performance is expected to be moderated by the percentage of female executives in top management.

However, gender is not the only important aspect that can influence company performance. A vast amount of previous research has shown that national culture affects values and behaviour of individuals (Hofstede, 1981). This indicates that also the decisions of executives in corporate settings is influenced by culture (Gomez-Meija & Welbourne, 1991; Pennings, 1993; Newman & Nollen, 1996; Schuler & Rogovsky, 1998; Tosi & Greckhamer, 2004; Jansen, Merchant & Van der Stede, 2009; Wright, 2010 and Merchant, Van der Stede, Lin & Yu, 2011). Furthermore, the cultural dimensions used by the GLOBE Study (House, Hanges, Javidan, Dorfman & Gupta et al., 2004) show that most countries rank differently in certain aspects of national culture. Some are more individualistic some are more masculine, some give more importance to hierarchical structures and some try to avoid uncertainty more than others. Consequently, it is expected that the size of the compensation gap differs across national cultures due to differences in the cultural dimensions.

1.1. Problem

As mentioned earlier, to deal with the agency problem that might arise within the organisation, compensation can be a strong motivational tool (Bevilacqua & Singh, 2009). Due to the hierarchical structure in the organisation, a compensation gap between the CEO and other executives is common since the CEO will earn more than the people on a lower level. This gap is found to positively impact the company performance through its influence on individual performance of the executives in top management (Main, O'Reilly III & Wade, 1993; Henderson & Fredrickson, 2001; Kale, Reis & Venkateswaran, 2009).

In his research, Vieito (2012) used CEO gender as a variable to show how the compensation gap for executives was set-up. He included this variable because female and male behave differently, as stated by Howden (1994). Hence, in the decision of compensation for top management, females are found to value equality more and consequently set lower gaps than their male counterparts who are more competitive and prefer higher gaps according to tournament theory (Vieito, 2012).

Nevertheless, the CEO is not in charge of setting the compensation of other executives, hence the remuneration committee seems to be a better choice when assessing the size of the compensation gap. The reason for that is this committee is appointed in the organisation to set executives' compensation, including the CEO and other executives in the company. Therefore, it will show more clearly how the different genders affect the decision of compensation for the executives.

Furthermore, studies about the effects of the compensation gap on company performance have been done by various researchers (Kato & Long, 2006; Lin & Lu, 2009; Vieito, 2012; Banker, Bu & Mehta, 2016). However, most research in this field focuses on the US and China. That is why this paper will investigate if the same results can be obtained when studying European countries. Additionally, little has been written about how the gender of the involved parties, like the top management, will affect that relationship (Vieito, 2012). Hence, this paper will also use the gender of the top management as Vieito (2012) found that there are differences in the behaviour of male and female executives based on the size of compensation gap which might influence their performance as well. Another reason to include, the gender of the top management is because their decisions affect the company performance due to their strategic position as "upper-echelon" (Hambrick & Mason, 1984).

Moreover, national culture influences how people behave and make decisions, which is shown by Hofstede (1984) who split national culture into different dimensions. In a company context, national culture will also influence how top management behaves which also affects the decision of compensation size for CEO as well as other executives. According to Hofstede (1980), national culture influences the distribution of power, the organisational goals and objectives, the decision-making process as well as reward systems. However, previous research has not acknowledged the effect that culture can have on the size of the compensation gap. Therefore, this paper investigates if national culture influences the size of the compensation gap. Additionally, as previous research mostly analysed US and Chinese companies, this paper will fill the research gap about European countries since differences in national culture can be expected based on the GLOBE Study (House et al., 2004). According to this study national cultures can be clustered into ten different clusters. Hence, Germany, Sweden and the United Kingdom (UK) have been chosen as these countries are

the biggest countries in their respective regional clusters and are expected to be representable for Germanic Europe, the Nordics and Anglo-Saxon countries.

1.2. Purpose

This paper serves two purposes. First, the effect of gender on the remuneration committee and top management will be examined. Additionally, its effects on the compensation gap decision as well as its (moderating) effects on the relationship between compensation gap and company performance will be investigated. Second, this paper will include national culture as a moderating variable and investigate its effect on the size of compensation gap and on the company performance.

Female and male executives are found to have different behavioural tendencies related to the amount of compensation (Howden, 1994). That is why, the effects on remuneration committee decisions could be different based on the respective gender. Moreover, Vieito (2012) found that there are different preferences of males and females concerning the size of the compensation gap based on their differences in behaviour. This is particularly interesting because previous research on the tournament theory (Main, O'Reilly III & Wade, 1993; Henderson & Fredrickson, 2001; Kale, Reis & Venkateswaran, 2009) has not considered differences in behaviour. Furthermore, as national culture reflects the way society behaves, it is also considered to be able to influence the way people behave in the organisation. Hence, this paper also considers national culture as one of the factors that can influence the relationship between the gender and the compensation gap as well as the relationship between the gap and company performance.

This study will contribute theoretically and practically. Theoretically, this study can contribute to the development of the literature which links compensation and performance through several aspects. This study used more recent data as most previous research only used the data until early 2000. Moreover, this study also can fill the research gap as most previous research related to compensation gaps between CEOs and the top management only focused on the US and Chinese companies. Furthermore, this study used more relevant and extensive variables e.g. gender on the remuneration committee and gender of top management as well as national culture. These aspects can contribute to the scarce body of research on compensation and performance by involving

gender and culture as the main and moderator variables. Practically, this study will make top-management aware of the effects higher or lower compensation gaps have on the performance of the executives on the management board. With this knowledge, companies and remuneration committees can analyse if a higher or lower gap is beneficial. Combining this with the findings of how gender and national culture influence remuneration committees and compensation gaps, the executives in the remuneration committees will be able to set compensation in accordance to the needs of the current management board. Consequently, this will lead to better financial and operational performance of the company.

1.3. Outline

In order to fulfil the purpose of the study, this paper is structured as follows: Section 2 contains a literature review which describes the relevant supporting theory and previous research for each variable that used in this paper. This section also contains the Hypothesis Development which explains each proposed hypothesis in this study. The data, variables and the empirical approach are presented in the methodology section. Section 4 provides the result and analysis of this study. A discussion part is presented in section 5 and followed by the conclusion of this study in section 6. Finally, section 7 discusses the contributions, the suggestions for the future research and limitations of this study.

2. Literature Review

2.1. Gender

In general, Bell (2005) shows that female executives receive between 8% to 25% less than male executives (corrected gender pay gap) and that this is dependent on the gender of the Chief Executive or the Board Chair. Further, she found that women-led companies pay their female executives 10% to 20% more than male-led companies. Moreover, Francis, Hasan, Park, and Wu (2015) found the presence of gender effects on decision-making when assessing the behaviour of female and male CFOs. However, Bell (2005) also stated, that the uncorrected gender pay gap has been declining since the 1950s, which is also supported by Vieito and Khan (2012). Gayle, Golan and Miller (2012) claimed that there is even a “female premium” on the executive level. According to them, the reason for that is that there is a high demand for female executives, which results in

higher salaries for them. Nonetheless, more recent research by Wang, Markóczy, Sun and Peng (2018) showed that the difference of male and female pay on CEO-Level is still substantial, even in countries with a high number of female CEOs like China.

This might be due to differences in behaviour and leadership style of the different genders as the behavioural theory states. According to Howden (1994), the communication styles of the two genders are vastly different. He found the male style to be direct and confrontational. In comparison, females are more democratic, participative and less selfish in their leadership and communication style (Eckel & Grossman, 1998; Jogulu & Wood, 2006). Howden (1994) stated that these traits have their origin in different socialisation practices in childhood since boys are usually taught to think individualistic, while girls are socialised as collectivists. Most of the research until the early 1990s, thought of women as not suitable for leadership roles due to less aggressive behaviour, more concern for others and artistic qualities (Orser, 1994). However, a study by Lewin and Lippitt in 1938 isolated three leadership styles: The autocratic, the democratic and the laissez-faire and found the democratic style to be the most effective (Bass & Stogdill, 1990). The leaders fitting this style are characterised by valuing an “open, trusting, and follower-oriented relationship” with their subordinates (Jogulu & Wood, 2006). Another study by Kahn and Katz (1952) also showed that “employee-oriented” employers achieved a higher productivity and job satisfaction of their employees which would also support the claim that females are suitable for leadership positions. Nonetheless, Andersen and Hansson (2011) evaluated leadership behaviour in Swedish public companies and did not find significant results which indicate different behaviour between the genders. This is also supported by Ferrario (1991) who concluded that the effectiveness of a leader is not determined by gender but by the skill of balancing task- as well as relation-oriented behaviour. Considering the previous research mentioned before, there is no consensus about the question if women’s and men’s behaviour in leadership roles differ.

However, most of the current research found differences in the risk-taking behaviour between genders (Powell & Ansic, 1997; Byrnes, Miller & Schafer, 1999). Furthermore, Khan and Vieito (2013) found that these differences in risk-taking behaviour have important implications on company performance. Perryman, Fernando and Tripathy (2016) found a connection between gender and company performance. According to them, companies with higher gender diversity

show lower risk and deliver better performance, which is in line with the behavioural theory. Furthermore, they stated that females on the executive level are still paid less.

Vieito (2012) looked at the effect of the compensation gap between CEOs and the top management on company performance. As other researchers (Main, O'Reilly III & Wade, 1993; Henderson & Fredrickson, 2001; Kale, Reis & Venkateswaran, 2009), he found that tournament theory (Lazear & Rosen, 1981) in general is applicable on the executive level. Tournament theory states that people like competition and hence perform better if the compensation scheme is designed accordingly. However, Vieito (2012) also found that this is applicable only to males but not to females by using gender as a control variable which is in-line with the research about the behavioural theory. This indicates, that the compensation gap should be set in accordance with the number of females in top management since it could have substantial effects on the company's performance.

2.2. Compensation Gap

In a company-setting, an agency relationship could be defined as the relationship between shareholders as the principal and top management as the agent (Jensen & Meckling, 1976). As the agent is appointed to work on behalf of the principal's interest, the possibility of a conflict of interests between those parties might arise, which leads to inefficiencies and is also known as the "agency problem" according to Jensen and Meckling (1976). Therefore, a financial incentive can be used to control an agent's behaviour and to ensure that the agent will take actions in the principal's interest (Jensen & Meckling, 1976). Compensation as a form of a financial incentive plays a role in monitoring executive teams or top management due to a major impact on profit and share price as a result of their decision-making, according to the "upper echelons" approach by Hambrick and Mason (1984).

Compensation can be designed in many ways. Lazear and Rosen (1981) focus on a compensation scheme based on the organisational ordinal rank rather than people's output level. The use of a rank-order tournament scheme will encourage people to compete in order to 'win' the 'competition' to get the desired reward which is a higher rank in this case (Lazear & Rosen, 1981). In a company context, the application of a rank-order tournament scheme is shown by the

hierarchical structure in the organisation. Hierarchical structures show different responsibilities and roles for each individual (Simon, 1957). Getting to a higher level in the organisation will often be followed by higher compensation. The possibility to obtain this reward will create a tournament atmosphere which can drive an individual to perform better (Lazear & Rosen, 1981). Hence, if compensation is designed in accordance to the rank-order scheme, it can motivate people to perform better to get the desired reward. Additionally, Lazear and Rosen (1981) found that a tournament atmosphere will also be suitable from a corporate perspective. It will lead to better performance without the necessity of adjusting the compensation based on the output level (Lazear & Rosen, 1981; Malcomson, 1984). In the top management structure, the CEO of the company is viewed as the 'winner' where he or she will receive more than the other members of the top management. Usually, the compensation that an individual gets in this position is not necessarily showing his current productivity but more into as a result of a good performance when he or she was in a junior level (Lazear & Rosen, 1981). Therefore, this scheme will make people more productive because they want to pursue a higher position in the organisation eventually. Main, O'Reilly III and Wade (1993) also found that compensation as a reward is needed to motivate the people who are involved in top management of the organisation to perform better as they expect high dispersion of compensation among hierarchical levels. Furthermore, the increasing amount of the reward over the years is essential because the 'winner' has to be motivated to retain his/her past good performance (Rosen, 1986; Main, O'Reilly III & Wade, 1993).

As suggested by Lazear and Rosen (1981) and Rosen (1986), variations of compensation among executives are needed. There has already been research that discusses the link between executives compensation and company performance. Kato and Long (2006) for example, have found that there is a positive relationship between executive compensation and company performance when measured by sales growth. However, instead of looking at the compensation for each executive, this paper will focus on the gap between the compensation earned by the CEO and the other members of the top management. The gap between top management compensation is caused by the hierarchical structure within the company (Kale, Reis & Venkateswaran, 2009). This gap is also found to have an impact on the company performance as it can influence the competitiveness among top management, according to tournament theory. By using US companies, Kale, Reis and Venkateswaran (2009) found that there is a positive influence of promotion-based tournament

incentives between CEO and Vice Presidents (VPs) on the company performance. Moreover, they also found that there is an increase in performance shortly before the retirement of the current CEO which supports the tournament theory. Similar results appear when Chinese companies are used (Lin & Lu, 2009; Banker, Bu & Mehta, 2016). Vieito (2012) extended the links between compensation gap and company performance with the CEO gender as a control variable. His study shows that there is a difference in the size of the compensation gap depending on the gender of the CEO.

2.3. National Culture

Considering the aforementioned theories, it becomes clear that behaviour of individuals is an important aspect which can influence organisations. Behaviour itself, however, is influenced by many different factors. Since national culture can be defined as “shared motives, values, beliefs, and interpretations or meanings of significant events that result from common experiences of members of collectives and are transmitted across age generations” (House et al., 2004), it can be classified of one of these factors. Based on this, Hofstede (1984) developed four cultural dimensions. *Power Distance* explains how much value a country attributes to hierarchical structures. *Uncertainty Avoidance* is defined as the tolerance for unpredictability. *Individualism* describes how tight the integration into groups is handled in a country and *Masculinity* measures the desire for achievement and competition in a country. Furthermore, he added the fifth dimension *Long-Term Orientation* which states how important traditions are in a country and if it is willing to adapt to improve their economic development (Hofstede, 2011). The latest dimension added was *Indulgence* to measure the degree of social norms set in a country and how strict they are regulated (Hofstede, 2011).

Additionally, culture does not only affect individuals but also organisations as they are built and run by people (Cieslewicz, 2014). Doupnik and Tsakumis (2004) specified that culture is the most important environmental factor in accounting systems. That is why Gray (1988) adapted the cultural dimensions by Hofstede (1984) to explain and predict differences in accounting systems of individual countries. For this purpose, he developed four dimensions. *Professionalism vs. Statutory control* which evaluates the degree of professional judgement, *Uniformity vs. Flexibility* which assesses the desire of uniform accounting practices, *Conservatism vs. Optimism* which

estimates the intensity of risk-taking and *Transparency vs. Secrecy* which appraises the disclosure practices of a company. This indicates that morals valued by society have consequences for organisations as well (Gray, 1988). According to Hofstede (1980), culture influences the distribution of power, the organisational goals and objectives, the decision-making process as well as reward systems. However, studies about culture did not get much attention up until the late 20th century. Most researchers expected any existing cultural differences in organisational settings to decrease over time (Hofstede, 1980). Nonetheless, after the 1970s academic literature about cultural dimensions and their effects exploded (Perera, Cummings & Chua, 2012), mainly because of the rapid increase of multinational enterprises (House et al., 2004; Drnevich & Stuebs, 2013).

One of the major studies in this field is the Global Leadership and Organizational Behavior Effectiveness (GLOBE) Study by House et al. (2004) which is based on Hofstede's dimensions. This study contributes massively to the academic literature about organisational and leadership theory by presenting cross-cultural data from 62 societies and 951 organisations. The authors developed nine cultural attributes, based on the cultural dimensions by Hofstede (1984). Classifying the responses into the categories *Future Orientation*, *Gender Egalitarianism*, *Assertiveness*, *Humane Orientation*, *In-Group Collectivism*, *Institutional Collectivism*, *Performance Orientation*, *Power Distance* and *Uncertainty Avoidance* helped the authors to conclude on differences in organisational behaviour for the 62 societies¹. Based on this, England, Germany and Sweden differ in their cultural dimensions (see Table 1).

¹ A more detailed description of the cultural dimensions developed by House et al. (2004) can be found in Appendix 2.

Country	Assertiveness	Gender Egalitarianism	Institutional Collectivism	In-Group Collectivism	Future Orientation	Humane Orientation	Performance Orientation	Power Distance	Uncertainty Avoidance
England	4,15	3,67	4,27	4,08	4,28	3,72	4,08	5,15	4,65
Anglo-Saxon Cluster Average	3,88	4,83	4,31	5,74	4,15	4,22	4,41	4,86	4,44
Germany	4,64	3,08	3,68	4,27	4,11	3,29	4,17	5,39	5,19
Germanic Cluster Average	3,07	4,91	4,69	5,16	4,4	3,55	4,41	4,95	5,12
Sweden	3,38	3,84	5,22	3,66	4,39	4,1	3,72	4,85	5,32
Nordic Cluster Average	3,56	4,82	4,08	5,65	4,36	4,17	3,92	4,54	5,19
Magnitude	G > E > S	S > E > G	S > E > G	G > E > S	S > E > G	S > E > G	G > E > S	G > E > S	S > G > E

S...Sweden; G...Germany; E...England

Table 1: Cultural Dimensions by House et al. (2004)

Wright (2010) suggests that culture and reward systems are linked. Moreover, she proposes that culture is connected with the performance of a company. However, she also admits that there has not been much research on the topic so far. Additionally, Newman and Nollen (1996) investigated if management practices which are in accordance with national culture have an impact of company performance. They found that management practices of a company should be in-line with the cultural dimensions of the respective country to achieve the best possible financial performance which supports the findings of Wright (2010). Furthermore, Tosi and Greckhamer (2004) found that CEO compensation is related to the degree of power distance of a country as well as individualism. The study by Schuler and Rogovsky (1998) concludes that the human resource and compensation policies should be set in accordance with the dimensions developed by Hofstede (1984) to ensure that compensation is set in the best possible way. Gomez-Meija & Welbourne (1991) research compensation strategies in a global context since most of the research on this topic was done only in the US. They found that even though there are certain strategies have become internationally applicable, others remain heavily affected by cultural influences. These findings are also supported by Jansen, Merchant and Van der Stede (2009) who found that the incentive programmes in the Netherlands differ substantially from the programmes in the US. Furthermore, their findings suggest that the use of incentive programmes in Dutch companies have a negative effect on company performance and employee satisfaction. Even though this research only focused on the comparison of one European country and the US, this shows that national culture is an important aspect to consider when setting up reward structures in a company. Likewise, research conducted by Pennings (1993) indicates that there are different incentive plan preferences by executives in the US compared to their European counterparts. The research by Merchant et al. (2011) present similar results when Chinese reward schemes are added to the comparison. Gomez-Meija & Welbourne (1991) conclude, that adapting compensation schemes can give companies a competitive advantage over their competitors in certain markets. However, the authors also pointed out that implementation of compensation schemes based on culture has to be done on a country-by-country basis and very carefully with respect to cultural sensitivity as well as open-mindedness since there is not much research about the relationship between culture, compensation policies and company performance. Furthermore, Chiang and Birtch (2012) found that additional to the dimensions of national culture, other contextual factors have to be considered since these factors also influence the preferences individuals have concerning reward and compensation schemes.

2.4. Hypothesis Development

Vieito (2012) found that in companies managed by female CEOs a lower compensation gap leads to better company performance, while companies with a male CEO record better performance with bigger compensation gaps. This indicates that tournament theory is applicable to males while behavioural theory applies to females. However, the CEO of a company is not necessarily responsible for setting the compensation of executives. In most companies setting the compensation for executives is the responsibility of remuneration committees which usually consist of executives who are in a supervisory position. Based on this, it is expected that the percentage of female executives on the remuneration committee of a company will influence the size of the compensation gap. One reason for this expectation is that female executives do not value competition as much as their male counterparts and hence prefer lower gaps to encourage collaboration (Howden, 1994). Another reason is that previous research showed that female executives are still earning less compared to their male colleagues (Bell, 2005; Wang et al., 2018). These reasons led to the development of the first hypothesis below:

H1: A higher percentage of female executives on the remuneration committee will lead to a lower compensation gap.

The compensation gap between the CEO and other members of the top management shows the level of competitiveness among them. The CEO will get higher compensation compared to the other members of the the top management since he has the highest position in the hierarchy of the top management. According to Lazear and Rosen (1981), a high gap in compensation can create a competitive environment for the agents which are the members of the top management in this case. The greater feeling of competitiveness will lead to higher motivation among the executives since they are trying to ‘win’ the highest reward, similar to how people behave in a tournament (Lazear & Rosen, 1981). The size of the gap will affect the competition among them which encourages people to work better in order to achieve a higher position (Masulis & Zhang, 2013). Consequently, the increased performance will have an impact on company performance (Eriksson, 1999; Henderson & Fredrickson, 2001) due to the influential position of the top management within the company. Based on these reasons, the second hypothesis is:

H2: A higher compensation gap will lead to higher company performance.

Even though there are already many studies about the effect of the compensation gap on company performance, however, none of them includes the gender of the top management as a moderator. Vieito (2012) found that female and male CEOs have a different tendency when reacting on the size of the compensation gap. Howden (1994) stated that men tend to be more competitive than women which means that a higher gap will motivate them more to perform better. Further, Howden (1994) stated that females are more cooperative which leads to better performance when the gap is low. Based on this research, it seems plausible that the effect of the compensation gap on company performance could be different depending on the dominating gender in top management since it is an essential part of the company's decision making. Therefore, the third hypothesis is defined as:

H3: A higher percentage of female executive in top management will moderate the effect of the compensation gap on company performance.

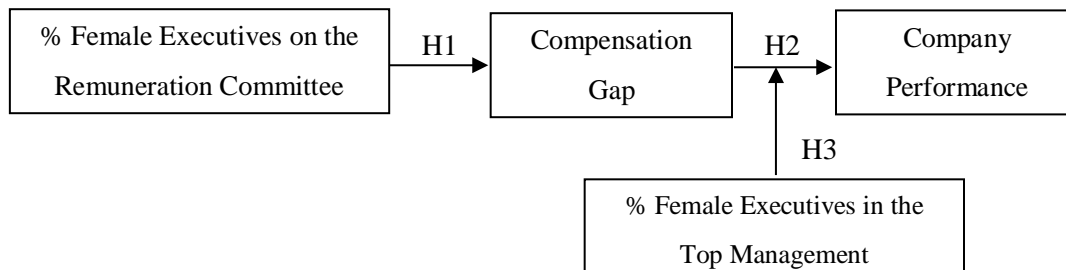


Figure 1: Visualisation of Hypothesis 1-3

As specified before, organisations are influenced by national culture, since they are run by people (Cieslewicz, 2014). Previous research showed that management practices as well as compensation schemes should be in-line with the respective national culture of a country to ensure the best performance of the top management in the company (Gomez-Meija & Welbourne, 1991; Pennings, 1993; Newman & Nollen, 1996; Schuler & Rogovsky, 1998; Tosi & Greckhamer, 2004; Jansen, Merchant & Van der Stede, 2009; Wright, 2010 and Merchant et al., 2011). However, none of these researchers have looked at the effect of national culture in combination with the compensation gap between CEOs and the top management.

Furthermore, the three countries rank differently on the nine dimensions defined by the GLOBE Study (House et al., 2004). Table 1 in the section above shows the scores assigned to the individual countries as well as the cluster averages. For example, on the *Power Distance* and the *Performance Orientation* scale, Sweden ranks lower than the two other countries. This means that executives in

Germany and the UK attribute more importance to hierarchies and performance improvement than in Sweden and hence see a higher compensation gap as appropriate. Since national culture does affect every gender in the respective country this will have effects on the treatment of compensation schemes by the remuneration committee as well as the general behaviour of executives. Sweden ranks lowest in *Assertiveness*, highest in *Gender Egalitarianism* and highest in *Human Orientation* which fits the feminine leadership and communication style described by Howden (1994). Furthermore, the high ranking of Sweden in the *Institutional Collectivism* also indicates a more feminine behaviour in Swedish companies. Based on the expectation that female executives prefer lower compensation gaps and perform better when the compensation is set accordingly, this type of behaviour will have an influence not only on the process of deciding the amount of the remuneration for the executives in top management but also on the performance of individual executives. German companies on the other hand, rank lowest in the *Institutional Collectivism* which indicates an individualistic culture, however, German Executives rank high in the *In-Group Collectivism*.

In combination with tournament theory (Lazear & Rosen, 1981) this leads to the assumption that German and Swedish executives might set and perform better with lower compensation gaps. Additionally, the high ranking in *Assertiveness* and low ranking in *Gender Egalitarianism* in Germany indicates a more masculine behaviour than in Sweden or the UK. Following the previously specified expectation that males perform better when the gap is higher due to increased competitive behaviour, this indicates that German executives perform better with higher gaps. Finally, based on the scores on *Uncertainty Avoidance*, German and Swedish executives prefer predictability compared to the UK which scored slightly lower in this dimension. Combining these expectations with the previous hypotheses leads to the prediction that national culture will affect the size of the compensation gap as well as company performance subsequently. Hence the fourth hypothesis is defined as:

H4a: National culture is a moderator in the relationship between female executives on the remuneration committee and the compensation gap.

H4b: National culture is a moderator in the relationship between the compensation gap and company performance

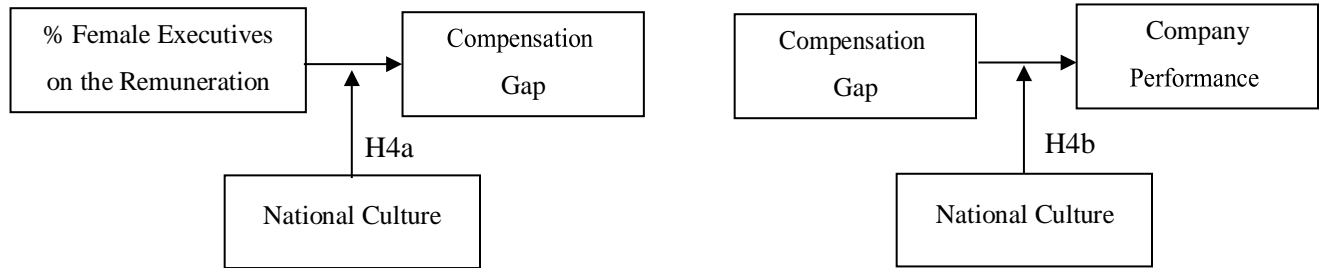


Figure 2: Visualisation of Hypothesis 4a and 4b

According to the explanation above, there are four main hypotheses proposed in this paper. Table 2 presents the summary of all hypotheses.

Hypotheses	Supporting Theory
1 A higher percentage of female executives on the remuneration committee will lead to a lower compensation gap.	Behavioural Theory
2 A higher compensation gap will lead to higher company performance.	Tournament Theory
3 A higher percentage of female executive in the top management will moderate the effect of the compensation gap on company performance.	Tournament Theory Behavioural Theory
4a National culture is a moderator in the relationship between female executives on the remuneration committee and the compensation gap.	Cultural Dimensions
4b National culture is a moderator in the relationship between the compensation gap and company performance	Cultural Dimensions

Table 2: Summary of Hypotheses

3. Methodology

3.1. Data Collection

The company sample for this paper consists of the 30 biggest public companies (by market-capitalisation) as of 31 December 2018. In Sweden and Germany, these companies could be found using the OMX Stockholm 30 and the DAX index respectively. OMX Stockholm 30 and DAX are used as these indices represent the 30 most actively traded and stocks and largest companies on the Stockholm Stock Exchange and on the Frankfurt Stock Exchange. For the United Kingdom, the 30 biggest companies were extracted from the FTSE 100 as it includes the 100 largest companies which list on the London Stock Exchange. The extraction of 30 companies was done to make the final sample comparable with other countries. The final sample will include financial and compensation data for the years 2014 and 2018. However, due to unavailability of data, the final sample used in this paper consists of 430 observations (see Table 3) which can be classified as an unbalanced panel.

Remarks		Amount of Observations	
Companies listed in OMX 30, DAX and 30 companies of FTE100 from 2014 to 2018		450	
Lost Observations			
Country	Company's Name	Reason	Lost years
Sweden	Atlas Copco	Listed with A and B shares	5
	Essity Aktiebolag	Exists since 2017	1
	Glencore PLC	No executives in the top management	5
UK	BHP Group	No executives in the top management	5
	Covestro AG	Exists since 2015	3
Germany	Linde AG	Annual report 2018 is not available at the time	1
Amount of Lost Observation			20
Amount of Final Observation			430

Table 3: Sample Selection

To collect all the information needed, several ways to gather the data were needed. As there is no database that has information about compensation for each person in top management available,

the information was collected manually from the published annual reports which was obtained from the company's website. Other complementary information, e.g. the age and birth year of executives, was also obtained from annual report. However, if this information was not available, the data was collected using other sources such as bloomberg.com. Furthermore, the database *Datastream* was used to gather total assets, market value and total debt of the respective companies. Moreover, as *Datastream* did not have all necessary data available, some of the numbers were calculated based on the information available in the annual reports to avoid lost observations. Additionally, due to different terms used by companies to refer to executives in charge of management decisions, the term 'top management' is used to be consistent.

3.2. Variable Description²

3.2.1. Independent Variables

The percentage of female executives on the remuneration committee (*fENEXERE*N) is included to show if the differences in the behaviour of males and females have an influence on the size of the compensation gap. Another explanatory variable is the compensation gap (*CONPGap*) in percent between the CEO and the top management. As mentioned before, it is calculated by deducting the average executive compensation from the CEO compensation of the respective year (Vieito, 2012). The percentage of the calculated compensation gap has been used to make the variable more comparable between the countries used. Figure 3 visualises how this variable has been calculated. Furthermore, the compensation gap was split into three categories. Variable compensation is often used as an incentive for executives while fixed compensation does not change much over time as the name suggests. Hence, a split into total, variable and fixed compensation gaps was done to evaluate if different effects can be observed. Especially, the split into a variable compensation gap is of great interest, since variable compensation is often used as an incentive to steer the individuals' behaviour.

$$\text{Compensation Gap (\%)} = (\text{CEO Compensation} / \text{Average Amount of Compensation of Executives in the Top Management}) \times 100$$

Figure 3: Calculation of the Compensation Gap Variable

² A full summary of all variables has been included in table 4.

3.2.2. Dependent Variables

For some hypothesis Tobin's Q (Q) has been used as a measure for financial performance. It is calculated by $\frac{\text{Market VaSue} + \text{Debt}}{\text{Totas Accetc}}$ (Lin, Shen & Su, 2005; Lin, Yeh & Shih, 2013). The values for

market value, debt and total assets are obtained from *Datastream*. For some other hypothesis the compensation gap (conPgap) between the CEO and the top management was used as a dependent variable. It is calculated by deducting the average executive compensation from the CEO compensation of the respective year (Vieito, 2012). The percentage of the calculated compensation gap has been used to make the variable more comparable between the countries used. Additionally, the compensation gap was split into the same three categories as previously mentioned.

3.2.3. Moderating Variables

The percentage of female executives in top management (feNExetop) is expected to affect the relationship between the compensation gap and the company performance. Furthermore, the national culture *natculture* is used as a moderating variable in Hypotheses 4a and 4b. It is included to show if the differences between the dependent variables are due to the national culture of the respective country.

3.2.4. Control Variables

Total assets are used to control for the size of the companies included in the sample. The natural logarithm of *size* is used since this normalizes the variable and reduces skewness. The *CEOtenure* is expected to have an influence on the dependent variables since a higher tenure leads to better knowledge about the company, industry as well as the competitors. To account for the exponential character (see Appendix 6 and 7) of *CEOtenure*, the squared form of this variable is included. Similar to the tenure of the CEO, the age of the CEO and executives is expected to have an influence due to more experience in general. To account for the exponential character of *avgexeage* and *CEOage* (see Appendix 6 and 7), the squared forms of these variables are included as well. To account for effects caused by the past performance of the company, the average of the return of assets of the last five years is included. Furthermore, year and industry dummies are used as controls to isolate any effects on the explanatory variables. As a classification for the industry dummies the Fama-French 10 industry classification has been used.

Variable	Meaning	Description
Q	Measure for financial performance	Market value and debt divided by total assets
compgaptot	Total compensation gap between CEO and the executives in the top management	Total compensation of the CEO minus the average of total top management compensation of the respective year in percent
compgapvar	Variable compensation gap between CEO and the executives in the top management	Variable compensation of the CEO minus the average of variable top management compensation of the respective year in percent
compgapfix	Fixed compensation gap between CEO and the executives in the top management	Fixed compensation of the CEO minus the average of fixed top management compensation of the respective year in percent
natculture	National culture	Dummy variable to differentiate between countries
femexerem	Percentage of female executives on the remuneration committee	Number of female executives on the remuneration committee divided by total number of executives in the committee
femexetop	Percentage of female executives in the top management	Number of female executives in the top management divided by total number of executives in the top management, not including the CEO
size	Company size	Total assets of the company
CEOTenure	Tenure in CEO position	Respective year minus year of obtaining CEO position
CEOAge	CEO's age	Age of CEO in respective year
avgexeage	Average executive's age	Average of total age of executives in respective year
pastperf	Past performance of the company	Average ROA of the last five years
year	Observation year	Dummy variable to differentiate between observation years
industry	Company's industry	Dummy variable from Fama-French 10 industry classification to differentiate between industries

Table 4: Variable Description

3.3. Empirical Approach

As specified before panel data is used to study the effects of gender and national culture on the compensation gap and company performance. A pooled OLS regression will not be sufficient for this purpose since time-specific effects are present. The reason why the Fixed-Effect (FE) Estimation is chosen over a First-Differencing (FD) approach is that an FD Estimation is known

to be less efficient than an FE assuming no homoscedasticity and serial correlation. A Hausman-Test (see Appendix 3) was run to assess if a Fixed-Effect Estimation or a Random Effect Estimation is more appropriate to assess the individual hypotheses. By using this test the endogeneity problem was addressed. To assess if heteroscedasticity is present, a White-Test was used and can be found in Appendix 5. Based on this test, robust standard errors have been used to avoid any heteroscedasticity problems that might occur. Additionally, before running the regressions in the same manner as previously described, an Analysis of Variance (ANOVA) was performed for hypotheses 4a and 4b to assess if differences in the dependent variables between the countries are based on national culture. Moreover, the probability of omitted variable bias is reduced by including control variables used in most papers covering this topic. Additionally, it was tested if the squared forms of CEO tenure (*CEOtenure*) and average executive age (*avgexeage*) should be included by conducting an F-Test (see Appendix 6)

3.4. Regression Models

Regression models were developed for four hypotheses in this paper. Each model is based on the expectations developed in Section 2.4. The models have been divided into two sub-sections since some focus on the gender effect while others focus on the effect of national culture.

3.4.1. Gender

The first model visualises the first hypothesis which expects a negative effect of a higher percentage of female executives on remuneration committee on the size of the compensation gap between CEO and other members in top management (see Model I). The second model displays the second hypothesis which expects a positive effect of the size of compensation gap on the company performance (see Model II). The third model depicts the expected moderating effect of a higher percentage of female executives in top management on the relationship between the compensation gap and the company performance as stated in the third hypothesis (see Model III).

Model I: Effect of gender on the size of the compensation gap

$$\begin{aligned} \text{COMPensation Gap} = & \beta_0 - \beta_1 \% \text{feNEXereN} + \beta_2 \ln(\text{size}) + \beta_3 \text{CEOtenure} + \beta_4 \text{CEOtenure}^2 \\ & + \beta_5 \text{avgexeage} + \beta_6 \text{avgexeage}^2 + \beta_7 \text{pastperf} \\ & + \beta_{8...12} \text{year dUNNIeS} + \beta_{13...23} \text{industry dUNNIeS} + \mu \end{aligned}$$

Model II: Effect of compensation gap on the company performance

$$\begin{aligned} \text{COMPany PerFORNance} = & \beta_0 + \beta_1 \text{CONPgap} + \beta_2 \ln(\text{size}) + \beta_3 \text{CEOtenure} + \beta_4 \text{CEOtenure}^2 \\ & + \beta_5 \text{avgexeage} + \beta_6 \text{avgexeage}^2 + \beta_7 \text{pastperf} \\ & + \beta_{8...12} \text{year dUNNIeS} + \beta_{13...23} \text{industry dUNNIeS} + \mu \end{aligned}$$

Model III: Moderating effect of percentage female in top management on the effect of compensation gap on the company performance

$$\begin{aligned} \text{COMPany PerFORNance} = & \beta_0 + \beta_1 \text{CONPgap} + \beta_2 \text{feNEXetop} + \beta_3 \text{CONPgap} * \text{feNEXetop} \\ & + \beta_4 \ln(\text{size}) + \beta_5 \text{CEOtenure} + \beta_6 \text{CEOtenure}^2 + \beta_7 \text{avgexeage} \\ & + \beta_8 \text{avgexeage}^2 + \beta_9 \text{pastperf} + \beta_{10...14} \text{year dUNNIeS} \\ & + \beta_{14...24} \text{industry dUNNIeS} + \mu \end{aligned}$$

3.4.2. National Culture

Hypothesis 4a and 4b are both testing if national culture acts as a moderator in the relationships tested in hypothesis 1 and 2. Hence, the fourth model investigates if national culture changes the results of the effect of a higher percentage of female executives on the remuneration committee and the size of the compensation gap (see Model IV). The fifth model tests for a moderating relationship between national culture and the compensation gap itself and its effect on company performance (see Model V).

Model IV: Moderating effect of national culture on the relationship between female executives on the remuneration committee on the size of the compensation gap

$$\begin{aligned} \text{CONPensation Gap} = & \beta_0 - \beta_1 \% \text{feNEXereN} + \beta_2 \text{ natculture} + \beta_3 \% \text{feNEXereN} * \text{ natculture} \\ & + \beta_2 \ln(\text{size}) + \beta_3 \text{ CEOtenure} + \beta_4 \text{ CEOtenure}^2 + \beta_5 \text{ avgexeage} \\ & + \beta_6 \text{ avgexeage}^2 + \beta_7 \text{ pastperf} + \beta_{8...12} \text{ year dUNNiES} \\ & + \beta_{13...23} \text{ industry dUNNiES} + \mu \end{aligned}$$

Model V: Moderating effect of national culture on the relationship between the compensation gap and company performance

$$\begin{aligned} \text{CONPany PerfoRnANce} = & \beta_0 + \beta_1 \text{ CONPgap} + \beta_2 \text{ natculture} + \beta_3 \text{ CONPgap} * \text{ natculture} \\ & + \beta_2 \ln(\text{size}) + \beta_3 \text{ CEOtenure} + \beta_4 \text{ CEOtenure}^2 \\ & + \beta_5 \text{ avgexeage} + \beta_6 \text{ avgexeage}^2 + \beta_7 \text{ pastperf} \\ & + \beta_{8...12} \text{ year dUNNiES} + \beta_{13...23} \text{ industry dUNNiES} + \mu \end{aligned}$$

4. Results and Analysis

Table 5 and 6 present the descriptive statistics and show a reduction of 20 observations (see Table 3 for details) which led to a total sample of 430 observations. The individual countries' observations amount to 142 in Sweden, 140 in the UK and 148 in Germany. The first variable represents Tobin's Q which was used as a measure for financial performance of the respective companies. It was calculated by adding the total debt to the market value and dividing this by the total assets. The maximum and minimum of this value in the sample show some outliers with 8,426 and 0,042. However, the mean of the whole sample amounts to 1,221 which seems to be a plausible value for this measure. An interesting fact illustrated by the descriptive statistics is that Swedish companies perform best based on the Tobin's Q measure, followed by the UK.

The variable to measure the compensation gap between CEOs and other executives has been split into a total, variable and fixed value to allow an analysis of different effects occurring. For the whole sample, the means are all about 50 percent, however, table 5 and 6 show that the size of the compensation gap in Swedish companies is slightly higher compared to the UK and Germany. The

variable *natculture* was used as a dummy variable to categorise the companies according to their respective countries. Furthermore, the descriptive statistics show that there are about 24 percent of female executives on the remuneration committees in the total sample. However, it becomes clear that this is different between the three countries. Whereas the UK assigns about one third of the positions on the remuneration committees to female executives, German companies only have about 15 percent of females on the committee and Swedish companies lie in the middle with about 25 percent. These different effects can also be observed when looking at the female executives in top management.

However, in contrast to the country ranking of female executives in the remuneration committees, Sweden employees the highest percentage of females in top management with 23,7 percent and is followed by Germany with 11,3 percent. UK companies report the lowest percentage of females in top management, however, this might be because the team of executives in charge of management decisions are much smaller than in the other two countries with only one or two executives on the board. Moreover, the descriptive statistics show that the biggest companies in the sample by size can be found in the UK and the smallest companies are located in Sweden. Total assets have been used to measure the size of the companies. Furthermore, the figures have been transformed to the same currency (€) to make the values comparable. The maximum values of CEO tenure, CEO age and average executive age might seem rather high, however, the mean of both values seem plausible with values of 5,178, 54,802 and 52,862 respectively. The measure for past performance is measured by the return on assets of the past five years. Finally, a variable for the presence of a female CEO has been included to show that there is a very low number of female CEOs in the sample overall.

Furthermore, table 7 does not show any strong correlations apart from the variables resembling total, variable and fixed compensation gap. However, this is expected and hence not of further concern. The correlation tables for each individual country can be found in Appendix 4.

Variable	ALL COUNTRIES					SWEDEN				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
Q	430	1,221	1,015	0,042	8,426	142	1,488	1,298	0,309	8,426
compgaptot	430	0,505	0,211	-0,481	0,905	142	0,620	0,182	-0,481	0,902
compgapvar	430	0,503	0,310	-1,816	1,000	142	0,633	0,237	-0,283	1,000
compgapfix	430	0,466	0,205	-0,357	0,918	142	0,597	0,182	-0,209	0,918
natculture	430	1,981	0,819	1,000	3,000	142	2,000	0,000	2,000	2,000
femexerem	430	0,239	0,193	0,000	0,750	142	0,256	0,231	0,000	0,750
femexetop	430	0,143	0,182	0,000	1,000	142	0,237	0,135	0,000	0,667
size	430	171000000	367000000	46688	2350000000	142	59400000	133000000	46688	694000000
CEOtenure	430	5,178	4,024	0,333	20,250	142	5,452	4,772	0,500	20,250
CEOage	430	54,802	5,172	38,000	68,000	142	52,373	5,359	38,000	64,000
avgexeage	430	52,862	4,253	38,750	67,000	142	51,330	4,486	38,750	67,000
pastperf	430	6,550	7,192	-	75,740	142	7,925	8,124	-15,900	53,532
femaleCEO	430	0,037	0,189	0,000	1,000	142	0,063	0,245	0,000	1,000

Table 5: Descriptive Statistics - All countries and Sweden

Variable	UK					GERMANY				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
Q	140	1,148	0,907	0,042	4,640	148	1,035	0,712	0,108	3,027
compgaptot	140	0,419	0,233	-0,249	0,905	148	0,477	0,159	-0,113	0,786
compgapvar	140	0,398	0,416	-1,816	1,000	148	0,478	0,189	-0,235	0,811
compgapfix	140	0,364	0,187	-0,357	0,756	148	0,437	0,174	-0,282	0,800
natculture	140	3,000	0,000	3,000	3,000	148	1,000	0,000	1,000	1,000
femexerem	140	0,312	0,152	0,000	0,667	148	0,153	0,152	0,000	0,667
femexetop	140	0,080	0,237	0,000	1,000	148	0,113	0,115	0,000	0,500
size	140	300000000	516000000	6174096	2350000000	148	157000000	309000000	1994265	1700000000
CEOtenure	140	5,026	2,917	0,333	13,750	148	5,060	4,153	0,500	17,000
CEOage	140	55,757	4,563	46,000	67,000	148	56,230	4,712	45,000	68,000
avgexeage	140	54,395	4,460	45,000	67,000	148	52,881	3,188	44,000	63,667
pastperf	140	5,904	5,210	-2,240	20,680	148	5,841	7,698	-2,520	75,740
femaleCEO	140	0,050	0,219	0,000	1,000	148	0,000	0,000	0,000	0,000

Table 6: Descriptive Statistics - UK and Germany

	Q	compgaptot	compgapvar	compgapfix	natculture	femexerem	femexebod	size
Q	1,000							
compgaptot	0,117	1,000						
compgapvar	0,095	0,779	1,000					
compgapfix	0,117	0,706	0,403	1,000				
natculture	0,049	0,107	0,101	0,140	1,000			
femexerem	0,020	0,129	0,160	0,051	0,339	1,000		
femexebod	0,049	0,144	0,085	0,250	0,069	0,100	1,000	
size	0,378	0,168	0,211	0,170	0,156	0,011	0,125	1,000
CEOtenure	0,105	0,160	0,122	0,142	0,003	0,022	0,092	0,084
CEOage	0,218	0,003	0,019	0,072	0,043	0,209	0,190	0,133
avgexerage	0,038	0,066	0,011	0,105	0,142	0,060	0,191	0,012
pastperf	0,464	0,109	0,007	0,114	0,006	0,009	0,106	0,111
	CEOtenure	CEOage	avgexerage	pastperf				
CEOtenure	1,000							
CEOage	0,137	1,000						
avgexerage	0,082	0,277	1,000					
pastperf	0,046	0,114	0,062	1,000				

Table 7: Correlation Table for All Countries

4.1. Effect of Gender on the Compensation Gap and Performance

The first three hypotheses are related to the effect of gender on the compensation gap and its effect on company performance. The first hypothesis was used to test if a higher percentage of female executives on the remuneration committee of a country leads to a lower compensation gap between CEOs and other executives. The development of this hypothesis is based on the findings by Vieito (2012). Even though he found the tournament theory by Lazear and Rosen (1981) to be mostly supported, he noted that companies with a female CEOs perform better if the compensation gap is lower. Consequently, this led to the expectation that women in general would prefer a lower compensation gap. That is why, this hypothesis was developed to investigate the effects of a higher percentage of females on the remuneration committee on the size of the compensation gap. The results for this hypothesis are visualised in table 8 (Section A). In contrast to the initial expectations, generally the results for the first hypothesis show no statistical significant relationship of the female presence in the remuneration committee on the decision of compensation gap.

Table 8 (Section B) demonstrates the result for the second hypothesis. It expected, based on tournament theory, that a higher compensation gap between the CEO and other executives will result in higher company performance. It shows that the results vary when the total, variable or fixed compensation gap is used. Furthermore, table 8 (Section B) shows that no significant relationships exist between the total compensation gap and the company performance when the combined sample is used. The same result occurs when the effect of the variable compensation gap on company performance was investigated. However, it is found that the fixed compensation gap is statistically significant at the ten percent level with a coefficient of +0,144.

The third hypothesis expected that the presence of female executives in top management will moderate the effect of the compensation gap on company performance as females and males are expected to have different preferences concerning the size of the compensation gap. After running the available data collectively for all countries, the results for the interaction effect of the compensation gap and the percentage of female executives in top management have been summarised in table 8 (Section C). The interaction terms were not significant at any level which could be interpreted that the female presence in top management will not make any differences in the relationship of compensation gap on company performance.

VARIABLES	Hypothesis 1 (A)			Hypothesis 2 (B)			Hypothesis 3 (C)		
	compgap tot	compgap var	compgap fix	Q	Q	Q	Q	Q	Q
femexerem	-0,069	-0,179	-0,01						
compgaptot				0,093			0,070		
compgapvar					0,002			-0,008	
compgapfix						0,144*			0,119
femexetop							0,126	0,143	0,129
compgaptot *femexetop							0,206		
compgapvar *femexetop								0,197	
compgapfix *femexetop									0,256
Control variables									
size	-0,012	-0,015	-0,022**	-0,609***	-0,602***	-0,608***	-0,611***	-0,603***	-0,613***
CEOtenure	0,014*	0,030**	-0,001	-0,003	-0,002	-0,002	-0,006	-0,005	-0,005
CEOtenure ²	-0,001	-0,001*	0,000	0,000	0,000	0,000	0,000	0,000	0,000
avgexeage	0,054	0,050	0,078**	0,010	0,017	0,002	0,012	0,016	0,004
avgexeage ²	-0,001	-0,001	-0,001**	0,000	0,000	0,000	0,000	0,000	0,000
pastperf	0,002**	-0,002	0,003**	0,001	0,002	0,001	0,002	0,002	0,001
CEOage	0,078**	0,106*	0,065	0,045	0,056	0,040	0,042	0,053	0,034
CEOage ²	-0,001**	-0,001*	-0,001	0,000	-0,001	0,000	0,000	-0,001	0,000
year15	-0,035	-0,002	-0,042*	0,098***	0,094***	0,101***	0,097***	0,092***	0,101***
year16	-0,013	0,033	-0,005	0,015	0,012	0,014	0,010	0,006	0,010
year17	-0,010	-0,003	-0,002	0,103***	0,101***	0,103***	0,095***	0,092***	0,095***
year18	-0,037	-0,019	-0,046*	0,081*	0,075*	0,084*	0,065	0,058	0,070
industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
constant	-2,763	-3,237	-2,961*	8,686*	8,147*	9,023**	8,663*	8,168*	9,123**
Observations	430	430	430	430	430	430	430	430	430
Adj R ²	0,0908	0,961	0,081	0,362	0,359	0,366	0,370	0,367	0,374
Fixed Effects	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Random Effects	Yes	Yes	Yes	No	No	No	No	No	No

*** p<0,01, ** p<0,05, * p<0,1

Table 8: Regression Results for Hypothesis 1 to Hypothesis 3

Since *CEOage*, *CEOtenure* and *avgexeage* are significant control variables, Appendix 7 shows the visualisation for the quadratic effects. For the first 55 years, the CEO age shows positive effects on the compensation gap but starts declining at age 55. The CEO tenure has negative effects on the

compensation gap after year 10 and the executive age shows negative effects on the compensation gap after year 51.

4.2. Effect of National Culture on the Compensation Gap and Performance

The fourth hypothesis expected cultural effects to be present in the relationships specified in the first and second hypotheses. Consequently, the fourth hypothesis is split into two parts. Hypothesis 4a expected national culture to act as moderator in the relationship between a higher percentage of females on the remuneration committee and the size of the compensation gap while hypothesis 4b expected that national culture moderates the relationship between the compensation gap and the financial performance of the company. The emergence of this hypothesis was based on the cultural dimensions developed and adapted by House et al. (2004).

Before running the regressions to test for the two hypotheses, an ANOVA has been performed which showed high significance of the effect of national culture on both hypotheses. The results for the ANOVA can be found in table 9. The results show that national culture and the percentage of female executives on remuneration committee report significant differences for the total and variable compensation gap on a one percent level for the fixed compensation gap on a ten percent level (see Table 9 Section A). The significant differences support Hypothesis 4a which proposed that national culture is a moderating variable. Furthermore, national culture is also found to moderate the relationship mentioned in Hypothesis 4b (see Table 9 Section B). The results show that the differences in company performance are significant on a one percent level for the variable compensation gap and on a five percent level for the total as well as the fixed compensation gap.

ANOVA for Hypothesis 4a (Section A)							
Female Executives on Remuneration Committee and National Culture on Total Compensation Gap							
Source	Partial SS	df	MS	F	Prob>F	R ²	Adj. R ²
femexeremcat	0,71846688	9	0,07982965	2,42	0,0109***	0,2987	0,2571
natculture	12 239 124	2	0,61195618	18,58	0,0000***		
		1					
femexeremcat # natculture	14 604 646	3	0,11234343	3,41	0,0001***		
Female Executives on Remuneration Committee and National Culture on Variable Compensation Gap							
Source	Partial SS	df	MS	F	Prob>F	R ²	Adj. R ²
femexeremcat	18 329 689	9	0,20366321	2,85	0,0029***	0,2985	0,2569
natculture	11 865 635	2	0,59328173	8,3	0,0003***		
		1					
femexeremcat # natculture	42 188 928	3	0,32453021	4,54	0,0000***		
Female Executives on Remuneration Committee and National Culture on Fixed Compensation Gap							
Source	Partial SS	df	MS	F	Prob>F	R ²	Adj. R ²
femexeremcat	0,17279127	9	0,01919903	0,6	0,7992	0,2778	0,235
natculture	18 527 176	2	0,9263588	28,83	0,000***		
		1					
femexeremcat # natculture	0,67438004	3	0,05187539	1,61	0,0783*		
ANOVA for Hypothesis 4b (Section B)							
National Culture and Total Compensation Gap on Company Performance							
Source	Partial SS	df	MS	F	Prob>F	R ²	Adj. R ²
compgaptotcat	99 580 718	9	10 645 242	1,47	0,1579	0,1539	0,1015
natculture	42 460 577	2	21 230 288	2,93	0,0547*		
		1					
compgaptotcat # natculture	26 953 711	4	19 252 651	2,65	0,0010**		
National Culture and Variable Compensation Gap on Company Performance							
Source	Partial SS	df	MS	F	Prob>F	R ²	Adj. R ²
compgapvarcat	1 152 893	6	19 214 884	2,7	0,0140*	0,1146	0,1128
natculture	0,22524687	2	0,11262344	0,16	0,8538		
		1					
compgapvarcat # natculture	26 217 798	8	32 772 247	4,6	0,0000***		
National Culture and Fixed Compensation Gap on Company Performance							
Source	Partial SS	df	MS	F	Prob>F	R ²	Adj. R ²
compgapfixcat	13 748 685	9	15,276,317	2,13	0,0259**	0,1654	0,1115
natculture	20 922 788	2	10 461 394	1,46	0,2332		
		1					
compgapfixcat # natculture	21 188 531	5	14 125 687	1,97	0,0160**		

*** statistically significant on a 1% Level (p<0,01)

** statistically significant on a 5% Level (p<0,05)

* statistically significant on a 10% Level (p<0,10)

Table 9: ANOVA Result for Hypothesis 4a and Hypothesis 4b

The results for the regressions show that hypothesis 4a is supported throughout the different compensation gaps (see Table 10 Section A). The interaction term of the total as well as the fixed compensation gap is significant on a one percent level. When the variable compensation gap is chosen as the dependent variable the effects are still significant, however, only on a five percent level. The isolated effect of the percentage of female executives on the remuneration committee has now changed in significance to a one percent level.

Likewise, the results for hypothesis 4b show highly significant results for the interaction terms when the total and the variable compensation gaps act as the main explanatory variables (see Table 10 Section B). The negative sign of the interaction indicates that culture has a negative effect on the relationship between the compensation gap and company performance. However, this seems to only be true for the variable and total gap, since there no moderating effect observed for the relationship between the fixed compensation gap and the culture of the country.

VARIABLES	Hypothesis 4a (A)			Hypothesis 4b (B)		
	compgaptot	compgapvar	compgapfix	Q	Q	Q
femexerem	0,514***	0,835**	0,480***			
natculture	0,047	0,084*	0,029			
femexerem*natculture	-0,275***	-0,481**	-0,229***			
compgaptot				0,719***		
compgapvar					0,559***	
compgapfix						0,435*
compgaptot*natculture				-0,264***		
compgapvar*natculture					-0,206***	
compgapfix*natculture						-0,139
Control variables						
size	-0,009	-0,010	-0,019**	-0,602***	-0,597***	-0,608***
CEOtenure	0,017**	0,035***	0,002	-0,005	-0,003	-0,004
CEOtenure ²	-0,001	-0,002**	0,000	0,000	0,000	0,000
avgexeage	0,055	0,051	0,077**	0,022	0,010	0,013
avgexeage ²	-0,001	-0,001	-0,001**	0,000	0,000	0,000
pastperf	0,078**	0,108**	0,064	0,040	0,045	0,034
CEOage	-0,001**	-0,001**	-0,001	0,000	0,000	0,000
CEOage ²	0,002**	-0,002	0,003**	0,001	0,002	0,001
year15	-0,033	0,002	-0,040*	0,101***	0,101***	0,102***
year16	-0,008	0,041	-0,001	0,011	0,012	0,012
year17	-0,005	0,007	0,002	0,100***	0,101***	0,102***
year18	-0,033	-0,013	-0,043*	0,074*	0,071	0,082*
industry	Yes	Yes	Yes	Yes	Yes	Yes
constant	-2,959	-3,580	-2,989*	8,411*	8,489*	8,873*
Observations	430	430	430	430	430	430
Adj R ²	0,127	0,133	0,132	0,378	0,374	0,370
Fixed Effects	No	No	No	Yes	Yes	Yes
Random Effects	Yes	Yes	Yes	No	No	No

*** p<0.01, ** p<0.05, * p<0.1

Table 10: Regression Results for Hypothesis 4a and Hypothesis 4b

Additionally, among control variables used in the model concerning hypothesis 4a, the firm size is significant on a five percent level when the fixed compensation gap is used as a dependent variable. Furthermore, the CEO tenure, CEO age and the past performance of the company show significant

effects on the different types on compensation gaps. Regarding hypothesis 4b, the company size is significant at a one percent level for the all datasets as well as the years 2015 and 2017.

Table 11 shows the comparison of the regression results for each individual country because, as mentioned earlier, national culture is able to moderate the relationship between female executives on the remuneration committee and the decision of the size of the compensation gap. Hence, there are different coefficients for the effect of a higher percentage of females in top management on the size of the compensation gaps in the individual countries. The results for Sweden show that more females in the remuneration committee will lead to lower total and variable compensation gaps. This supports the previous expectations of more females in the remuneration committee having a negative effect on the size of the compensation gaps. However, a higher percentage of females in the remuneration committee will lead to higher fixed compensation gaps according to the results in table 11. Including national culture as a moderator in the UK shows that the expectation of a negative effect on the size of the compensation gap is strongly supported when national culture is included for all types of compensation gaps. The German results show opposite results since the coefficients are positive for all of the compensation gap types (see Table 11).

Magnitude after moderated by National Culture	Hypothesis 4a		
	femexerem on compgaptot	femexerem on compgapvar	femexerem on compgapfix
Sweden	-0,036***	-0,127**	+0,022***
UK	-0,311***	-0,608**	-0,207***
Germany	+0,239***	+0,354**	+0,251***

*** statistically significant on a 1% Level (p<0,01)

** statistically significant on a 5% Level (p<0,05)

* statistically significant on a 10% Level (p<0,10)

n/s : not significant

Table 11: Summary of Result After Moderating Effect - Hypothesis 4a

Moreover, it is also stated previously that national culture is able to moderate the effect of compensation gap on the company performance. That is why, the isolated effects of the compensation gap on the financial performance after including national culture as a moderator are displayed in table 12. The empirical results are mixed in their level of significance. Among the three countries in the sample, Germany is the only country which shows a significant positive relationship in all categories

of compensation gap on company performance. Even though the fixed compensation gap is only significant at the ten percent level with a coefficient of +0,311, the total and variable compensation gap are significant at one percent level with coefficients of +0,502 and +0,438 respectively (see Table 12). Sweden shows similar results to Germany, even though the magnitude of the relationship is lower than Germany and only significant at ten percent level for the effect of the total and fixed compensation gap on the company performance. Nevertheless, there are no significant effects of the variable compensation gap on company performance in Sweden. Furthermore, the UK is the only country that shows no significant relationship findings in any categories of compensation gap on company performance.

Magnitude after moderated by National Culture	Hypothesis 4b		
	compgaptot on Q	compgapvar on Q	compgapfix on Q
Sweden	+0,191***	+0,147***	n/s
UK	-0,073***	-0,059***	n/s
Germany	+0,455***	+0,353***	n/s

*** statistically significant on a 1% Level ($p < 0,01$)

** statistically significant on a 5% Level ($p < 0,05$)

* statistically significant on a 10% Level ($p < 0,10$)

n/s : not significant

Table 12: Summary of Result After Moderating Effect - Hypothesis 4b

5. Discussion

5.1. Effect of Gender on the Compensation Gap and Performance

Hypotheses		Expectation	All countries
H1	A higher percentage of female executives on the remuneration committee will lead to a lower compensation gap.	compgaptot	- n/s
		compgapvar	- n/s
		compgapfix	- n/s
H2	A higher compensation gap will lead to higher company performance	compgaptot	+ n/s
		compgapvar	+ n/s
		compgapfix	+ +0,144
H3	The percentage of female executive in the top management will moderate the effect of the compensation gap on company performance	compgaptot	+/- n/s
		compgapvar	+/- n/s
		compgapfix	+/- n/s

*** statistically significant on a 1% Level ($p < 0,01$)

** statistically significant on a 5% Level ($p < 0,05$)

* statistically significant on a 10% Level ($p < 0,10$)

Table 13: Summary of Results for Hypothesis 1 to Hypothesis 3

Generally, the result for the combined sample shows that female executives on the remuneration committee do not have any influence in the decision of the size of the compensation gap in the company (see Table 13). Hence, there have to be other variables influencing the compensation gaps. The control variables used show that the variable compensation gap is mainly influenced by CEO age and tenure (see Table 8). This seems like a plausible effect since the higher the CEOs age and tenure, the higher his or her experience and knowledge of the company and industry. The fixed compensation gap on the other hand is mostly influenced by the company size, past performance and executive age. This means that the fixed compensation gap increases with higher average executive age. Since executives are also expected to obtain better knowledge about the industry, the company and position with increasing age, the resulting increase in the fixed compensation gap is most likely due to higher fixed compensation for the executives. However, since this kind of increase alone would not lead to a total increase of the fixed compensation gap, it seems likely that the CEO's fixed compensation is increased not only by the same amount but by more than the executive's compensation increase. Additionally, the results show that the fixed compensation gap decreases with growing size of the company. The reason for this might be that a company increasing in size is able to hire more

experienced executives more easily and hence will have to pay these executives more which in turn will lower the fixed compensation gap.

The results for the second model which was investigating the relationship between the compensation gap and company performance in all countries only show significant results for the fixed compensation gap. The fixed compensation gap is found to have a positive effect on company performance. This is in line with the tournament theory developed by Lazear and Rosen (1981) which states that a higher gap leads to more competitiveness between the executives and better performance. Although, it seems like the financial performance is also highly affected by the company size and the respective years. The negative effect of company size on the financial performance is due the design of the variable used to measure Tobin's Q which is calculated as $\frac{\text{Market Value} + \text{Debt}}{\text{Total Assets}}$ (Lin, Shen & Su, 2005; Lin, Yeh & Shih, 2013). Since total assets are used in the formula, an increase in total assets will lead to a decrease of the variable overall. However, the reasoning for this effect might also be found in the effect an increase of total assets has on the market value. An increase of total assets leads to higher expenses for the company which will be reflected in the net income of the company. This in turn could lead to a decrease in market value which intensifies the negative effect on the variable used for the financial performance.

Additionally, the second model was also tested for the presence of a moderating effect of a higher percentage of female executives on the board. However, the results were not significant which indicates that there are no differences in behaviour between the different genders which affect the performance of the company. Again, only the company size and the variables for the respective years show a high significance instead.

5.2. Effect of National Culture on the Compensation Gap and Performance

Since different effects could be observed when investigating the effect of gender on the compensation gap and company performance, both of the main models were tested for moderating effects based on national culture. Table 14 shows the summary of results for both hypotheses.

Hypotheses			Expectation	All countries	Sweden	UK	Germany
H4a	National culture is a moderator in the relationship between female executives on the remuneration committee and the compensation gap.	compgaptot	+/-	+0,239***	- 0,036***	- 0,311***	+ 0,239***
		compgapvar	+/-	+0,354**	- 0,127**	- 0,608**	+ 0,354**
		compgapfix	+/-	+0,251***	+ 0,022***	-0,207***	+ 0,251***
H4b	National culture is a moderator in the relationship between the compensation gap and company performance	compgaptot	+/-	+0,455***	+ 0,191***	- 0,073***	+ 0,455***
		compgapvar	+/-	+0,353***	+ 0,147***	- 0,059***	+ 0,353***
		compgapfix	+/-	n/s	n/s	n/s	n/s

*** statistically significant on a 1% Level (p<0,01)

** statistically significant on a 5% Level (p<0,05)

* statistically significant on a 10% Level (p<0,10)

Table 14: Summary of Results for Hypothesis 4a and Hypothesis

As stated previously, the effect of a higher percentage of females on the remuneration committee on the size of the compensation gap was not significant. However, the result changes when national culture is taken into account. The significant interaction terms for all countries indicate that national culture is able to moderate the effect that more females on the remuneration committee have on the compensation gap decision. In Germany, the effect of a higher number of females in the committee on the compensation gap is positive for the total, variable and the fixed compensation gap (see Table 14). Even though this is not in line with the behavioural theory which expects women to be less competitive and hence prefer lower compensation gaps, this result is in accordance with the findings of the GLOBE Study (House et al. 2004). It was found that Germany scores really high in the *Assertiveness* dimension and lowest in the *Gender Egalitarianism*. Both of these scores indicate that Germany can be classified as behaving rather masculine. Hence, tournament theory will also hold for women in Germany and not only men, as Vieito (2012) claimed.

In Sweden, the results show that having more females on the remuneration committee will lead to a reduction of the total compensation gap of about three percent. This negative effect is in line with previous expectations which were based on the different leadership and communication preferences of females compared to males (Howden, 1994). Furthermore, Sweden's ranking in the cultural dimensions by House et al. (2004) is very high in *Human Orientation*, *Gender Egalitarianism* and very low in *Assertiveness*. Consequently, Sweden could be described as a rather feminine country, compared to the other two countries in the sample. Also, the effect on the variable gap is in accordance with the previous assumptions. The negative influence of 12,7 percent on the gap is significantly higher than the one on the total gap. This, however, could also be explained with the higher femininity of the country itself. As mentioned previously, variable compensation is often used as an incentive to improve performance of executives. These incentives are usually designed to trigger competitive and aggressive behaviour. That might be why more women in the remuneration committee will be more prone to reduce variable gap in the company. Nonetheless, this reduction of the variable gap could be caused by a lower variable compensation of the CEO or a higher compensation of all executives. However, according to the *Uncertainty Avoidance* dimension in the GLOBE Study, Swedish people dislike uncertainty. Hence, in combination with the higher femininity of the country, this would suggest that a reduction of the variable gap is due to a reduction in variable compensation of the CEO. In contrast to the negative effect of a higher percentage of females on the remuneration committee on

the total and variable compensation gap, a positive effect of 2,2 percent was observed when the fixed compensation gap was used as the dependent variable. Even though this was unexpected, the results are not contradicting the previous assumptions. Again, there are two ways in which the fixed compensation gap can be increased: granting the CEO more or paying the executives less. However, an increase of fixed compensation for the CEO seems to be more likely since the high ranking in the *Humane Orientation* dimension would suggest that this is done to counterbalance the reduction in variable compensation. The reason for the coefficient of the fixed compensation gap being substantially lower might be due to already high fixed compensation.

Compared to the results of the other countries, the negative effect on the total gap is significantly higher in the UK. This effect becomes even higher in magnitude for the variable gap with over 60 percent and the effect on the fixed gap is negative with about 21 percent as well. The UK has lower scores in *Assertiveness* and higher scores in *Gender Egalitarianism* and *Institutional Collectivism* than Germany. This implies that the UK is a more feminine country compared to Germany. However, knowing about the substantially higher femininity of Swedish companies, it seems odd that the UK shows higher (negative) effects on the compensation gaps than Sweden. Moreover, the UK's ranking in the other cultural dimensions developed by House et al. (2004) is usually not higher or lower than the scores for Sweden and Germany but rather in between the two. Nonetheless, one cultural dimension remains in which the UK ranks lowest of all the countries. The low ranking in the *Uncertainty Avoidance* dimension implies that the country in general does prefer uncertainty over strict rules and hence will not hinder change as much as other countries do. Consequently, it seems plausible that the reason for the lower variable compensation gap is due to a higher variable compensation for all executives and not due to lower variable compensation like in Sweden. Based on the assumption that variable compensation is preferred over fixed compensation in the UK, the decrease in the fixed compensation gap will be due to lower fixed compensation for executives. This seems plausible since the increase of variable compensation will have to be balanced by a reduction somewhere else, to avoid random increases in total compensation.

The high level of competitive behaviour in Germany is also confirmed when national culture is involved as a moderating variable in the relationship between the compensation gap and company performance. According to House et al. (2014), Germany is the country with the highest score in the

Assertiveness dimension of culture which reflects the competitive behavior of the society. This assertive behaviour is shown by the high significance and positive sign of the coefficient in the relationship between all types of compensation and company performance (see Table 14).

In Sweden, the effect of the compensation gap on the financial performance shows highly significant results for the interaction terms for the total as well as variable compensation gap. Both of the results for isolated effect after including national culture as a moderator can be interpreted as supporting the second hypothesis which expected positive relationships between the compensation gaps and financial performance. These results imply that tournament theory holds in Sweden as well. Considering the cultural dimensions and the fact that Sweden is known to be a rather feminine country, these results may seem odd. However, the magnitude of the coefficient is considerably lower than the results of the German sample. This shows that the feminine national culture highly influences performance of the executives. Additionally, Sweden has the highest score in the *Future Orientation* dimension in comparison with the two other countries. This could be one of the reasons why a higher variable compensation still leads to higher performance since variable compensation is an easiest measure to evaluate performance of an individual when considering possible promotion. The same reasoning can be applied to the results for the effect of the fixed compensation gap on the financial performance. The high future orientation of the country will lead to better performance since a higher position in the organisation can only be obtained when the performance is good enough. Long-term, this higher position will offer higher (fixed) compensation and hence increase the amount of secure income in the future. Even though the significance of the result is not as high as for the total and variable compensation gap and national culture seems to not have an influence, the effect on the financial performance is positive. This supports the second hypothesis as well, since tournament theory claims that a higher compensation will lead to higher performance eventually. Moreover, it has to be mentioned that the company size is highly significant in all of the model which included Tobin's Q as a dependent variable. This seems plausible since the company size is measured in total assets which is one of the factors in the calculation of the Tobin's Q variable in this paper.

The negative effects of the variable compensation gap on the company performance in the UK are in line with the previous assumption that UK companies prefer variable compensation over fixed compensation. The reason for this might be the low score in *Uncertainty Avoidance* since this suggests

that the gap in the UK would be lowered by increasing variable compensation of executives. Furthermore, the coefficient for the effect of the total compensation gap shows a negative effect on the company performance. This could be due to the lower compensation gaps in the UK compared to the other countries in the sample. The reason for this might be that there are often only one or two executives in top management. Hence, executives in the UK might prefer lower gaps since they compare themselves to the CEO more frequently than in other countries. Consequently, their performance will be influenced which will then affect the financial performance of the company.

6. Conclusion

Compensation can be considered an important tool to control the behaviour of executives. However, tournament theory suggests that it's not the compensation alone which drives the actions of executives but rather the gap between their compensation and the CEOs compensation (Main, O'Reilly III & Wade, 1993; Henderson & Fredrickson, 2001; Kale, Reis & Venkateswaran, 2009). Additionally, Vieito (2012) found that differences between males and females also apply on the executive level. Hence, one of the main purposes of this paper was to investigate the effect of gender on the compensation gap as well as the effect of this gap on company performance. Based on the different rankings in the cultural dimensions developed by House et al. (2004), another factor which can influence both of these relationships is national culture. That is why, the second purpose of this paper was to examine the effects of national culture on the compensation gap and its impacts on company performance.

The results describe that generally gender composition in the remuneration committee will not affect the decision of the size of the total, variable or fixed compensation gap in the company. However, it is found that this will differ among countries due to its differences in its national culture which influences people's behaviour. Generally in Sweden and Germany there are no significant effects found when there are more female executives on the remuneration committee. However, the UK shows support for the behavioural theory which indicates that female executives value teamwork instead of competition and hence lower the compensation gaps among the top management, especially concerning variable compensation.

In general, the results show that tournament theory is supported. The significant positive coefficient for the effect of the fixed compensation gap indicates that a higher gap will lead to higher performance of top management executives. Furthermore, the effects of the total and variable compensation gap are highly significant when national culture is included as a moderator. According to this moderating effect, there have been different tendencies found in each of the tested countries. The cultural dimensions developed by House et al. (2004) suggest that in Germany tournament theory is supported due to its strong tendency to masculine and competitive behaviour. Sweden also showed support for the tournament theory, which was unexpected since based on the cultural dimensions *Human Orientation*, *Gender Egalitarianism* and *Assertiveness* Sweden is categorised to be a rather feminine country. Also the results in the UK were not as predicted since based on the previously mentioned dimensions, the country is known to be less feminine than Sweden. However, the actual results indicate that behavioural theory is strongly supported in the UK since higher compensation gaps have a negative effect on the company performance. This shows, that it is not enough to just categorise countries based on their ‘feminine’ or ‘masculine’ behaviour but all cultural dimensions have to be considered.

7. Contribution, Future Research and Limitations

As previously mentioned, this paper contributes theoretically to academic literature by extending the current research on the gender effect on the compensation gap between the CEO and other members of top management and its effect on company performance. Additionally, previous research on the effect of compensation gaps has neglected the influence of national culture and mostly focused on the US and China (Main, O’Reilly III & Wade, 1993; Henderson & Fredrickson, 2001; Kale, Reis & Venkateswaran, 2009). Furthermore, this research adds to academic literature by investigating if there are different effects observed in newer time periods. The practical contributions of this research are mainly aimed at remuneration committees. This is particularly interesting for them since better knowledge about the effect of gender and national culture on compensation can influence their decision-making heavily. A company operating in a country with tendencies to masculine behaviour like Germany might need different compensation schemes than other countries in which executives perform better when the compensation gap to the CEO is smaller.

However, this paper presents some limitations which must be considered. The first one is related to the limited number of samples which also affect the generalisation of the result. This paper only used one country as a representative for each national culture which might not capture the whole behaviour for different national cultures. Therefore, including more countries to represent each part of Europe with longer observed periods would increase the generalisation of findings and could be a starting point for future research. The second limitation is related to the fact that numbers of female executives in top management are still relatively low in many companies and this might be one of the reasons of the insignificant results in some countries.

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Appendices

Appendix 1: List of Companies Included in the Sample

	OMX Stockholm 30	FTSE 100 (Top 30)	DAX 30
1	TELEFONAKTIEBOLAGET LM ERICSSON	ROYAL DUTCH SHELL B	DEUTSCHE BANK AG
2	VOLVO AB	HSBC HOLDINGS	ALLIANZ SE
3	SKF AB	BP	BASF SE
4	SCA-SVENSKA CELLULOSA AB	ASTRAZENECA	DAIMLER AG
5	ELECTROLUX AB	GLAXOSMITHKLINE	SIEMENS AG
6	SVENSKA HANDELSBANKEN	DIAGEO	BAYER. MOTOREN WERKE
7	SKANDINAVISKA ENSKILDA BANK	BRITISH AMER.TOB. (OTC)	LINDE AG
8	ATLAS COPCO AB	UNILEVER (UK)	BAYER AG
9	SKANSKA AB	RIO TINTO	DEUTSCHE LUFTHANSA
10	SANDVIK AB	RECKITT BENCKISER GROUP	E.ON SE
11	HENNES & MAURITZ AB	VODAFONE GROUP	RWE AG
12	SWEDBANK AB	PRUDENTIAL	HENKEL AG AND
13	ASTRAZENECA PLC	LLOYDS BANKING GROUP	SAP SE
14	SECURITAS AB	RELX	MUNCHENER RUCKVER
15	ABB LTD	NATIONAL GRID	Deutsche Telekom AG
16	TELIA COMPANY AB	BARCLAYS	ADIDAS AG
17	TELE2 AB	COMPASS GROUP	THYSSENKRUPP AG
18	INVESTOR AB	ROYAL BANK OF SCTL.GP.	FRESENIUS MEDICAL CA
19	ASSA ABLOY AB	BT GROUP	DEUTSCHE POST AG
20	SWEDISH MATCH AB	ANGLO AMERICAN	MERCK KGAA
21	ALFA LAVAL AB	IMPERIAL BRANDS	BEIERSDORF AG
22	BOLIDEN AB	STANDARD LIFE ABERDEEN	FRESENIUS SE
23	SSAB CORP	TESCO	VOLKSWAGEN AG
24	GETINGE AB	ASSOCIATED BRIT.FOODS	INFINEON TECHNOLOGIE
25	INVESTMENTS AB KINNEVIK	EXPERIAN	HEIDELBERGCEMENT AG
26	FINGERPRINT CARDS AB	CRH	DEUTSCHE BOERSE AG
27	HEXAGON AB	ROLLS-ROYCE HOLDINGS	CONTINENTAL AG
28	NORDEA BANK ABP	AVIVA	VONOVIA SE
29	ESSITY AKTIEBOLAG		COVESTRO AG
30			WIRECARD AG

**Appendix 2: Explanation of Cultural Dimension Used in the GLOBE Study
(House et al., 2014)**

Dimension	Explanation
Future Orientation	“Cultural future orientation is the degree to which a collectivity encourages and rewards future-oriented behaviors such as planning and delaying gratification.”
	(Based on Kluckhohn and Strodtbeck’s, 1961; and similar to the Long-Term Orientation dimension by Hofstede, 2001)
Gender Egalitarianism	“This measure reflects societies’ beliefs about whether members’ biological sex should determine the roles that they play in their homes, business organizations, and communities. Societies with greater gender egalitarianism rely less on biological sex to determine the allocation of roles between the sexes.”
	(Based on the Masculinity dimension by Hofstede 1984)
Assertiveness	“Broadly speaking, cultural assertiveness reflects beliefs as to whether people are or should be encouraged to be assertive, aggressive, and tough, or nonassertive, nonaggressive, and tender in social relationships.”
	(Based on the Masculinity dimension by Hofstede 1984)
Humane Orientation	“The degree to which an organization or society encourages and rewards individuals for being fair, altruistic, friendly, generous, caring, and kind to others”
	(Based on Kluckhohn and Strodtbeck’s, 1961)
In-Group Collectivism	“This dimension reflects the degree to which people have pride and loyalty in their families and organizations.”
	(Based on the Individualism dimension by Hofstede, 1984)
Institutional Collectivism	“Institutional Collectivism may take the form of laws, social programs, or institutional practices designed to encourage collective behavior.”
	(Based on the Individualism dimension by Hofstede, 1984)
Performance Orientation	“Performance orientation reflects the extent to which a community encourages and rewards innovation, high standards, and performance improvement.”
	(Based on McClelland’s, 1961)
Power Distance	Broadly speaking, this dimension reflects the extent to which a community accepts and endorses authority, power differences, and status privileges.”
	(Based on the Power Distance dimension by Hofstede, 1984)
Uncertainty Avoidance	“Involves the extent to which ambiguous situations are threatening to individuals, to which rules and order are preferred, and to which uncertainty is tolerated in a society.”
	(Based on the Uncertainty Avoidance dimension by Hofstede, 1984)

Appendix 3: Hausman Tests

Dependent variable	Explanatory variable	All countries		Sweden		UK		Germany		
		Prob > chi2	Method*	Prob > chi2	Method*	Prob > chi2	Method*	Prob > chi2	Method*	
H1	compgapvar	0,2334	RE	0,8978	RE	0,0606	RE	0,5890	RE	
	compgapfix	0,7930	RE	0,1838	RE	0,2795	RE	0,0393	FE	
	compgapfix	0,0912	RE	0,8683	RE	0,4100	RE	0,6706	RE	
H2	Q	compgapvar	0,0000	FE	0,0046	FE	0,0000	FE	0,3011	RE
	compgapvar	0,0000	FE	0,0041	FE	0,0001	FE	0,2169	RE	
	compgapfix	0,0000	FE	0,0045	FE	0,0000	FE	0,3502	RE	
H3	Q	compgapvar	0,0000	FE	0,0034	FE	0,0008	FE	0,0000	FE
	compgapvar	0,0001	FE	0,0024	FE	0,0048	FE	0,0000	FE	
	compgapfix	0,0000	FE	0,0035	FE	0,0013	FE	0,0024	FE	

*if Prob>chi2 is higher than 0,05, then a Random-Effects Estimation is used

RE....Random-Effects Estimation

FE....Fixed-Effects Estimation

Appendix 4: Correlation Tables

	Q	compgaptot	compgapvar	compgapfix	femexerem	femexebod	size	CEOtenure	CEOage	avgexerage	pastperf
Q	1,000										
compgaptot	0,131	1,000									
compgapvar	0,047	0,526	1,000								
compgapfix	0,106	0,565	0,169	1,000							
femexerem	0,039	0,175	0,243	0,008	1,000						
femexebod	0,021	0,111	0,154	0,008	0,150	1,000					
size	0,301	0,247	0,060	0,148	0,165	0,028	1,000				
CEOtenure	0,044	0,267	0,150	0,321	0,115	0,159	0,063	1,000			
CEOage	0,253	0,063	0,091	0,015	0,287	0,229	0,196	0,178	1,000		
avgexerage	0,007	0,063	0,125	0,055	0,185	0,367	0,095	0,259	0,244	1,000	
pastperf	0,496	0,103	0,055	0,173	0,007	0,158	0,319	0,005	0,294	0,053	1,000

Table 1: Correlation Table for Sweden only

	Q	compgaptot	compgapvar	compgapfix	femexerem	femexebod	size	CEOtenure	CEOage	avgexerage	pastperf
Q	1,000										
compgaptot	0,116	1,000									
compgapvar	0,010	0,827	1,000								
compgapfix	0,149	0,576	0,265	1,000							
femexerem	0,110	0,163	0,184	0,202	1,000						
femexebod	0,068	0,043	0,010	0,140	0,024	1,000					
size	0,523	0,048	0,119	0,040	0,082	0,111	1,000				
CEOtenure	0,230	0,188	0,220	0,005	0,039	0,164	0,073	1,000			
CEOage	0,139	0,148	0,020	0,159	0,022	0,032	0,022	0,092	1,000		
avgexerage	0,141	0,079	0,015	0,024	0,075	0,074	0,163	0,041	0,241	1,000	
pastperf	0,742	0,048	0,091	0,086	0,185	0,051	0,500	0,308	0,002	0,096	1,000

Table 2: Correlation Table for UK only

	Q	compgaptot	compgapvar	compgapfix	femexerem	femexebod	size	CEOtenure	CEOage	avgexerage	pastperf
Q	1,000										
compgaptot	0,225	1,000									
compgapvar	0,232	0,894	1,000								
compgapfix	0,202	0,843	0,628	1,000							
femexerem	0,067	0,046	0,044	0,086	1,000						
femexebod	0,218	0,001	0,053	0,131	0,297	1,000					
size	0,426	0,081	0,298	0,071	0,105	0,152	1,000				
CEOtenure	0,105	0,009	0,031	0,032	0,131	0,062	0,134	1,000			
CEOage	0,045	0,253	0,230	0,130	0,261	0,138	0,132	0,191	1,000		
avgexerage	0,208	0,300	0,338	0,183	0,018	0,238	0,114	0,007	0,168	1,000	
pastperf	0,186	0,042	0,266	0,049	0,111	0,004	0,407	0,041	0,133	0,113	1,000

Table 3: Correlation Table for Germany only

Appendix 5: White Tests

Prob > F				
Hypothesis 1	All Countries	Sweden	UK	Germany
totcompgap	0,0021	0,0034	0,0084	0,4983
varcompgap	0,0007	0,0073	0,0022	0,8061
fixcompgap	0,7015	0,0207	0,2396	0,0488

Prob > F				
Hypothesis 2	All Countries	Sweden	UK	Germany
totcompgap	0,0000	0,8069	0,0092	0,1244
varcompgap	0,0000	0,8022	0,0055	0,1146
fixcompgap	0,0000	0,7642	0,0115	0,0671

Prob > F				
Hypothesis 3	All Countries	Sweden	UK	Germany
totcompgap	0,0000	0,7500	0,0069	0,1273
varcompgap	0,0001	0,7100	0,0042	0,1209
fixcompgap	0,0000	0,7832	0,0076	0,0637

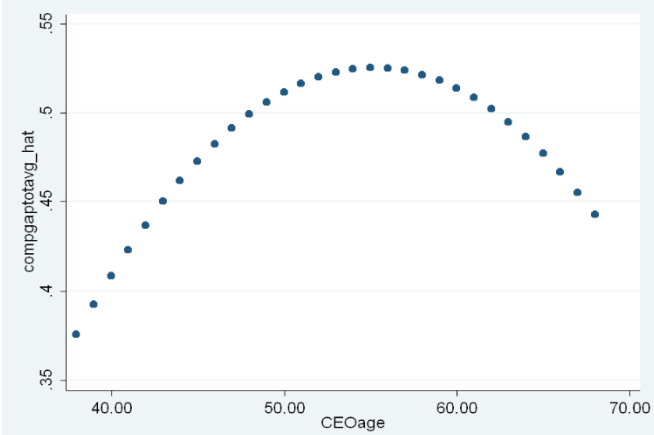
Prob > F		Prob > F	
Hypothesis 4a	All Countries	Hypothesis 4b	All Countries
totcompgap	0,0122	totcompgap	0,0000
varcompgap	0,0000	varcompgap	0,0000
fixcompgap	0,5690	fixcompgap	0,0000

Appendix 6: Relevance of Using *CEOtenure*², *CEOage*² and *avgexeage*²

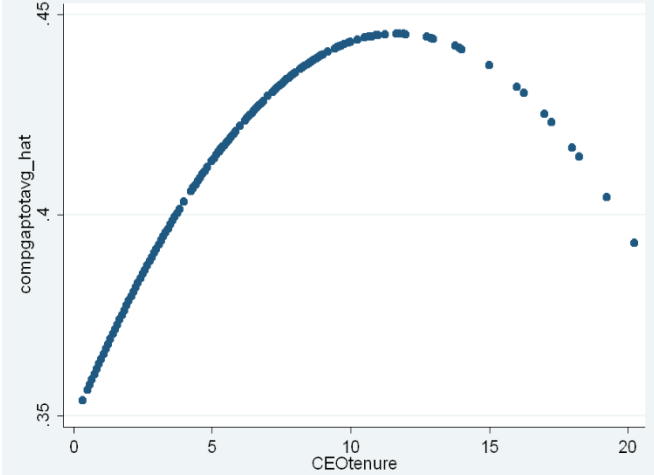
	Prob>Chi2				
	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4a	Hypothesis 4b
compgaptot	0,0061	0,4055	0,4571	0,0035	0,4878
compgapvar	0,0217	0,4034	0,4638	0,0091	0,5124
compgapfix	0,0906	0,3480	0,3772	0,0916	0,4726

Appendix 7: Quadratic Effect of *CEOtenure*, *CEOage* and *avgexeage* on *compgap*

CEOage



CEOtenure



avgexeage

