Master Thesis

The influence of the introduction of a gender quota on work motivation
– An experimental approach –

(The Economist 2010)

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Executive Summary

Even though the countries in the European Union aim at providing the same opportunities for men and women in the business world, this effort has not lead to gender equality in the highest management positions. Male dominance is still the everlasting. With this, the introduction of a gender based promotion quota has become a common approach to tackle the gender imbalance in top management positions over the recent years. Yet, the influences of the implementation of such a quota have not been thoroughly evaluated. This paper, therefore, analyses the influences of an introduction of a gender quota on work motivation for top management employees.

In the field of work motivation, tournament theory is a commonly used approach that suggests that people are best motivated when they are able to win a prize. A clear cut between what the winner and what the losers receive, provides the most important incentive. Yet, what happens if the tournament is unfair? With the introduction of a gender quota, women need to be promoted first in order to fulfill the requirements. While women enjoy this privileged treatment, the promotion possibilities of men are severely limited. This thesis, therefore, analyzes how the work motivation of top management employees is impacted by the implementation of a gender quota using tournament theory as a framework.

The evaluation comes to a mixed conclusion. On the one hand side, the analyzed theory clearly implies that the work motivation, especially of men, is likely to be seriously deprived, while female motivation remains the same. Yet, the empirical data collection, on the other hand side, in form of an experiment, did not allow for the validation of the implications of tournament theory. Even though, the chances of winning differed for the participants, the subjects seemed to be equally motivated across groups. This outcome, therefore, implies that not all work motivation can be explained by the incentives suggested by tournament theory, but additional intrinsic factors are influential. For the business world the analyzed theory, thus, signalizes that the implementation of a gender quota has a negative influence on work motivation, especially of the male workforce. Yet, the results of the experiment suggest the contrary: Employee motivation remains the same, even in an unfair tournament.
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1 Introduction

“Organizations and economies are human enterprises. They are the sum result of the motivations, decisions, and actions of many individuals. These individuals and their actions are combined to create innovation, higher economic growth, more job opportunities and better products” (Lazear & Gibbs 2007, p. I). In times of global competitiveness and economic slowdown these factors are especially important for company success and economic growth. Creativity and motivation is what drives today’s economy. (Lazear & Gibbs 2007) Employee motivation is, therefore, the analyzed topic of this paper.

There are different theories that tackle the phenomenon of work motivation. A famous one of them is tournament theory invented by the economists Edward Lazear and Sherwin Rosen in 1981. In its first stages the theory aimed at explaining the optimal labor contract (Lazear & Rosen 1981). However, over the years it was augmented and added on nonetheless by its inventors. The theory suggests that people are best motivated when they are able to win a prize. (Lazear & Rosen 1981) Absolute output is not the factor that matters, but instead the incentive is to win. Drawing conclusions from competitive sports, tournament theory suggests that most people are motivated by rank-order, for instance promotion, instead of performance based pay, such as bonuses. For the theory to be applicable a set of conditions needs to be met. Those are homogeneity and risk neutrality of the participants and equal externalities. Further, it is essential that players are economic actors who are characterized by rational decision making and complete information. (Lazear & Rosen 1981)

In reality however, it is likely that these conditions are not all present at the same time. Looking at today’s prevailing business environment, it can be stated that laws and regulations are in place that directly intervene with these requirements. A currently by the media often discussed topic imposes exactly this violation of equal promotion possibilities: the gender quota. At first thought, this might not be the primary association one has with the gender quota. However, the influences of the quota on the work environment and with this on the employees should not be neglected. Especially when the by tournament theory suggested motivator “promotion” constitutes an incentive difficult to provide. This results from the fact that companies are required to promote women first in order to fulfill the quota. (European Commission 2011)

While many European countries aim at increasing female presence on management boards, the fairness and influences of the gender quota remain questionable issues. Many researchers have over the past decade focused on the various reasons of the gender imbalances where as the con-
sequences of an introduction of a quota, also on employee motivation, remain a mostly unexplored field. The example of Norway shows that employee motivation has not been in the focus of the research concerning the gender quota. (Storvik & Teigen 2010) However, these consequences should not be underestimated especially in times of global competitiveness where it is essential for companies to keep their workforce motivated.

After all, one might be surprised by the necessity of a quota in the first place. In Germany, for example, gender equality has undoubtedly reached the political world as Angela Merkel has been chancellor for nine consecutive years, the federal ministry of defence is headed by a woman (Ursula von der Leyen) and roughly 40 percent of parliament members are female. Nevertheless, the business world remains largely unaffected from the predominant equality in the government with only seven percent of executive board seats and 25 percent of supervisory board seats occupied by women among the 30 largest companies on Germany’s blue chip DAX index. (Reuters 2014) Only a few companies, such as the telecommunication provider “Deutsche Telekom” have on a voluntarily basis effectively increased female presence in their top management. (Deutsche Telekom 2014) The persistent inequality in the economy has lead to heated discussions over the last decades in the government and the media which have recently come to an end with the decision to introduce a law that requires the largest German companies to fill 30 percent of board seats with women from 2016 onwards. The quota only targets top management positions such as management boards. If no fitting candidate can be found, the seat remains empty. In addition, smaller companies are required to bindingly set their own quota. (Reuters 2014)

In addition to the current gender equality in the German government, the OECD had already in 2008 published a report that suggested that women in leadership positions are a valuable asset to companies in today’s ever changing business environment. The report stated: “In general, women managers bring a wider range of perspectives to bear in corporate decision-making, contribute to team-building and communication skills, and help organizations adapt to changing circumstances” (OECD 2008, p. 31). The management consulting company, McKinsey, had one year before come forward with a study proving that women in leadership positions have a positive influence on the company’s financial statement as well as on innovation effort. (McKinsey & Company 2007)

These findings would suggest that today’s corporations voluntarily attempted to generate a gender balance in their executive management to benefit from the diversity and the positive influences that female leaders are said to bring to the corporation. Yet, reality paints a different picture. In 2012 only 15,8 percent of board members and 16,8 percent of non-executive board members of the
largest companies listed on stock exchange in the European Union were women. The situation is even worse in CEO positions. In 2012 only 2.4% percent of CEOs in the 27 EU member states were female. (OECD 2014) Therefore, the demand for a fixed gender quota has become more pressing especially over the past decade. Yet, it remains questionable what happens to the motivation of the employees affected by the implementation of a gender quota when suddenly promotion possibilities are discriminatory by law. (European Commission 2011)

1.1 Problem statement

In times of global competitiveness companies today are more than ever concerned with providing the right incentives for their employees as motivation constitutes one of the key company success factors. Lazear states: “Economies grow and change through the creativity and motivation of entrepreneurs and employees. The strategy of many firms today is explicitly human resource driven, emphasizing customization, service, and innovation” (Lazear & Gibbs 2007, p. I). It is therefore the logical consequence that currently a large stream of research is examining what truly motivates people in their respective job. There are different concepts that have so far been established. Commonly known ones are tournament and motivation theory, both of which are elaborated upon in this paper.

However, companies are not only challenged by the worldwide competition, on top of that governments are pushing for gender equality. For many companies that means drastic change on their boards in a short period of time. These measures automatically transform the company’s working environment, which consequently leads to several factors influencing the workforce. Unequal promotion possibilities for male and female workers can be expected to be problematic. Undoubtedly, this type of female favoritism in companies influences the behavior at work of both male and female employees. While men might feel discriminated, women might have to fight with prejudice as “quota females”. (Seng et al. 2013)

The factors that influence work motivation are numerous. The aim of this thesis is to analyze the impact of one specific incidence on work motivation: the introduction of a gender quota. Using tournament theory as a framework, the respective research objective, therefore, is to analyze the changes in work motivation of men and women in top management positions when a gender quota is imposed. As already indicated, tournament theory suggests that workers are best motivated when they are able to win a prize. That is a clear cut between winners and losers, not a competition for absolute output. What counts is to perform better than the rest of the players in the competition. However, as briefly explained, the introduction of a gender quota influences the settings of the “tournament” in the company. The arising unequal promotion possibilities clearly present a vio-
lation to the conditions of tournament theory. To evaluate the consequences emerging from this breach, the following research question provides the foundation of this thesis:

“Using tournament theory how is the work motivation of top management employees impacted by gender based promotion quotas?”

1.2 Research objective
To assess the influences of the introduction of a gender quota on work motivation of top management employees a series of steps are undertaken. Three subquestions aid at structuring the analysis in order to systematically come closer to responding to the superordinate research question. Therefore, conclusions are drawn from media coverage, theory and experimental research. The outline of the paper has been specifically designed to answer these questions in a structured manner to finally reach a conclusion for the main problematic analyzed.

The three subordinated questions are:
1. Considering the current gender quota legislations in Europe, are there influential factors on work motivation of men and women observable analyzing the media coverage of the topic? If so, what are they?
2. What conclusions on the changes in work motivation can be drawn from existing research based on tournament theory?
3. On the basis of an experiment and an attached questionnaire, can the predictions identified by tournament theory be verified? Are additional factors observable?

To answer the first subordinate question, the current legislation situation is described. In combination with a definition of the term “gender quota”, this provides an essential background for the further analysis. Current media coverage especially from Germany is analyzed to identify potential influences on male and female work motivation as a consideration of the real life scenario. The understanding of the empirical background builds an indispensable foundation for the following discussion of the other two subordinate questions and finally the response to the overall research question.

To evaluate the changes in work motivation as suggested by tournament theory, the background of the theory is first of all explained. After that, specific cases that explain changes in work motivation and gender based differences are presented. This section answers the second subordinated question and provides the basis for the data to be tested in the experiment.
To round up the analysis on how work motivation of top management employees is impacted by the introduction of a gender quota an experiment is conducted under the frame of tournament theory. Here, it can be observed whether the factors suggested by the theory are reflected in a real life scenario and if there are additional factors that have not been indicated in the previous theoretical section. All of these three steps add value to answering the research question and together provide the perfect approach for the analysis.

1.3 Delimitations
Economists usually acknowledge two key elements to drive human behavior: On the one hand, preferences and on the other hand, the environment in which people act. Understanding human preferences is the field of knowledge of classical psychology. The environment, however, is the area of interest of economics. The key interest of the economic approach is to analyze how economic variables, such as information, resources, constraints, decisions and incentives. Additionally, social psychology acknowledges both of the previously named factors: preferences and the environment. (Lazear & Gibbs 2007) This paper focused on the economic side of the phenomenon. Especially, two variables are the main area of interest: constraints and incentives. Here, the variable constraints is represented by the gender quota. The variable incentives is analyzed using tournament theory as the main framework for this paper. Classical psychology as a tool for the analysis is not part of the scope of this thesis. However, social psychology is influential to the structure of the thesis and especially the experiment.

Studies in tournament theory usually employ complex mathematical calculations to evaluate the respective phenomenon of the research area. This leads to rather theoretical outcomes. These calculations are, hence, not of interest for the analysis of this paper. It is the main results of previous research that add value to the investigated field of this thesis. Therefore, the analysis does not aim at deriving any conclusions based on mathematical problems. This results from the fact that the outcome of the thesis aims at being as transferable to the real life scenario as possible. Furthermore, changes in behavior are here equally seen as changes in motivation. This approach is used due to the difficulty of measuring motivation in the first place. Other motivation theories might disagree with this approach, but under the frame of tournament theory no differentiation is made.

As previously stated, the economic area of interest is the gender quota as it is a topic heavily discussed by governments in the EU and has been in the focus of the media in recent years. The interest in the matter has, therefore, also triggered numerous researchers to engage in the analysis of the quota. Studies widely range from the benefits of having women in top management positions
over the analysis of the gender pay gap to why a gender quota is necessary in the first place. Phenomena like the “old boys network” or the so called “glass ceiling” are well known reasons that hinder women from making it to the top. (Morrison 1987) Other gender quota related research are-as assess the differences in the fields of study chosen by men and women (OECD 2014), the gender pay gap, stereotypes or the difficulties to manage career and family at the same time. (Adams & Kirchmaier 2012) These are just a few examples out of a pool of a large variety of research. However, these factors do not lie within the scope of the thesis. As explained above the main aim is to assess the influences of the introduction of a gender quota on work motivation. Behavioral and with this motivational differences between the sexes are the main interest of the research design. All other research possibilities that surround the gender quota are not being evaluated as there already is a large pool of research surrounding these factors available. Additionally, the limitation of the length of the thesis does not permit the analysis of any topics that stray from the research question.

Furthermore, the reach of the gender quota must be defined. Most of today’s applicable laws or proposals are concerned with top management positions only. The introduction of a gender quota for decision-making positions is assumed to indirectly affect other hierarchy levels. However, critics oppose this approach and question the limited reach of the quota. (Stettes 2011) However, an evaluation to whether or not a quota should be extended to other hierarchy levels is not part of the scope of the analysis. Therefore, the investigated field is limited to decision-making positions as most laws only apply to these positions. More clearly, the focus lies on members of corporate boards. The analysis includes members of management boards as well as supervisory boards. Depending on the respective corporate governance structure (one-tier or two-tier) a company may or may not have both types of boards. For simplicity reasons, however, this research does not differentiate between the different types of boards. People in top management positions/decision-making are therefore here defined as members of both types of boards.

Further, the analysis focuses solemnly on fixed quotas specifically targeting management boards of publicly listed companies. Quotas targeting parliaments and governments, other governance codes, or flexi-quotas are not evaluated here. Parliaments and governments are not part of the scope because here reaching gender diversity does not appear to be a big issue as a study by the European Commission showed. (European Commission 2011) Nevertheless, it has to be acknowledged that gender diversity is not fully reached in this sector either, but the willingness and efforts to appointing females are much higher. The following numbers of the European Commission illustrate this: In 2011 35 percent of European Parliament Members were women whereas only one out
of ten seats (around 12 percent) in boardrooms of the largest European companies was occupied by women. (European Commission 2011) Statistics from the independent member states paint a similar picture. Therefore, quotas for parliaments and governments lie outside of the scope of this paper. The specific characteristics of the different approaches to the gender quota are explained in chapter 2.1.

In addition to the above named delimitations, the area of research is limited to Europe. Most data used has been conducted in the European Union in addition to facts and figures from Norway. Norway has been chosen due to the fact that it was the first country to introduce a gender quota in Europe. Accordingly, there is already some research and data available. However, the focus of the analysis lies on Germany as it has just passed a gender quota law and, therefore, provides valuable insight on reactions and feelings towards a quota. In other countries of the world, for example the US, there is currently also an interest in the topic, however, for a profound and in depth assessment of the topic it is necessary to limit the geographical territory of the analysis to the EU and particularly Norway and Germany.

1.4 Methodology
The methodological approach represents the research philosophy and the strategy of the analysis of this paper. Combined these two present an understanding on how data is selected and how knowledge is analyzed. For a well-defined approach to the methodology the “research onion” by Saunders, Lewis and Thornhill (2009) serves as a framework to fulfill the research objectives and answer the research question in a structured manner. The following description of the methodology therefore explains the research approach using the layers of the research onion from the outside to the inside as observable in figure 1:

![Figure 1: The research onion (Saunders et al. 2009, p. 108)](image-url)
The research philosophy is **pragmatism**. That means that the problem formulation and its research question build the center of the analysis and constitute the foundation for the selected research approach. (Saunders et al. 2009) This leads to the chosen empirical, theoretical and experimental strategy. These three factors have been selected because connected they provide the most suited perfect combination for the analysis of the underlying research question and its objectives.

Further, the research approach has to be defined. The conducted analysis of this paper follows a **mixed research approach: deductive and inductive**. (Saunders et al. 2009) In the section “theoretical background” the deductive approach is used. Here the influences on work motivation through the introduction of a gender quota are analyzed following the framework of tournament theory. With this, the ideas and approaches of tournament theory build the guiding structure for the analysis of the research question. The evaluation leads in this matter to the first partial answers to the research question. On the basis of these findings, the analysis proceeds with the collection of both quantitative and qualitative data in the experiment. Here, it has to be stated, that the research approach of the experiment follows also an inductive approach as it is aiming at “gaining an understanding of the meanings humans attach to an event” (Saunders et al. 2009, p.127). This is being reached by, first of all, giving a task to the participants. In a next step, in order to understand their feelings and reactions a questionnaire will give the opportunity to collect quantitative as well as qualitative data. The combined deductive and inductive approach leads to the possibility of making general assumptions of influencing factors on work motivation when a gender quota is imposed.

In addition to that, the research strategy needs to be defined. This thesis employs an **experiment** as the predominant strategy. “The purpose of an experiment is to study casual links; whether a change in one independent variable produces a change in another dependent variable” (Saunders et al. 2009, p. 142). The experiment conducted in this paper has a strong connection to social science research, particularly psychology, as it aims at evaluating the influence of the introduction of the gender quota on work motivation. Furthermore, the trial can be classified as a **classic experiment**. Here, two groups of participants are established. The members of each group are randomly assigned. One of the groups is the experimental group, the other the control group. This means that only in the experimental group the planned manipulation is made. This allows a before and after comparison. (Saunders et al. 2009) In this case only one group will be confronted with the introduction of a gender quota.

The experimental approach used in this paper is, as already indicated, a commonly employed method in the field of tournament theory due to the difficulty of obtaining data on employee behav-
ior. This results from several factors such as the difficulty to measure motivation in the first place or limitations in the exchange of information as companies are bound to protecting personal employee information. Additionally, monitoring difficulties and the necessity of long experimental periods provide further boundaries to experiments in the field. Therefore, the conducted experiment presents the best alternative to evaluating the research question next to a real life scenario which does due to the previously explained factors not provide the possibility of generating the desired data. The exact buildup of the conducted experiment is explained in chapter 4.

Subsequent to the experiment, a questionnaire rounds up the research strategy. The survey serves as an addition to the findings in the experiment. To evaluate the physiological state towards work motivation of the participants, quantitative as well as qualitative data is analyzed. The quantitative data allows looking at macro aspects whereas the qualitative part gives insights to the micro aspects of the phenomenon. The collected data is being analyzed using the Microsoft Excel Pivot table as a tool to evaluate the outcome of the questionnaire as well as the experiment. Furthermore, correlations are being tested for also using Excel. However, only selected relationships are evaluated to only test the most important factors and to prevent an overload of data analysis. The reader should be aware that further statistical analysis is possible with the collected data, however, for the purpose of the analysis it has been decided that a correlation analysis sufficiently demonstrates the relationship between the variables. Any additional calculation possibilities are therefore not included here.

Furthermore, the research choice is of interest. The assessment of this thesis relies on a multi-method data collection technique. (Saunders et al. 2009) As previously explained, qualitative as well as quantitative data is evaluated. For the analysis primary as well as secondary data is used. The information surrounding the gender quota is drawn from secondary data from previous research on the topic such as the working paper “The quota instrument: different approaches across Europe” by the European Commission (2011) and newspaper articles and reports. The literature used here is carefully chosen especially the input from articles is thoroughly evaluated as it often consists personal opinion of the author. As the gender quota is a heavily discussed topic in the media, many articles are full of emotion, judgment, and convictions. These papers are not used as references in this thesis in order to guarantee an objective and valid analysis. The theoretical section is similarly composed of secondary data from previous research. Especially the work from Lazear and Rosen as the inventors of tournament theory and Gneezy as one of the leading economists in the field of gender based behavioral studies play an important role here. Many of the
presented facts are based on experimental studies - a method commonly associated with the research concerning tournament theory.

Ultimately, the time horizon needs to be defined. The conducted analysis of this paper follows a cross-sectional approach. This means that the aim is to study a particular phenomenon at a specific point of time. Due to the limited amount of time available for the preparation of the Master’s thesis it is essential to follow this approach. A longitudinal approach that allows the analysis of change and development can simply because of the restrictive time frame not be undertaken. (Saunders et al. 2009) Therefore, the cross-sectional approach provides the best method to answer the research question.

1.5 Literature

The literature has been carefully evaluated by the author in order to best determine the underlying research question. There is a large pool of research available for both main strings of this paper: the gender quota and tournament theory. Here, it has to be noted, that any studies and theories presented in this paper are the results of known economists and not based on the opinion of the author.

The literature chosen on the gender quota is mostly composed of articles and reports due to the recency of the topic. This is due to the fact that the information is up to date and provides the possibility to include current events into the analysis. The selected information emerges from reliable sources only. Articles are, for example, written by “Reuters” or the known German newspaper “Der Spiegel”. The utilized reports mostly provide insights to current statistics and originate from reliable institutions like the OECD, the European Commission or well-known consultancy companies like McKinsey. The evidence presented from Norway originates mainly from the work of Storvik and Teigen (2010) as well as newspaper articles.

As already indicated the information on the gender quota provides the foundation for the further conducted analysis of this paper and delivers first possible influences of the introduction of a quota on work motivation.

Tournament theory has been chosen as the second main string of this paper for several reasons. First of all, it is concerned with competition and changes in work environment - both factors that are likely to arise from the introduction of a gender quota. Second, it encourages an experimental research approach, which is an effective method for the evaluation of the research question. There are numerous other studies and theories that are concerned with motivation. Commonly known
ones are Maslow's hierarchy of needs or the Two factor theory by Herzberg. However, these are not influential to this paper as they are not specific enough for the conducted analysis. Maslow’s hierarchy of needs is too broad as it is concerned with motivation in general triggered by needs starting with biological and physiological needs. (Maslow 1943) The Two factor theory by Herzberg is concerned with the interaction between job satisfaction and motivation (Herzberg et al. 1959), where job satisfaction is not a variable of interest here. Therefore, tournament theory provides, as previously explained, the best concept for the respective field of research of this paper.

The literature on tournament theory has been narrowed down to a few valuable studies that are directly related to the research question. First of all, the origin of the theory by Lazear and Rosen is explained in order to provide a clear understand of the main ideas of the theory. In a next step, studies that evaluate behavioral changes connected to work motivation are presented. Two studies have been chosen that analyze emotions which are also likely to arise for employees in connection to the related research question. Those are the influence of disappointment on work behavior a study by Gill and Prowse (2009) and the work of Jil and Stone (2010) on loss and envy as changing factors for motivation.

Furthermore, two pieces by Gneezy et al. round up the theoretical discussion of this paper. These studies provide valuable insights on gender based differences related to tournament theory, more specifically on performance and gender and on competitive behavior and gender. Therefore, these investigations are of high interest for the evaluation of the research question.

These studies lead to the directly following excursion to motivation theory as the analysis shows that motivation is not only influenced by monetary or promotion based rewards – the only two factors analyzed by tournament theory. On the contrary, it has been proven that there are other factors that influence motivation. These are evaluated in the Cognitive evaluation theory. Many studies surrounding this theory have been undertaken. For this paper the research by Kasper and Mayrhofer (2009) has been chosen.

1.6 Structure of the thesis

This paper is structured into seven chapters. In chapter 1, the introduction gave an overview of the main contents of the thesis. The main body of this paper is, as already indicated, made up of three main components: empirical background, theoretical background and an experiment.
In chapter 2, the empirical background, the gender quota, is elaborated upon. It builds the foundation of the paper. To follow the further investigation it is, first of all, essential that the reader has a clear picture of the current rules and regulations as well as debates and first outcomes of the introduction of a gender quota. Due to the fact that different countries have different approaches to a gender quota, the term quota as used in the further investigation of this paper is defined in the beginning of this section. After that the international relevance of the topic and the different types of quotas used in the European Union are demonstrated. This is followed by possible factors that could influence work motivation that have already been established by the existing literature on gender quotas. Rounding up evidence from Norway as the gender quota pioneer is presented. The chapter conclusion summarizes the findings of the section that are relevant for the following analysis in regards to the research question. The second chapter serves as an introduction for the first main topic of this paper – the gender quota. It provides the basis for the conducted analysis and the experiment.

Chapter 3 is concerned with the analysis of the second main string of this thesis: tournament theory. This theory constitutes the main topic of the analysis in this section. First of all, the beginnings of the theory by Lazear and Rosen (1981) are explained. In the next step the main ideas of tournament theory as understood today are demonstrated. Further, a selection of chosen studies specifically targeting the topics motivation and gender and motivation are presented in order to already indicate some of the factors that could influence work motivation through the introduction of a gender quota. The analyzed topics serve in the experimental stage as a first informative basis for the later conducted experiment. In order not to follow a too narrow path on work motivation only using tournament theory, motivation theory is introduced as well. The chapter conclusion sums up the most important aspects of the theory that are directly adding value to the analysis of the research question. This chapter provides the theoretical foundation for the analysis and serves as the framework of the conducted experiment. Further, the selected studies contribute important aspects towards answering the research question.

Chapter 4 is concerned with the research design where the reasoning and thoughts behind the set-up of the experiment are described. Here the research approach, the task, motivation, the implications of the gender quota, the group set-up, and the rules of the game under the frame of tournament theory are explained. Furthermore, the methodological limitations as well as behavioral predictions are presented.
The consecutive section, chapter 5, analyzes the findings of the experiment and puts them into relation to the theory. Here the observations concerning both sexes are presented. First of all, the outcome of questionnaire and the results of the experiment are analyzed. In a next step, correlations are being tested. The most important findings are summarized in the chapter conclusion. The results of this chapter answer combined with the findings from chapter three answer the research question.

Chapter 6 constitutes a discussion. In this section the findings of the previously conducted analysis are evaluated, also leaving space for personal opinion towards the results. Furthermore, suggestions for the management world are made in relation to the results of the empirical and theoretical background as well as the outcome of the experiment.

In chapter 7, the conclusion, the outcome of this thesis is summarized. All factors identified throughout the analysis answering the research question are once more in a combined manner presented. The conclusion serves a wrap up and constitutes the final chapter of this paper.

The following section, chapter 2, describes first of all the empirical background.

2 Empirical background: The gender quota

This chapter gives the reader a clear understanding of the gender quota and the current legislations as employed by the countries in Europe. The international relevance of the topic is emphasized as different approaches are explained. Further, evidence from countries with a gender quota is presented – a first step towards answering the research question. At first, the term “gender quota” is defined as employed for the further research of this paper.

2.1 Defining the gender quota

Promoting gender equality in decision-making has many faces. The need for fixed gender quotas was eventually generated by the corporations unable or unwilling to act on previously voluntary measures implemented in corporate governance codes. Even though the European Commission acknowledges that “corporate governance codes play an increasingly important role in addressing gender balance on corporate boards” (European Commission 2011, p.10), they have in reality not proven to be the most successful attempt at enacting equality. Although corporate governance codes typically do not carry penalties for companies that do not fulfill the requirements, whereas legislation does, many corporations did not focus enough on achieving gender equality in decision making. Most corporate governance codes follow a “comply or explain” principle, which requires
companies failing fulfill the conditions to explain the reasons for it and declare corrective actions in their annual report. (European Commission 2011)

In Norway and currently also in Germany the measures of the respective corporate governance code did not lead to the desired gender diversity on corporate boards. (Storvik & Teigen 2010) Therefore, other efforts were necessary – the demand for a fixed quota arose. Here, a quota is defined as “a government imposed fixed percentage of minority group members, here women, to be active members of corporate boards where the percentage can vary from country to country” (Seng et al. 2013, p.19). A failure to comply with the respective quota law carries penalties. In Germany, as already stated, the board seat remains empty, in Norway, on the other hand, companies can even be dissolved if they fail to live up to the requirements. (Storvik & Teigen 2010)

2.2 International relevance

Overall, it can be stated that currently a historically high level of female labor force participation in the European labor market of nearly 45 percent exists. However, this promising number is not reflected by female boardroom presence. In January 2012 only 14 percent of the boardroom seats of the 27 European member states were occupied by women. The following graph illustrates the share of women in decision-making of the largest companies in selected countries. The pioneer position of Norway is clearly observable.

![Figure 2: Percentage of women in top management position, January 2012](Own design, data from European Commission 2012b)

Although the European Commission stresses the relevance for more female presence in top management positions, there is no common approach of the member states; each of them has a differ-
ent approach to the lack of female representation. The European Commission states: “The variety in approaches to address the situation, ranging from voluntary systems, soft targets to those with serious legal penalties (Norwegian quota law), clearly reflects the diversity of European cultures and the absence of a ‘one-size-fits-all’ solution” (European Commission 2011, p. 15). As of 2013 countries that already have passed a law concerning more female representation in top management positions are Norway, Spain, France, the Netherlands, Belgium and Italy. Other countries like Denmark, Greece, Austria and Finland have quotas for state-owned companies. Sweden, the UK, Denmark, Finland, Austria and currently Germany (until the law previously talked about is finally passed) follow governance codes. These typically encourage companies on a voluntary basis to fill more top management positions with women. (Seng et al. 2013)

However, there are not only large differences between the types of quotas passed by the countries, also the laws in themselves differ largely. Looking at the legislation of Norway, the Netherlands and Spain already makes this evident. All of these countries have passed laws concerning a gender quota, yet the regulations in the Netherlands and Spain are not binding for the companies. They are merely a recommendation. In Norway, on the other hand, the quota is binding. In the Netherlands and Spain no sanctions are imposed. In addition to that, Spain’s law includes a gender equality article: In order not to discriminate men a gender quota for men and women of 40 percent per sex was implemented. (European Commission 2012) The absence of a “one-size-fits-all” solution is clearly observable. As already indicated, this research focuses on a non-voluntary quota as the Norwegian law or the one passed by Germany.

**Evidence from Norway**

In 2003 Norway introduced a fixed gender quota for corporate boards as the first country in the world. The law applies only to the largest companies listed on the Norwegian stock market. Smaller companies with limited liability are not affected by the quota. The ruling is that 40 percent of board seats have to be filled with women. If companies fail to comply, they face fierce sanctions. The Norwegian law even goes so far, that those companies can be dissolved (unless a considerable public interest exists). However, this incidence has not occurred until today. (Storvik & Teigen 2010)

There are a couple of facts of interest that can be observed 12 years after the introduction of the quota in Norway. First of all, the average percentage of women on corporate boards reached 40 percent as the quota requires. However, this number was also never exceeded. The female occupation of CEO positions remained at a low 2 percent. (Storvik & Teigen 2010) The evidence from
Norway shows that the corporations complied with the law, but at last only that. Many companies successfully avoided the quota by changing their business form from a stock listed public limited company (in Norwegian: ASA) to a private limited company (in Norwegian: AS). As the quota law is only binding for public limited companies, the corporations got around the forced board changes. From 2002 until 2011 the number of public limited companies was nearly cut in half. (Aftenposten 2014)

The influences and changes generated by the introduction of the gender quota in Norway are still largely unexplored. Employee behavior and motivation remain entirely uninvestigated. The same applies to changes in company value or revenue as it is difficult to isolate effects of more female managers from all other influential factors of business success. A study by the Ross School of Business in Michigan was, however, able to prove that the company value of 130 Norwegian companies between 2001 and 2007 dropped significantly. The respective measure used is Tobin’s Q (book value – market value). The study showed that with an increase of 10 percent of female board members, Tobin’s Q fell by 18 percent. The study stresses that this does not necessarily result from higher female participation in decision making, but mostly from the forced new composition of boards which lead to a much younger age average and with this less experienced board members. (E24 Jobb 2010)

In general, it can be stated that the acceptance of the gender quota in Norway was negative. The fact that nearly 50 percent of stock listed companies changed their business form to avoid the quota and the decreased company values measured by Tobin’s Q, support this statement. Even though, there are no behavioral studies in regards to the gender quota it can be assumed that the factors discussed above are influential on the work motivation of board members. Possible points are therefore now discussed.

2.3 Potential influences on work motivation through the introduction of a quota

The introduction of a gender quota clearly transforms the working environment. Through an exogenous policy shock, the externalities are being changed. That implies that companies are forced to adapting in order to comply with the law. Undoubtedly, this influences the working behavior and with this the motivation of the people that have contact points with the quota, namely those in top management positions or those working hard to get there. Generally, there is a negative acceptance towards the introduction of a gender quota. (Seng et al. 2013) This negativity varies between the sexes and has potentially different influences on men and women’s working behavior and with this their motivation.
2.3.1 Influences on men

Especially men tend to have a negative attitude towards the introduction of a gender quota. This observation can not only be made in the business world. Men in politics have often stressed their anger over the introduction of a quota. This displeasure was, for instance, recently observable in the German government as head of the political party CDU¹, Volker Kauder, publically admitted his negative attitude towards the quota. (Spiegel Online 2014) This negative perception of the gender quota is likely to influence the work motivation of men when they are being faced with these restrictions in their respective work environment. According to Izard “emotions constitute the primary motivational system of humans” (Izard 1977, p. 38). Therefore, the negative attitude towards the quota influences the work motivation most probably.

In addition to the described antipathy towards the quota another influential factor that is the discrimination of men. In Germany, for example, the state is by law obliged to generate equality between men and women (Art. 3, Section 2 in the German Basic Constitutional Law). (Seng et al. 2013) While quota supporters see the realization of this equality through the introduction of a gender quota, others criticize the obvious discrimination of men as a factor not compliable with the law. This aspects leads to the fact that men in decision-making positions cannot reach the next hierarchy level due to the necessity to promote women first in order to fill the given amount of board seats with women. In 1990 Akerlof and Yellen were able to prove that deprived workers are not only less satisfied, but they tend to withdraw efforts from their tasks as well. It can, therefore, be assumed that men will be discouraged due to the fact that their efforts cannot be rewarded with promotion and with this their motivation is likely to sink. This is further elaborated upon in the next chapter. On top of that, it is likely that other emotions that influence the working behavior of men arise. Those could, for example, be disappointment with the rewards received or also envy towards the promoted women. These factors are in depth discussed in section 3.2. Additionally, the experiment in chapters 4 and 5 evaluates whether these points are reflected in a real live case.

Another influential factor on men might the “tokenism” phenomenon observed by Konrad et al. in 2008. In an experiment they were able to prove that in a group of people, men are strengthening the solidarity between each other forming an alliance against outsiders, in this case women. This effect stops once a total of three females is reached in the group. (Konrad et al. 2008) This phenomenon is likely to lead to changes in behavior at work for both sexes. On the one hand, men will form an alliance, while women on the other hand will in return to feeling unfairly treated in their

¹ CDU: Christlich Demokratische Union; German political party
2.3.2 Influences on women
In connection to the above described phenomenon, it can be stated that women commonly feel more injustice than their male colleagues. Generally, women rate their feelings towards equality in pay, promotion possibilities and professional development much lower than men. (Seng et al. 2013) It is likely that these feelings are being cancelled out through the introduction of a gender quota. However, another issue may arise: the labeling as a “quota women”. This term has a negative connotation as it implies that women are promoted to fulfill the respective quota even though they may not be as qualified as their male opponents. (Seng et al. 2013). This could have different influences on their working behavior and their motivation. On the one hand, they might feel encouraged to try even harder to prove that they are in the respective position for the right reasons. This could potentially increase the work motivation of women. On the other hand, they might be discouraged as they will not feel accepted by their male colleagues.
In summary, the motivation of women could go either way through an introduction of a gender quota.

2.4 Chapter conclusion
This chapter set the foundation for the following theoretical background and provided the response to the first subquestion. The term gender quota was defined as basis for the further analysis and the experiment. Further, the international relevance of the topic became clear as well as the absence of a ‘one-size-fits-all’ solution within the European Union. With this knowledge, the analysis proceeds with the introduction of the theoretical background. So far, it can be stated that men are likely to have a negative attitude towards the introduction of a gender quota, which might influence their behavior at work and their motivation. In addition, the discrimination of men is another possible factor that negatively influences their motivation, possibly causing feelings like envy or disappointment. Women, on the other hand, might be labeled as “quota women”, which could cause motivation to go either way. The revealed points influencing male and female behavior serve as a first hint in response to the research question and are being revisited and analyzed in further depth in the theoretical background and the experiment.

3 Theoretical background: Tournament theory
This chapter introduces the second main string of this paper: tournament theory. With the empirical background in mind, the second subquestion “What conclusions on the changes in work motivation
can be drawn from existing research based on tournament theory?" is analyzed in this section. For this matter, only studies that are either gender related or concerned with work motivation have been chosen. First of all, the basics of the theory are explained.

3.1 The fundamentals of tournament theory

In 1981 Lazear and Rosen invented tournament theory. With their pioneer work “Rank-Order Tournaments as Optimum Labor Contracts” they argued that under certain circumstances a compensation scheme based on an individual’s relative position within the firm rather than the absolute level of output will be the preferred and natural outcome of a competitive economy. What lead them to the investigation of this topic were the large wage gaps between individuals, which were at that time steadily increasing. Their interest arose from the fact that some positions paid significantly more than one could expect when looking at the marginal products. Therefore, they examined the optimal labor contract. They argued that tournaments are an integral and often invisible part of the work environment. This means that employees are frequently ranked and promoted in comparison to their coworkers, instead of paying them for their actual output level. Therefore, Lazear and Rosen suggest that the allocation of a “prize” over a piece rate compensation results in “workers to allocate their efforts and investment activities efficiently” (Lazear & Rosen 1981, Abstract). Rank-order prizes are therefore superior to pay-performance compensations because they motivate a larger range of employees that strive for promotion instead of focusing on individuals only. (Lazear & Rosen 1981)

For this finding to be applicable however, one has to differentiate between the level of risk aversion of the workers. Lazear and Rosen discovered that a rank-order tournament provides the optimal and also natural outcome in order to best motivate the workers. Yet, this is only the case for risk-neutral workers. With this companies can produce the same incentive structure for risk-neutral workers when they are rewarded with relative position within the firm as opposed to an optimal and efficient piece rate as remuneration. It is more cost efficient for companies to observe the relative position in comparison to measuring the absolute output of each worker. Winners and losers are chosen based on relative differences of performance. The expectation of deferred payouts stimulates tournament participants to perform. This also leads to the large wage gaps for workers in specific positions that exceed their suggested marginal products, as briefly described before. The remuneration structure of rank-order tournaments leads to the payment of prizes which in the end often greatly exceed the wage structure as suggested by their absolute output. Even though, there usually is only a small difference in how the competing people have performed, the difference in what they receive is usually substantial. This is also the reason for the unusual high wage of the
company CEO. In addition, this large payment gap serves as a motivator for other employees in more junior positions – this high stage of earning constitutes the incentive to work hard throughout the career to finally reach the final hierarchy level. (Lazear & Rosen 1981) In one of his later pieces Lazear described this effect with the following words: “The salary of the vice president acts not so much as motivation for the vice president, as it does as motivation for the assistant vice president” (Lazear 1998, p. 226).

The composition of the prize consequently depicts an essential factor for the motivation of the employees as it aims at generating the optimum level of effort of each employee participating in the tournament. The theory implies that the prize is optimal when it generates the maximum level of output of all of the participants. Therefore, it is essential that a clear differentiation between winner and losers is given. The prize spread between these positions is hence of utmost importance. If the prize differential is too small workers might not be incentivized sufficiently. That is, for instance the case when the spread between current and promotion based wage is insignificant. Consequently, the motivation and with this the output of the tournament will drop. Vice versa, a prize spread that is too large also decreases tournament efficiency. Even though it assures the motivation of the participants, it usually induces so much effort, that contestants must be broadly remunerated. This again, reduces tournament efficiency. In this matter, the number of participants is of interest. With an expansion of group size, the prize must increase to generate an efficient outcome. The design of the tournament and its prize therefore requires the strategical design of the optimum prize in order to maximize the output of the tournament. (Lazear & Rosen 1981)

On top of that, for positions that comprise a high level of risk, rank-order promotions are also the most efficient payment method. This results from the fact that workers are equally impacted by external shocks such as recessions or unexpected competition. The internal contest in the tournament, however, is not influenced as all employees are facing the same conditions. When workers are risk averse, on the other hand, rank-order tournaments do no longer provide the best remuneration structure to incentivize workers in the most effective manner. (Lazear & Rosen 1981)

When absolute output is easily observable, a piece rate payment structure induces the best incentive construction and depicts the best allocation of resources. Tournaments are therefore only used in higher, executive positions, where it is more difficult to measure the absolute output of the workers. Lower positions, on the other hand, where output is easily measured, for example salesmen, a piece rate payment structure serves as an effective motivator. Here, individual performance determines the earnings under a piece rate scheme. In higher positions, where tournaments are ap-
plied, prizes usually depend on the competing group - the more participants in the tournament, the higher the prize. (Lazear & Rosen 1981)

Additionally, for the theory to be applicable, it is critical that a series of conditions is met. First of all, it is essential that workers are homogenous in their abilities. When their abilities differ too much, cheating is likely to occur which negatively influences the outcome of the tournament and does not lead to an efficient allocation of resources. (Lazear & Rosen 1981) Knoeber and Thurman demonstrated in 1994 the importance of the homogeneity of the contestants. The stated that if contestants are aware of their own abilities and the one of the other participants it is no longer the case that the person who puts forth the most effort wins. The level of effort is usually lowered due to the fact that participants are discouraged by the disparity in abilities. Heterogeneity between the participants therefore never leads to the optimal level of output of the tournament. (Knoeber & Thurman 1994)

Furthermore, as explained before, actors need to be risk neutral. Additionally, it is important that the participants of the tournament are economic actors. That is they are characterized by rational decision making and on top of that, have access to complete information. Furthermore, the same externalities need to be given to all of the players. Those are, for example, equal promotion possibilities. (Lazear & Rosen 1981)

Over the years, many economists added on to the work of Lazear and Rosen. Due to difficulties in measuring the implications of tournament theory in real life scenarios, experimental approaches became an often used method in the field. On top of that, competitive sports are the source of many conclusions drawn. Monitoring difficulties are, for example, the need for large panel data and long periods for observation. Further, companies usually have strong privacy regulations when it comes to employee information, which makes it difficult to obtain the necessary data. In addition, as already stated before, it is problematic to measure performance in executive positions in the first place. Empirical studies in professional sports provide the possibility to observe all this data. An advantage is the availability of large sets of panel data. Furthermore, performance can be measured with accuracy as it is clearly observable. Moreover, hypotheses can be tested in a relatively controlled field environment. (Kahn 2000)

In the following selected studies that came to important conclusions for the research area of this thesis are presented.
3.2 Behavioral studies in tournament theory related to motivation

Numerous economists have over the years added on to the initial work of Lazear and Rosen and evaluated the implications of tournament theory in real life scenarios. Next to sporting events as a data source, experiments are the most frequently used method for the evaluation of the theory. For the analysis of this paper the influences of emotions as well as gender differences are of special interest. The importance of gender related studies arises from the research topic as the gender quota provides one of the two main areas of interest of this thesis. The influences of emotion might at first sight not be the first obvious aspect in regards to the research field. However, the studies by Gill and Prowse (2009) as well as Gil and Stone (2010) have proven that emotions do have a significant influence on the working behavior of employees. According to the media coverage of the gender quota, the subject matter is a very emotional topic. Therefore, this research area should not be neglected. Two studies have been chosen for this paper: The influence of disappointment on working behavior by Gill and Prowse (2009) and the influence of loss and envy by Gil and Stone (2010). Both of these emotions are likely to arise when a gender quota is implemented in a company; most likely on the male side of the workforce. Men might feel disappointed because they are deprived of their chance of being promoted. At the same time they might be envious towards the female favoritism. Therefore, the analysis proceeds with the introduction of these two studies.

3.2.1 The influence of disappointment on working behavior

In 2009 Gill and Prowse conducted an experiment to measure the disappointment aversion of participants in a real life scenario. They employed a computerized slider task to evaluate whether participants are disappointment averse when competing in a real effort sequential move tournament. As one of the most important conclusions they discovered that “disappointment at doing worse than expected can be a powerful emotion” (Gill & Prowse 2009, p. 1). The emotion “disappointment” is usually particularly strong, when a person has put a lot of effort into a task and expects an appropriate remuneration. Especially, when competing for a prize in tournament theory, the efforts of the individual may however not be rewarded adequately unless the person performs better than all other participants. With an increased effort level, the expectation of winning is usually raised in equal measure. Further, Gill and Prowse were able to observe that rational individuals anticipate possible disappointment change their effort level taking the expected disappointment into account.

In addition, they observed that in a sequential tournament, the second mover tends to shy away from working hard, if the person was able to observe that the first mover had already worked hard. This phenomenon is called discouragement effect. Here the expected disappointment leads to the fact that the second individual does not even try to win anymore. As a consequence, the winner of
the tournament is elated while the losers are disappointed. The conducted experiment showed that
disappointment is the stronger emotion in this scenario. (Gill & Prowse 2009)

The results of the study are of interest to the analysis of this paper since they prove the strong
connection between emotions and working behavior. Even though, the implementation of a gender
quota does not reflect a sequential move tournament, important conclusions for the respective re-
search question can be drawn. As the influence of disappointment proved to have a strong impact
on working behavior, it is likely that this emotion also influences employee motivation when a gen-
der quota is introduced. As briefly explained before, especially men are likely to be influenced by
this emotion since they are deprived of their promotion possibilities. When a gender quota is im-
plemented, men are able to observe that women have to be promoted first. This factor alone pro-
vides enough ground for the generation of the discouragement effect. It can, therefore, be ex-
pected that men withdraw effort from their respective task. However, Gill and Prowse also
acknowledge that employers might be able to offset this effect through the right remuneration of
the deprived workers. Yet, the question remains on how high the compensation needs to be in or-
der to contradict the disappointment. (Gill & Prowse 2009) A special remuneration structure for
men might therefore also be a solution to the discrimination of the gender quota.

Akerlof and Yellen had in 1990 already come up with a theory that examined exactly this approach
for a solution as suggested by Gill and Prowse.

They analyzed to the working behavior of deprived workers in relation to wage and effort. Akerlof
and Yellen state that workers usually have a conception of fair wage for their efforts estimated
through comparing themselves with similar workers within their firm. This perception is called fair
wage-effort hypothesis. They found out that deprived workers are not only less satisfied, but they
tend to withdraw efforts as well. (Akerlof & Yellen 1990) The explanation for this reaction is simple:
“When people do not get what they deserve, they try to get even” (Akerlof & Yellen 1990, p. 256).
This discovery clearly has an implication for the research field of this paper. As men are deprived
of their promotion possibilities, it can therefore be expected that they will be disappointed, less sat-
isfied in their job, and are likely to withdraw effort. As a comparison with their privileged female
colleagues is inevitable, these feelings represent the natural reaction to the discrimination. In re-
gards to an introduction of a gender quota to a work environment, this specific tournament theory
study consequently suggests that the male employees will be less motivated and their effort level
will drop.
3.2.2 The influences of envy and loss aversion on working behavior

Similarly to the disappointment that might occur due to the introduction of the gender quota, envy is an emotion that potentially represents an influencing factor on employee motivation. Again, it can be expected that mostly men are affected by this feeling. The likelihood of envying a woman for the relative “easy” way into a decision-making position is relatively high. It can be stated that through the introduction of a gender quota it is “easier” for women to reach a position on a company board in comparison to the potential of a man making it to the top. This is the logical consequence of the need of more female representatives. Envy can, therefore, be seen as a natural reaction to this favoritism of women. (Eisenkopf & Teyssier 2010)

In 2010 Eisenkopf and Teyssier analyzed the effects of envy and loss aversion on working behavior on the basis of tournament theory. While the likelihood of envy to affect the competitors of the tournament is quite high, the impact of loss may not represent a strong influence. The potential for a person in decision making to be facing a loss is generally quite small as a downgrading in hierarchy is extremely rare. However, due to the need of filling more board seats with women, there still is a possibility that men might have to vacate the spot as a necessary consequence of the implementation of the gender quota. Therefore, men might be affected by the fear of loss. This phenomenon, however, is only likely to occur for a person that already occupies a board seat instead of someone that is still competing to reach this position. (Eisenkopf & Teyssier 2010)

With their study Eisenkopf and Teyssier empirically tested the assumptions made by Gill and Stone in the same year. The theory of Gill and Stone suggests that similarly to the work of Akerlof and Yellen, as described before, people want to be properly remunerated for their efforts. Gill and Stone focused on the influence of loss on motivation. They evaluate that loss is directly linked to disappointment. In their paper they were able to mathematically prove that loss avers people are highly disappointed if they do not win the prize they have been competing for in the end. Therefore, the individuals may choose not to apply any effort at all in order to minimize the disappointment. That means that the effects of loss on work motivation as suggested by Gill and Stone are exactly the same as the influence of disappointment on work motivation as proven by Akerlof and Yellen in 1990 and suggested by Gill and Prowse in 2009. In addition to that, they note that a way to reduce the fear of loss of the individuals is giving them their respective pay up front. Gill and Stone were able to prove that the loss aversion and the correlated disappointment were offset through this incentive structure and people performed better. This treatment ensures that subjects cannot experience loss. The emotion is therefore eliminated. In their paper Gill and Stone propose the empirical and experimental evaluation of their theory on loss aversion. (Gill & Stone 2010)
At exactly this point Eisenkopf and Teyssier take off. In addition to the empirical testing of loss aversion, they take “envy” into consideration as well. Based on the finding of Gill and Stone they conducted an experiment where subjects played a classical tournament aiming at winning a prize. The tournament consisted of three rounds each aiming at assessing the influence of one specific emotion. Therefore, the first treatment was designed as a basic tournament, the second aimed at evaluating the influence of envy and the third one the impact of loss on work behavior. Their results support the predictions of Gill and Stone on loss aversion. (Eisenkopf & Teyssier 2010)

Additionally, Eisenkopf and Teyssier observed that envy increases competitive behavior, whereas loss reduces it dramatically. Consequently, envy represents an emotion that increases work motivation. Furthermore, they were able to confirm that when the individuals were unable to experience loss in relation to their expected payoff, the variance in the tournament was largely reduced. With this they were able to experimentally prove that an up-front payment can offset a decrease in motivation through loss aversion. (Eisenkopf & Teyssier 2010)

Even though, Eisenkopf and Teyssier suggest that envy can positively affect work motivation, this result cannot be transferred one to one to the introduction of a gender quota. The problem is that if a person is envious - which is potentially positive for the outcome of the tournament - but at the same time loss-averse, the effects may cancel each other out. The results of Eisenkopf and Teyssier show that while some individuals that are envious and loss-averse lay out extensive effort, other subjects dramatically reduced their efforts. (Eisenkopf & Teyssier 2010) Therefore, “envy”, as a positive influence on the tournament, may not be sufficient to offset the loss aversion of the subject. This should also be considered in the real life scenario when a gender quota is implemented in the firm. The motivation of the individuals, especially men, may therefore in relation to the results of Eisenkopf and Teyssier increase or decrease depending on personality traits. One way to tackle the problem of loss aversion and the connected disappointment might therefore be to openly address the problematic of not being able to promote men due to the introduction of the gender quota. If realizable, an up-front remuneration could in this case serve as a motivator for men when they are unable to compete for the prize of the tournament – the promotion.

Summing up, it can be stated that disappointment, envy and loss are influential emotions that are likely to impact the work behavior and with the motivation of the subjects that are affected by an implementation of a gender quota. The empirical evidence suggests that the influence especially on men could turn out to be negative. As the likelihood of these emotions to arise can be estimated to be quite high, it can be assumed that the work motivation of men due to the introduction of a
gender quota is subject to decrease. The results, however, also aim at presenting solutions to the negative impact of the respective emotions. Those could, for instance be an up-front payment in order to align expectation with the actual remuneration of the individual. Yet, it has to be noted that companies usually employ bonus payments based on past performance instead of up-front remuneration.

3.3 Behavioral studies in tournament theory related to gender

Next to the influence of emotions on work behavior, the differences between the sexes are worth evaluating. Especially the work of the known economists Gneezy and Rustichini constitutes the foundation of the following analysis as their research focus lies on gender differences. Many economists have added on to their findings in behavioral economics. Combined, these are presented in the following starting out with his assessment of the relationship between performance and gender.

The economists Gneezy and Rustichini focus in their research on behavioral economics. Applying tournament theory as a framework they evaluate behavioral traits of men and women. In 2003 and 2004 they published two reports that are of interest for the investigated topic of this paper. Here, it has to be noted that the study released in 2004 is based on field data that was gathered in 2002. Therefore, this study is presented first even though the publication date lies behind that of the other paper. Both pieces analyze the differences in behavior of men and women in relation to performance. As the gender quota induces a clear cut between the sexes, this research field is of utmost interest for the assessment of the research question. Therefore, both of these studies are presented now. Additionally, conclusions in regards to the research question are drawn. Here, suggestions for the real life scenario, as in what the management world can learn from these studies, are undertaken. These are presented subsequent to the explanation of the results of Gneezy et al.. The evaluation begins with their work from 2004.

“Gender Performance at a Young Age”

The pieces by Gneezy and Rustichini were inspired by the gender pay gap and the predominant male leadership amongst the best paying executive positions in the US in the 1990s. They acknowledge that this gap can be due to differences in ability, discrimination or stereotype role allocation within the family as suggested by previous research. Yet, they expand the discussion testing whether men and women show differences in competitive behavior. In an experiment with young children their results are unambiguous: While girls shy away from competition, the motivation of boys increases. (Gneezy & Rustichini 2004)
In a closed field environment they eliminated all confounding factors to ensure the exclusion of any disruptions for the data collection. For the analysis they tested the competitive behavior of 140 children at an Israeli elementary school between the age of nine and 10. The experiment consisted of the children competing against each other in a 40 m sprint. Two rounds were played. First of all, each child ran individually, noting their respective time. In the second round, the teacher paired two children relative to their speed in the first round, but regardless of their gender starting with the two fastest. When more than two children had the same time in the first round, the teacher decided randomly on the match of the second one. A separate group of children also ran alone in the second round to create a control group to be able to suspend the possibility that one gender might get tired easier than the other. The children were not aware of their participation in an experiment and were not remunerated for their effort. In the first round, the average time of girls was 7.672 seconds, the one of the boys 7.693 seconds. The results of the test group showed that the children ran on average just a little bit faster than in round one. The outcome of the experimental group, however, where the children run in pairs show another scenario: Boys ran significantly faster than in the first round (on average - 0.163 seconds). Girls, on the other hand, ran slower than before (on average + 0.015 seconds). The time differences may seem small, yet they are statistically significant. On the other hand, Gneezy and Rustichini did not find any statistically significant evidence that the gender distribution of the pairs in the second round had an influence on the reached time. (Gneezy & Rustichini 2004)

“Performance in Competitive Environments: Gender Differences”

In their 2003 piece, Gneezy, Niederle and Rustichini, analyzed the findings of their 2002 field experiment in more depth; this time choosing adults as subjects. Confirming the observations made in the elementary school, they present experimental evidence that men may be more effective than women in competitive environments. They argue that this factor reduces the chances of women to win promotion contests and may, therefore, be one of the reasons of the male dominance in decision-making positions. (Gneezy et al. 2003)

To test whether the ability or behavior of women and men differs in competitive environments they conduct an experiment in a closed field environment. Gneezy et al. specifically chose this task because it is gender neutral. They argue other tasks might favor one of the sexes, solving numeric equations for instance might favor men. Therefore, they assess the maze-game as gender neutral which is also proven by their results that do not show statistically significant gender differences. For the sake of the experiment three groups are created: a control group and two experimental groups. Each group consists of six members – three men and three women. In the control group,
they let participants solve computerized mazes over a time frame of 15 minutes. Each person is paid a fixed piece rate depending on the amount of mazes solved. The members of the first experimental group are, however, not paid by a piece rate payment scheme. Instead, they are participants of a tournament where only the person who solves the largest number of mazes wins. In this case only that person is paid proportionally to the output. The tournament payment therefore differs from the piece rate scheme in the sense that its amount is uncertain and depends on the performance of the other participants. (Gneezy et al. 2003) This set-up reflects the main assumption of tournament theory – that people are best motivated when they are able to win a prize. The members of the third group however, participate in a tournament where the winner is randomly chosen. The remuneration is, therefore, not based on output, but purely random.

The results of Gneezy et al. show that under the tournament remuneration scheme of the first experimental group men usually outperform women significantly in comparison to the noncompetitive environment of the control group. While the average performance of men increases under the competitive environment of the tournament, the outcome of women is not affected. Therefore, they state that men are motivated by competition while women are not influenced by the change in the set up. This is further confirmed by the results of the second experimental group where the winner is randomly chosen: here no statistically significant gender related differences were found. In conclusion, men are more motivated by competition than women. (Gneezy et al. 2003)

In addition to the above described results, Gneezy et al. conducted two other experiments during the same study to test whether women are not motivated by competition at all or if they just shy away from competing against men. For the study they used the exact same experimental composition as described before, but this time exclusively choosing women or men as participants. With this one study only consisted of male participants, the other one of females. First of all, it can be stated in the non-competitive environment the gender gap decreased in comparison to the initial experiment described above. However, significant evidence was found that women do not dislike competition in general, but competing against men appears to affect their motivation. In the tournament treatment of the second experimental group women performed significantly better than in the mixed gender group set-up. Therefore, it can be assumed that women do not shy away from competition in general, but from competing with men. The performance of the winner of the tournament is not impacted by the gender allocation of the groups. (Gneezy et al. 2003)

Comparing both of the studies - children running in relation to adults solving mazes - it can be stated that both come to the same main conclusion: while men are elated by competition, women tend
to shy away from it. The main difference, however, is that at a young age the difference in performance is not generated by the girls shying away from competing with a boy, but from competing in general. As an adult, it can on the other hand be observed that women perform significantly better when paired with only females, instead of competing in mixed environments against men. The reasons for this change in behavior can only be speculated about. Gneezy et al. acknowledge that more and more evidence emerges in field studies that demonstrate that women estimate their own competence lower than the one of their male colleagues. Consequently, the confidence of the women decreases. (Gneezy et al. 2003)

*Implications for the management world*

For the specific scenario of this thesis, namely the introduction of a gender quota a couple of conclusions can be drawn from the research of Gneezy et al.. First of all, as women usually shy away from competition, the introduction of a gender quota can serve as a positive influence on their behavior especially when considering the results of the 2003 study. As their way to a board membership does not depend on the direct comparison between women and their male colleagues, women might not feel as discouraged as they might be when directly competing amongst men.

On the other hand, the finding that men are motivated by competition implies two possible outcomes depending on the degree of promotion possibilities of men: The first scenario is that no men can be promoted due to the introduction of a gender quota, meaning that men are excluded from the tournament of reaching the next hierarchy level. This circumstance in relation to the results of Gneezy and Rustichini consequently implies a decrease of the motivation of men since they are eliminated from competing. More precisely, the research, therefore, suggests that men are less motivated when a gender quota is introduced. However, there also exists a second scenario: It implies that a small number of men can be promoted due to the gender quota meaning that there is a chance of promotion. In this scenario men might even be more motivated due to the increased competition amongst them. Which of these applies depends on the board composition of each individual company.

To counteract less motivated male employees in the most extreme scenario, companies need to find a way of keeping their male employees motivated. Another internal tournament, for instance, could potentially solve this dilemma by initiating another competition amongst men to activate their competitive behavior. Accordingly, firms cannot only rely on a promotion based incentive structure to keep their male work force motivated.
3.4 Motivation theory – Cognitive evaluation theory

In addition to the approach of tournament theory, it is important to state that not all forms of work motivation can be explained by the chance of winning a prize. Recently, the cognitive evaluation theory has pressed forward and become the area of interest of many economists. Therefore, a short excursus is undertaken here.

The study undertaken by Gill and Stone (2010) revealed that people perform better when they are given their remuneration up front even though they are loss averse. That indicates that the individuals are not only motivated by monetary or promotion based incentives, but that there are other factors that influence their effort level. These factors are explained by intrinsic motivation. In this specific scenario, trust can be expected to be the triggering factor.

Cognitive evaluation theory states that people are either motivated by external or internal factors. External factors are those incentives imposed on the employee from the work environment and are commonly known as extrinsic motivation. Those are, for example rules and regulations, monetary rewards, such as bonus payments or promotion based incentives. (Kasper & Mayrhofer 2009) Tournament theory sees extrinsic motivation as the most influential incentive on work behavior. Internal factors, on the other hand are the so called intrinsic motivators. Those are for example, the enjoyment of a task, pleasure at performing well or the setting of clear personal goals. In the case of intrinsic factors, the motivation results from the task itself. (Kasper & Mayrhofer 2009) Tournament theory neglects this kind of motivation. The principles of the theory purely see extrinsic factors, namely the chance of winning a prize, as the reason for work motivation. Nonetheless, more recent studies, as described before, take emotions into consideration. Cognitive evaluation theory, however, stresses the importance of the interdependency of extrinsic and intrinsic motivation. Especially excessive extrinsic motivation can lead to a decrease in intrinsic motivation: While someone’s work behavior might have been determined by voluntary self-motivation and enjoyment, an introduction of a bonus-payment oriented remuneration structure has the power to offset this intrinsic motivation leading to a ‘What do I get if I do this’-organization type culture. (Kasper & Mayrhofer 2009)

3.5 Chapter conclusion

This chapter introduced the principles of tournament theory as implemented by Lazear and Rosen in 1981. The main suggestion of the theory is that people are best motivated by the chance of winning a prize. The concept of differentiating between real winners and loser in a tournament is an important aspect to this concept. Furthermore, additional studies in the field of tournament theory
were introduced. In this matter, the evaluation of the influence of emotions, such as disappointment or envy on work behavior was added to the analysis. Above all, the work by Gneezy et al. (2003 and 2004) played an important role in this chapter as their research focus lies on gender differences. Therefore, their work is of interest for the design of the experiment and with this for the remainder of the analysis. A brief excursus into the field of motivation theory was undertaken in order to ensure a holistic view on additional research on human motivation.

Summing up, it can be stated that tournament theory suggests that the introduction of a gender quota does have an influence on the motivation of the employees. First of all, men are discriminated in the tournament due to the fact that they are deprived of their promotion possibilities when a gender quota is implemented. Therefore, the outcome of the tournament will be inefficient and their motivation will decrease. In connection to this, negative emotions such as envy or disappointment are likely to have a negative impact especially on the male workforce. In addition, the work of Gneezy et al. further suggests a decrease in male performance as their research showed that men are best motivated under a competitive frame whereas female performance remains the same.

The theoretical background set the foundation for the following empirical data collection in form of an experiment. The experimental set-up is designed under the frame of tournament theory and is explained in the next chapter.

4 Research design

The experiment serves as the main instrument for the data collection of this paper. As already described in the methodology, the thesis follows a multi-method approach for the data collection. That means that in addition to the experiment a basic questionnaire is given to the participants in order to guarantee a profound analysis. According to the investigation of the empirical background and the theoretical background, an influence on work motivation through the introduction of the gender quota can be expected. The experiment and the attached questionnaire therefore, aim at testing whether these suggestions hold up in a scenario where a quota is introduced as a manipulation. The research undertaken in this section consequently provides an answer to the third subquestion of the research objectives: On the basis of an experiment and an attached questionnaire, can the predictions identified by tournament theory be verified? Are additional factors observable? Moreover, the main aim is to analyze the conclusions in relation to the real life scenario. ‘What are the implications for the management world?’ is the essential question that is discussed subsequent to the experiment.
The research approach originates from personnel economics, a term often associated with the later research by Lazear. Personnel economics are characterized by a dualistic research approach that combines economic theory with social psychology. The same applies for the experiment of this paper. The main framework – tournament theory – follows a purely economic rationale. Additionally social psychology influenced the selection of the task. As described before, economists in the field of tournament theory often use experiments as a way to validate their theoretical framework. Testing whether the theory holds up is also the aim of this experiment.

The use of an experiment as an investigative tool is advantageous as it can be conducted in a closed field environment which allows for a controlled experimentation. With this the experimenter possesses a large influence on the setting and the conditions of the experiment and can therefore assess specific factors through the right composition of the analysis. The structure of the experiment is therefore carefully chosen and presented in detail in the following section. The composition of the experiment is inspired by previous studies undertaken in the field of tournament theory, for instance Gneezy et al. (2003) as introduced in the theoretical background.

For the purpose of measuring the effects of the introduction of a gender quota on work motivation the experiment asks the participants to solve a real task. To draw additional conclusions, a short questionnaire is given to the subjects subsequent to the experiment. According to the chosen research question, tournament theory serves as the main framework of the experiment. The aim is to study casual links between two variables. In this case, whether a change in one independent variable induces change in another dependent variable. More specifically, here the intention is to evaluate whether the introduction of a gender quota induces change on the motivation of the participants. Therefore, the composition, the setting and the remuneration structure have been selected in a manner that contains as many implications of tournament theory as possible. As explained before, for the theory to be applicable a set of conditions needs to be met. Those are homogeneity and risk neutrality of the participants and equal externalities. Further, it is essential that subjects are economic actors who are characterized by rational decision making and complete information. (Lazear & Rosen 1981) These four requirements are explicitly included in the setup of the experiment and are accounted for in subsection 4.1.1 of this chapter.

First of all, the composition is described in the following. The questionnaire is explained subsequently.
4.1 Experimental design

There are several factors that had to be decided upon for the construction of the experiment. Those are, the group set-up including the subjects, the length of the experiment, the task, the instructions, the remuneration structure and the planned manipulation. All these factors are chosen in a manner that reflects the ideas of tournament theory as much as possible. These components are now described one by one. Before the start of the experiment, a test phase was conducted with five individuals to ensure the full understanding of the participants and with this guaranteeing a faultless realization of the experiment.

The experiment is printed out and handed to the participants. This was first of all done because an online self-trial showed that it is significantly more time consuming to fulfill the task on a computer than in hand writing. Furthermore, the five subjects that participated in the pre-test where on average only able to solve about 80 percent of the result they had achieved in the printed out version even though they received the same task in both scenarios. Therefore, the printed version was chosen.

Second and most importantly, using the print version increases the influence of the experimenter on the distribution of subjects across the groups. As explained later, a specific group set-up is desired. An online distribution would have not enabled this composition. In this particular case, the equal distribution of men and women is desired. Therefore, the experimenter is able to control this condition by approaching potential participants face to face. Thus, this distribution method provides the most effective way of generating the desired group composition. Yet, the subjects are placed into the groups at random. The experimenter only had to ensure that the same amount of men and women were approached. This allocation implies that subjects are approached in a consecutive manner. There is no single point in time, when all 40 participants meet at the same place to conduct the experiment. However, there is a possibility that two or more participants conduct the task simultaneously. The subjects are therefore instructed not to communicate with any other participants in order to not to falsify the results.

In addition, the realization of the experiment printed on paper allows for the close monitoring of the participants. With this the experimenter might be able to observe additional factors that influenced the behavior of the participants.

The group set-up is described in the following.
**Group set-up**

According to the fact that a classic experiment approach has been chosen, two groups of participants were established. One of the groups can be regarded as the control group that was asked to solve the required task without any constraints. The task is designed as a tournament. The person that provides the best answer wins a prize. Here, group A is the control group. The experimental group, on the other hand, here group B, solves the exact same task, however, with the planned manipulation. Using a control group and an experimental group allows drawing conclusions from a before and after perspective. Further, it provides the possibility to compare the observed outcome with the previously described suggestions from existing research in tournament theory.

40 individuals participate in the experiment. This number was defined before the start of the study. It is estimated as realistic that this amount of individuals are willing to participate in the experiment. To account for equality 20 women and 20 men were approached by the experimenter and asked to join the study. However, also within the groups the equal distribution of men and women was desired for analytical reasons that are explained later on. Each group should therefore consist of 10 women and 10 men. To randomly place the subjects into one of the groups, two bags each containing 20 pieces of paper are established. Each of the bags contained 10 “Group A” papers and 10 “Group B” papers. Each bag serves one gender only in order to guarantee the equal amount of women and men in the groups. With this approach the subjects are randomly assigned and the experimenter only has to pay attention to recruiting the same amount of people of both sexes.

Before the beginning of the experiment, each participant is asked to blindly draw a piece of paper out of one of the bags depending on their gender. This measure let to the following desired set-up of the groups as the graphic illustrates:

---

**Figure 3: Group set-up, own design**
Each group consequently consists of 20 participants. Both are divided into two subgroups. Those are A1 and A2 as well as B1 and B2. A1 and B1 are characterized by the fact that they only have women members. A2 and B2 on the contrary, consist exclusively of men.

This group composition is designed for several reasons. First of all, the equal distribution of subjects into the groups allows for the comparability of the results. In addition to that, this set-up also enables the observation of differences between men and women. This is an important aspect in consideration of the research aim.

**Length of the experiment**

Moreover, the length of the experiment has to be decided upon. According to the chosen time horizon as a cross-sectional approach, the particular phenomenon is studied at a specific point of time. Therefore, the measurability of the results is guaranteed by the chosen task as explained in the following section. In connection to this, the length of the experiment is designed to be as short as possible, yet long enough to be able to obtain the desired variables. All in all, it was estimated that the participation in the study would take approximately 5 minutes. This length allows for the conduction of the experiment itself, which takes 3 minutes and the response to the questionnaire at the end. It is estimated that this provides a time frame that individuals are willing to spend on the participation of the experiment. A longer experimental structure would have made it significantly more difficult to obtain the desired number of subjects and would additionally require a different remuneration structure. Previous experiments in this field, for instance Gneezy et al. (2003) lasted one-hour and paid the participants in cash. This study, however, does not have the funds to provide this kind of payment to participants. Therefore, it has been determined that the chosen length in combination with the selected remuneration structure (see 4.1.1) provide the best set-up of the study for the funds available of this thesis. The experimenter is responsible for the time-keeping.

In the following the task is described.

**The task**

Tournament theory suggests that people are motivated by the fact that they can win a prize. To account for this suggestion, the task is designed in a manner that allows for the measurability of the results so that a clear differentiation between winners and loser can be made at the end. This means that the experiment is designed as a winner-takes-it-all tournament. Further, the task needs to be gender neutral, as in the experiment conducted by Gneezy et al. (2003), in order to guarantee that any results of the experiment arise from motivational differences of the participants and not from a gender related discrepancy. The chosen task is believed to fulfill this requirement as it com-
bines the use of letters in association with a specific number. The selected assignment originates from psychological research, more precisely concentration tests. It is evaluated that the use of this approach suits the research aim best. It was selected over other measures such as intelligence tests or general knowledge questions because both of these are likely to be influenced by factors that could falsify the inspected dependent variable. Both of these are inevitably impacted by competence or previously attained knowledge. The chosen task does not require any previous knowledge and does not aim at differentiating between the intelligence levels of the participants. The participants are asked to solve a concentration test using letter number combinations. They are asked to write down the respective number under the letters using the given letter-number combinations. There are 11 given letter-number combinations. These are illustrated in the following table including the example:

<table>
<thead>
<tr>
<th>C</th>
<th>I</th>
<th>G</th>
<th>J</th>
<th>A</th>
<th>T</th>
<th>H</th>
<th>L</th>
<th>B</th>
<th>Y</th>
<th>P</th>
<th>All other letters</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>6</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>X</td>
</tr>
</tbody>
</table>

Before starting the experiment, the following example is provided on the introduction page:

<table>
<thead>
<tr>
<th>A</th>
<th>U</th>
<th>G</th>
<th>K</th>
<th>L</th>
<th>T</th>
<th>Z</th>
<th>C</th>
<th>F</th>
<th>J</th>
<th>B</th>
<th>E</th>
<th>P</th>
<th>T</th>
<th>B</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>X</td>
<td>5</td>
<td>X</td>
<td>6</td>
<td>...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 4: Letter-number combinations in the experiment; own design

The task is to write down the matching number under the respective letter. Once the attendee understands the assignment, the experiment starts on page two. There are eight rows to solve, similar to the example above. The given letter-number combinations remain the same and are printed on the top of the page so that they can be seen throughout the whole test. The timing is limited to three minutes. The experimenter therefore supervises each participant and is responsible for the time keeping. The task is designed in a manner that does not allow for solving all eight rows in the given time. The pre-test with the five individuals validated this statement. A person with a photographic memory might present an exception. This specific characteristic can, however, not be accounted for in the experiment. Yet, it has to be noted, that amongst the 40 participants, one individual was able to solve all letter-number combinations making only two mistakes. Additionally, the person even had 10 seconds left of the given time of three minutes. This individual can be seen as an exception.
The instructions and the rationale behind them

The experimental setting in a closed field environment allows for the measurement of only specific factors that are of interest. Depending on the setting and information given to the participants, their behavior is likely to be influenced. This knowledge had to be carefully evaluated by the experimenter when establishing the concrete set up of the experiment. It is therefore essential to provide only the right information concerning the research approach to the players in order to obtain unbiased results. Additionally, for the validity of the experiment it is essential that the participants are not being lied to.

In this specific case, it is important to withhold the two main topics of the research question from the participants: Motivation and the gender quota. The experiment therefore needs to be designed as neutral as possible. Accordingly, the instructions give away only limited information. The experimental set-up is shown in the following figure already partly known from the elaboration of the group set-up.

![Experimental set-up](image)

**Figure 5: Experimental set-up, own design**

According to the rules of the game, the participants of the different groups need to be informed about their specific regulations. For group A this means, that everybody can win. For group B on the other hand, only women, in this case only members of group B1 can win. Consequently, three different instruction sheets are needed. One for the whole group A since all participants have the same chance of winning. Group B, however needs two manuals, because the probability of winning between them differs. Consequently, there are three separate instruction sheets describing only the information of the respective group. The manual includes the most important facts, such as the length of the study, an example of the assignment and information on the remuneration of
the participants. Both groups are instructed to fulfill the same task in order to guarantee the comparability of the results reached by the individuals.

Group A is additionally informed that there is a competition in their group and that the winner is able to win a prize. This results from the main idea of tournament theory, precisely the fact that people are most motivated when they are able to win a prize. It is therefore essential to inform the members of group A about their chance of winning the prize. The rules of the game for group A are, accordingly, that everybody can win regardless of their gender. The experimental group, group B, does, however, not face the same equality. They are similarly informed about their participation in a competition, however, in group B a gender quota is imposed. Therefore, the rules of the game are that only women could win. That means that only a member of group B1 has the chance of winning. Here, it has to be noted that not all of this information is disclosed to the participants. The groups are only informed about their respective instructions. At no point in time, is group A informed about the fact that there even is a group B, let alone the instruction and restrictions of group B.

Additionally, at no point were the participants educated about the research aim of the experiment. The instructions neither mention the connection to work motivation nor to the gender quota. The reasons for the discrimination of group B are not disclosed, nor are the subjects aware of the gender distribution in their group. This is an important restraint as it keeps the participants from speculation about the research aim. The information that a gender quota is imposed might cause participants to behave differently and with this the results would be biased. It is, therefore, essential that neither the gender distribution, nor the research aim is disclosed to the participants. However, it has to be noted that the questionnaire at the end might give away hints concerning the research aim to the participants. Yet, this does not influence the outcome of the experiment as the participants are instructed not to look at the questionnaire before finishing the task. More information on the questionnaire is provided in section 4.1.3.

The subjects are informed by the instructions that their group consists of 20 people. Members of group B are additionally told that there are 10 individuals in group B1 and equally 10 in group B2. Therefore, they are aware of their probability of winning the prize. For group A this means that each person has a five percent chance of winning. The probabilities for group B, however, differ between the subgroups. Since the rules of the game are that only members of group B1 can win, the individuals here have a one in 10 chance of winning. That is a 10 percent probability. Members
of group B2, on the contrary are excluded from the competition and, therefore, their possibility of winning is zero percent due to the discrimination of the gender quota.

To guarantee that the individuals understand the rules of the game and with this their chance of winning they are asked to write down the respective probability before starting the task. As the pre-test indicated, subjects of group B were only skimming through the instructions and with this they were likely to miss the most important rule that only members of group B1 could win and subjects in group B2 could not. Therefore, it was decided to not only ask the participants for their respective chance of winning, but also to note the probability of the member of the other group (B1 vs. B2). With this the probability distribution between the groups becomes more clear and visual to the participants.

4.1.1 Implementation of tournament theory basics
According to the theory, players are best motivated by the chance of winning a prize over a piece-rate payment. For this to be true a set of conditions needs to fulfilled. The requirements include \textit{homogeneity} and \textit{risk neutrality} of the participants. Further, it is essential that subjects are \textit{economic actors} who are characterized by rational decision making and complete information. In addition, all individuals must face \textit{equal conditions of the external environment}. (Lazear & Rosen 1981)
All of these factors are now discussed in depth as implemented in the experiment. The specification begins with the remuneration structure based on the fundamentals of tournament theory.

\textit{Remuneration Structure}
In order to mimic real life incentives each individual receives a “basic payment” as well as the opportunity to win a prize. The participants are all remunerated with a chocolate bar as a small “thank you” for joining the experiment. Before the start of the task, the individuals are informed that they have the possibility to win a 10 Euro gift card from the online shop Amazon. This price is chosen due to the fact that Amazon provides a wide range of products for both sexes. This allows for the assumption that both men and women are equally motivated by the prize they are able to win. A gift card from a different store that is more gender specific, a clothing store or a perfumery for instance, might cause women to be more motivated to win than men. For the purpose of the experiment, it is however essential that men and women are equally motivated by the prize. An Amazon gift card can, therefore, be seen as a gender neutral prize and motivator for both sexes. It has to be noted that there still is a slight chance that a person participating in the experiment might not see a giftcard for Amazon as a motivator to do well in the experiment. This might arise from different reasons such personal opinion or conviction. However, this cannot be accounted for in the ex-
experiment. According to the arguments presented above, a giftcard to the online store Amazon, therefore, serves as the best motivator for both sexes.

There are two 10 Euro gift cards for Amazon available: one for group A and one for group B. According to the rules of the game, in group A everybody has the chance of winning the gift card. In group B however, only the women as members of group B1 participate in the competition for the giftcard. Everybody else is only remunerated with a chocolate bar.

The remuneration structure of the experiment reflects the theoretical approach as suggested by tournament theory. First of all, tournament theory implies that even though the differences in performance of the participants might be small, the remuneration gap between winners and loser is substantial. (Lazear & Rosen 1981) The payment structure for this experiment was also chosen in this manner. ‘The winner takes it all’ phenomenon is clearly reflected as participants are either only remunerated with a chocolate bar and the best performing person, at least in group A, additionally wins a 10 Euro Amazon gift card. Here, the second connection to tournament theory can be observed: The participants are not paid by absolute output, as a piece rate remuneration structure suggests, rather they are ranked among the performance of the other group members. The person performing best wins the gift card.

Homogeneity of the participants

One of the requirements for tournament theory to be applicable is that the subjects need to be homogenous in their abilities. (Lazear & Rosen 1981) This demand however, is difficult to fully guarantee; even in a closed field environment as the experiment is conducted in. Nonetheless, the setting at the economics department of the University of Hamburg aims at getting as close to the fulfillment of this requirement as possible. With this it can be assured that all of the participants lie within a certain age range, have the same educational background, are likely to have only small amounts of work experience, through internships for instance, and more or less possess the same ability to fulfill the presented task. This also applies for the group of friends and family that participated in the study. All of these subjects were either enrolled in a Master’s program or had just graduated from university. It is made sure that none of the participants deviates from this pattern. With this the requirement of homogeneity of the subjects is satisfied.

Risk-neutrality of the participants

Risk-neutrality of the participants is difficult to evaluate in this scenario. Lazear and Rosen describe risk-neutrality in their pioneer work in 1981 with the indifference between being remunerated
through a piece-rate and being rewarded by a prize as suggested by tournament theory. (Lazear & Rosen 1981) This differentiation is not applicable for this experiment as there is only one remuneration structure available to the participants – that is winning a prize as suggested by tournament theory. Additionally, the subjects do not have anything to lose. Further, their participation is not as essential to their current circumstances in life as the remuneration in their respective job would be. Here, the experiment purely represents an option of winning something. With this, the participants can be assumed to be risk-neutral in this particular case.

*The subjects as economic actors*

Another essential factor for the applicability of tournament theory is the characterization of the participants as *economic actors*. That is the subjects are identified by rational decision making and complete information. (Lazear & Rosen 1981) The set up of the experiment aims at guaranteeing for the characterization of the participants as economic actors. First of all, the players are provided with complete information. As already indicated, the participants are assigned to the groups at random. They are only provided with the instructions specific to their group. The manual of the other group is not disclosed to them in order to guarantee the validity of the experiment. The main reason for withholding the instructions of group A from group B and vice versa, is to keep participants from speculating wildly about the research objective before fulfilling the task. With this the subjects placed in the control group, group A, do not know about the quota imposed in group B. Further, this step is necessary for the comparability of the two groups: In order to be able to analyze the contrasts between the samples, it is essential that the control group remains unaffected from the restrictions imposed on the experimental group.

In addition, the subjects can be assumed to be rational. That means the participants make decisions that maximize their self interest. Any other attitude towards the experiment would be surprising, especially considering the fact that they are able to win a prize. Therefore, it can be stated that also the requirement of the characterization as economic actors is provided by the composition of the experiment.

*Environmental conditions*

For tournament theory to be applicable, it is essential that all actors face the same external conditions in their respective work environment. (Lazear & Rosen 1981) This specific factor is being relaxed for the sake of the experiment. As a gender quota is imposed to group B, the members do not face equal externalities. More precisely, the participants of group B2, all the men of group B, are deprived of their chance of winning. The rules of the game of group B clearly depict this. In
group A, on the other hand, all participants face the same environment. The rules do not differentiate between the sexes in the control group.

It can therefore be stated that the members of the experimental group, group B, do not face the same external environment. This approach allows for the evaluation of the influences of this specific factor on the motivation of the participants. More clearly, it can be observed what happens when not all of the requirements of tournament theory are given at the same time.

Summing up, it can be stated that all but one of the required conditions of tournament theory are met by the set-up of the experiment. The influence of an unequal environment and with this, diverging possibilities are therefore to be tested. The desired variable that caused this unequal environment is the introduction of a gender quota, which is explained in the following.

4.1.2 The gender quota as a restriction

The basic requirement of equal externalities as described above is clearly not provided by the set-up of the experiment. For the sake of the analysis, a gender quota is introduced to the experimental group. The participants are, however, not aware of the implementation of a gender quota. The only information they have is that only members of group B1 can win. That this group contains only women is not disclosed to them. As the research aim is to evaluate the influence on work motivation when a gender quota is imposed, group B was composed in a manner that a quota regulated the chance of winning of the individuals. However, as stated before, the members were not informed about the reasons of the discrimination. The rules of the game of group B, therefore, reflect the scenario of the introduction of a gender quota as currently done in many countries in Europe. For comparability reasons every member of group A was able to win. This scenario reflects a working environment without a gender quota. The subjects are not informed that this set up of group B arises from the introduction of a gender quota as explained before. This results from the aim of keeping the participants from knowing or speculating wildly about the research aim. It, therefore, remains hidden.

The framework of group B represents the discrimination that men face through the introduction of a gender quota. As previously explained in the empirical background, the necessary consequence of the implementation of a quota is that companies have to promote women first. In the short run, this implies that companies are forced to make drastic changes on their management boards. If they do not already reach the predetermined percentage of women on their board, they are now forced to do so by law. In reality, a men’s chance of promotion may therefore be seriously deprived. In a company internal tournament the chance of winning is, therefore, much higher for a woman than for a man. In the experiment, this situation is illustrated in an exaggerated manner. The chance of win-
ning for men in the experimental group is due to the respective group composition 0 percent. It has to be noted, that in the real live scenario, this probability may differ. Depending on the existing board structure, current female presence and hiring customs, the discrimination of men can be expected to vary between companies. The experiment, therefore, analyzes the most drastic scenario: When a gender quota is introduced, no men can be promoted.

Through this construction, the following differences in behavior can be observed: How do the individuals behave when there is no limitation to the competition? And on the other hand, do the participants change their behavior, when they are deprived of their chances of winning? In this matter, another interesting factor to be analyzed is how the behavior and with this the motivation is changed. The main aim of the experiment is, therefore, to test whether an introduction of a gender quota influences the work motivation of employees. A change in behavior is thus regarded as a difference in motivation.

### 4.2 The questionnaire as a supplement

In addition to the experiment, a basic questionnaire is attached to the experiment. All in all, the study, therefore, consists of three pages that are printed out and given to the participants: page one contains the instructions, page two is the task and on page three the questionnaire follows. The questionnaire serves as an additional data source to the experiment. It is however, only a supplement to the experiment as the main data collection tool. The survey, therefore, only contains nine questions that round up the study. It is important to note, that here no time limit applies. The three minutes are the time frame for the experiment. The participants can take as much time as needed to answer the questionnaire. However, as it is kept short and simple it will only take one or two minutes. The subjects have to fill out the survey as it is part of the study. The option of only fulfilling this task is not given to them.

The overall objective is to support the conclusions from the experiment and to strengthen the suggestions that arose from the analysis of the theoretical background. Further, other factors might become clear that have not been suggested before. Therefore, six multiple choice questions have been designed. They are investigative questions. The required variables are opinion and feelings of the participants. The first question asks whether the participants feel comfortable with fulfilling the task. Further, question two adds on to this topic encouraging the subject to evaluate his or her strengths in the task in relation to other students. Both of these aim at investigating what the individual thought about his/her performance. Not being comfortable with the task might, for instance be the reason to why someone performed poorly or vice versa. Question three is designed as a statement checking how competitive an individual is. According to the research of Gneezy et al.
(2003/2004) men and women react differently to competition. This variable therefore aims at evaluating this factor. Furthermore, question four attempts at ruling out whether a subject is motivated by the prize. Particularly in group B2 it can be evaluated whether a subject fully understood the rules of the game. Technically, nobody in that group should be motivated by the chance of winning the gift card, since the rules specifically state, that only members of group B1 can win. Further, for the other two groups, it can be analyzed whether motivational differences arose from the incentivation structure of the experiment.

Question five is the only point throughout the whole study that might give away the research aim. This does, however, not influence the outcome of the experiment, as the task has been finished beforehand. Participants are asked whether their motivation would be influenced when a gender quota is implemented in their company. If answered with ‘yes’, a subquestion aims at evaluation in what direction the motivation is changed. This is however, the only question that considers motivation in relation to the gender quota. Any other questions concerning the gender quota are left out because it is likely that participants might give ‘socially acceptable’ answers that do not reflect their real conviction.

At the end, three socio-economic questions round up the survey. These ask for age, gender and highest education level. This is done for comparability reasons. Additionally, the members of groups A and B1 are asked to write down their e-mail address so that they can be notified in case they win the Amazon gift card. This particular part is left out in group B2 as the member cannot win.

4.3 Methodological limitations

Even though, the set-up of the experiment has been carefully selected in order to provide the most accurate analysis possible, it has to be acknowledged that, nonetheless, methodological limitations exist to the chosen approach. There are several factors that cannot be accounted for, yet they might influence the results. As already indicated before, there might be differences in the perception of the prize. Individuals might not be motivated equally by the chance of winning an Amazon giftcard. Due to the sheer size of the product range of the company, it can, however, be expected that both, women and men are motivated by this remuneration. However, a small chance remains that an individual does not put any effort into the competition due to this specific prize. The questionnaire aims at ruling out, that participants might not be incentivized by the giftcard, as it simply asks if the participant was motivated by the chance of winning an Amazon giftcard. In addition to that, the chosen methodology only focuses on the by tournament theory suggested assumption that people are best motivated when they are able to win a prize.
As previously explained motivation theory represents a broad field of study. In this case, only the motivators as suggested by tournament theory are influential to the experiment as previously explained. Other possible aspects, such as intrinsic motivators are neglected here. Yet, they could be influential to the behavior of the participants, but cannot be measured.

Furthermore, the experiment was conducted with business students instead of top management employees. Business students usually only have little work experience acquired through internships or the like. Compared with a person in decision-making, the difference is substantial. It, therefore, has to be noted, that a manager with years of experience might react differently to the given scenario as an inexperienced business student. However, existing studies undertaken by well-respected economists such as Gneezy et al. (2003) also use business students as participants as it is evaluated that as economic actors they would react the same way.

Additionally, the analysis does not consider cultural differences. People in other countries might react differently to a gender quota which could be influenced by a varying perception of female leadership induced through cultural differences.

Another limitation to the selected methodology is that differences in performance may not necessarily arise solemnly from differences in motivation. Even though, the task has been chosen in a manner that does not aim at measuring a person’s intelligence, this could yet be an influential factor. On the one hand, an individual that has conducted similar tests before could have an advantage through a learners curve regardless of the constraints induced by the setting of the experiment. On the other hand, a photographic memory could be beneficial. These factors cannot be ruled out. However, the realization of the experiment at the University of Hamburg and with this the employment of business students only, can be seen as use of individuals with more or less the same learning abilities.

Moreover, tournament theory only measures only short term effects. The same applies for the experiment. The long term effects of the implementation of a quota are not tested.

Furthermore, it has to be noted, that not all assumptions made throughout the analysis of this paper can be tested with the respective set-up of the experiment. Specifically, suggestions made in the empirical background are difficult to analyze. Those are, for instance the “tokenism” phenomenon by Konrad et al. (2008) or the labeling as a “quota-women”. First of all, the “tokenism” phenomenon cannot be evaluated here. This arises from the fact that gender based group dynamics are not assessed. Furthermore, the influence on women, for example of the labeling as “quota-
women” is difficult to measure. First of all, this is due to the fact that the women that participate in the experiment are not even aware of the gender distribution of the groups. Therefore, a labeling experience is not induced here. Additionally, a more general problematic is generated from the difficulty of measuring emotions. This experiment does not provide the possibility to measure the emotions of the participants. The assumptions made in the empirical and the theoretical background concerning emotions, such as loss, envy or disappointment are therefore not measurable here as described in section 3.2.1 and 3.2.2.

However, the analyzed theory allows for predicting the behavior of the participants, which is evaluated in the following.

4.4 Behavioral predictions

The introduction of the empirical and the theoretical background revealed several implications that allow for the prediction of the behavior of the participants. According to the investigation an influence on work motivation through the introduction of the gender quota can be expected.

Specifically looking at the separate groups the following assumptions can be made: The individuals of group A are unlikely to show any abnormal behavior. Small variations in performance are possible, but any larger deviations from the average are not expected due to the fact that all group members are facing the same rules. All of the conditions of tournament theory are met, therefore, it can be assumed that all participants are equally motivated and aim at performing best to win the prize.

The experimental group, however, is targeted by the restriction of a gender quota. Even though, the participants are not aware of this specific fact, they know that their respective chance of winning and the one of the other subgroup. The results of group B are, therefore, going to show what happens if one of the conditions of tournament theory is not met. The pioneer work of Lazear and Rosen (1981) would, therefore, suggest an influence on the behavior of the participants. However, the theory only states that the outcome tournament is inefficient when not all factors are present. Thus, the nature of the results of group B cannot be foreseen.

However, later theory approaches suggest that the motivation of men is likely to decrease in this specific scenario. The fair wage hypothesis by Akerlof and Yellen (1990) implies that people want to be properly remunerated for their effort. In the scenario of group B2, however, this is clearly not the case as men are not able to win the prize. Therefore, the theory of Akerlof and Yellen suggests that men withdraw efforts from the tournament and are with this less motivated.
The behavior of group B1 can be predicted using the theory by Gneezy et al. (2003) on competitive behavior of men and women. Their research suggests that women do not change their behavior under competition. Therefore, the behavior of the members of group B1 is likely to be similar to the outcome of the control group.

Whether these assumptions hold up and if other factors are observable is analyzed in the following evaluation of the results.

5 Analysis – The results of the experiment

Following the explanation of the composition of the experiment, the results are now being evaluated. For this matter, the data analysis is split into four categories: The answers of the questionnaire, the results of the task, correlations and additional observations. The categories the outcome of the questionnaire and the results of the task are analyzed first and contain simple statistical models evaluating the results of the experiment as well and the answers chosen in the questionnaire. The data is assessed using the Excel based Pivot Table function. Next to the outcome of the questionnaire, it is evaluated whether the participants understood the rules of the game by assessing the answers of the chances of winning in percent. Furthermore, the average results as well as the best performances of each group of the experiment are presented. Here, it can already be observed whether the behavior of the participants differed.

In a next step correlations between the outcome of the experiment and the questionnaire are tested. This section allows testing for dependencies. Here, the results of the task are evaluated in relation to the answer given in the questionnaire. It is for example tested whether a correlation between how well people did in solving the task in relation to how much they enjoyed fulfilling it. Furthermore, it is assessed whether a relationship exists between the chance of winning the gift card and how well the individual fulfilled the task.

Concluding, the category additional observations aims at raising other factors that were observed when conducting the study. Those are not facts that have been written down by the subjects, but are merely observation made by the experimenter that were possible through the close monitoring of the participants.

At all times the implications from the previous explanations of the empirical and the theoretical background are evaluated in relation to the results of the experiment. As gender differences are of importance to the research question, contrasts between men and women are especially meaning-
ful. The main intention is to answer the third subquestion: *On the basis of an experiment and an attached questionnaire, can the predictions identified by tournament theory be verified? Are additional factors observable?* The analysis of this section, therefore, provides another valuable step towards answering the research question. Furthermore, the analysis provides the background to the final discussion of the results of this thesis and particularly the implications that can be drawn for the management world.

### 5.1 The outcome of the questionnaire

This section analyzes first of all, the general factors that can be observed from answers of the questionnaire. The analysis begins with the socio-economic conditions in order to understand the characteristics of the participants. In a next step the remaining answers from questions 1 – 5.1 are assessed. The questionnaire is analyzed previous the evaluation of the experiment in order to get a clear understanding of the participants and to see whether assumptions made in the experimental design hold up. Keeping the gender based approach in mind, next to the evaluation of the total sample, the differences between male and female participants are additionally presented. Where it is of importance, a group based analysis is added to the assessment. The most important tables and graphs are directly placed into the analysis. Additional figures and tables concerning the evaluation of the questionnaire can be found in Appendix 2. The analysis begins with the introduction of the socio-economic factors of the participants.

*Socio-economic characteristics of the subjects (Q 6 – Q 9)*

According to the experimental design 20 women and 20 men participated in the study. The average age amongst all participants was 26,38 years with a range from 18 to 33 years. The following table illustrates the age distribution as well as the education level of the separate groups:

<table>
<thead>
<tr>
<th>Group</th>
<th>A</th>
<th>A1</th>
<th>A2</th>
<th>B</th>
<th>B1</th>
<th>B2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age of the subjects</td>
<td>26,1</td>
<td>27</td>
<td>25,2</td>
<td>26,65</td>
<td>26,1</td>
<td>27,2</td>
</tr>
<tr>
<td>Subjects with Abitur in %</td>
<td>25%</td>
<td>20%</td>
<td>30%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Subjects with Bachelor in %</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>30%</td>
<td>20%</td>
<td>40%</td>
</tr>
<tr>
<td>Subjects with Master in %</td>
<td>65%</td>
<td>70%</td>
<td>60%</td>
<td>50%</td>
<td>60%</td>
<td>40%</td>
</tr>
</tbody>
</table>

Table 1: Age distribution and education level of the subjects, own design
It can be observed that the age distribution between the groups lies closely together. Where the average age in group A is 26.1 years, the mean in group B is 26.65 years. The subgroup with the lowest average is group A2 with 25.2 years, the oldest is group B2 with 27.2 years. The age distribution between the groups can, therefore, be characterized as balanced even though the subject’s assignment to the groups was completely random. The same applies for the education level. Most of the participants had a Master’s degree. That is 65 percent in group A and 50 percent in group B. Slightly, more women (65 percent) had on a Master’s degree on average in comparison to men (50 percent). Even though there study was conducted at the University of Hamburg, some of the participants do not hold a university degree. That is due to the fact that some of the younger participants had just started their university career. Additionally, friends participated in the study. However, it was made sure that none of the participants deviated from the previously explained pattern, meaning that they all had a university degree. Summing up, it can therefore be stated that the groups were homogenous with similar age and education level.

Evaluation of opinion and personal traits (Q 1 – Q3)

To evaluate the attitude towards the task and to assess whether competition is generally important for the subjects three questions were implemented. First of all, participants were asked whether they enjoyed solving the task. In general, most people stated that they enjoyed solving the task. 55 percent of the individuals chose the answer ‘agree’ to this first question; another 12.5 percent ‘strongly agree’. 20 percent of the subjects did not enjoy solving the task. Furthermore, it can be stated, that men and women rate the enjoyment of the task similarly: 65 percent of women rated the question either with ‘agree’ or ‘strongly agree’ opposed to 70 percent of the male participants choosing either one of these answers. Therefore, it can be estimated that both genders presented equal levels of enjoyment in conducting the task. This observation can serve as an indicator proving the gender neutrality of the task. A diagram summing up the sample result of Q 1 as well as the percentages for men and women can be found in Appendix 2.

Many studies, for instance Gneezy et al. (2003), previously showed that women shy away from competition. Question two was thus designed to evaluate whether this was also true for this experiment. Subjects were, therefore, asked to evaluate their results of the task in comparison to the other students. If women would have estimated their outcome to be worse than the ones of their male colleagues, this could have been an indicator for perception or performance differences. Yet, this was not the case here. Just as in Q 1 the results lie closely together. On average, 73 percent of participants rate their outcome as being equal to the other contestants. Examining male and female perception it can be stated that 70 percent of men assume to have performed equally as
good as the other contestants in comparison to 75 percent of women (see Appendix 2). It can, therefore, be stated, that women did not shy away from competition in this experiment even rating their results a little bit better than their male competitors. Looking at the results of the experiment, the participants are proven correctly in their assumption concerning their outcome evaluation. This is in detail presented in section 5.2.

In addition, Q 3 aimed at evaluating the general competitive behavior of the participants. Therefore, the subjects were asked to rate their common behavior evaluating the question if they always try to perform better than others. Overall, 70 percent of the participants either chose ‘strongly agree’ or ‘agree’. 25 percent selected the neutral answer ‘indifferent’ and only 5 percent said that they ‘disagree’ with this statement. Just as in the previous two questions, the results of men and women again lie closely together. 70 percent of men and equally as many women replied that they usually aim at performing better than others in their private life. Therefore, it can be stated, that the participants of the experiment generally aim at exceeding expectations. Again the summary of these findings is presented in a graph and two tables can be found in Appendix 2.

*The Amazon gift card as a motivator (Q 4)*

Question four considered the gift card as an incentive. Even though it was estimated before that men and women should be equally motivated by the chance of winning an Amazon gift card, a question was added to the questionnaire to evaluate whether this assumption was true. Participants were, therefore, asked if they were motivated by the Amazon gift card as payment choosing between the five possible answers: strongly agree, agree, indifferent, disagree or strongly disagree. Furthermore, this question also allowed for evaluating of whether the subjects fully understood the rules. This is especially the case for group B2. Since its participants are unable to win the gift card, none of the members should be motivated by the chance of winning the prize. Here, it can be stated that this assumption held up. None of the members of group B2 specified that they were motivated by the chance of winning the gift card. They all chose ‘indifferent’, ‘disagree’ or ‘strongly disagree’. This is another indicator validating the understanding of the rules of the game of the study next to the calculation of the probability of winning as analyzed in the next section.

The following figure shows the results of this question:
First of all, it has to be noted that Group B2 is not included in the sample here because all of the members chose either ‘indifferent’ or a negative answer due to the set-up of the experiment as explained before.

As observable from figure 5, it can be stated, that also the participants of groups A and B1 had mixed feelings about the Amazon gift card as a motivator. For these groups, it was expected that most participants evaluate the chance of winning the Amazon gift card as a motivator. Yet, the results cannot fully support this hypothesis. Amongst the 30 subjects of groups A and B1 only five individuals chose ‘agree’ while no one selected ‘strongly agree’. 13 people were indifferent. Surprisingly, six participants (out of the 30 members of group A and B1) chose ‘disagree’ and another six even ‘strongly disagree’, even though all members had the chance of winning the gift card. That means that 43.3 percent of the participants with the chance of winning were indifferent towards the prize. Another 40 percent even had a negative perception as they did not see the gift card as a motivator. Therefore, it can be stated, that the Amazon gift card did not serve as the desired motivator that would appeal to all subjects equally. Looking at the differences between men and women, men even seem to be less motivated by the Amazon gift card. Amongst the ten individuals of group A that thus had the chance of winning 50 percent of subjects chose the answer ‘strongly disagree’ and another 20 percent selected ‘disagree’. That equals to 70 percent of men rating the Amazon gift card negatively as a motivator. In contrast, 25 percent of ‘women’ stated they did not see the gift card as a motivator by choosing either ‘disagree’ or ‘strongly disagree’. 55 percent were indifferent and only 20 percent chose ‘agree’. For more information see Appendix 2. It can, therefore, be estimated that the chance of winning an Amazon gift card did not provide the perfect
incentive structure for the experiment as most individuals were not motivated by the chance of winning this particular prize.

The reasons to why the participants were not motivated by the gift card can only be speculated about. Numerous factors like personal conviction or a negative perception of the online shop giant could be reasons. Furthermore, another possibility is that the amount of the remuneration is not sufficient. As Lazear and Rosen stated in 1981 the prize of the tournament needs to be chosen in a way that trigger the maximum motivation of the participants. (Lazear & Rosen 1981) It is therefore possible that the prize in this experiment might have not been set to be at the optimal level. A higher prize for the winner might have led to a different evaluation of the remuneration as an incentive by the participants. Additionally, other factors seemed to be influential. One of the participants of group B1 stated in a conversation after finishing the study that she felt that her 10 percent chance of winning was still very low and, therefore, did not see the gift card as a motivator. Thus, several aspects seemed to have influenced the negative perception of the Amazon gift card as an incentive. Summing up, it can consequently be stated that the remuneration structure did not provide the perfect incentive structure for the set up of the tournament. A monetary reward might have served as a better way to motivate the participants. This can, however, not be tested at this point anymore. However, it appears that the reward structure of the study was not as influential on the participants as desired. This can be stated due to the observation that regardless of the different rules, the average group results lie closely together as explained section 5.2.

The perception of the gender quota (Q 5 – Q 5.1)
Furthermore of great importance to the research question, an evaluation towards the perception of the gender quota was undertaken. Therefore, the participants were instructed to imagine that a gender quota was introduced to their respective work environment and to evaluate whether this would change their motivation at work. If answered with ‘yes’ a subquestion aimed at assessing whether their motivation would increase or decrease. The following graph illustrates the results:
Q 5: Imagine a gender quota is introduced in your company, do you think this would impact your work motivation and effort?
- Total sample -

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Indifferent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>32.5%</td>
<td>47.5%</td>
<td>20.0%</td>
</tr>
</tbody>
</table>

Figure 7: The gender quota as an influence on work motivation; own design

47.5 percent of participants did not think that an implementation of a gender quota would change their work behavior. Another 20 percent was indifferent. Only 32.5 percent estimated that their work behavior would change.

Overall, more men than women chose ‘yes’ as an answer (nine men vs. four women). This would support the predictions of the experiment that men are more likely to change their behavior when a gender quota is implemented due to the gender discrimination when it comes to promotion. Yet, looking at subquestion 5.1 this assumption cannot be validated. The four women all estimated that their motivation would increase through an introduction of a gender quota. This is first of all, not a surprise. However, also five men, that is 55.6 percent of male participants that chose ‘yes’ in Q 5 stating that their motivation would increase under the implementation of a gender quota (see Appendix 2). The assumption that men are less motivated by the introduction of a gender quota can, therefore, not be validated by this experiment.

5.2 The results of the task

In the next step, it is evaluated whether the participants understood the rules of the game and finally the outcome of the task is analyzed. This certainly presents one of the main components for answering the research question. Here, the average group performance is of special interest.

Understanding of the rules of the game

First of all, it is important to evaluate whether the subjects understood the rules of the game. To estimate this factor, the participants were asked to write down their respective probability of win-
ning in percent. According to the rules of the game and the group composition, the chance of winning for a member of group A was, therefore, five percent, for a subject in group B1 10 percent and the individuals of group B2 did not have a chance of winning at all, thus their probability was zero percent. 90 percent of the participants answered these questions correctly. Only four individuals failed at estimating the right probability. Two of them did not write down anything at all in this field, which might indicate that they did not read the instruction thoroughly and, therefore, missed the question. In general, it can however be stated that with 90 percent of correct answers, the participants understood the rules of the game and with this their chance of winning the Amazon gift card.

**Average group results**

Considering the research aim of this paper, the average results of the groups are certainly the most interesting factors for the analysis of this paper. In this matter, the results are being evaluated as a direct link to the motivation of the participants. A better result, therefore, depicts a higher motivation of the participant and vice versa. The maximum level of correct letter-number combinations is 128. This level is reached when all combinations are filled out correctly. As briefly stated before, only one individual was able to solve all in the given time. Interestingly enough, this person was a member of group B2, thus not able to win the giftcard. He reached the highest performance with 125 correct combinations losing three points due to false answers. All in all, it can be stated, that the average performance of the groups showed little variation as the following graphic illustrates:

![Average group results](image)

*Figure 8: Average group results, own design*

As a reference point the maximum number of correct letter-number combinations (128) is shown on the left hand side. It can be observed that the group averages lies closely together. In general, the control group A performed with 90,85 correctly given answers better than group B with 84,1
right combinations. Furthermore, group A1 (only women) performed best on average with 92.7 correctly given letter-number combinations followed by group A2 with an average of 89. Groups B1 and B2 level of performance is exactly the same (84,1). That means that the individuals with a probability of winning of five percent performed best. The outcome of the experimental group B has to be evaluated in detail. First of all, as indicated before, tournament theory suggests, that the motivation of the members of group B2 decreases with an introduction of a gender quota as implemented in this experiment. Consequently, a difference in performance between group B1 and B2 should be observable with a much lower average for the discriminated group B2. As stated, this is, however, clearly not the case as both groups performed equally on average. Therefore, it can be stated, that the theory cannot be validated by the results of this experiment. The results of group B2 are just as high as the ones of group B1 even though these members had a 10 percent possibility of winning over no chance at all. Thus, other factors are likely to influence the motivation of the participants that cannot be explained by tournament theory. An attempt at exposing some of these factors is made in subsection 5.4 when the additional observations are evaluated.

When looking at the individual performances, it can be observed that the person with the highest result was in group B2, however, also the person with the lowest results. According to the theory and the empirical background, it was expected for the members of group B2 to be less motivated than the subjects of the other groups. As the averages showed, this was however not the case. Therefore, the theory cannot be validated by this study. Only two out of 10 individuals showed a lower effort level when conducting the task solving only 55 and 56 letter-number combinations respectively. All other participants were just as motivated as the members of the other groups. In group A it took 118 correctly stated letter-number combinations to win as reached by a male participant. The lowest performance equaled to 66 solved combinations. In group B1 94 combinations were sufficient to win the gift card. The worst result was 55 combinations here. However, this participant tried as the only one a different approach to solving the task: Instead of filling in the combinations line by line, she chose to first fill in all combinations for ‘C’, then all for ‘Y’ and so on. In the end, she failed at filling in all the ‘X’s in the given time. Therefore, this approach did not prove to be as successful as solving the task line by line.

In the next step, the correlations are being tested.

5.3 Testing for correlations
After evaluating the separate results of the questionnaire, correlations are now in the focus of the analysis. The aim of this section is to test whether a statistical significant relationship between two
variables exists. For this purpose, the correlation coefficient \( r \) is calculated using once again Excel. Using this method, it can not only be distinguished whether a correlation exists at all, but also if it is positive or negative. As \( r \) always lies between -1 and 1 a coefficient of 0 means that no correlation exists. The closer to 1 the coefficient gets the closer it is to a perfect positive linear relationship. Usually, a \( r \)-value of 0,3 is seen as a weak positive linear relationship, 0,5 is regarded as a moderate positive relationship and 0,7 as a strong positive linear relationship. This applies also vice versa into the negative direction. As briefly stated in the methodology, only selected correlations are being evaluated.

Four correlations are tested for the evaluation of this study. Most of these aspects have already been established by the previous analysis of the questionnaire and the results, but the statistical analysis allows for the validation or neglecting of the suggested relationships between the variables. The previous section mostly focused on establishing the results of the questionnaire and the outcome of the task in relation to gender. Additionally, for the Amazon gift card as a motivator the differences between the groups was also of interest to evaluate whether the members of group B2 understood the rules. This section now allows for the statistical evaluation of the previously stated results as well as the analysis of two additional factors. Consequently, the answers given in the questionnaire in relation to the results of the task are of interest here. Therefore, the correlations between the results of the task and the answers given in the questionnaire are tested in three ways: in relation to the enjoyment of the task, in relation to the gift card as a motivator and in relation the gender variable. Furthermore, it is being evaluated whether the gender variable is correlated to the Amazon gift card as a motivator to evaluate whether women and men had different opinions towards the prize.

First of all, the correlation between the results of the task and the enjoyment of it (Question 1 in the survey) is tested. A possible factor for outperforming others could be that a person that enjoys doing the task is able to get a better score. The \( r \)-value of the in this particular case is \( r = -0,11 \). With 0 being not relationship at all and -0,3 as a weak negative correlation, the \( r \)-value in this specific exemplar can only be seen as a very weak to a non-existing relationship. Therefore, it can be stated, that the enjoyment of the task does not influence the score achieved. A scatter diagram further validates this statement and can be found in Appendix 3 a.).

Furthermore, the result of the task is analyzed in relation to the Amazon gift card as a motivator (Question 4 in the survey). According to answers given in the questionnaire in regards to the gift card which have already been assessed in the previous section, it can be stated that the prize was
not accepted in a satisfactory manner by the participants. Most individuals stated that they were not motivated by the chance of winning the gift card. It is, therefore, now interesting to see whether a correlation between the result of the task and the possibility to win the Amazon gift card exists. Ideally, as suggested by the experimental design, the chance of winning the prize should have lead to a higher motivation of the individuals. However, the analysis of the results of group B2, who did not have the chance of winning the gift card, that the individuals did not seem to choose their effort level in regards to the possibility of winning a prize. The $r$-value estimated in this specific case further proves this as $r = 0.05$. Again, with a value close to zero it can be stated that no correlation between the results achieved in the task and the Amazon gift card as an incentive exists. The scatter diagram shows this as no linear trend can be observed. For the illustration the categories available for the evaluation the gift card as a motivator are presented in a numeric way as follows: $1 = \text{Strongly agree}$, $2 = \text{Agree}$, $3 = \text{Indifferent}$, $4 = \text{Disagree}$, $5 = \text{Strongly Disagree}$.

![Figure 9: Correlation between gift card motivation and results of the task; own design](image)

Ideally, the remuneration structure should have motivated all participants equally, however, as already stated, this was clearly not the case. It appears that the individuals were motivated by something else rather than the chance of winning the prize. The next section aims at giving insight to what might have triggered the motivation of the participants.

In addition, it is also worth testing whether a correlation between the Amazon gift card as a motivator and the gender variable exists. As explained before, the Amazon gift card was chosen as the prize because it is believed that men and women are equally motivated by a voucher to the online store. However, it has now already been established that the gift card did not prove to be the de-
sired motivator of the task. It this therefore, worth looking at whether men and women reacted similarly to the prize. The r-value is this particular case equals -0.48. Here, it can be stated that a moderate negative relationship exists. This does not come as a surprise anymore as the evaluation of the in the previous section has already indicated that women seemed to be more motivated by the gift card than men. Furthermore, this observation can be explained by the fact that the members of group B2, only men, were not able to win the prize and did thus not see the gift card as a motivator. In this case, no scatter diagram is generated due to the fact that only a total of five choices exist for question four of the survey (the Amazon gift card as a motivator). This results in a scatter diagram with many overlapping points, which does not illustrate the outcome of the analysis very well.

At last, it is worth looking at the relationship between the task and the gender variable. As stated in the experimental design, this task was chosen because it was estimated to be gender neutral. This was seen as an essential condition for the results of the experiment to be representative. The r-value calculated here equals 0.06. Again this value is close to zero which means that no relationship between the two variables exists. Therefore, it can be stated that task did indeed prove to be gender neutral. The respective scatter diagram can also be found in Appendix 3 b).

After analyzing the outcome of the experiment, the questionnaire and establishing the correlations, additional factors exposed are now explained.

5.4 Additional observations

Besides the results analyzed from evaluating the task and the questionnaire, the experimenter was able to observe the behavior of the participants. As the experimenter was responsible for approaching the subjects, answering any open questions as well as the time keeping, close monitoring of the subjects was possible. With this, other factors that would have not been revealed at an online survey became evident.

First of all, it was observed that the task itself seemed to generate motivation for the participants. According to the results of the analysis, the subjects were not sufficiently motivated by the chance of winning the Amazon gift card. Yet, throughout the conduction of the experiment, it was observable that the subjects were trying hard to fill in as many correct letter-number combinations as possible. Therefore, it can be stated that the task itself seemed to be incentive enough for the participants.
As already stated, at times two or three subjects conducted the task simultaneously. It was possible to observe that in this case group dynamics were developing: The individuals were more motivated when they were fulfilling the task at the same time with another subject. Whether the conduct of the experiment had a statistically significant influence on the outcome of the task can however not be evaluated here. According to the experimental design, group dynamics are not in the focus of the study. At this point, it can, therefore, not be determined anymore whether a subject conducted the study independently or simultaneously with any other participants. The factors presented here, are therefore purely based on the close observation of the behavior of the individuals.

Even though participants were not allowed to talk to each other and they were also randomly placed into the different groups of the experiment, thus having different rules, the actual conduction of the task remained the same just as suggested by tournament theory. When two of more participants fulfilled the task at the same time an interesting observation could be made. Executing the experiment simultaneously seemed to generate another tournament within the tournament that the participants had been placed into. Performing better than a direct opponent appeared to greatly motivate people. This was also the case when participants were placed into group B2, consequently not being able to win. This was especially true when the subjects knew each other. The first question asked after finishing the task therefore generally was aimed at the opponent’s performance and not, like one might expect, at the group placement. At this point, it, therefore, has to be noted that this group dynamic could potentially have an influence on the outcome of the experiment. One of the participants that was placed into group B2 and conducting the task at the same time as his girlfriend even admitted that he would have liked to see how well he could have done in direct comparison. Yet, he noted, that it did not make sense for him to try hard as he could not win the tournament anyways. Even though the participants was only one in two individuals in group B2 that lowered their level of effort because they were not able to win the giftcard, this observation still has an important implication. This scenario perfectly reflects the real life problematic of the implementation of a gender quota as suggested by the theory: A person is motivated and willing to try hard, yet the discrimination of the quota counteracts this ambition leading the person to decrease the level of effort employed at a task. These observations are, therefore, of great importance for the real life scenario. First of all, the fact that subjects were more motivated when they were simultaneously conducting the experiment can be used as an advantage in companies. The actual discrimination of the tournament lost its importance in this specific situation. In this experiment a ‘sub-contest’ developed unintentionally. The motivation of the participants of performing better than a friend clearly exceeded the motivation induced by the remuneration structure of the experiment. It can, therefore, be stated that other factors were generated that cannot be explained by the sug-
gestions of tournament theory. Neither the prospect of finishing first in the respective group, nor the possibility of winning the gift card and with this being paid much more than the other contestants motivated the subjects - but the chance of performing better than a direct opponent. Therefore, another type of motivation developed in this scenario that is not anticipated under the frame of tournament theory. It can, thus, be assumed that intrinsic factors played a role in the motivation of the participants in this particular case.

The following section sums up the most important factors as suggested by the analysis of the experiment and the questionnaire.

5.5 Chapter conclusion

According to the research question, the most important aim of the experiment was to evaluate whether work motivation is influenced by the introduction a gender quota. First of all, it can be stated that the results of the experiment strongly differ from the implications of tournament theory. As indicated before, tournament theory would suggest that the introduction of a gender quota has an influence on the motivation of the participants. This arises from the fact that one of the necessary circumstances in an environment where tournament theory is applicable – here equal probabilities of winning – is purposely not met by the design of the experiment. Yet, the results paint a different picture. First of all, it can be stated that the average performance of the groups does not vary significantly even though the groups were facing different rules. If the suggestions of tournament theory were true, group B2 should have been less motivated because its participants were deprived of winning the prize. However, this did not happen in this experiment. Interestingly enough, the person that performed best among all of the participants, was a member of group B2. Thus, it can be stated that his motivation and with this his working behavior was not influenced by the gender quota and the discrimination induced by the rules. Furthermore, it was proven that the task was indeed gender neutral as the average performance of men and women was balanced.

In addition, a weakness of the tournament design was observed. The Amazon gift card did not serve as the desired motivator. Therefore, it can be stated that the prize of the tournament was not designed ideally, which does according to the theory not lead to the optimal output of the tournament.

However, it was additionally possible for the experimenter to make interesting observations due to the close monitoring of the participants. Here it became evident, that the Amazon gift card was not the only source of motivation for the participants. The task itself seemed to generate sufficient mo-
tivation. The person that was able to solve all letter-number combinations and did not have the chance of winning enjoyed solving the task and was motivated by the challenge of finishing the assignment. Even though he conducted the task independently, another interesting observation was made by monitoring the other competitors. Group dynamics developed when two or more individuals conducted the experiment simultaneously which led to an increase in motivation of the participants regardless of their group placement.

6 Discussion

The analysis of this paper came to mixed results. Whereas the theory and the empirical background indicated that the work behavior of top management employees will be influenced in a negative way, the empirical data collection did not verify these implications. This chapter, therefore, evaluates what the management world can learn from the mixed findings of this thesis and what possible solutions could be for the business world for the identified problems. Furthermore, the personal opinion of the author is expressed.

In general, the observations made in the experiment do not support the implications of tournament theory. Yet, in my opinion, the suggestions made by the theory should not be neglected in the business world. This is due to several reasons. First of all, the experiment is only made up of a three minute task that mimics real-life scenario. A job, on the other hand, occupies a large amount of time in a person’s life. Therefore, the outcome of the experiment cannot be transferred to the real world one to one. Furthermore, the study was conducted with business students as well as graduates instead of top level managers. A person in decision-making might, thus, react differently to the task. Even though, the outcome of the experiment showed no change in behavior of the participants, in my opinion, companies should still anticipate that the implementation a gender quota might negatively influence the work motivation of their employees as suggested by the theory.

First of all, it is worth looking at the gender related implications made throughout the paper, beginning with female motivation. As the analysis showed, it is difficult to evaluate the influence of the introduction of a gender quota on the motivation of women. According to the findings of Gneezy et al. (2003 and 2004) women do not perform differently under increased competition. Therefore, it is likely that women do not change their working behavior even though they are clearly privileged by the regulations of the gender quota. However, in my opinion, the perception of the quota as introduced in the empirical background should not be neglected here. As the perception of the gender quota appears to be widely negative, especially amongst the male workforce, women have to face stereotyping as well as the close observation of their performance. It is, therefore, complicated to
estimate whether these factors lead to an increase in female work motivation in order to prove their ability, or to a decrease due to the lack of trust. Even though the results of the experiment showed that women did not change their behavior when they were facing a higher chance of winning, it is yet difficult to make any suggestions for the business world due to the previously described reasons.

On the other hand, male behavior seems to be easier to predict. There are several factors that the analysis of this paper suggested that are important for the business world. First of all, tournament theory clearly implies that the working behavior of men is subject to decreasing due to their discrimination. With this emotions such as envy and disappointment are likely to arise which indicate a further downgrading of their motivation. In addition, Gneezy et al. (2003 and 2004) stress the importance of competition for the generation of a high level of male motivation, which is clearly disrupted by the implementation of a quota as men do not participate in the internal promotion tournament. Therefore, the theory itself suggests a negative trend on male motivation when a gender quota is introduced.

Yet, the results of the experiment and the questionnaire contradict these findings. The male participants of the experiment did not change their behavior when a gender quota was introduced. Only two individuals performed worse than the other contestants, but the group average remained constant in relation to the other groups. With this, the suggestions of tournament theory do not hold up. This indicated that the men in the tournament must have been motivated by something else rather than the extrinsic factors. First of all, it is likely that intrinsic motivation that arose from the task itself was generated. Especially the top performing contestant in group B2 supports this statement. Therefore, it can be stated that an interesting task at work is able to induce motivation.

Furthermore, the participants were in general not sufficiently motivated by the selected prize. That includes all subjects and not only the participants in group B2. Yet, all participants were highly motivated in solving the task. Therefore, it can be assumed that employees in decision-making can still be motivated even though a gender quota is introduced. The implication from the experiment in this matter is that the task just has to be interesting enough to trigger a kind of motivation that does not result from the promotion possibilities as an incentive. However, it is questionable whether this assumption can be transferred one to one to the business world as participating in an experiment and performing at work every day are clearly two different things. Where a task could be motivating in a three minute experiment, the generation of a similar incentive in the everyday business life can be expected to be far more difficult especially in an environment where workers are used the being
remunerated by extrinsic factors. Therefore, the generation of work motivation for top management employees based on intrinsic factors is, in my opinion not the best solution to the problem.

On the other, the observation of the self-developing sub-tournament in the experiment offers valuable information for the business world. As a conclusion from this observation, it can be stated, that it is possible to motivate people even though the discrimination of the gender hinders equal promotion possibilities. Creating another internal tournament could serve as a motivator. In the case of the experiment this sub-contest developed unintentionally. In a company, however, this coincidence is unlikely to arise. To use this additional incentive firms should, thus, aim at generating another internal tournament next to the promotion tournament that is affected by the gender quota. This sub-contest is especially important for the motivation of men as they are not targeted by the promotion based incentive structure as suggested by tournament theory anymore. However, here it also has to be stated that this might not even be a necessity in the real world scenario. According to the previous analysis of the results, only two participants of group B2 withdrew their effort from the tournament. As stated before, it is therefore possible that men do not change their working behavior under the circumstances of the introduction of a gender quota. In this case, companies would not have to fear about the changes in motivation of their employees too much. Here it has to, however, be noted, that this study was conducted by business students and not real managers. One, therefore, has to keep in mind, that a person in decision-making might react completely different than suggested by this study. In case of motivational deterioration of individuals a sub-contest next the promotion contest of the gender quota could present a possibility to designing an incentive structure. Especially for the male workforce this might be a valuable suggestion as the presented study by Gneezy et al. (2004) verified. As explained before, in their study they were able to show that male competitive behavior has a positive influence on motivation. Therefore, the generation of a sub-contest would increase competition and should accordingly increase the motivation of men. Exactly this behavior was observable in the unintentional development of the sub-contests of this study.

Even though this analysis came to mixed results, in my opinion companies should aim at generating sub-tournaments to keep their male workforce motivated. As the task showed, intrinsic motivation can be a powerful self-provisioning of incentives, I estimate that a task that would generate sufficient motivation is difficult to find and, more importantly, is unlikely to be sufficient for a top management employee. This results from the fact that, in my opinion a person that works in decision-making is not mostly motivated by intrinsic motivation. To make it to the top, it is essential to perform better than others in order to make it to the next hierarchy level. Therefore, I think that ex-
trinsic motivation, as suggested by tournament theory clearly outweighs intrinsic factors in positions as high as management boards. As these people are used to being remunerated by promotions and bonus payments, it is unlikely that they will go back to being motivated by just a great task itself. The same applies for an up-front payment of the individuals. Thus, I see the generation of a sub-competition as the best possible way to keep especially the men in decision-making motivated. Tournaments with different prizes could, therefore, be a solution allowing for the motivation of men and women equally in decision-making positions. Yet, the research undertaken in this thesis does not allow for the assessment of what this sub-contest should look like in the business world. The design of this incentive structure represents an interesting topic for future research. Furthermore, an up-front payment could be a possible solution to keeping the workforce motivated. Even though, this is not a commonly employed method in the business world, studies as presented in this paper, have shown that the trust induced by this kind of remuneration can provide a valuable incentive. However, as this is a rarely used approach, it is difficult to estimate whether this would be a good solution. Additional research in this field is necessary to ensure a profound analysis.

Summing up, in my opinion the management world can learn something from both, the suggestions of the theory as well as the results of the experiment. Even though, the outcome of the study does not indicated a change in motivation, the implication of the theory should not be neglected. I, therefore, estimated that the generation of a sub-contest provides the best possible way to keeping the workforce motivated when a gender quota is implemented.

7 Conclusion
The aim of this thesis was the evaluation of the research question: “Using tournament theory how is the work motivation of top management employees impacted by gender based promotion quotas?”
Therefore, three subquestions were designed to ensure a holistic approach with each of them targeting one of the main components of the analysis: the empirical background, the theoretical background and the experiment.

Weighing the results of the empirical background, the theoretical background and the experiment, it can be stated, that the results of this paper in consideration of the research question are mixed. First of all, the empirical background as well as the theory clearly suggest an influence on the work motivation of top management employees. The empirical background introduced the implementation of the gender quota in the real world scenario. Here, it became evident that a negative perception of the quota exists in the business world. Furthermore, two factors are likely to influence the
working behavior of the individuals targeted by the gender quota. First of all, men are being discriminated in their promotion possibilities as women have to be advanced first to fulfill the quota regardless of their performance. Second of all, women are often seen as “quota-women” that have only reached their respective position in decision-making due to the implementation of a gender-quota and regardless of their level of competence.

In a next step, step the evaluation of tournament theory indicated that men are most likely to change their working behavior. According to the theory, people are best motivated when they are able to win a prize. (Lazear & Rosen 1981) A commonly used incentive in the business world is the chance of promotion. In the case of the implementation of the gender quota, however, men cannot participate in the tournament for promotion. That is if the most drastic scenario appears and men cannot be promoted at all. This, however, entirely depends on the structure of the board of a company. It is, therefore, expected that through the introduction of a quota the motivation of the male workforce is subject to decreasing due to the discrimination in promotion possibilities. Furthermore, their productivity is likely to drop as men perform better in competitive situations as the research by Gneezy et al. (2003) has shown. Yet, with the implementation of a gender quota, men do not participate in the internal promotion tournament anymore. Due to the finding on competitive behavior of women, the motivation of the female employees can be expected to remain the same even though their chance of promotion increases.

Yet, the results of the experiment paint a different picture. The suggestions in regards to the theory did not hold up as the behavior of the, by the quota discriminated, men did not change. The outcome of the task does not imply that men were less motivated in fulfilling the experiment as their group average did not vary from the one of the established control group. Aligned with the theory, the motivation of women did not change in the experimental group in comparison to the control group. Besides these implications in regards to the research question, additional observations in relation to the motivation of the subjects were made. It became evident that the chance of winning a prize did not prove to be the primary incentive source for the participants. Regardless of their group placement, the individuals appeared to draw their motivation from the realization of the task itself. This interrelation was additionally intensiﬁed when two or more subjects conducted the task simultaneously regardless of their group placement. Therefore, it can be stated that the prize as suggested by tournament theory, did not serve as the primary source of motivation for the participants.
In conclusion, it cannot be fully determined how the work motivation of top management employees is impacted by the gender quota as the results of the analysis are mixed. Whereas the theory suggests that the motivation of men is subject to decreasing with a constant level in female motivation, the results of the experiment contradict these suggestions. The outcome implies that neither women nor men change their behavior when a gender quota is implemented. Predictions for the management world are therefore difficult to make since the suggested implications by the theory were not supported by the outcome of the experiment.
IV Bibliography


Appendix

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Appendix 1: The instructions of the experiment
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  Instructions Group B1
  Instructions Group B2

Appendix 2: Evaluation of the questionnaire

Appendix 3: Scatter diagrams
Appendix 1: The instructions of the experiment

INSTRUCTIONS
- GROUP A -

Thank you for participating in this experiment and for contributing to a Master’s Thesis at Copenhagen Business School. The experiment lasts only about 5 minutes.

From now until the end of the experiment you are not allowed to communicate with any other participants. Please read the instructions carefully and make sure that you fully understand them before you start the task. If you have any questions, please ask before you begin.

This study consists of two parts: a short experiment and a questionnaire at the end. Please do not look at the questionnaire before you are finished with the task.

By joining this experiment, you are participating in a competition. That means that you have the chance of winning a 10 Euro gift card for Amazon if you win the competition! In any case you receive a chocolate candy bar at the end of the experiment as a small “thank you”. You have been randomly put into Group A. There are 20 people in your group. The one that performs best at the task wins.

Before you start, what is your probability of winning in %? _______________________

Instructions:
You are asked to solve a letter-number combination game based on a given legend. You will receive eight rows with letters where you have to write down the matching number below. If there is no letter-number combination given for a specific letter, please write down X in the field below.

Example:
The following letter-number combinations are given:

<table>
<thead>
<tr>
<th>C</th>
<th>I</th>
<th>G</th>
<th>J</th>
<th>A</th>
<th>T</th>
<th>H</th>
<th>L</th>
<th>B</th>
<th>Y</th>
<th>P</th>
<th>All other letters</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>6</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>X</td>
</tr>
</tbody>
</table>

Write the matching number under the letter. Wrong answers lower your score.

<table>
<thead>
<tr>
<th>A</th>
<th>U</th>
<th>G</th>
<th>K</th>
<th>L</th>
<th>T</th>
<th>Z</th>
<th>C</th>
<th>F</th>
<th>J</th>
<th>B</th>
<th>E</th>
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<tbody>
<tr>
<td>3</td>
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</tbody>
</table>

Understood? Great! 😊
You may now begin. You have 3 minutes to solve the task. Additionally, you have as much time as you need to answer the questionnaire in the end.

Thank you and good luck!
The following letter-number combinations are given:

<table>
<thead>
<tr>
<th>C</th>
<th>I</th>
<th>G</th>
<th>J</th>
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<td>1</td>
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<td>8</td>
<td>6</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>X</td>
</tr>
</tbody>
</table>

Write the matching number under the letter:

1.

| K | C | M | P | D | P | N | J | O | B | M | F | D | T | R | Z |

2.

| Z | R | D | V | J | O | P | S | E | J | L | B | C | M | H | O |

3.

| O | P | T | Z | E | R | W | A | D | C | X | Y | B | G | I | K |

4.

| K | H | G | F | D | D | A | Q | W | E | R | T | Z | U | I | O |

5.

| J | A | P | T | Z | B | C | V | H | L | O | B | X | I | A | C |

6.

| A | B | Y | X | N | M | C | V | W | R | T | D | L | H | G | I |

7.

| O | T | H | J | D | S | O | L | A | U | T | Z | R | G | B | Y |

8.

| J | L | S | A | L | M | U | I | J | T | Z | R | E | D | L | H |
QUESTIONNAIRE

Please choose only one answer. Give your honest opinion. Your answers do not influence the outcome of the task you just solved.

1. I enjoyed solving the task.
   □ Strongly agree   □ Agree   □ Indifferent   □ Disagree   □ Strongly disagree

2. How good do you think you are in solving tasks like this in comparison to other students?
   □ Better   □ Equal   □ Worse

3. I always try to perform better than other people surrounding me, for example in my job, in university, …
   □ Strongly agree   □ Agree   □ Indifferent   □ Disagree   □ Strongly disagree

4. The chance of winning an Amazon gift card motivated me.
   □ Strongly agree   □ Agree   □ Indifferent   □ Disagree   □ Strongly disagree

5. Imagine a gender quota is introduced in your company, do you think this would impact your work motivation and effort?
   □ Yes   □ No   □ Indifferent

5.1 Answer only if you chose ‘Yes’ for the previous question.
   In what sense would your work effort be influenced?
   □ My motivation would increase   □ My motivation would decrease

6. What is your age?  ________________
7. What is your sex?  □ M  □ F
8. What is your highest education?  ____________________________

Please write down your e-mail address in the following blank so that you can be notified in case you win the giftcard.  

_________________________________________

Your e-mail address will only be used to contact you, should you be the winner of the experiment. It will not be given to any third parties and will be destroyed after the evaluation of your results.
INSTRUCTIONS
- GROUP B -

Thank you for participating in this experiment and for contributing to a Master’s Thesis at Copenhagen Business School. The experiment lasts only about 5 minutes.

From now until the end of the experiment you are not allowed to communicate with any other participants. Please read the instructions carefully and make sure that you fully understand them before you start the task. If you have any questions, please ask before you begin.

This study consists of two parts: a short experiment and a questionnaire at the end. Please do not look at the questionnaire before you are finished with the task.

By joining this experiment, you are participating in a competition. That means that you have the chance of winning a 10 Euro gift card for Amazon if you if you win the competition! In any case you receive a chocolate candy bar at the end of the experiment as a small “thank you”.

**Rules of the game:**
You are participating in a competition! You have been randomly placed into **Group B**, which overall has 20 contestants. Group B is further split into two subgroups: Group B1 and B2 with 10 members each. You are in **Group B1**. It is important for you to know that only members of group B1 can win the gift card! Members of group B2 will only get a chocolate bar regardless of their performance. For you, this means that you can win the gift card!

Before you start, what is your probability of winning in % ? _________________________
What is the probability of winning for a member of group B2? _______________________

**Instructions:**
You are asked to solve a letter-number combination game based on a given legend. You will receive eight rows with letters where you have to write down the matching number below. If there is no letter-number combination given for a specific letter, please write down X in the field below.

**Example:**
The following letter-number combinations are given.

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</tr>
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</table>

Write the matching number under the letter. Wrong answers lower your score.

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<thead>
<tr>
<th>A</th>
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<th>K</th>
<th>L</th>
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</table>

Understood? Great! ☺
You may now begin. You have **3 minutes** to solve the task. Additionally, you have as much time as you need to answer the questionnaire in the end.

Thank you and good luck!
The following letter-number combinations are given:

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<td>6</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>X</td>
</tr>
</tbody>
</table>

Write the matching number under the letter:


2. Z R D V J O P S E J L B C M H O

3. O P T Z E R W A D C X Y B G I K

4. K H G F D D A Q W E R T Z U I O

5. J A P T Z B C V H L O B X I A C

6. A B Y X N M C V W R T D L H G I

7. O T H J D S O L A U T Z R G B Y

8. J L S A L M U I J T Z R E D L H
QUESTIONNAIRE

Please choose only one answer. Give your honest opinion. Your answers do not influence the outcome of the task you just solved.

1. I enjoyed solving the task.
   □ Strongly agree   □ Agree   □ Indifferent   □ Disagree   □ Strongly disagree

2. How good do you think you are in solving tasks like this in comparison to other students?
   □ Better   □ Equal   □ Worse

3. I always try to perform better than other people surrounding me, for example in my job, in university, …
   □ Strongly agree   □ Agree   □ Indifferent   □ Disagree   □ Strongly disagree

4. The chance of winning an Amazon gift card motivated me.
   □ Strongly agree   □ Agree   □ Indifferent   □ Disagree   □ Strongly disagree

5. Imagine a gender quota is introduced in your company, do you think this would impact your work motivation and effort?
   □ Yes   □ No   □ Indifferent

5.1 Answer only if you chose ‘Yes’ for the previous question.
   In what sense would your work effort be influenced?
   □ My motivation would increase   □ My motivation would decrease

6. What is your age? ________________

7. What is your sex? □ M □ F

8. What is your highest education? ________________________________

Please write down your e-mail address in the following blank so that you can be notified in case you win the giftcard.

_________________________________________

Your e-mail address will only be used to contact you, should you be the winner of the experiment. It will not be given to any third parties and will be destroyed after the evaluation of your results.
INSTRUCTIONS
- GROUP B -

Thank you for participating in this experiment and for contributing to a Master’s Thesis at Copenhagen Business School. The experiment lasts only about 5 minutes.

From now until the end of the experiment you are not allowed to communicate with any other participants. Please read the instructions carefully and make sure that you fully understand them before you start the task. If you have any questions, please ask before you begin.

This study consists of two parts: a short experiment and a questionnaire at the end. Please do not look at the questionnaire before you are finished with the task.

By joining this experiment, you are participating in a competition. That means that you have the chance of winning a 10 Euro gift card for Amazon if you win the competition! In any case you receive a chocolate candy bar at the end of the experiment as a small “thank you”.

Rules of the game:
You are participating in a competition! You have been randomly placed into Group B, which overall has 20 contestants. Group B is further split into two subgroups: Group B1 and B2 with 10 members each. You are in Group B2. It is important for you to know that only members of group B1 can win the gift card! Members of group B2 will only get a chocolate bar regardless of their performance. For you, this means that you cannot win the gift card! Those are the rules.

Before you start, what is your probability of winning in %? ________________________
What is the probability of winning for a member of group B1? _______________________

Instructions:
You are asked to solve a letter-number combination game based on a given legend. You will receive eight rows with letters where you have to write down the matching number below. If there is no letter-number combination given for a specific letter, please write down X in the field below.

Example:
The following letter-number combinations are given:

<table>
<thead>
<tr>
<th>C</th>
<th>I</th>
<th>G</th>
<th>J</th>
<th>A</th>
<th>T</th>
<th>H</th>
<th>L</th>
<th>B</th>
<th>Y</th>
<th>P</th>
<th>All other letters</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>6</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>X</td>
</tr>
</tbody>
</table>

Write the matching number under the letter. Wrong answers lower your score.

A U G K L T Z C F J B E P T B V
3 X 5 X 6 ...

Understood? Great! ☺
You may now begin. You have 3 minutes to solve the task. Additionally, you have as much time as you need to answer the questionnaire in the end.
The following letter-number combinations are given:

<table>
<thead>
<tr>
<th>C</th>
<th>I</th>
<th>G</th>
<th>J</th>
<th>A</th>
<th>T</th>
<th>H</th>
<th>L</th>
<th>B</th>
<th>Y</th>
<th>P</th>
<th>All other letters</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>6</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>X</td>
</tr>
</tbody>
</table>

Write the matching number under the letter:


2. Z R D V J O P S E J L B C M H O

3. O P T Z E R W A D C X Y B G I K

4. K H G F D D A Q W E R T Z U I O

5. J A P T Z B C V H L O B X I A C

6. A B Y X N M C V W R T D L H G I

7. O T H J D S O L A U T Z R G B Y

8. J L S A L M U I J T Z R E D L H
QUESTIONNAIRE

Please choose only one answer. Give your honest opinion. Your answers do not influence the outcome of the task you just solved.

1. I enjoyed solving the task.
   □ Strongly agree   □ Agree   □ Indifferent   □ Disagree   □ Strongly disagree

2. How good do you think you are in solving tasks like this in comparison to other students?
   □ Better   □ Equal   □ Worse

3. I always try to perform better than other people surrounding me, for example in my job, in university, …
   □ Strongly agree   □ Agree   □ Indifferent   □ Disagree   □ Strongly disagree

4. The chance of winning an Amazon gift card motivated me.
   □ Strongly agree   □ Agree   □ Indifferent   □ Disagree   □ Strongly disagree

5. Imagine a gender quota is introduced in your company, do you think this would impact your work motivation and effort?
   □ Yes   □ No   □ Indifferent

5.1 Answer only if you chose ‘Yes’ for the previous question.
   In what sense would your work effort be influenced?
   □ My motivation would increase   □ My motivation would decrease

6. What is your age? __________________

7. What is you sex? □ M □ F

8. What is your highest education? ____________________________
Appendix 2: Evaluation of the questionnaire

Q 1: I enjoyed solving the task.
- Strongly agree
- Agree
- Indifferent
- Disagree
- Strongly disagree

Results:

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly agree</td>
<td>3</td>
<td>15,00%</td>
</tr>
<tr>
<td>agree</td>
<td>10</td>
<td>50,00%</td>
</tr>
<tr>
<td>indifferent</td>
<td>4</td>
<td>20,00%</td>
</tr>
<tr>
<td>disagree</td>
<td>2</td>
<td>10,00%</td>
</tr>
<tr>
<td>strongly disagree</td>
<td>1</td>
<td>5,00%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>100,00%</strong></td>
</tr>
</tbody>
</table>

Q 1: Female results

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly agree</td>
<td>3</td>
<td>15,00%</td>
</tr>
<tr>
<td>agree</td>
<td>10</td>
<td>50,00%</td>
</tr>
<tr>
<td>indifferent</td>
<td>4</td>
<td>20,00%</td>
</tr>
<tr>
<td>disagree</td>
<td>2</td>
<td>10,00%</td>
</tr>
<tr>
<td>strongly disagree</td>
<td>1</td>
<td>5,00%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>100,00%</strong></td>
</tr>
</tbody>
</table>

Q 1: Male results

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly agree</td>
<td>2</td>
<td>10,00%</td>
</tr>
<tr>
<td>agree</td>
<td>12</td>
<td>60,00%</td>
</tr>
<tr>
<td>indifferent</td>
<td>1</td>
<td>5,00%</td>
</tr>
<tr>
<td>disagree</td>
<td>3</td>
<td>15,00%</td>
</tr>
<tr>
<td>strongly disagree</td>
<td>2</td>
<td>10,00%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>100,00%</strong></td>
</tr>
</tbody>
</table>
Q 2: How good do you think you are in solving tasks like this in comparison to other students?

- Better □  Equal □  Worse □

Results:

Q 2: How good do you think you are in solving tasks like this in comparison to other students?

- Total sample -

<table>
<thead>
<tr>
<th></th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>better</td>
<td>3</td>
<td>15,00%</td>
</tr>
<tr>
<td>equal</td>
<td>15</td>
<td>75,00%</td>
</tr>
<tr>
<td>worse</td>
<td>2</td>
<td>10,00%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100,00%</td>
</tr>
</tbody>
</table>

Q 2: Female results

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>better</td>
<td>3</td>
<td>15,00%</td>
</tr>
<tr>
<td>equal</td>
<td>15</td>
<td>75,00%</td>
</tr>
<tr>
<td>worse</td>
<td>2</td>
<td>10,00%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100,00%</td>
</tr>
</tbody>
</table>

Q 2: Male results

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>better</td>
<td>4</td>
<td>20,00%</td>
</tr>
<tr>
<td>equal</td>
<td>14</td>
<td>70,00%</td>
</tr>
<tr>
<td>worse</td>
<td>2</td>
<td>10,00%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100,00%</td>
</tr>
</tbody>
</table>
Q 3: I always try to perform better than other people surrounding me, for example in my job, in university, …

- Strongly agree  □  Agree  □  Indifferent  □  Disagree  □  Strongly disagree

Results:
No subject chose ‘strongly disagree’ as an answer.

Q 3: Female results

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly agree</td>
<td>2</td>
<td>10,00%</td>
</tr>
<tr>
<td>agree</td>
<td>12</td>
<td>60,00%</td>
</tr>
<tr>
<td>indifferent</td>
<td>5</td>
<td>25,00%</td>
</tr>
<tr>
<td>disagree</td>
<td>1</td>
<td>5,00%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100,00%</td>
</tr>
</tbody>
</table>

Q 3: Male results

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly agree</td>
<td>4</td>
<td>20,00%</td>
</tr>
<tr>
<td>agree</td>
<td>10</td>
<td>50,00%</td>
</tr>
<tr>
<td>indifferent</td>
<td>5</td>
<td>25,00%</td>
</tr>
<tr>
<td>disagree</td>
<td>1</td>
<td>5,00%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100,00%</td>
</tr>
</tbody>
</table>
Q 4: The chance of winning an Amazon gift card motivated me.

- Total sample -

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>agree</td>
<td>4</td>
<td>20,00%</td>
</tr>
<tr>
<td>indifferent</td>
<td>11</td>
<td>55,00%</td>
</tr>
<tr>
<td>disagree</td>
<td>4</td>
<td>20,00%</td>
</tr>
<tr>
<td>strongly disagree</td>
<td>1</td>
<td>5,00%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100,00%</td>
</tr>
</tbody>
</table>

Q 4: Female results

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>agree</td>
<td>4</td>
<td>20,00%</td>
</tr>
<tr>
<td>indifferent</td>
<td>11</td>
<td>55,00%</td>
</tr>
<tr>
<td>disagree</td>
<td>4</td>
<td>20,00%</td>
</tr>
<tr>
<td>strongly disagree</td>
<td>1</td>
<td>5,00%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100,00%</td>
</tr>
</tbody>
</table>

Q 4: Male results

<table>
<thead>
<tr>
<th>Answer</th>
<th>All men</th>
<th>Only men in group A</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of participants</td>
<td>Percentage</td>
<td>No. of participants</td>
<td>Percentage</td>
<td>Percentage</td>
</tr>
<tr>
<td>agree</td>
<td>1</td>
<td>5,00%</td>
<td>1</td>
<td>10,00%</td>
<td></td>
</tr>
<tr>
<td>indifferent</td>
<td>6</td>
<td>30,00%</td>
<td>2</td>
<td>20,00%</td>
<td></td>
</tr>
<tr>
<td>disagree</td>
<td>4</td>
<td>20,00%</td>
<td>2</td>
<td>20,00%</td>
<td></td>
</tr>
<tr>
<td>strongly disagree</td>
<td>9</td>
<td>45,00%</td>
<td>5</td>
<td>50,00%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100,00%</td>
<td>10</td>
<td>100,00%</td>
<td></td>
</tr>
</tbody>
</table>

Q 4: Group results

<table>
<thead>
<tr>
<th>Answer</th>
<th>Group A</th>
<th>Group B1</th>
<th>Group B2</th>
</tr>
</thead>
<tbody>
<tr>
<td>agree</td>
<td>15,0%</td>
<td>20,0%</td>
<td>0,00%</td>
</tr>
<tr>
<td>indifferent</td>
<td>40,0%</td>
<td>50,0%</td>
<td>40,0%</td>
</tr>
<tr>
<td>disagree</td>
<td>20,0%</td>
<td>20,0%</td>
<td>20,0%</td>
</tr>
<tr>
<td>strongly disagree</td>
<td>25,0%</td>
<td>10,0%</td>
<td>40,0%</td>
</tr>
<tr>
<td>Total</td>
<td>100,0%</td>
<td>100,0%</td>
<td>100,0%</td>
</tr>
</tbody>
</table>
Q 5: Imagine a gender quota is introduced in your company, do you think this would impact your work motivation and effort?

☐ Yes  ☐ No  ☐ Indifferent

Results:

Q 5: Imagine a gender quota is introduced in your company, do you think this would impact your work motivation and effort?
- Total sample -

<table>
<thead>
<tr>
<th></th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>4</td>
<td>20,00%</td>
</tr>
<tr>
<td>no</td>
<td>11</td>
<td>55,00%</td>
</tr>
<tr>
<td>indifferent</td>
<td>5</td>
<td>25,00%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100,00%</td>
</tr>
</tbody>
</table>

Q 5: Female results

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>4</td>
<td>20,00%</td>
</tr>
<tr>
<td>no</td>
<td>11</td>
<td>55,00%</td>
</tr>
<tr>
<td>indifferent</td>
<td>5</td>
<td>25,00%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100,00%</td>
</tr>
</tbody>
</table>

Q 5: Male results

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>9</td>
<td>45,00%</td>
</tr>
<tr>
<td>no</td>
<td>8</td>
<td>40,00%</td>
</tr>
<tr>
<td>indifferent</td>
<td>3</td>
<td>15,00%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100,00%</td>
</tr>
</tbody>
</table>
Q 5.1 Answer only if you chose ‘Yes’ for the previous question.
In what sense would your work effort be influenced?
□ My motivation would increase   □ My motivation would decrease

Results:

Q 5.1: In what sense would your work effort be influenced?
- Total sample -

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>increase</td>
<td>4</td>
<td>100,00%</td>
</tr>
<tr>
<td>(empty)</td>
<td>(16)</td>
<td>(0,00%)</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>100,00%</td>
</tr>
</tbody>
</table>

Q 5.1: Female results

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>increase</td>
<td>4</td>
<td>100,00%</td>
</tr>
<tr>
<td>(empty)</td>
<td>(16)</td>
<td>(0,00%)</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>100,00%</td>
</tr>
</tbody>
</table>

Q 5.1: Male results

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>increase</td>
<td>5</td>
<td>55,56%</td>
</tr>
<tr>
<td>decrease</td>
<td>4</td>
<td>44,44%</td>
</tr>
<tr>
<td>(empty)</td>
<td>(11)</td>
<td>(0,00%)</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>100,00%</td>
</tr>
</tbody>
</table>

Note: Q 6 – Q 9 are analyzed in the thesis itself.
Appendix 3: Scatter diagrams

a.) Correlation between the result of the task and the level of enjoyment of it

For the illustration the categories available for the evaluation the gift card as a motivator are presented in a numeric way as follows:
1 = Strongly agree, 2 = Agree, 3 = Indifferent, 4 = Disagree, 5 = Strongly Disagree

![Correlation result of the task - enjoyment of the task](image1.png)

b.) Correlation between the result of the task and gender

For the illustration the gender variable is presented in a numeric way as follows:
1 = man, 2 = woman

![Correlation result of the task - gender](image2.png)