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„Glass Ceiling and Women's Quotas – Gender Role Congruity Theory in the Information Technology Sector in Austria"

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"Think manager – think male." (Schein & Mueller, 1992)

Think quota – think female.

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1. Introduction

Over the last two decades, gender diversity in the private sector has developed into a wide-spread and publicly discussed research topic. Simultaneously, it sparks controversy: The next heated debate always seems to be just around the corner, whether it is about a new direction of diversity, new measures to increase diversity, or new insights to the origin of stereotypes towards the sexes. The introduction of a third gender, the "diverse" category, is a good example of contemporary adjustments of jurisdiction and social order.

In Austria, evolving from an awareness-building campaign in the 1990s into an action-based politics debate during the 2000s, active political commitment to gender diversity at the workplace resulted in an action plan on Gender Equality in the Labor Market in 2010. While in the public sector and in state-affiliated companies the representation of women in supervisory boards has risen constantly, the private sector has not yet made big improvements on this quota. "In 2018, the share of women in executive board and management positions of the 200 Austrian companies with the highest turnover was 8.4%; female participation in supervisory boards was 18.5%" (Austrian Presidency of the Council of the European Union, 2018, p. 19). This contrasts highly with the fact that gender mainstreaming has become obligatory for Austrian companies with more than 1,000 employees:

> "The Act on Equality between Women and Men in Supervisory Boards (GFMA-G) was adopted in June 2017 to raise the share of women in leadership positions. Since 1 January 2018, there must be at least 30% women and 30% men on the supervisory boards of publicly traded companies and companies with more than 1,000 employees" (ibid.).

However, the spillover effect on management level, which is expected according to a study by Scharfenkamp, Joecks, & Bozhinov (2019) is yet to come, as the aforementioned numbers show.

Departing from the fact that women are still underrepresented in top management in Austrian companies, the global state of the art within information technology firms – which generally lack balanced sex distribution – is even worse: "women constitute only 33% of employees at the entry level and 17% at the leadership level" (Atal, Berenguer, & Borwankar, 2019, p. 595). Atal et al. identify six causes that determine the underrepresentation of women in the IT service industry (ibid.): a low number of women graduating in STEM-studies (science, technology, engineering, and mathematics), referral-based recruitment and a masculine work environment, a lack of development-

favoring sponsors or mentors within the organization, gender-biased performance evaluation, a lack of flexibility to ensure a positive work-life-balance, and implicit biases and tokenism. Additionally, leadership positions may not be filled by women due to the well-known glass ceiling that prevents women from moving up the success ladder. Another factor are the still-existent cultural and invisible beliefs that men are better leaders than women (Johnson, Kiser, & Kappelman, 2018).

Based on socially constructed gender schemata, society is educated to maintain these beliefs, leading eventually to fewer positive attitudes towards female leaders (Eagly & Karau, 2002). Eagly & Karau's role congruity theory argues that the attributions made to the male or female sex have to match with leadership characteristics. Otherwise, prejudice and stereotyping due to the mismatch will lead to fewer leading roles given to women and less success in these roles for the selected few who make it to the top (ibid.).

Following the reasoning above and facing the actuality of the topic, research in this field is further legitimized due to these considerations: If a mismatch does still persist in today's society and women are "negatively stereotyped into an incongruent social role" (Johnson, Kiser, & Kappelman, 2018, p. 4), women's quotas may have a negative effect. More precisely: the existing prejudice is intensified, as women are perceived to be promoted simply because they are women and in order to comply with set quotas. Facing the underrepresentation of women in the IT sector, the argument is even stronger. Men would therefore feel discriminated on the basis of preferential treatment of women. Women feel discriminated on the basis of advancement due to gender and not performance. "In the presence of quotas, the decision to hire or promote individuals is based on observable characteristics (i.e. gender), different than merit" (Maggian & Montinari, 2017, p. 33).

The following study experimentally sheds light on the hardly investigated general perception of female leaders in Austria's IT companies. The goal is to address the following research questions that have been derived from role congruity theory: Do traditional role attributions to female or male gender prevail in today's organizational society? How do these stereotypes affect the evaluation of leadership competence? What are the consequences of women's quotas / diversity targets regarding the perception of fairness of advancements?

The thesis is structured as follows: In the following chapter, the theoretical background of the research paradigm is displayed, focusing on basic concepts that are touched upon as a basis of the empirical investigation. A literature review on gender role

congruity theory is given and important detailed aspects of the theory are further pointed out. A short overview of the IT industry landscape in Austria is added as well. Chapter 3 is dedicated to the underlying empirical analysis. The research questions are deducted from the theoretical background and hypotheses are formulated. Also, the methodology is described, and the motivation of the chosen operationalization is explained. The fourth chapter contains the results of the study. Chapter 5 merges the findings with the expectations that are present in recent literature and wraps up the results. A conclusion builds the bridge from the evidence of this study to further possible research gaps. It also contains the deduction of managerial implications that can be drawn from the results.

2. Theoretical Background

In this first part of the thesis, I present the theoretical basis in which the research topic is anchored. As a basis for the underlying empirical research, some terms and theoretical concepts need to be defined and explained. Especially in research areas which deal with abstract phenomena in society or organizations, it is crucial to determine in detail what is included when speaking about them. Furthermore, touching upon concepts that are situated in different research areas (like international management, gender studies and sociology as well as psychology), a clear delineation of the theoretical bases is key. The topic of this thesis requires a combination of different knowledge fields and the investigation of the interplay between different factors. The focus lies on role congruity theory in social psychology, but it is just as important to introduce to the basics of gender studies, discrimination dynamics and leadership literature. Considering the emergence of women's quotas and displaying the current state of the art within the IT sector in Austria is also crucial to be able to first deduct the research questions and methodology. In a second step, the results can be presented accordingly.

2.1. Concepts and Definitions

The concepts of gender roles and discrimination constitute the starting point when theorizing the emergence and persistency of gender stereotypes. Besides the impact gender roles still have on hiring or advancements decisions, it is indispensable to understand what they comprise and in which way they are constituted. I shed light on the current state of research within the topics Women and Leadership as well as Women's Quotas.

2.1.1. Gender Diversity and Discrimination

While in the course of the 21st century western society has headed for the balance between women and men when it comes to rights and social position, there is still inequality in various aspects of the workplace, e.g. pay, promotion or profession choice (Lloyd-Jones, Bass, & Jean-Marie, 2018). The current policy approach for gender equality has been known as gender mainstreaming since 1985, being defined as follows by the Council of Europe:

> "The (re)organisation, improvement, development and evaluation of policy processes, so that a gender equality perspective is incorporated in all policies at all levels and at all stages, by the actors normally involved in policy-making" (Council of Europe, 1998).

While the historically evolved term indicates that gender diversity should regard men and women (or also people who identify as diverse), both scientists and practitioners have mostly focused on the discrimination of women (Lloyd-Jones, Bass, & Jean-Marie, 2018). This is mostly due to the fact that "women experience a workplace skewed in favor of men." (Krivkovich, Robinson, Starikova, Valentino, & Yee, 2017, p. 2). However, research has shown that men also face gender discrimination, albeit to a lesser extent than women (ibid.).

But what lies behind discrimination at the workplace? It is argued that co-workers and leaders are stigmatized based on their sex, because people think that women and men are different in the way they behave. Stereotype Accuracy research tries to shed light on the truth behind stereotypes, the latter being defined as oversimplifications or overgeneralizations of characteristics of only a small number of a respective group (Kite, Deaux, & Haines, 2008). At this point, it is crucial to introduce some terms that are often mixed up when speaking about gender diversity:

> "Gender refers to the socially constructed characteristics of women and men – such as norms, roles and relationships of and between groups of women and men" (World Health Organization, 2019).

Gender is therefore not necessarily based on measurable differences between the behavior of sexes but is rather something that is learned in society and passed on from generation to generation. Out of these characteristics, gender roles are developed, which can be defined by the "traditional beliefs about what functions are appropriate for women and men" (Lloyd-Jones, Bass, & Jean-Marie, 2018, p. 83) cited from (Powell & Greenhaus, 2010). For instance, these roles typically propose that men are not good at child education and women can never be technology-savvy.

Role behaviors depend on the psychological traits that are believed to be characteristic for the female and male (Kite, Deaux, & Haines, 2008), i.e. gender stereotypes (Powell & Greenhaus, 2010, p. 1012): typical feminine traits that are viewed as crucial in the family domain are "compassion, nurturance, sensitivity to the needs of others", while typical male traits include "aggressiveness, decisiveness, independence", which are major features of the work domain. Women are characterized as "emotional,

gentle, understanding, and devoted" while men are viewed as "active, competitive, independent, and self-confident" (Kite, Deaux, & Haines, 2008, p. 207).

In line with these traits, different societal roles are adhered to the sexes (ibid): Men are seen as leaders, breadwinners and decision-makers in the household, while women are assumed to rather take the role of caregivers, who look after the children and home, and give emotional support. The so-called gender socialization process takes place during childhood and is then intensified during adulthood by something similar to a self-fulfilling prophecy (Powell & Greenhaus, 2010; Lippa, 2005; Roese & Sherman, 2007; Powell, Butterfield, & Parent, 2002; Schilt, 2006). Expectancies that group people according to their expected social behavior are said to "work principally to guide effective behavior", but with this they also "serve to perpetuate inaccurate and unfair prejudices" (Roese & Sherman, 2007, p. 100).

Until today, this role-centered thinking, socially constructed and replicated as it is, defines the working life of men and women. If this influence is negative, we speak of sexism or gender discrimination, which includes:

> 'gendered-based behaviors, policies, and actions that adversely affect a person's work by leading to unequal treatment or the creation of an intimidating environment because of one's gender' (Lloyd-Jones, Bass, & Jean-Marie, 2018, p. 85) cited from (Sipe, Johnson, & Fisher, 2009, p. 342).

According to Ngo et al., there are four indicators of gender discrimination at work (Ngo, Foley, Wong, & Loi, 2003): salary, rewards and working conditions, dead-ends and the unattainability of powerful positions. Women lag behind when it comes to the remuneration and recompensation of their work (which is known as the gender pay gap). Also, they are more likely to get stuck in the middle of the career ladder and are less likely to reach a leading role at the workplace (ibid).

One type of discrimination, named occupational sex segregation, refers to the fact that women and men are likely to separate in two different kinds of jobs, organizations or industries. There are two potential reasons: On the one hand, this happens because people prefer to work with others of the same sex, and on the other hand because organizations and industries tend to attract rather one sex (Mora & Ruiz-Castillo, 2004; van Vianen & Fischer, 2002; Sipe, Johnson, & Fisher, 2009). It is also one influencing factor that typically male-dominated working domains are hindering women from entering these fields due to a special group-building practice (Levine, 2009). Women would not feel accepted as they are likely to perceive themselves as outsiders of this male social network.

2.1.2. Women, Leadership and the Glass Ceiling

The previous explanations lead to a central term of this thesis: the glass ceiling. The well-known notion "symbolizes barriers that are based on attitudinal or organizational bias, preventing qualified women from advancing higher in their organizations" (Lloyd-Jones, Bass, & Jean-Marie, 2018, p. 90) cited from (Danzinger & Eden, 2007; Powell, 1999).

Gender bias, as explained above, is hindering female employees from actually making it to the position that they should hold based on their qualifications and job experience, which tend to be the same as their male colleagues'. The phenomenon results in a gender-related inequality, regardless of the fact that knowledge, skills or competence may well be equal (Danzinger & Eden, 2007).

In line with the gender roles presented above, the glass ceiling has its roots in the characterization of men as better leaders: There exists a "considerable overlap between the characteristics associated with men and the characteristics associated with high-level positions such as executive or leader" (Kite, Deaux, & Haines, 2008, p. 208). There are two investigation approaches to the field of leadership and associated characteristics (Powell, Butterfield, & Parent, 2002):

Schein first came up with the aforementioned occupational sex typing theory, which holds that gender discrimination is based on the fact that managers have historically been men and the job is therefore associated with typical male characteristics (Schein, 1973, 1975). Even though there is controversy about different outcomes that support or oppose the theory, there is some evidence for the fact that women in management positions are not seen as most successful managers. Schein et al. later found evidence for the global distribution of this phenomenon (Schein, Mueller, Lituchy, & Liu, 1996; Schein & Mueller, 1992).

As a second approach that has to be mentioned, Bem's androgyny theory was developed, asserting that both female and male characteristics are key for successful managers and that a standard dichotomy is not the concept of choice (Bem, 1974, 1975). In opposition of the classic male-female dichotomy, Bem found evidence of better behavior in non-organizational environments when androgyny was present (Bem, 1975). However, in contrast to the initial hypothesis, a study by Powell & Butterfield – conducted with the help of the developed instrument, the Bem Sex Role Inventory (BSRI) – showed that a good manager was described again with typical male characteristics (Powell & Butterfield, 1979). This depicts that gender roles and transferred assumptions

about the social behavior of male and female colleagues impede working groups to perform better.

Most of the longitudinal studies between the 1970s and 1990s report that gender roles were still present and almost had not changed (Haines, Deaux, & Lofaro, 2016, p. 354): there are "some changes over time in the direction of greater egalitarianism and somewhat less gender differentiation". Powell & Butterfield (1979) and Powell et al. (2002) also show that "a good manager is still perceived as predominantly masculine", this being evidence for the barrier women face when they are ready to enter management level (Powell, Butterfield, & Parent, 2002, p. 177).

These findings contrast with the fact that good communications skills, intuitivism and flexibility have become more important for an organizational leader than typical male characteristics (ibid.). Characteristics like supportiveness and participation have been identified as key for organizational effectiveness (Eagly & Karau, 2002). Also, women are said to contribute positively to organizations as they are associated with innovation and profitability (Glass & Cook, 2016). For the 21st century, Haines et al. show that typical gender roles are maintained, explaining this result by psychological processes that I have mentioned before (Haines, Deaux, & Lofaro, 2016). Vast amount of research has shown that today women still suffer from the glass ceiling in white- as well as blue-collar workplaces, and that this is the case due to maintained gender stereotypes (Schilt, 2006; Allen, French, & Poteet, 2016). It has been proven that women do not reach management positions to the extent men do, that they are paid less and face constrained career opportunities (Kalev, 2009; Reece & Brandt, 2008). Williams recognizes a societal willingness to generally include more women in the workforce of organizations, but still a preferential treatment for men prevails (Williams, 2009).

Additionally, women who manage to access management roles are bound by the domination of a male leadership style in their working group and face attitudes that claim women are "less capable leaders" (Esser, Kahrens, Mouzughi, & Eomois, 2018, pp. 138-139). As proposed by Schein, this is due to the fact that men have traditionally held leadership roles and therefore coined the term leadership with typical male characteristics (Glass & Cook, 2016). Male leadership style is commonly linked to attributes like assertiveness, mastery and competence (Bailey, 2014; Mendez & Busenbark, 2015) and the adjectives hierarchical and individualistic (Festing, Kornau, & Schaefer, 2015; Esser, Kahrens, Mouzughi, & Eomois, 2018). In contrast, female leaders are described as caring, emotionally sensitive and attentive (Esser, Kahrens, Mouzughi, & Eomois, 2018).

Should women ignore the fact that their perceived attributes close the doors to leadership positions or should they adapt and assimilate typical male behavior? While some research supports the latter strategy in order to succeed in male-dominated environments (Eagly & Carli, 2007a; Powell, 2011), it is also claimed that women who try to be more like men are either way stereotyped of being "bossy, bitchy, opinionated, and too emotional" (Allen, French, & Poteet, 2016, p. 206). However, there is evidence that cross-functional collaboration and fostering relations between workers from different levels in the hierarchy can lead to a "cracking" of the glass ceiling (Kalev, 2009). Esser et al. show that men who have reported to women for at least 10 years regard authenticity as one of the most important characteristic for a female boss, even though there was also much importance given to typical male traits like dominance, willingness to take risks and stress resistance (Esser, Kahrens, Mouzughi, & Eomois, 2018). The authors argue that "female leaders should integrate both masculine and feminine leadership competencies" and conclude that "women are usually expected to demonstrate exceptional and often higher professional expertise than their male peers" (ibid., p.155, 157). The fact that women are expected to take action on the inequality they face actually does produce more inequality itself.

Interestingly, in female-dominated professions and industries, like for instance healthcare, education, social and non-profit sectors, men are also treated preferentially and are more likely to make it to a top position (Williams, 1995). Named the glass escalator, the phenomenon is reproduced in culture and society, originating from the beliefs about men's and women's strengths and weaknesses, their different abilities and skills that people presume (Schilt, 2006; Kite, Deaux, & Haines, 2008).

2.1.3. Women's Quotas

Is there any way to change stereotypes or to erase biases from humans' brains? Research shows that stereotyping occurs automatically; in other words, even if people knew that stereotypes are wrong or not based on true differences, even if they did not believe in them, they used stereotypes (Kite, Deaux, & Haines, 2008). As stereotypes are reproduced steadily by cognitive and social mechanisms, they are quite persistent. As early as the late 1990s, Eagly stated that gender roles may change only if social arrangements change, i.e. if women and men are distributed equally in the working domains and women access high-status roles to the same extent men do (Eagly, 1987; Eagly & Karau, 2002). Eagly and Diekman propose models in which gender role thinking

can be changed if the actual behavior of women and men is perceived to be identical, i.e. the expectations people have about female and male behavior are not observed in reality or a contrasting observation alters the beliefs (Eagly & Diekman, 2003; Powell, Butterfield, & Parent, 2002). Another option, however, is the subtyping of group members (Powell, Butterfield, & Parent, 2002): whenever some of the group stand out and do not follow the idea of the observers, the latter may separate them from the group and save their behavior as a new stereotype.

Despite these hypothetical models, it is argued that humans tend to maintain stereotypes before changing them, even though contrasting information is processed (ibid). Additionally, humans strive to comply with the expectation society has, as Powell et al. summarize the problem:

> "If top managers still believe in and adhere to the traditional stereotype of managers as masculine, women as well as men may feel compelled to display personal characteristics that are consistent with this stereotype to be selected for and successful in managerial roles" (Powell, Butterfield, & Parent, 2002, p. 181).

Kite et al. argue that even though the activation and application of stereotypes is an automatic mechanism, people have to be held responsible for stereotyping, as the knowledge about the motives and consequences is common (Kite, Deaux, & Haines, 2008, p. 223). So, in order to fight stereotyping, there must either be some concrete cues for control or the formulation of "chronic egalitarian goals" (ibid.).

Both organizations and governments have been implementing specific programs and policies to even the ground for further integration of women in the labor market and to counteract gender discrimination (Allen, French, & Poteet, 2016). Known as the "silent revolution", institutions strive for "higher visibility for women in social, political and economic life" (Cabeza-Garcia, Del Brio, & Rueda, 2019, p. 56). As a supranational organ, the EU contributed to the equality between sexes with a number of policy actions in line with gender mainstreaming (Christofides, Polycarpou, & Vrachimis, 2013). Advancements in numbers are, for example, the number of women in supervisory boards or in executive positions in large listed companies in the EU: numbers have grown from around 12% each in 2010 to almost 18% and 16% respectively in 2013 (Allen, French, & Poteet, 2016). Studies on organizational success have outlined that organizations can retain and further develop female leaders by showing them real support and long-term career prospects, while motivating other women to follow role models that they establish (Walsh, Fleming, & Enz, 2016). Still, in EU-28, "managers are on average twice more

likely to be male", and women remain underrepresented on boards and in management (European Commission, 2019, pp. 22, 27).

One way to call an organization to account on gender equality is the implementation of women's quotas or some soft regulation. These instruments try to overcome gender inequalities, even though there are drawbacks and negative aspects of the undertaking. Nevertheless, it is clear that diversity commitment is a topic that organizations strive to achieve not only to enhance performance, but also to escape pressure from stakeholders (Krivkovich, Robinson, Starikova, Valentino, & Yee, 2017). Gender diversity on management level has also become prominent in academic research, as more and more importance is given to gender impacts on the decision-making process in and the success of organizations (Matsa & Miller, 2013; Georgen & Renneboog, 2014).
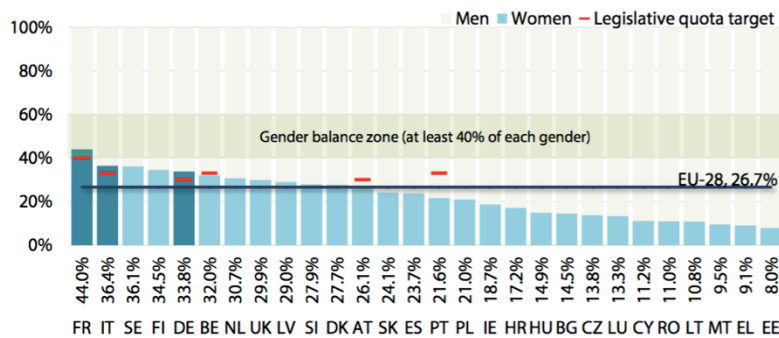
Source: European Institute for Gender Equality, Gender Statistics Database. Legislative gender quota targets: FR (40 %), BE, IT, PT (33 %), DE, AT (30 %).

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69 Publicly listed means that the company's shares are traded on the stock exchange. The largest companies in each country are taken to be the members (max 50) of the primary blue-chip index maintained by the national stock exchange, which covers the largest companies by market capitalisation and/or volume of market trades. Only companies registered in the country concerned (according to the ISIN code) are taken into account

Figure 1: Proportion of women and men on the boards of the largest publicly listed companies in the EU, October 2018 (European Commission, 2019, p. 27)

Figure 1 shows the 2018 status of gender balance in EU-28: six member states have introduced legislative gender quota targets. While France has already reached a so-called gender balance since the adoption of the target in 2011, all other five countries still struggle to increase female representation in large organizations. Interestingly, Sweden and Finland show an above-average percentage of women, even though they have not set any legislative quota.

Cabeza-Garcia et al. compare different countries and investigate which measures are more effective to foster the representation of women in supervisory boards: mandatory gender quotas or soft recommendations (Cabeza-Garcia, Del Brio, & Rueda, 2019). In line with the data gathered by the European Commission, it has been shown that soft regulation does not lead to a higher representation of women in economic decision-making to the extent quotas do (European Commission, 2019). Similar results have been

found for the soft quota implemented in Spain: the incentives do not trigger organizations to hire more women for their supervisory boards (Mateos de Cabo, Terjesen, Escot, & Gimeno, 2019). Cabeza-Garcia et al. also touched upon the role of country-specific culture in the advancement of women and found evidence that masculinity and power distance inhibit the effectiveness of soft regulation (Cabeza-Garcia, Del Brio, & Rueda, 2019). Countries that score high on these dimensions therefore need to implement quotas instead of mere recommendations to achieve gender equality in supervisory boards (ibid.).

While corporate performance was found to be negatively influenced by quotas (Yang, Riepe, Moser, Pull, & Terjesen, 2019), it is interesting to mention that more importance is given to employment policy when there are women present at the top of organizations: Matsa & Miller found that firms in Norway that increased the representation of women in their boards have laid off less employees and increased relative labor costs, while short-run profits of the companies shrank (Matsa & Miller, 2013).

A recent study by Kienbaum Consultants & BDI (Federation of German Industries) in Germany has shown that the set legal quotas are seen with ambiguity (Kienbaum & BDI, 2016). Interviews with members of organizations reveal that it is both regarded as encroachment to the liberty of the economy and a catalyst for more effort regarding women's advancement. Quotas are also considered to be unrealistic and inefficient for the implementation of diversity in companies, which is highly constrained by the company culture. It is claimed that traditionally replicated leadership roles block women from advancement within the hierarchy. However, some respondents also acknowledged the fact that digitalization and the transformation process stimulated by demographic and generational change brings along diversity by force. In other words: quotas may be a wakeup call for companies, telling them that a transformation of the workforce is key.

It is assumed that gender quotas for supervisory boards have spill-over effects on the management level of organizations (Scharfenkamp, Joecks, & Bozhinov, 2019). With research conducted in Norway, the first country to introduce women's quotas, Wang et al. show that more women make it to top leadership positions, not least because board members serve as role models (Wang & Kelan, 2013).

In Austria, women are still underrepresented in leadership positions and boards (Austrian Presidency of the Council of the European Union, 2018). In 2018, roughly 8%

of executive board and management members of the 200 companies with highest turnover were female, women in supervisory boards accounted for 18.5%. In June 2017, The Act on Equality between Women and Men in Supervisory Boards was passed, and implementation started from 1st of January 2018. Quotas are set to a minimum of 30% women and 30% men on supervisory boards of publicly traded companies as well as companies with more than 1,000 employees (ibid.). Strikingly, even if women make it to the boards, they often remain in non-executive positions therein. Comparing EU-28, Austria has the lowest percentage of women in senior roles (European Commission, 2019).

Source: European Institute for Gender Equality, Gender Statistics Database
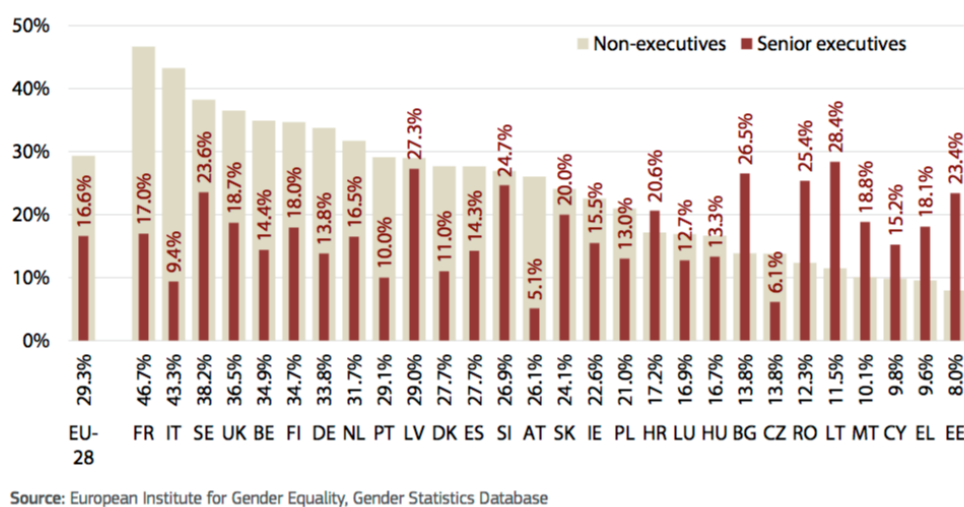
Figure 2: Proportion of women among executive and non-executive members of the two highest decision-making bodies of large companies in the EU-28, October 2018 (European Commission, 2019, p. 77)

While the effect for female representation of quotas, to a greater or lesser extent, is undeniable, it remains unclear if this mechanism is actually changing the underlying gender roles and the acceptance of women in traditional male leadership roles. I argue that with quotas, women are not promoted because of their capabilities and their expertise. It means that change does not even touch upon gender roles but is due to regulation. On the one hand, this means that women will not feel appreciated, as only their sex made the difference and opened the door to a leading position. On top of the glass ceiling, women now feel an "additional pressure of justifying their positions as being result of professional expertise not gender quotas" (Esser, Kahrens, Mouzughi, & Eomois, 2018, p. 141). On the other hand, men who in theory may be better suited for the job are discriminated by the quota, and stereotyping will intensify, as hiring policies are perceived as unequal and unjust. They may think that their female colleagues received the advancement due to the quota, and not due to their qualification.

So far, there is little evidence for the effects of quotas. Dorrough et al. found that group cooperation is negatively influenced by a promotion on the basis of quotas compared to performance-based promotion (Dorrough, Leszcynska, Barreto, & Glöckner, 2016). This is evidence for the hypothesis that assumed positive influence of gender diversity on team performance can vanish in the presence of quotas.

2.2. Role Congruity Theory

Having introduced generally the topic and the most important concepts, I now focus on the main theory on which the empirical part of this thesis is based and which deserves an entire chapter by itself, although some of the aspects mentioned before will be reiterated.

2.2.1. Background and Evolution

Role congruity theory was developed by Eagly & Karau and dates back to the early 2000s, while it has its roots in social role theory that was first formulated by Eagly in the 1980s. As the forerunner for role congruity theory, social role theory "seeks to explain the cause of differences and similarities in social behaviour" (Lloyd-Jones, Bass, & Jean-Marie, 2018, p. 82). Eagly's first aim was to provide the social psychological debate with a clear description of sex differences in social behavior, focusing on those differences that are not due to biological conditions (Eagly, 1987). She argued that sex differences stem from social roles that affect behavior during adulthood, and she focused on the "structural" differences emerging from similar social situations of members of one social group. In contrast, "cultural" differences were left aside, them being differences originating from childhood socialization processes.

Eagly identifies two mechanisms that bring about sex differences: "conformity to gender roles [… and] the transmission to individuals of (a) skills relevant to social behaviors and (b) beliefs about the consequences of social behaviors" (Eagly, 1987, p. 12). She argues that said skills and beliefs are "indirect manifestations of social roles" (ibid.), as they are obtained through previous involvement in roles. Based on gender-stereotype research, social role theory presumes that peoples' beliefs can be integrated to a two-dimensional paradigm: communal and agentic attributes. Communal traits are connected with a concern with the welfare of others and selflessness, i.e. traits typically attributed to women, while agentic traits concern self-assertiveness and mastery, i.e. traits typically attributed to men (ibid.).

Communion	Agency
Caring: Affectionate, Able to devote self completely to others, Eager to soothe hurt feelings, Helpful, Kind, Sympathetic, Loves children Interpersonal sensitivity: aware of feeling of others Emotional expressiveness: easily express tender feelings Personal style: Gentle, Soft-spoken	Self-assertion: aggressive, ambitious, dominant, forceful, act as a leader Independence from others: independent, self-reliant, self-sufficient, individualistic Personal efficacy: self-confident, feel superior, make decisions easily Personal style: direct, adventurous, never give up easily
Selflessness, concern with others, desire to be at one with others	Self-assertion, self-expansion, urge to master

Figure 3: List of traits and characteristics of communal and agentic attributes, taken from Eagly, 1987, p. 16

Eagly focuses on personal attributes in her first book on sex differences, because on the one hand, these form the most common stereotypic beliefs, and on the other hand, social behavior can be predicted on their basis, as attributes "themselves [are] abstractions about social behaviour" (Eagly, 1987, p. 17). While the common perception is that communion and agency divide men and women into two distinct, sharply delimited groups, Eagly shows that people attach only different levels of these characteristics to women and men. This leads to an intersection of the two categories. Research shows that people do rate men differently than women, but sexes cannot be called opposite (ibid.). It is also argued that these characteristics are not of judgmental nature in the first place, i.e. women's characteristics are not seen as bad or less important and qualities that are typical for one gender are rated as equally desirable for the other sex (Eagly & Sczesny, 2009).

Gender roles are internalized, because "people's own attitudes and values have the stamp of societal gender roles" (Eagly, 1987, p. 18), a hypothesis supported both by public-opinion and self-concept research (like e.g. Bem, 1974). Research shows that men are perceived to be more agentic and women more communal (Eagly, 1987). These stereotypes have their origin in traditional roles that women and men occupy, i.e. the typical domestic setting for the female versus the typical societal and economic setting for the male. Also, this leads to the fact that the typical male breadwinner is considered to be of higher social status and authority than the typical female domestic occupation. As a result, women, if employed, have jobs with low status, power and opportunity for advancement. Eagly already theorized that stereotypes are maintained because acting

according to the gender roles serves to be successful in these roles, i.e. it is not only desired by society but also effective (ibid.).

Summarizing social role theory, sex differences stem from roles in different ways (Eagly, 1987, p. 31):

> "Gender roles directly induce stereotypic sex differences because these roles tend to be behaviourally confirmed. The distribution of the sexes into specific roles indirectly supports stereotypic sex differences because this distribution is an important source of people's expectations about female and male characteristics. […] [W]omen and men are not proportionately represented in specific social roles, they acquire different skills and beliefs, which, in turn, may affect social behaviour."
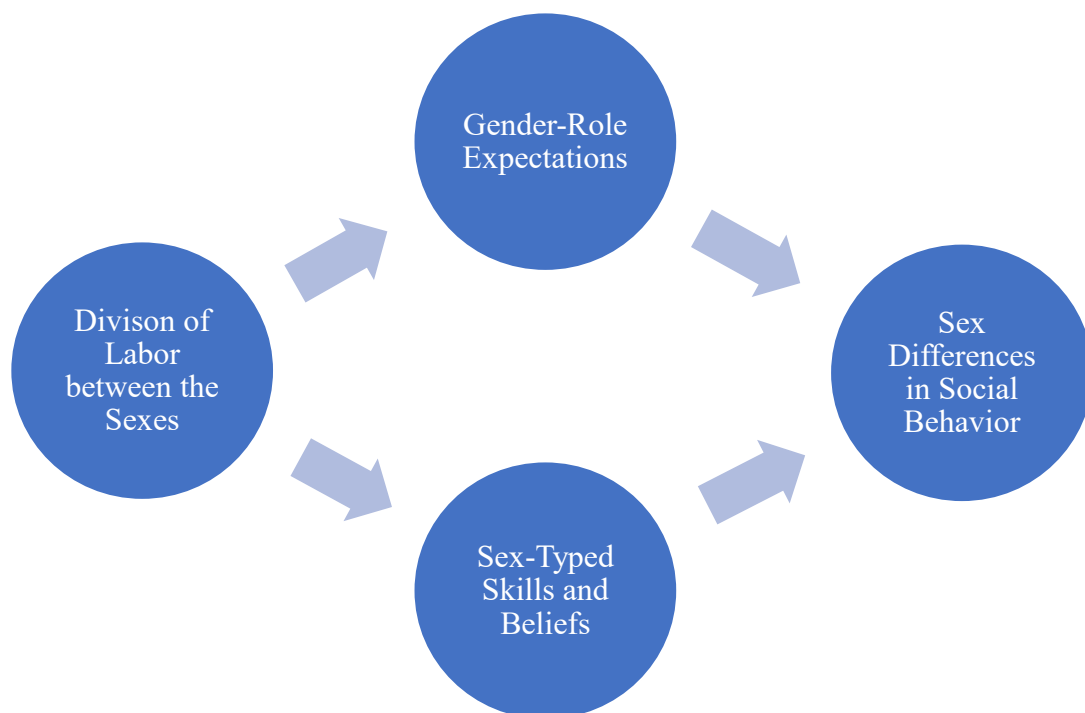
Figure 4: Interdependencies in social role theory, taken from Eagly, 1987, p. 32

It is argued that differences that are observed become and intensify the beliefs people have about a specific social group (Kite, Deaux, & Haines, 2008; Eagly, 1987; Eagly, Wood, & Diekman, 2000). The psychological process describing how traits are derived from observation is called "correspondent inference" (Eagly & Sczesny, 2009). Therefore, I conclude that the cycle described previously does not end with sex differences, but sex differences again lead to the division of labor, starting the sequence all over again.

Kite et al. point out how communion and agency are attached to gender:

> "Women are traditionally in lower-status roles, such as homemaker, and men in higher-status ones, such as breadwinner. Women, then, are disproportionately represented in roles requiring communal traits, such as kindness and concern for others, and men disproportionately in roles requiring agentic traits, such as self-confidence and assertiveness. Observers of these different representations associate the traits required by the social role with the people who occupy that role, and thus conclude that women are helpful and warm whereas men are independent and in charge" (Kite, Deaux, & Haines, 2008, p. 218).

These considerations have then been applied to research on prejudice toward female leaders, the core topic of this thesis.

2.2.2. Basic Assumptions

Eagly & Karau first formulated role congruity theory in 2002, saying that an incongruity between the gender role attached to women and the role of a leader exists (Eagly & Karau, 2002). They argue that this results in prejudice, which occurs when an individual's behavior is incongruent with the stereotyped role model in a certain social role. It is proposed that "there is a perceived lack of fit between the agentic characteristics required of the traditional male roles and women's supposed communal/expressive characteristics, and that this disjunction plays a role in perceptual and evaluative bias" (Kite, Deaux, & Haines, 2008, p. 226). Typical behavioral characteristics that are attached to women contrast with the typical behavioral characteristics attached to leaders, leading to the "violation" of gender stereotypes (Bongiorno, Bain, & David, 2014, p. 218). A violation of a socially accepted and mandated principle is then often countered with aversion (ibid.).

This is based on two forms of prejudice that are predicted by role congruity theory: on the one hand, women are seen as less favorable than men to occupy a leadership role, and, on the other hand, women are evaluated less favorably in a leadership role, even though they comply with the traits attached to a leader (Eagly & Karau, 2002; Eagly & Sczesny, 2009). This is summarized in a descriptive and an injunctive/prescriptive norm:

"The descriptive component (that women *are* less agentic) is demonstrated in prejudiced perceptions of women's *potential* for leadership […] the prescriptive component of this stereotype (that women *should* be less agentic) […] (means that) women who behave agentically once in a leader role remain at a distinct disadvantage due to 'less approval of agentic behavior enacted by a woman compared with a man' […]. That is, prejudice based on this prescriptive stereotype is demonstrated in less favourable evaluations of women's *actual* leadership behavior […]" (Bongiorno, Bain, & David, 2014, p. 218), original emphases).

Roles are hence attached to sexes via learning from reality: the reason why a man takes a leadership role is due to the presumed traits that men hold, and not due to the circumstances or the requirements of the job (Kite, Deaux, & Haines, 2008; Eagly & Karau, 2002). This cognitive process occurs by the combination of gender and leadership role models, where easily-accessible expectations about this combination are activated (Eagly & Karau, 2002). Women being associated with communal traits will be rated as less capable leaders due to divergent expectations between gender and leadership roles, while men will be rated as more capable. This leads to the consequence that women face more difficulties in reaching a leadership position and being successful in this role. Eagly & Karau add that their principle (hypothetically) allows for prejudice against male leaders if their agentic traits are incongruent with a feminine leader role (ibid.). It is quite obvious that prejudice is not always overt but oftentimes implicit (Eagly & Sczesny, 2009).

Eagly & Karau identify a range of moderators that may lead to variability in effect sizes in studies: When it comes to the descriptive stereotype, moderators include the extent of masculinity of the leader role, the sex of the perceiver, the cultural milieu of the research participants and feminine personal characteristics (such as pregnancy or feminine appearance) (Eagly & Karau, 2002). This means, for example, that the evaluation of women's suitability for leadership roles may depend on the degree of masculine traits that characterize the role. If it is less important for the organizational environment to show typical agentic traits, female leaders may be regarded as more competent than if the role is defined solely by these characteristics. Eagly & Karau also note that these role definitions differ across leadership domains, across functional areas within the organization, as well as across the level of the roles in the hierarchy. They show that incongruity is highest in top leadership while lower in middle or first level management. It is also claimed that the sex of the evaluator matters due to the fact that men tend to attach more masculine traits to the leader role than women do. It has to be mentioned as well that male and female perceptions of leaders differ consistently due to

the fact that experiences with female bosses are rare (Eagly & Karau, 2002). Concerning the second type of prejudice, prescriptive stereotypes, moderators include again the definition of the leader role, the adaptability of women to the agentic prerequisites enforced by the definition, as well as the perceivers' personal endorsement of traditional gender roles. The latter depends, certainly, on the sex of the perceiver, the temporal setting of the research and the culture of the investigated group. Research has brought evidence that men endorse traditional gender roles to a greater extent than women, but that this approval has become smaller over time (ibid.; Duehr & Bono, 2006).

2.2.3. Evidence from Research on Role Congruity

Role congruity theory has been used in a vast range of research areas like leadership ability, stereotypes against nationalities, success in the workplace or stereotypes based on age (Eagly, Wood, & Diekman, 2000). Supporting the theory, diverse research domains have found evidence for a discrimination of women at work (Eagly & Karau, 2002): women earn less and are less likely to be promoted than men, women are less likely to be hired for sex-typed positions, women are obliged to perform better to be regarded as competent and women are less likely to be given the role of the group leader. Focusing on more recent research, studies show rather conflicting than uniform findings. The question if stereotypes have changed through a higher presence of women in the working domain is still left unanswered to the full.

In some studies, it has been shown that the stereotype of non-agentic women persists, despite the fact that the perceived gap between the sexes has diminished (Bongiorno, Bain, & David, 2014). In the 21st century women are more likely to estimate themselves and be estimated by others as agentic than in the past. Accordingly, they are assumed to behave even more agentic in the future (ibid.; Diekman & Eagly, 2000; Morton, Rabinovich, & Postmes, 2011). Also, the prescriptive ban for women to be agentic has decreased, i.e. research has shown that both agentic men and women are evaluated similarly (Diekman, 2007). These results have led to the conclusion that the non-congruency of female and leadership-characteristics does no longer have implications on the acceptability of women in leadership positions (Bongiorno, Bain, & David, 2014). This may be due to the open and explicit endorsement of women in leadership in the last decades and would mean a turnaround in gender stereotyping in combination with leadership (ibid.).

However, further developments and research based on role congruity theory have shed light on different and new types of gender discrimination: Bongiorno et al. for example have found evidence that women who do not act agentic, i.e. independent, masterful and determined, are seen as less likeable and lose influence in their leader roles (Bongiorno, Bain, & David, 2014). However, there was no difference in appraisal towards male leaders when they were or were not acting agentic.

Elsesser & Lever discuss the question if gender bias against female leaders persists and come to the conclusion that the answer is ambivalent: while in their study evaluations for the own boss contained little gender bias, the vision of the "ideal" manager was still preferentially the picture of a man. They found cross-sex preferences when rating competence of the leaders, as well as preference for men by women and no preference by men when rating relationship to the leaders. This finding is argued to be connected to a possible intra-gender competition between women. Their study supports role congruity theory in the sense that there were negative sentiments about female leaders made responsible for male preference, even if in general no gender-based preference for a man or a woman as boss was found. A small indication for persisting aversion against women who try to slip in the role of male leaders was also detected in the study. Additionally, there was evidence that having experienced women as their boss, respondents were less likely to prefer a male leader (Elsesser & Lever, 2011).

Supporting the hypothesis that competition between women plays a role for the advancement of women in organizations, Gils et al. find that a so-called "Queen Bee" phenomenon prevails: "senior women compete with junior women" (Gils, Van Quaquebeke, Borkowski, & Knippenberg, 2018).

Ritter & Yoder provided similar results to those of Elsesser & Lever, showing that women who act with typical male dominance (and, in doing so, according to the role characteristic attached to leadership) experience gender-stereotyping and barriers to their success in their leadership roles when performing typical male tasks (Ritter & Yoder, 2004).

Besides this, women tend not to have access to professional networks to the extent men do; neither are they supported by mentors or given insider information like men are (Glass & Cook, 2016). Glass & Cook revealed that women are often assigned leadership roles with high risk to fail and therefore experience shorter tenures in the management position (ibid.).

Elsesser & Lever (2011) claim that empirical evidence for gender stereotyping often depends on the method and on the study participant group: Basically, more support for an existing bias against female leaders was found in surveys with students or future leaders, whereas less support was found when asking actual leaders (Elsesser & Lever, 2011).

An interesting study by Atwater et al. has investigated how different managerial roles are portrayed by business students with a rating of typical behaviors (Atwater, Brett, Waldman, DiMare, & Hayen, 2004). The aim was to understand which practices that are inherent to the managerial job are actually rather linked to male or female gender. Results suggest that tasks like delegating, disciplining and strategic decision-making are typically seen as masculine, while tasks like rewarding, communicating and organizing are typically regarded as feminine. This further supports the notion that women are punished in a leader role that comprises those masculine sub-roles (ibid.; Eagly & Sczesny, 2009). The authors also found evidence for the already discovered phenomenon that women are less likely to gender-stereotype the leadership role as predominantly masculine. Instead, a rather androgynous view of managers prevailed (ibid.; Shore, 1992).

This is also taken into account by Eagly & Sczesny: If change has not happened within gender stereotypes, it may be that the leadership prejudice as a typical male undertaking has changed (Eagly & Sczesny, 2009). Some studies show that prescriptive evaluations of a good leader have become more oriented towards communion, including more characteristics that are typically attached to women (Powell, Butterfield, & Parent, 2002). A "transformational", androgynous leadership style was theorized as being the newly emerged style that is favored in business settings, demanding "soft skills" from managers (Eagly & Sczesny, 2009).

2.2.4. Related Theories & Approaches

Besides role congruity theory, the Lack-of-Fit Model by Heilman has to be mentioned (Heilman, 1983). If there is a perceived lack of fit between the required attributes for a certain workplace and the personal characteristics of the possible holder of this workplace, it becomes more likely that this person is expected to fail in her job. This is rooted in the thought that expectations about the possible success of a worker drives personnel decisions (Heilman, 2001). The better the person fits the job requirements, the more success is anticipated. Gender plays a role as:

> "It is proposed that gender stereotypes and the expectations they produce about both what women are like (descriptive) and how they should behave (prescriptive) can result in devaluation of their performance, denial of credit to them for their successes, or their penalization for being competent" (Heilman, 2001, p. 657).

Heilman explains that the prescriptive female role models also include "should nots" that are mostly male characteristics, meaning that women who act more like men violate the socially constructed role schemata (Heilman, 2001). Quite similar to role congruity theory, the Lack-of-Fit model proposes that gender stereotypes form the foundation for gender discrimination and the glass ceiling. However, role congruity theory combines social-cognitive research and organizational research on leadership in more detail to systematically analyze discrimination at the workplace (Eagly & Karau, 2002).

Interesting in the context of this thesis is also the main argumentation of gendered organization theory, which examines how "men's advantages in the workplace are maintained and reproduced in gender expectations that are embedded in organizations" (Schilt, 2006, p. 467). Acker argues that organizations themselves are not gender-neutral and do therefore favor male presence: "Images of men 's bodies and masculinity pervade organizational processes, marginalizing women and contributing to the maintenance of gender segregation in organizations" (Acker, 1990, p. 139).

2.3. The Information Technology Sector – Global and Austrian Facts on Industry and Gender

It is no coincidence that this thesis is situated in the field of Information Technology. The reasoning, as already addressed in the introduction, is quite straight-forward: As it is a male-dominated field, quotas have a different impact and may be more difficult to achieve. They may even foster more discrimination at the workplace on the basis of gender.

Being part of the STEM (science, technology, engineering, and mathematics) subjects, the IT sector is traditionally one of the study and work fields that is clearly dominated by men (Atal, Berenguer, & Borwankar, 2019). A study by Kirvkovich et al. has brought evidence that in the software and IT branch in the U.S., women represent only 33% of the workforce and only 15% of leadership positions (Krivkovich, Robinson, Starikova, Valentino, & Yee, 2017). While the number of women who actually graduate at university grows and women now hold more bachelor degrees than men in the U.S.,

Atal et al. argue that this has had no effect on labor force participation in general yet (Atal, Berenguer, & Borwankar, 2019).

Strikingly, another study has shown that, within 12 years, the number of all women in the STEM sector who have left their jobs compared to non-STEM professionals has increased by 30%, meaning that female attrition in this field is a real problem (ibid.; Ashcraft, McLain, & Eger, 2016). Family obligations were not the primary motives, a fact that Atal et al. interpret as an indication for a preference for non-STEM occupations in general (Atal, Berenguer, & Borwankar, 2019). They identify six reasons for the underrepresentation of women in the IT sector (ibid).: a low number of female STEM field graduates, a referral-based recruitment and a masculine work environment, lack of development-favoring sponsors or mentors within the organization, gender-biased performance evaluation, lack of flexibility to ensure a positive work-life-balance and implicit biases and tokenism. The former includes stereotyping and discrimination via verbal or nonverbal signs, the latter means that the small number of women is seen as one homogenous group (ibid.). Ashcraft et al. also argue that microinequities, subtle repeated negative messages, devalue women in the tech workplace, which leads to higher attrition rates (Ashcraft, McLain, & Eger, 2016). They also found evidence that women get penalized in tech industry if they act non-compliant to their stereotypical feminine role (ibid.). Contrasting with these findings, Elsesser & Lever examined that female leaders in male-dominated environments are not "penalized for violating role norms" (Elsesser & Lever, 2011, p. 1572) and there is no difference in respect of subordinates in male- or female-dominated environments (ibid.).

Other studies have taken into account role congruity theory and argue that it is role thinking that hinders women from advancement in male-dominated industries:

> "the specific set of competencies required by female leaders operating in a male-dominated industry is shaped by not only contemporary leadership challenges but also social gender role bias and how female leaders are perceived and respected by their male peers" (Esser, Kahrens, Mouzughi, & Eomois, 2018, p. 139).

Johnson et al., in line with Esser et al., speak of "invisible barriers and cultural beliefs that shape the idea that men are better suited for leadership positions" (Johnson, Kiser, & Kappelman, 2018, pp. 1-2). Other research also shows that young women in male-type professions do place themselves in the image that society maintains. For instance, they express the wish for a suitable work-life-balance rather than for a successful career (Danzinger & Eden, 2007).

It can be concluded that evidence from the study of male-dominated environments has led to highly contrasting results. It may be argued that change is ongoing and that some research settings may have been more open to diversity than others.

Compared to these results from international research, the Austrian point of view is of much more interest within this thesis.

Austria holds position four of the EU countries with highest hourly unconditional wage gap (Christofides, Polycarpou, & Vrachimis, 2013, p. 89). "Around 30% of the total gender pay gap is explained by the overrepresentation of women in relatively low-paying sectors, such as care and education." (European Commission, 2019, p. 20). Even though women increasingly enter male-dominated job areas, over 80% of the employees in the science, technology and engineering sectors are male, meaning that men still dominate STEM and ICT (information and communication technologies) industries in Austria (European Commission, 2019). In 2018, only 18% of all employees in ICT in Austria were women (Eurostat, 2018). In the winter term 2017/2018, only 14% of all ICT students of Austrian universities were female (Friedl & Wohlgemuth, 2018). In universities of applied sciences, the percentage of women studying ICT was 21% (ibid.).

A concrete goal of the Association for Business Consulting and Information Technology (Fachverband für Unternehmensberatung, Buchhaltung und Informationstechnologie, short: UBIT) is to bring more women in the industry (Salzer, 2019). There are diverse action measures taken to make STEM job profiles more attractive to women (Prugger, 2019): The "Girls Day" has been introduced as an interaction day with employers for young pupils and students. Another initiative is "Women in Technology and Handcraft" ("Frauen in Technik und Handwerk", short: "FiT"), which supports education and training in professions with a female ratio of less than 40%. Besides arranging information days to give insights about career paths and trainings, "FiT" works closely together with the Austrian Institute of Technology (AIT). The institute stresses the importance of role models that drive change and serve as examples how women can succeed in the IT sector (ibid). The Austrian Computer Society (Österreichische Computer Gesellschaft, short: OCG) has also launched a new working group and platform called "gender#it". The goal remains the same: developing future perspectives for young women in ICT (OCG, n.d.). The Federal Ministry for Transport, Innovation and Technology (Bundesministerium Verkehr, Innovation und Technologie, short: BMVIT) supports women in research and technology with their initiative "FEMtech" ("Women in research and Technology", "Frauen in Forschung und

Technologie") (BMVIT, n.d.). They organize networking meetings and provide a database for female experts. The non-profit association Women and Code offer coding trainings to female classes only, thus fostering young women's interest in coding and IT (Duras, 2019).

The ICT sector in Austria consists of about 16.000 companies with ca. 98% of products being services (numbers from 2016) (Friedl & Wohlgemuth, 2018). With a total turnover of 27,6 billion € in ICT services, the sector forms round 6% of all services in Austria. The center of all ICT activities is Vienna, where almost half of all employees in ICT are working. The industry is constantly growing, and a big potential is forecast by Austrian institutions (bid.). However, a great skills shortage endangers the exploitation of this potential (Salzer, 2019). It is estimated that the economy lacks around 10.000 IT specialists.

When it comes to the number of companies that are affected by the Act of Equality, around a dozen companies in the sector exceed the bound of 1000 employees (CW Fachverlag GmbH, 2018), while around eight companies are listed on the Austrian stock exchange (Wiener Börse AG, n.d.). In sum, there are only around 20 companies that need to comply with the quota set for supervisory boards.

3. Empirical Study

3.1. Research Questions and Hypotheses

From the theoretical framework it has become clear that research has been broad, and that different methodology has led to contrasting results with regards to gender stereotyping and the evaluation of women as leaders. Due to the novelty of women's quotas, there have not been, to my knowledge, studies that directly measure the influence of quotas on gender roles or fairness perception when it comes to advancements.

As there are contradictory findings when it comes to the evolution of gender roles and stereotypes, I investigate on three levels that are built upon each other. First, to be able to check for a maintained incongruity between "female" and "leader", the often-used trait-attribution-to-gender-study has to be replicated. It is to be measured if we can still find those typical social roles in male-dominated organizations, where the effect of a balanced representation in the social situation at the workplace is not present. The first research question therefore reads: 1. Do traditional role attributions to female or male gender prevail in today's organizational society?

If there is evidence for maintained attribution of agentic traits to men and communal traits to women, the question is how a typical leader is described to then check for the presence of an incongruity. Accordingly, as a second level, leadership competence evaluation is to be examined. The second research question therefore targets the interdependency between gender roles and leadership competence evaluation: 2. How do traditional role attributions moderate leadership competence attribution? Connected to role congruity theory, I differentiate between prescriptive and descriptive forms of stereotyping female leaders. The descriptive component can be assessed with the attribution of traits to the ideal leader, while the prescriptive component sheds light on the evaluation of exemplary female and male leaders (based on the concept presented in chapter 2.2.2).

So, the first part of my study focuses on the gender stereotypes and the evaluation of women as leaders. Having examined this, I move on to the effect of quotas on gender equality, stereotyping and fairness perception, asking three more main research questions: 3. How do women's quotas / diversity targets affect gender equality, stereotyping and fairness perceptions? The reasoning I have presented above is that if there is still an incongruity and female leaders are evaluated as less competent, a quota will intensify this

stereotype and gender roles may not change. As an additional research question, it is of interest to investigate: 4. Do men regard the promotion of women into management positions as a result of women's quotas only? As a quota eclipses advancement due to competence or experience, men are expected to automatically perceive the advancement of a woman as unfair. This is why, ultimately, the last research question asks: 5. Are women's quotas seen as a new form of discrimination towards men?

Gender roles

1. Do traditional role attributions to female or male gender prevail in today's organizational society?

Leadership competence evaluation

2. How do traditional role attributions moderate leadership competence attribution?

Women's Quotas effect

3. How do women's quotas / diversity targets affect gender equality, stereotyping and fairness perceptions?

4. Do men regard the promotion of women into management positions as a result of women's quotas only?

5. Are women's quotas seen as a new form of discrimination towards men?

Figure 5 Processual depiction of the research questions according to consecutive reasoning

Along with these research questions, the literature review gives reason to the adoption of the following main hypotheses:

H1: Traditional gender roles still persist in organizations.

H1a: There is a difference in characterization of female and male colleagues: women are rather attributed communal traits, while men are rather attributed agentic traits.

When it comes to gender roles, from a social role theory approach, when focusing on the fact that there are still few but steadily more women entering the STEM-fields and therefore more role-model examples for women in the industry, the traditional gender roles should shift over time (Haines, Deaux, & Lofaro, 2016). However, on the other side, there is strong theoretical support for the assumption that gender roles will be maintained, as society is resistant to examples that are not conform with their stereotypes and will

therefore simply not recognize changing traits or even show aversion towards non-conform behavior (ibid.). It is to be seen as a strategic social behavior to act according to the social norms of a group to be successful (Eagly, 1987). Moreover, acquired skills and beliefs that are congruent with the traditional roles attached to women and men are transferred from the social surrounding to the individual (ibid.). Having in mind these findings and theoretical assumptions, I therefore predict the retention of these roles and a strong presence in today's IT organizations.

> H1b: There is a difference in the competence rating of the colleague: female colleagues are rated less competent than male colleagues.

> H1c: In the overall sample, there is a correlation between the attribution of agentic / communal characteristics and the competence rating of the colleague. The higher the colleague is rated on agentic characteristics, the higher is the competence rating.

Hypotheses H1b and H2b target to control if, independent from a leadership situation, female colleagues are rated as less competent than male colleagues and if there is a relationship between the characterization of the colleague and the competence attribution. If I find support for these hypotheses, effects in the set of H2 hypotheses may partially be explained also by a categorical negative evaluation of women.

> H2: Traditional gender roles support the incongruity between the female and the leader role and affect perceived leadership competence.

> H2a: There is a difference between those respondents who maintain traditional gender stereotypes regarding the characterization of their ideal leader and those respondents who do not maintain those stereotypes. The first group describes their ideal leader rather with agentic than communal behavioral traits (descriptive).

> H2b: There is a difference in perceived likelihood of communal behavior between male and female leaders: Female leaders are rather expected to act with communal behavior than male leaders.

> H2c: There is a difference in leadership competence attribution between male and female leaders: female leaders are evaluated less competent than male leaders (prescriptive).

> H2d: When acting communally, female leaders are evaluated less competent than if male leaders are acting communally.

Concerning female leadership competence attribution, theory predicts that there is a discrepancy or non-congruity between those characteristics attached to women and those attached to leaders: Both sex typing theory and role congruity theory show that women

do not make it to the top of the career ladder, as they are supposed to act differently, more communally than men (Schein, 1973; Eagly & Karau, 2002). While androgyny theory suggests that leaders need both communal and agentic traits, research has shown that managers are rather described with traditional masculine traits (Powell & Butterfield, 1979; Powell, Butterfield, & Parent, 2002). Furthermore, it has been shown that female managers face negative sentiments towards them and that they are claimed to not be capable leaders (Esser, Kahrens, Mouzughi, & Eomois, 2018). Also, adapting to gender roles and behaving in an agentic manner has shown to be of disadvantage to female leaders (Allen, French, & Poteet, 2016). Even though research suggests that the glass-ceiling may be cracked with time and collaboration (Kalev, 2009; Esser, Kahrens, Mouzughi, & Eomois, 2018), still more professionality and competence is expected by female leaders than by male leaders, which stems from the belief that their success cannot be due to their competence, as they are women (ibid.). Summarizing the state-of-the art concerning the competence attribution to female leaders, there is evidence for the non-agentic women stereotype (even though to less extent), but also for the idea that women are no more penalized in the leader role (Bongiorno et al., 2014; Diekman & Eagly, 2000; Diekman, 2007; Morton et al., 2011). Contrasting results have shown that there are new types of discrimination, for instance that women lose influence and standing in the leadership role when not acting agentic (Bongiorno et al. 2014; Elsesser & Lever, 2011) (Ritter & Yoder, 2004). Other studies found evidence that the prescriptive-bias proposed by gender role congruity theory is still in place (Haines, Deaux, & Lofaro, 2016).

In alignment with this evidence, I predict that women and men are still described with the traditional traits attributed to their gender, and that both in the descriptive and the prescriptive form of prejudice women are discriminated by those who keep up these traditional gender stereotypes.

> H3: Women's quotas moderate the relationship between perceived leadership competence and perceived fairness of advancement.
>
> H3a: There is a difference in fairness perception of advancements between a situation without and with quota: In the presence of quotas, men as well as women perceive the advancement of women as less fair.
>
> H3b: Cross-sex fairness ratings: In the presence of quotas, female respondents perceive the advancements of a female fictitious person as less fair than male respondents.

The third level of research then asks for the effect of quotas. In order to investigate the impact quotas have on fairness perception, and to which degree role thinking alters

fairness perception per se, the H3-set of hypotheses tries to address the interdependencies between quotas, perceived leadership competence and perceived fairness. As a recent study has shown that a quota may not necessarily affect the estimation of female leaders in a positive way and may therefore not alter the underlying beliefs about their competence (Kienbaum & BDI, 2016), I predict that stereotyping will intensify. In the advancement situation, I argue that a quota will leave only little doubts that a woman was hired to comply with it and not because of her competence and experience. Men will therefore perceive the promotion as less fair than if there is no quota in place. As outlined in the previous chapter, in contrast to serving as role models (Wang & Kelan, 2013), women in leadership positions may encounter aversion from their female colleagues as they perceive the promotion as unjust (Elsesser & Lever, 2011).

Gender roles
H1: Traditional gender roles still persist in organizations.
H1a: There is a difference in characterization of female and male colleagues: women are rather attributed communal traits, while men are rather attributed agentic traits.
H1b: There is a difference in the competence rating of the colleague: female colleagues are rated less competent than male colleagues.
H1c: In the overall sample, there is a correlation between the attribution of agentic / communal characteristics and the competence rating of the colleague. The higher the colleague is rated on agentic characteristics, the higher is the competence rating.
Role incongruity & Leadership
H2: Traditional gender roles support the incongruity between the female and the leader role and affect perceived leadership competence.
H2a: There is a difference between those respondents who maintain traditional gender stereotypes regarding the characterization of their ideal leader and those respondents who do not maintain those stereotypes. The first group describes their ideal leader rather with agentic than communal behavioral traits (descriptive).
H2b: There is a difference in perceived likelihood of communal behavior between male and female leaders: Female leaders are rather expected to act with communal behavior than male leaders.
H2c: There is a difference in leadership competence attribution between male and female leaders: female leaders are evaluated less competent than male leaders (prescriptive).
H2d: When acting communally, female leaders are evaluated less competent than if male leaders are acting communally.
Women's quotas
H3: Women's quotas moderate the relationship between perceived leadership competence and perceived fairness of advancement.
H3a: There is a difference in fairness perception of advancements between a situation without and with quota: In the presence of quotas, men as well as women perceive the advancement of women as less fair.
H3b: Cross-sex fairness ratings: In the presence of quotas, female respondents perceive the advancements of a female fictitious person as less fair than male respondents.

Figure 6 Summary of the main hypotheses

In addition to the main hypotheses, I have identified some more hypotheses regarding the moderator effects. These have been derived from the literature displayed in chapter 2.

Age of the respondents is expected to have a positive moderating effect on H1a, H2b & H2c & H2d, H3a & H3b +, as previous generations were rather educated traditional gender roles and lived in a society that perceived those gender stereotypes as a fact (based on Diekman & Eagly, 2000).

Gender of the respondent plays a crucial role as research on same-sex and cross-sex effects has not concordantly concluded on the difference between female and male thinking. I expect that men depict women still as the traditional role schema proposes, and also rate female colleagues as less competent (H1a, H1b +) (based on Eagly & Karau, 2002). When it comes to the relation between traditional gender roles and leadership competence, I assume that female respondents attach communal behavior to the same sex to a lower degree than male respondents (H2b -) (based on Atwater, Brett, Waldman, DiMare, & Hayen, 2004). However, the "Queen Bee" effect proposed by literature (Gils, Van Quaquebeke, Borkowski, & Knippenberg, 2018) gives reason to believe that female respondents rate the same sex as less competent to a greater extent than male respondents (H2c +). Nevertheless, agentic behavior of a female leader will be rated as less competent to a greater extent by men (H2d +).

The position within the hierarchy of the organization also moderates the interdependencies: In line with Eagly's proposal, I predict that the higher the respondent's position in the organization, the more they describe their ideal manager with agentic characteristics (H2a +), the more they expect that female leaders show communal behavior (H2b +), and the less is the extent of competence attribution to female leaders (H2c +) (based on Eagly & Karau, 2002). For the quota effect, it is expected that respondents in a high-level role perceive advancements of women as unfair to a greater extent (H3a +).

This moderator is to be analyzed also when it comes to factors in the vignettes, in which fictitious persons are described (see 3.2.1). The position of the hierarchy of this fictitious persons is defined by age, team size, experience and income of the person.

As soon as the respondent has had experience with a female leader, I predict that the leadership competence attribution will be higher (H2c -) and that female leaders are not punished when behaving agentically (H2d -) (based on Elsesser & Lever, 2011).

Also, if respondents are / have been leaders themselves, they are supposed to have less gender stereotypes against female leaders (H2 -).

As argued, the male-domination of the IT sector leads to the assumption that respondents who operate directly in IT business departments maintain traditional gender roles to a greater extent (H1 +), that the incongruity between the female and the leadership role is higher and therefore the perceived competence of female leaders is less (H2 +), and that advancements of women triggered by a quota is perceived less fair by these respondents (H3+).

Age	H4: The older the respondents, the stronger the effects of H1a, H2b & H2c & H2d, H3a & H3b.
Gender	H5: For male respondents, effects of H1a & H1b & H1c, H2a & H2d are stronger.
	For female respondents, the effect of H2b is weaker.
	For female respondents, the effect of H2c is stronger.
Position in organization of role (low-middle-high level in hierarchy)	H6a: The higher the *respondent's* position in the organization, the stronger is the effect of H2a, H2b, H2c and H3a.
	H6b: The higher the *fictitious person's* seniority level, the stronger is the effect of H2b and H2c.
	H6c: The higher the *fictitious person's* seniority level, the weaker is the effect of H2d.
Experience with female / male leader	H7: In presence of experience with a female leader, the effect of H2c and H2d is weaker.
Self-experience in leadership	H8: If respondents have been leaders themselves, the effect of all H2 hypotheses is weaker.
Department (Business, Support functions)	H9: For respondents employed in IT business departments the effects of all subsets of H1, H2 and H3 are stronger, while for respondents from support functions they are weaker.

Figure 7 Hypotheses of moderator effects

For a better understanding I've tried to summarize the interdependencies I suggest: traditional gender roles lead to the attribution of communal and agentic traits to gender. This attribution moderates the perceived leadership competence. Women's quotas then moderate between perceived leadership competence and perceived fairness of advancement. On the right-hand side, I have listed the moderators that affect the

relationships, them being age and gender of the perceiver, level within the organization, experience with female leaders, self-experience in leadership and department.
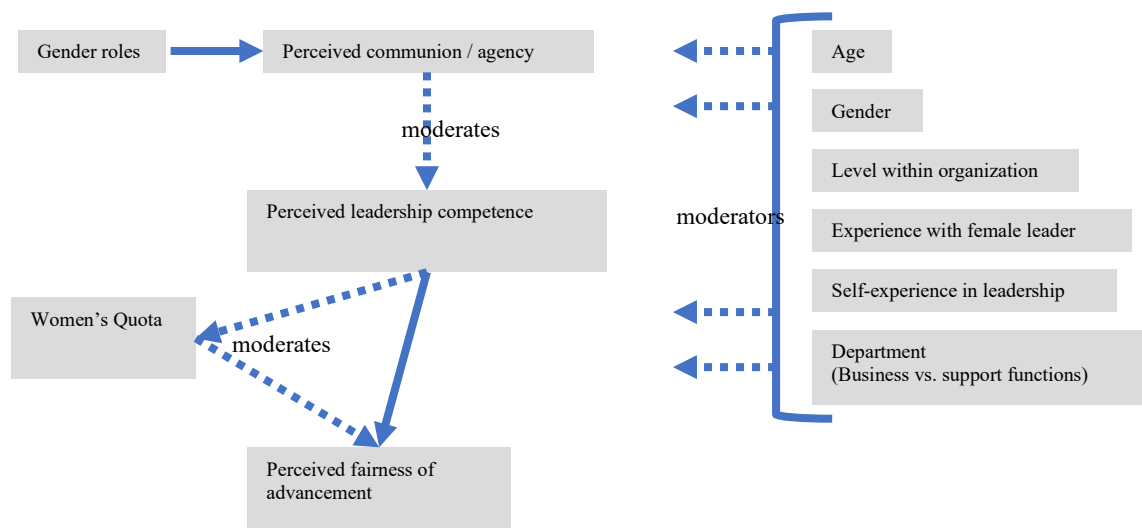
Figure 8 Research Model

3.2. Methods

As I have explained in the beginning, the quota effects will be even stronger in industries, in which women are scarcely represented, that is why only employees in the IT sector in Austria are identified as research population. The operationalization of the study has first been thought to consist of qualitative research, combining literature review and in-depth, semi-structured interviews with female and male leaders of Austrian companies in the IT industry. However, the delicate and personal character of the research proposition prevents a qualitative method to be the instrument of choice, as interviewees may not report truthfully on their preferences for female or male managers, or on the fairness perception of quotas in face-to-face interviews. Therefore, a quantitative, experimental research design was eventually selected. A questionnaire provides the necessary anonymity that encourages respondents to answer honestly and they are not influenced by social desirability to such a great extent.

3.2.1. Questionnaire

Data collection took place with a cross-sectional between-subjects online (self-administered) questionnaire with treatment element. The latter is the introduction of a quota policy in a hypothetical advancement scenario. The questionnaire is a combination of open- and closed-ended questions as well as factorial design questions (vignettes). "Vignette experiments typically employ short, systematically varied descriptions of situations or persons to elicit the beliefs, attitudes, or behaviours of respondents" (Steiner, Atzmüller, & Su, 2016). The respondents are asked to evaluate hypothetical situations and by systematically varying the factors within the descriptions, their influence on the respondents' attitudes, decisions, or choices can be determined (Atzmüller & Steiner, 2010). The combination of classic survey elements and vignette elements enhances external validity, compared to traditional experiments, as well as internal validity, compared to traditional questionnaires, and with that the representativeness of the study (ibid.). The questionnaire was distributed via snowball sampling, i.e. mail, social media (LinkedIn, xing) to the individuals.

The research instrument was designed as such to be able to investigate all three levels: gender roles, leadership competence attribution and fairness perception of advancements. Through the between-subject design, respondents were randomly assigned either to rate a woman or a man throughout the questionnaire. For the indication

of (dis-) agreement to the presented scenarios as well as for the rating of behavioral characteristics, a five point likert scale with the degrees "not at all", "slightly", "moderately", "very" and "completely" was used.

The survey was implemented on the online data collection tool soscisurvey.de, which was used to the full by enabling all study-relevant variables like e.g. duration of each respondent and the drop-out rates, which will be analyzed in the next chapter. After the introductory words and consent form, which ensures that only employees in the IT sector filled in the form, the socio-demographic details of the respondents were addressed: gender (male / female / diverse), age, functional area in company, level within the hierarchy, annual gross income and home city of the company were inquired. The latter was implemented to reveal possible effects coming from specific beliefs or attitudes within one organization, for which the location can be a proxy and was therefore incorporated in the analysis as control variable.

The second part intends to elicit the beliefs respondents had towards men and women in general, i.e. the extent to which traditional gender roles persist in their thinking. I therefore selected five agentic and five communal traits that were proposed by Eagly's social role theory: "aggressive", "self-confident", "dominant", "ambitious" and "independent" are attributes linked to agentic behavior, "helpful", "affectionate", "gentle", "caring" and "fair-minded" linked to communal behavior. The respondents first rated a female (Group 1) or male (Group 2) colleague who has similar responsibilities to the respondent. As an additional question, respondents rated the overall competence of their colleague. This is included due to the fact that the relationship between the adjectives attached to the colleague and the overall competence can help to understand if traditional gender perceptions are judgmental per se.

Question group number 3 addresses the leadership competence attribution. First, a hypothetical scenario was introduced, which describes a leader in the IT sector. Additional information given was gender and age, years of experience, team size and annual gross income. The respondents were then asked to rate to which degree they think it is likely that this person is going to praise the team and hold a feedback round after a successful project. This question triggers the evaluation of male and female leaders' communal leadership behavior (feedback and praise). Continuing with the first described person, different outcomes of the last project are combined with either the information that the person acted communally or not. Within those four scenarios, the respondents rated the leadership competence of this person. To investigate the effect of the moderator

variables that proxy for seniority (age, income, experience and team size), three different vignettes were created, leading to a total of 3x4 vignettes per group:

Project outcome	Successful		failure
Reaction	No praise – directly to next project		Praise – feedback round

Name (Group 1)	Sophia	Miranda	Sabrina
Name (Group 2)	Robert	James	Benjamin
Age	35	26	48
Years of experience	11	2	24
Leader	6 employees	2 employees	4 teams
Annual gross income	55.000,-	30.000,-	85.000,-

Figure 9 Matrix for question group 3 – descriptive leadership competence rating

Question group 4 targets on the fairness perception of advancements. Another scenario was introduced, in which either Olivia (Group 1) or Gabriel (Group 2) need to select their successors. Four different possibilities are given, the decision is always between a female and a male team member, who has either shown high performance and is very experienced or has not shown much effort and is short on experience. Respondents rated how fair the decision appeared to them. This sums up to 4 ratings for the classical advancement situation. As a second step, a 50% women's quota in all managerial roles is introduced as another scenario. The respondents rated the same items as beforehand plus the extent to which they think that the quota influenced the decision for every vignette. Question group 4 therefore sums up to 4 + 4x2 ratings per group:

Name of advanced team member	Charlotte	William	Stephanie	Thomas
Working attitude	High	High	Low	Low
Experience	High	High	Low	Low

Figure 10 Matrix for question group 4 – fairness evaluation of advancement

Question 5 consists of the characterization of the ideal manager, i.e. the prescriptive leadership construct. On the basis of the same attributes used in question 2, respondents rated to which degree these communal and agentic traits are desired when it comes to their ideal leader. This question was intentionally positioned as the penultimate item, as an initial position could have led to a strong sequencing effect on the answers provided in question sets 3 and 4.

The sixth and last set of questions regards the leadership experience of the respondents, the experience with female / male leaders, and the gender of the best manager the respondents identified in the course of their professional life. To estimate the opacity of the questionnaire, I have integrated an open question field where respondents could enter what they thought that the purpose of the study was.

A pretest with n=10 led to the revision of the questionnaire when it comes to wording and ordering. Data collection took place from 29th of January until 29th of February 2020.

3.2.2. Risks

As with any research there are pre-study risks to bear in mind. One risk is naturally, whenever the questioning of subjects is central, to get access to the respondents, a problem that was addressed using many different ways to forward the questionnaire to possible respondent groups. For instance, while there were many contacts from my professional network, the Silicon Alps Cluster was also contacted. All in all, 160 IT companies were asked for their contribution.

Another possible challenge lies in the sampling of the participants. To avoid systematic bias, I have added some control variables that allow to test the representativeness of the samples for the population: socio-demographic variables as well as variables attached to the work environment. Snowball sampling limits the randomness of the sampling in the way that those who receive the enquiry decide on whom to forward it. Detailed estimates of the sample parameters will be given below.

Concerning the method, there are various risks that have to be mentioned: there may be variables which were left unmeasured but from which the used variables depend in one way or another. Those missing variables may explain some of the variation and interdependencies I find. For instance, organizational culture could not be considered. In a second study, one could include perceived masculinity or the ratio women/men in the organization. Also, it could be asked whether the company had diversity targets in place. Questions on the influence of company culture on gender roles go beyond the scope of this thesis. However, there is reason to further investigate this as "each organization has its own unique expression of gender inequity, with its roots of discrimination deeply embedded in its systems, practices, and assumptions" (Ngo, Foley, Wong, & Loi, 2003, p. 229) cited from (Meyerson & Fletcher, 2000).

Also, other context variables may affect the relationships developed in my model: "factors such as the duration of managers' interactions with their subordinates, the level of success they have experienced in their jobs, and the nature of their managerial assignments affect the extent to which managers are viewed in gender-stereotypical terms" (Powell, Butterfield, & Parent, 2002, p. 190).

Even though I stuck to the methodological specifications made by earlier research, it is questionable if the question items in the questionnaire do proxy traditional gender roles enough to capture gender role thinking in the workplace domain. Additionally, a social desirability impact may lead to biased answering. Also, sequencing effects need to be kept in mind. To account for these effects, a much higher number of respondents would be needed to implement alternating sequences of the questions.

The possible generalizations upon the results is limited to IT companies and there is no possibility to investigate contrasts to other industries. The setting of the questionnaire is a typical IT project setting, making it difficult to replicate in another industry. However, further investigation could try with a different question design and somewhat generic vignettes.

3.2.3. Statistical modeling

The data was evaluated with the statistical program SPSS 25. The level of significance was set at $p < .05$. To corroborate or reject a hypothesis these statistical tools were used: independent samples t-test, paired samples t-test, multiple regression and ANOVA.

To calculate mean differences between two independent samples, the independent t-test was used. To calculate mean differences between two dependent samples, the t-test for paired samples was used. "The t test is a test of significance and we seek evidence for a statistically significant difference between populations based on the sample information we have" (Hinton, 2004, p. 69). The applicable requirements such as interval scale level, normal distribution of the data or a group size with $N > 30$ and homogeneity of the variances were ensured before use. If the normal distribution resulted as not given, this can be attributed to the sensitivity of the test to large samples (Field, 2018). The Levene's test was used to test the homogeneity of the variances. If a significant result exists, this indicates heterogeneous variances, which is why the test of the hypotheses was carried out using the modified t-test.

Simple variance analysis or one-way independent ANOVA (Field, 2018) was used to calculate mean differences between more than two independent groups. Again, the

applicable requirements such as interval scale level, normal distribution of the data and homogeneity of the variances were checked before use. In case of a positive Levene's test, the hypothesis test was carried out using non-parametric methods. If the requirements were not met, the Kruskal-Wallis test was used instead of the ANOVA. If a significant result is available, significant differences between the groups were calculated using the Mann-Whitney test.

A regression analysis was also carried out. A value (outcome) is predicted using one or more predictors. The applicable requirements such as interval scale level, normal distribution of the residuals, linearity, homoscedasticity, independence of the data and the residuals and no multicollinearity were ensured.

To determine the internal consistency, Cronbach's alpha was calculated for the characteristics which were used for the description of a colleague as well as the ideal manager. The higher their correlation the better they describe the same concept. For the male characteristics, the value was .559, for the female characteristics .782. An α of .7 or greater indicates internal consistency, i.e. these values can be interpreted in the way that the chosen male attributes do not measure a consistent construct (Hinton, 2004). This should be taken into consideration when replicating the study.

4. Results

4.1. Descriptive analysis

In this section, response items are described with the help of frequency distributions, means and standard deviations. Additional Tables and Figures can be found with their corresponding number in the appendix.

Participant report and timeline

A total of 1051 views (clicks) were recorded for this questionnaire (including accidental double clicks, searches by search engines, etc.). In total, 375 surveys were completed. Figure 11 shows the temporal sequence of responses. Most responses were registered on the 12th of February.
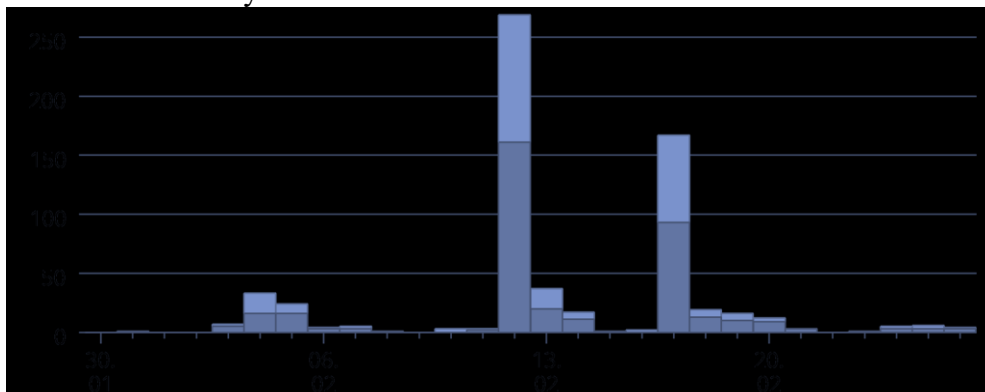
Figure 11 Timeline of data collection

Demographic statistics

Being a prominent variable in this study, gender is prioritized in my results as well. As Table 18 (see appendix) shows, out of 375 valid cases, 272 of respondents were male, 100 were female, and 3 considered themselves as of diverse gender. Even though the IT industry is male-dominated, almost 30% of the respondents were female, which stabilizes the results. Compared to the Austrian ICT sector, in which only 18% are female, the number of answers from women in the sample are above average. Figure 12 depicts the gender distribution.
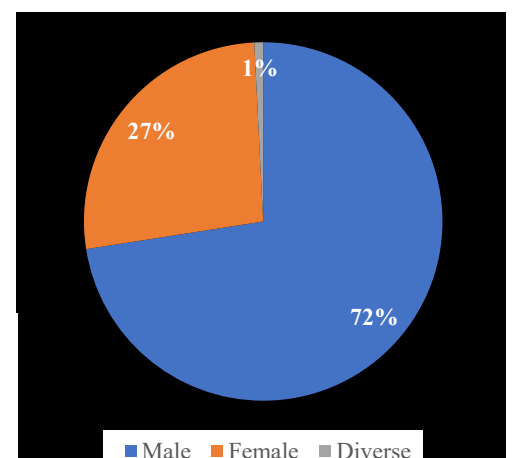
Figure 12 Gender distribution in percent

Concerning age, most participants were between 48 and 57 years old, the mean amounts to 41.36. Three answers were invalid. The boxplot (Figure 13) shows the distribution, Table 19 summarizes the respondents in age groups.
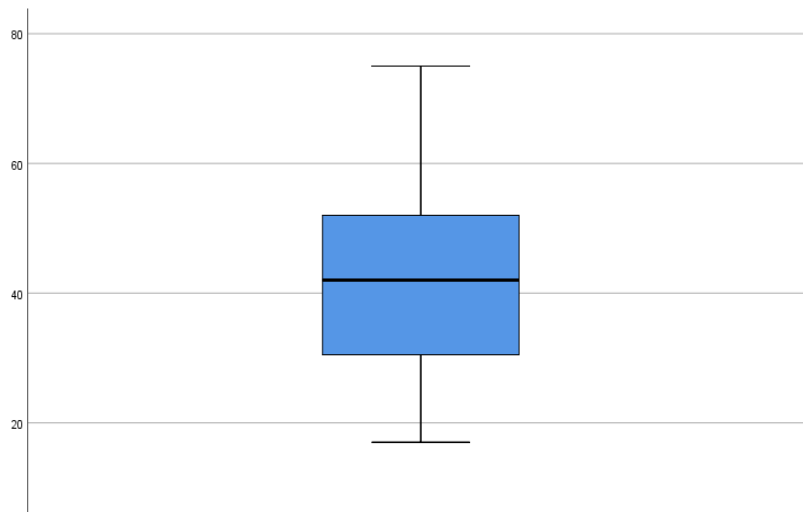
Figure 13 Age distribution

Analyzing the locations of the headquarter of the companies, there is quite a variety out of almost all federal states in Austria: While most respondents' companies are headquartered in Vienna, there are more than 70 with location in Innsbruck and 16 in Linz. Five answers were invalid. Table 20 summarizes the distribution and Figure 14 illustrates the locations on a map.

Figure 14 Graphical representation of the headquarters of the companies (map taken and adapted from Wikimedia Commons contributors, 2020)

Statistics on work-related variables

The distribution of respondents in departments reveals that most respondents are directly out of the core business functions (72%), while 28% belong to support functions (Figure 15, Table 23). In contrast to the expectations, it seems that the call for distribution among the employees was fruitful. Gender being a Human Resources related topic, I had anticipated that the questionnaire would remain among employees in this organizational department.

58% of all respondents are men and work in IT business functions, while 15% work in support functions. Both the category female – core functions and female – support functions are each made up by 13% of all respondents (Figure 16). It is not surprising that the share of women in support functions is considerably higher than in IT business functions, as support functions typically consist of commercial occupations.
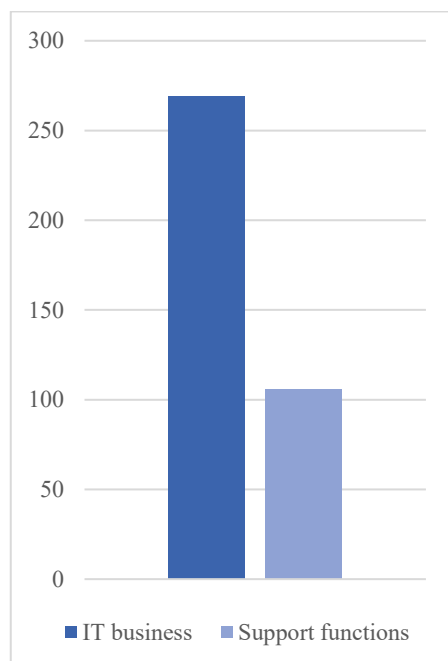
Figure 15 Totals of departments
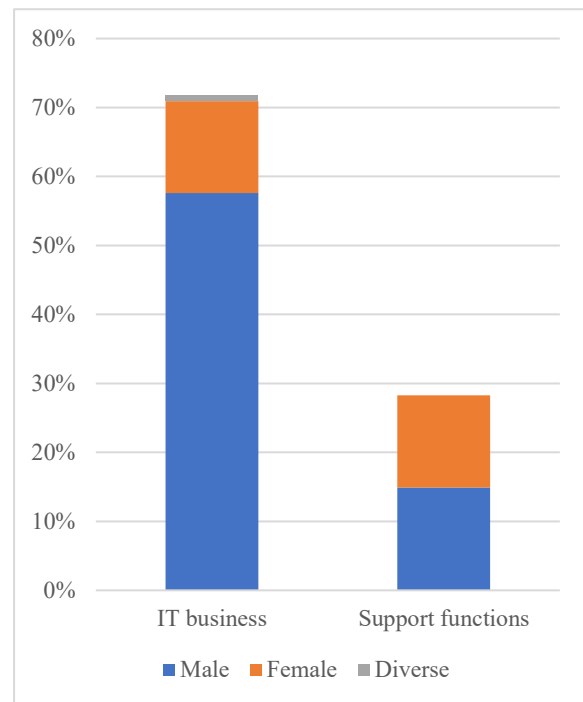
Figure 16 Respondents from core business functions vs. Support functions and corresponding gender distribution in percent

When it comes to the hierarchical level within the organization, Table 21 and Figure 17 show that most respondents do not have managerial responsibilities in their current position. Respondents in top-level management accounted only for 5% of the sample. Even if the representation of executive leaders in the sample is low, I can still draw conclusions from the following results, taking into consideration this distribution.
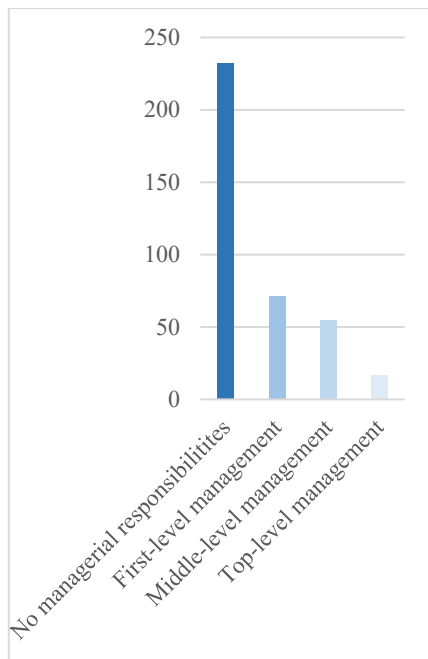
Figure 17 Totals of hierarchical levels
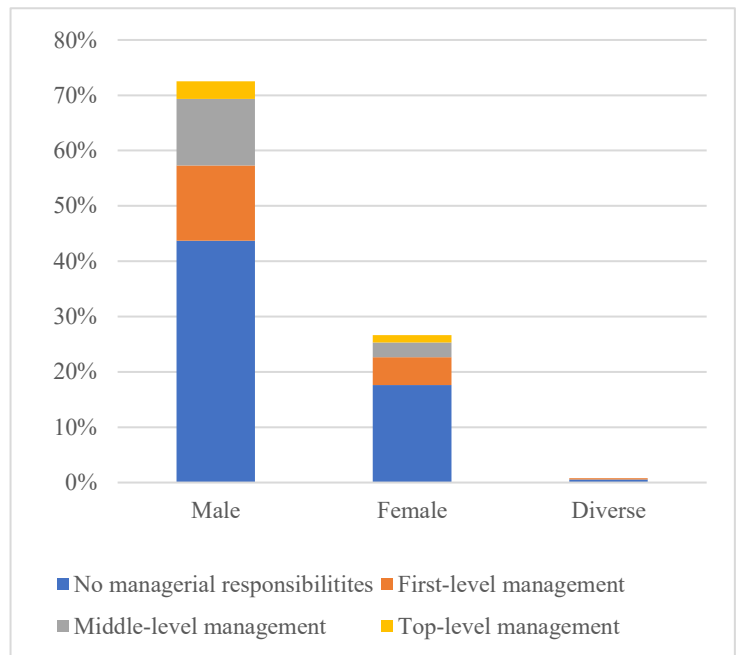
Figure 18 Respondents in hierarchical levels and corresponding gender distribution in percent

Figure 19 shows the distribution of female and male respondents and their corresponding position in the hierarchy. It is notable that, looking at the percentages within the gender categories, women in the sample are less represented in middle-level management and more female respondents hold positions in the lowest hierarchical level compared to male respondents. However, there is no statistical significance for this difference (p = .293).
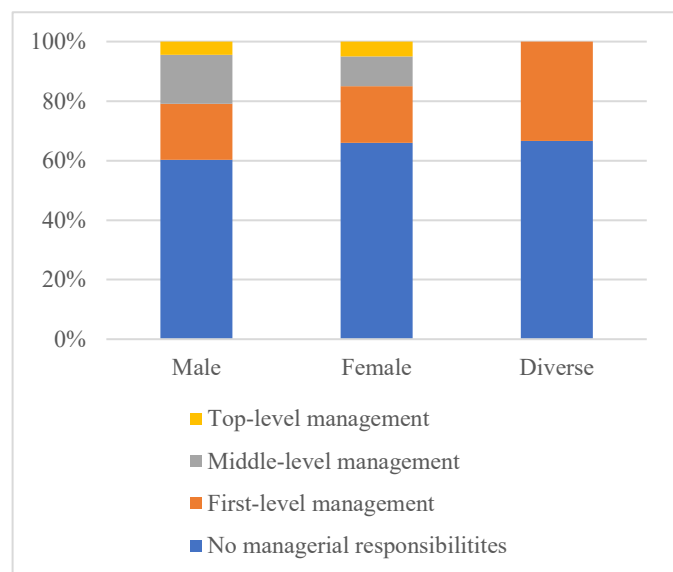
Figure 19 Percentages within gender categories of respondents in hierarchical levels

The distribution within the salary categories does not precisely correspond to the level within the hierarchy. Most respondents earn between 55 and 85k €, annually (gross), which I assumed to correspond to the first and middle-level management positions (see Table 22 and Figures 20 & 21). Possibly, the salary ranges given were set to low. This was also a remark given by one respondent. Facing the skills shortage on the labor market, salaries increase and there may be high discrepancy between employers regarding the remuneration of their employees.
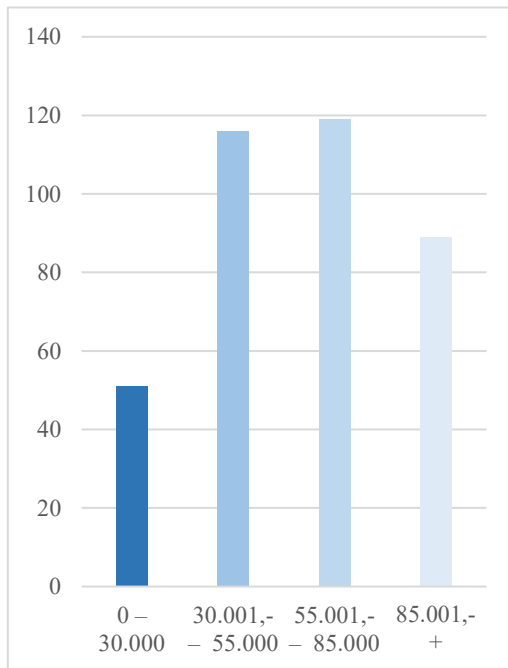
Figure 21 Totals of annual gross salary groups
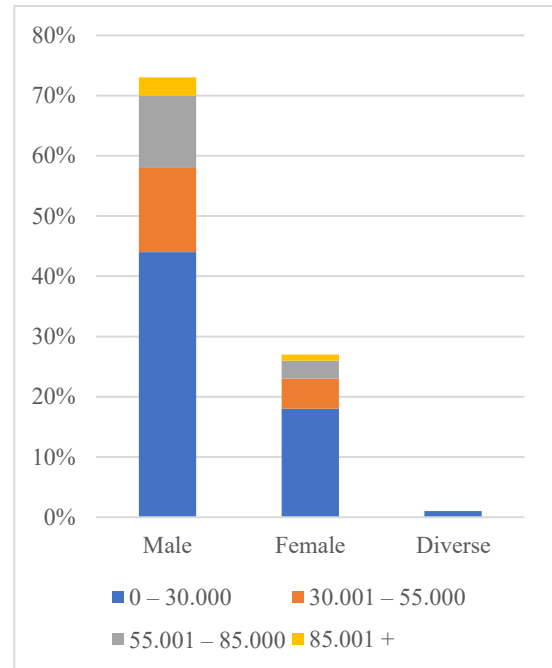
Figure 20 Respondents in salary groups and corresponding gender distribution in percent

As Figure 22 reveals, women are higher represented in the lowest salary range than men, even though there are proportionately more women in the highest salary range. As I asked only to pick the salary range and not to indicate a number, it is not possible to look at the mean salary for each gender within the hierarchy groups, which could have underlined a gender wage gap.
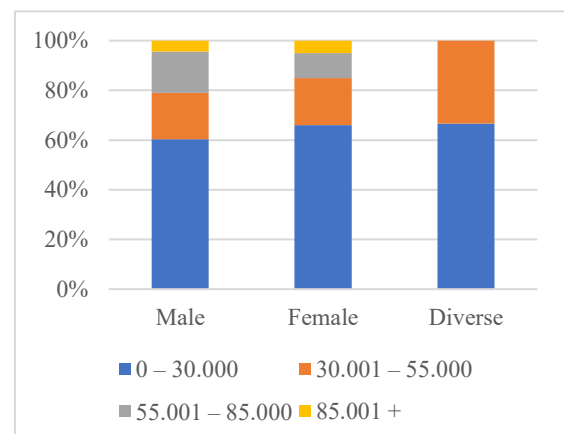
Figure 22 Percentages within gender categories of respondents in salary groups

When it comes to the experience with male and female managers in the past, the mean of female managers is 1.29, while the mean for male managers is 5.74. As expected in the male-dominated industry, it is more likely to have a male manager than a female manager. Not considering those who reported zero experiences, male respondents had on average 1.86 female and 6.25 male bosses, while female respondents had on average 2.50 female and 5.48 male bosses.

In the overall sample, 86% indicated that their best manager has been male, while for 14% a female manager was the better manager (see Figure 24). Comparing the answers for female and male respondents who have experienced both a female and a male leader in the past, I found that 32% of female respondents think a woman has been the best leader, while only 16% of men do so (see Figure 23). For respondents who described themselves as of diverse gender, one reported a woman to be the best manager and one a man. This can be interpreted as that men, when asked directly, consider women as less capable managers. However, it has to be taken into consideration that the contact with female managers has on average been lower, i.e. there may have been less chance to have a positive impression from female managers just because there was only little experience with them until now. There is also a difference between male and female respondents when it comes to the mean number of female and male managers in the past: male respondents have had on average 1.86 female managers and 6.25 male managers, while the means for female respondents were 2.50 and 5.48, respectively. Still, in comparison to these mean values, twice as many women than men have reported their best manager to be female.
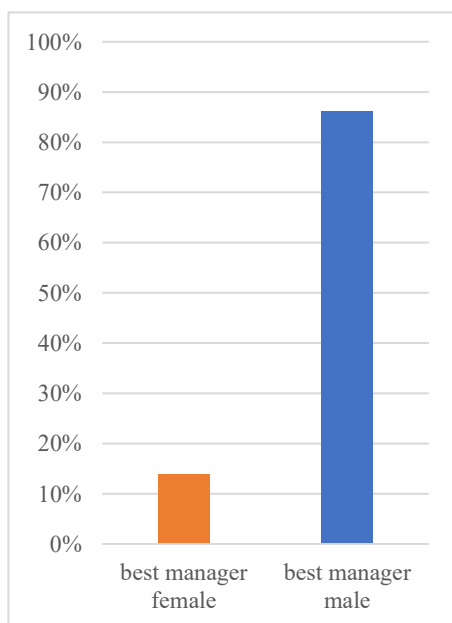
Figure 23 Distribution of gender of best manager in percent
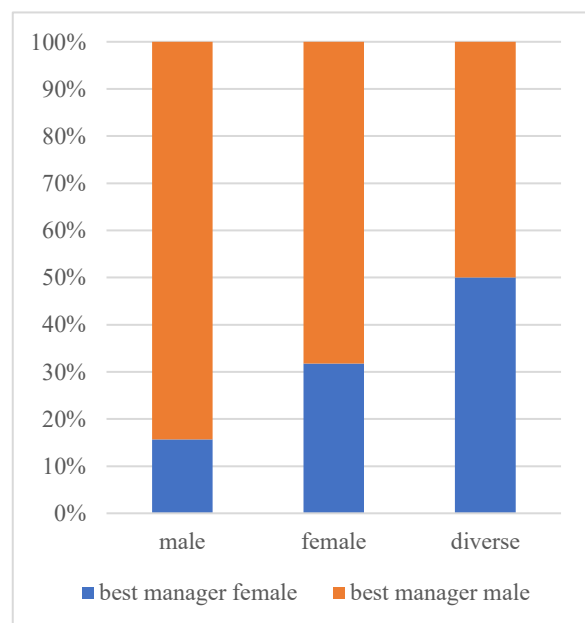
Figure 24 Percentages within gender categories of respondents who indicated their best manager to be fe/male

Purpose of the study

The aim was to make the study as opaque and subtle as possible so that the influence of social desirability remains small. That is why an open question on the purpose of the study was implemented at the end of the survey. 168 respondents did not give any response. Given answers show that mainly three categories of topics were noted down: perceptions of male / female, influence of gender on succession plans, influence of female quotas. I can deduct that people have mainly understood what the survey is about, however, with the existence of group 1 and 2, people could not know that it is about the differences between a female and male decision maker.

4.2. Data Quality and Methodological Analysis

Drop-outs

As we can see in Table 24, approximately 42% of all participants who landed on the introductory page of the questionnaire, dropped out in the course of the survey. Most drop-outs were recorded on page 1, 2 and 6. Page 6 corresponds to the start of questions sets 3a with the first appearance of vignettes. It may be that respondents felt it too difficult to rate the vignettes or that they were not willing to answer the volume of questions presented on that page.

Response Time

The mean response time amounts to 29 minutes. The standard deviation is 0.148. There are two outliers with a response time of 69 and 4 ½ hours, which seem to drive up the mean. Also, there are in sum 12 respondents who needed more than an hour to complete the questionnaire. Most time was spent on page 11. One explanation could be that respondents started the survey, stopped working on it and continued at a later stage. Figure 25 shows the distribution of response times, after having removed all durations above one hour.
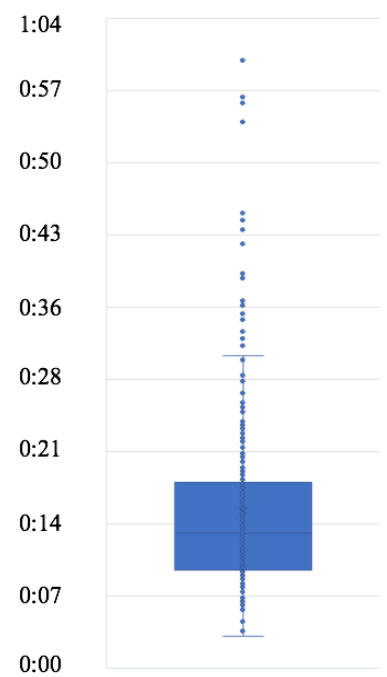
Figure 25 Boxplot Response Time

Group distribution and coherence

The assignment to group 1 (rating of a female fictitious person) and group 2 (rating of a male fictitious person) occurred randomly. Table 25 shows the frequency of each group. 26% of all respondents were male and were assigned to group 1, while 30% were assigned to group 2. 23% were female and rated a woman, while 19% rated a man (see Figure 26).
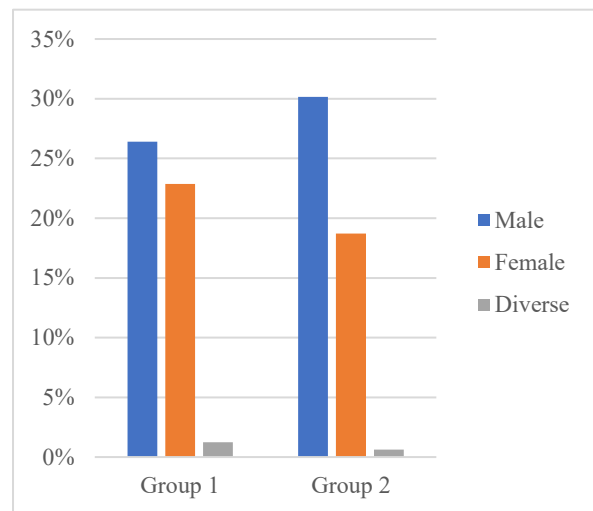
Figure 26 Distribution of gender within random group assignment in percent

A prerequisite for the testing of the hypotheses is that group 1 and group 2 do not differ significantly with regards to the control variables age, gender, hierarchical position in the organization, leadership experience and functional area so that results are consistent. For age, a t-test for independent samples has brought no significant difference ($p= .721$). Gender was tested with a Pearson's chi-squared test of independence, also resulting in no significant difference ($p= .302$). Neither for the level within the organization ($p= .130$) nor the previous leadership experience ($p= .212$) a difference was found. Same goes for the functional area ($p= .490$). I conclude that the two groups do not differ regarding those variables.

4.3. Hypotheses testing

The results of the hypotheses tests are analyzed on the next pages and presented graphically for better analysis. I have decided to use diverging stacked bar charts to plot the likert scale responses in percent, which is the recommended form of graphical presentation of likert data (Robbins & Heiberger, 2011).

4.3.1. Gender Roles

H1a: There is a difference in characterization of female and male colleagues: women are rather attributed communal traits, while men are rather attributed agentic traits.

Comparing means of the traits rated in question 2 a), we can see that both groups have on average responded quite similarly (Table 1 and Figure 27). Both female and male colleagues were described as very "helpful", "self-confident" and "fair-minded", while rather not "aggressive", "dominant" or "affectionate". It can be highlighted that female colleagues were clearly rated higher on aggression, ambition, dominance and independence, while male colleagues were rated higher only on self-confidence. This is contrasting with the assumption that agentic traits are rather associated with men.

Question 2 a) Mean comparison & t-test results					
Item	Group	N	Mean	Std. deviation	Sig. (two-tailed)
aggressive	female	184	1.89	1.026	.013
	male	191	1.63	0.936	
helpful	female	184	3.90	.926	.402
	male	191	3.82	.919	
self-confident	female	184	3.73	.901	.169
	male	191	3.85	.858	
dominant	female	184	2.76	1.173	.262
	Male	191	2.62	1.107	
affectionate	female	184	2.88	1.014	.401
	male	191	2.79	.928	
gentle	female	184	3.27	.982	.923
	male	191	3.26	1.008	
ambitious	female	184	3.74	.800	.059
	male	191	3.58	.925	
independent	female	184	3.78	.909	.414
	male	191	3.71	.887	
caring	female	184	3.48	.952	.130
	male	191	3.33	.941	
fair-minded	female	184	3.90	.938	.692
	male	191	3.86	.921	

Table 1 H1a Mean comparison question 2a) & t-test results
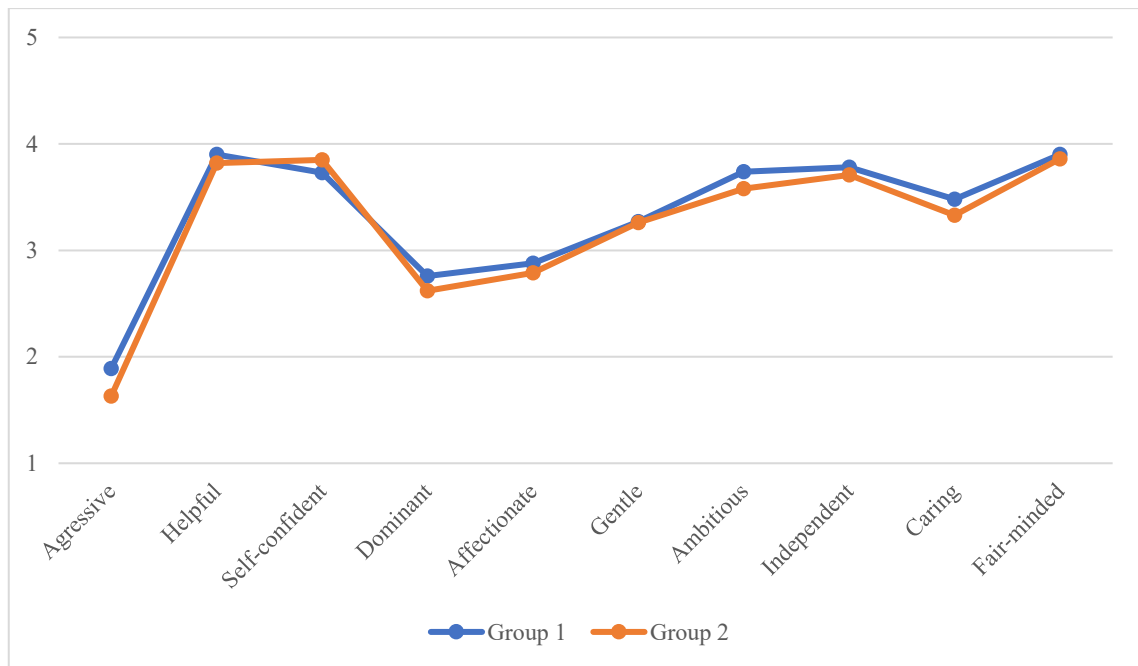
Figure 27 Group comparison of means of rating on question 2 a) (Fe/male colleague)

However, the t-test for independent samples on a difference between the characterization of female and male colleagues (Table 1) has brought these results: there is a significant difference between the groups only in the rating of aggressiveness (p = <.05), while all other comparisons have not revealed significant differences. H1a can, however, not be supported, as women were characterized as more "aggressive" than men. As there is no support for the hypothesis, age and gender moderator effects cannot be considered.

H1b: There is a difference in the competence rating of the colleague: female colleagues are rated less competent than male colleagues.

A t-test for paired samples was used to test H1b. As can be seen in Table 2, the test showed no significant difference between the groups regarding the assessment of competence (p = .554). The null hypothesis cannot be disproved. Nevertheless, there is a small difference between the mean values. As Figure 28 shows, there is a higher percentage in group 1 who rate their female colleague as "not at all competent", but also a very high percentage to rate her as "completely competent". Group 2, i.e. male colleagues were rated more frequently as "very competent".

T-test results					
Item	Group	N	Mean	Std. deviation	Sig. (two-tailed)
competent	female	184	4.04	.832	.554
	male	191	3.99	.754	

Table 2 H1b Mean comparison question 2b) & t-test results
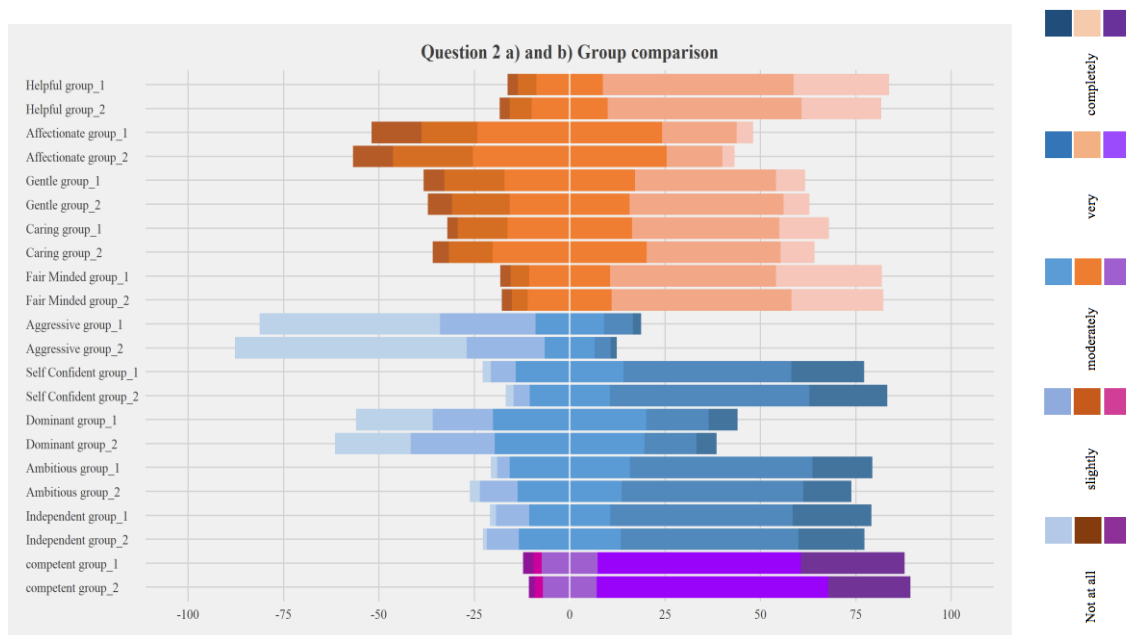
Figure 28 Group comparison of percentages of answers on question 2 a) and b)

Even though there is no support for H1b and therefore the moderator hypothesis about gender cannot be verified, it is interesting to look at the percentages of the ratings on the likert scale by male and female respondents within the groups (see Figures 33 and 34 in the appendix). There is an indication that women rated their female colleague (i.e. group 1) higher on communal traits and lower on agentic traits compared to male respondents. The only exception is independence, which female respondents rated higher than male respondents. Competence rating turned out higher by female respondents compared to male respondents. 85% of female respondents rated their colleague "very" or "completely competent", compared to 80% of male respondents. For group 2, interestingly, male respondents rated their male colleague higher on communal traits, lower on aggressiveness, self-confidence and dominance, but higher on ambitiousness and independence, compared to female respondents. Also, for all of the characteristics, the difference in the attribution level was much higher than in group 1, meaning that women and men rated more similarly in group 1, while opinions diverged to a greater extent when it comes to male colleagues. Male respondents rated the competence of their male colleague higher than female respondents. 83% of male respondents rated their same-sex peers "very" or "completely competent", compared to 78% of female respondents.

H1c: In the overall sample, there is a correlation between the attribution of agentic / communal characteristics and the competence rating of the colleague. The higher the colleague is rated on agentic characteristics, the higher is the competence rating.

A multivariate linear regression model was used to examine question H1c. It was tested whether the predictors "total value of agentic characteristics" and "total value of communal characteristics" can predict the level of competence rated. For this purpose, I have taken each five gender-specific traits together and built a mean value for each respondent of their responses in question 2 a). Gender of the respondents was considered as a control variable (note: in order to include gender in the regression, it has to be dichotomous, i.e. only male and female were considered).

As can be seen in Table 3, the regression analysis showed that model 1 achieved a significant effect with the predictors, $R^2 = .377$, $F = 44.387$, $p = .000$. I.e. 38% of the variance in the competence rating can be explained by the independent variables (characterization). The level of assessment of the characteristics of the colleague influences the assessment of competence. As both regression coefficients B are positive, we can deduct that the higher the rating on communal traits, the higher the rating on competence. As the total value for communal traits increases by 1, the competence rating increases by 0.652 (unstandardized coefficient). Gender of the respondent has no significant effect as an additional independent variable, i.e. there is no difference in the competence rating if the respondent was a man or a woman. Neither the interaction between the two variables total value_communal traits and gender nor between total value_agentic traits and gender has brought significant results. Gender is therefore no moderator in H1c. The alternative hypothesis H1c cannot be supported.

Regression results					
	B	*SE B*	t	Sig.	*R²*
Model 1	-	-		.000	.377
Intercept	.115	.693	.166	.869	-
Total value_communal traits	.652	.143	4.560	.000	-
Total value_agentic traits	.460	.169	2.722	.007	-
Gender	.607	.508	1.195	.233	-
Total value_communal traits * gender	-.043	.101	-.425	.671	-
Total value_agentic traits * gender	-.093	.120	-.773	.440	-

Table 3 H1c Regression results.

4.3.2. Leadership Competence Evaluation

H2a: There is a difference between those respondents who maintain traditional gender stereotypes regarding the characterization of their ideal leader and those respondents who do not maintain those stereotypes. The first group describe their ideal leader rather with agentic than communal behavioral traits (descriptive).

To introduce these two new groups, decision criteria for "endorsers" and "non-endorsers" of traditional gender roles, as well as "neutrals" were set: calculating the difference between the mean of the rating scores of the agentic and the mean of the communal traits rating in question 2a), those respondents with this difference being 0, i.e. 35 respondents, are seen as "neutrals". The endorsers of traditional roles are those who value men as particularly agentic and women as particularly communal. I.e., in group 1 (rating of the female colleague), any respondent with a low total score in agentic traits and a high score in communal traits, I can call endorser of traditional roles. The difference should therefore be negative. With group 2 (rating of the male colleague) it is the other way around, i.e. the difference should be positive. I.e., all respondents from group 1 with a negative difference and all respondents from group 2 with a positive difference were counted to the group of the "endorsers". The rest forms the "non-endorsers".

It has to be kept in mind that only 35 of all respondents count to the group "neutrals", who do neither favor traditional gender roles nor oppose them. From the youngest age group (18-27 years), more than 47% maintain traditional gender roles compared to 45% of "non-endorsers", and more than 57% of all aged 58+ maintain traditional gender roles compared to 34% "non-endorsers". Those numbers show that traditional gender role thinking is maintained mostly by elderly people, but that there is a tendency also for the youngest generation. In age groups 38-47 and 48-57 "non-endorsers" prevailed with 48 and 51%, respectively.

To test for differences between these groups when it comes to the description of the ideal leader (survey question 5), an ANOVA was used (see Table 4). A test for homogeneity of variances has revealed some violations. However, the ANOVA is still more meaningful than a Kruskal-Wallis test.

The assessment of the individual characteristics "helpful", "self-confident", "gentle" and "ambitious" shows a significant difference between subjects in the three different groups. For all four it can be seen that the mean values for the endorsers of traditional roles were highest, while respondents with neutral attitude rated the characteristics as less important compared to the other two groups. Also, the mean rating

of all agentic traits as well as the mean rating of all communal traits has revealed a significant difference between the groups.

Question 5 ANOVA results					
Item	Gender-role group	N	Mean	Std. deviation	Sig. (two-tailed)
aggressive	Neutral	35	2.00	.840	.104
	Non-endorsers	176	1.82	.842	
	Endorsers	164	2.02	.956	
helpful	Neutral	35	3.91	.981	.036
	Non-endorsers	176	4.16	.734	
	Endorsers	164	4.26	.633	
self-confident	Neutral	35	4.06	.998	.017
	Non-endorsers	176	4.32	.743	
	Endorsers	164	4.43	.576	
dominant	Neutral	35	2.71	.926	.567
	Non-endorsers	176	2.89	.894	
	Endorsers	164	2.87	.859	
affectionate	Neutral	35	2.94	.998	.333
	Non-endorsers	176	2.97	1.066	
	Endorsers	164	3.13	1.040	
gentle	Neutral	35	3.09	1.011	.041
	Non-endorsers	176	3.49	.968	
	Endorsers	164	3.54	.974	
ambitious	Neutral	35	3.77	1.165	.002
	Non-endorsers	176	4.24	.733	
	Endorsers	164	4.27	.693	
independent	Neutral	35	4.14	1.033	.420
	Non-endorsers	176	4.28	.740	
	Endorsers	164	4.32	.655	
caring	Neutral	35	3.77	1.087	.159
	Non-endorsers	176	3.96	.871	
	Endorsers	164	4.06	.757	
fair-minded	Neutral	35	4.46	1.010	.144
	Non-endorsers	176	4.65	.596	
	Endorsers	164	4.68	.517	
Total_agentic	Neutral	35	3.3371	.74007	.022
	Non-endorsers	176	3.5102	.49119	
	Endorsers	164	3.5817	.40172	
Total_communal	Neutral	35	3.6343	.81093	.019
	Non-endorsers	176	3.8477	.56770	
	Endorsers	164	3.9341	.53359	

Table 4 H2a ANOVA results

Question 5 ANOVA post hoc test results of significant items					
Item	Gender-role group A	Gender-role group B	Mean difference	Std. error	Sig. (two-tailed)
helpful	Neutral	Non-endorsers	-.250	.133	.171
		Endorsers	-.342*	.134	.039
	Non-endorsers	Neutral	.250	.133	.171
		Endorsers	-.091	.078	.505
	Endorsers	Neutral	.342*	.134	.039
		Non-endorsers	.091	.078	.505
self-confident	Neutral	Non-endorsers	-.267	.130	.125
		Endorsers	-.370*	.131	.020
	Non-endorsers	Neutral	.267	.130	.125
		Endorsers	-.103	.076	.405
	Endorsers	Neutral	.370*	.131	.020
		Non-endorsers	.103	.076	.405
gentle	Neutral	Non-endorsers	-.409	.180	.078
		Endorsers	-.457*	.181	.043
	Non-endorsers	Neutral	.409	.180	.078
		Endorsers	-.048	.106	.901
	Endorsers	Neutral	.457*	.181	.043
		Non-endorsers	.048	.106	.901
ambitious	Neutral	Non-endorsers	-.467*	.142	.005
		Endorsers	-.497*	.143	.003
	Non-endorsers	Neutral	.467*	.142	.005
		Endorsers	-.030	.083	.938
	Endorsers	Neutral	.497*	.143	.003
		Non-endorsers	.030	.083	.938
Total_agentic	Neutral	Non-endorsers	-.17308	.08958	.156
		Endorsers	-.24456*	.09012	.026
	Non-endorsers	Neutral	.17308	.08958	.156
		Endorsers	-.07148	.05253	.397
	Endorsers	Neutral	.24456*	.09012	.026
		Non-endorsers	.07148	.05253	.397
Total_communal	Neutral	Non-endorsers	-.21344	.10736	.140
		Endorsers	-.29986*	.10800	.022
	Non-endorsers	Neutral	.21344	.10736	.140
		Endorsers	-.08642	.06296	.391
	Endorsers	Neutral	.29986*	.10800	.022
		Non-endorsers	.08642	.06296	.391

Table 5 H2a ANOVA post hoc test results (* The difference of the means is significant on the level .050)

The post hoc test (see Table 5) showed that, concerning "helpful", "self-confident" and "gentle", endorsers of traditional gender roles rated the traits significantly higher than the respondents with neutral attitude ($p < .05$). For "ambitious", the difference is both significant between "neutrals" and "endorsers" as well as "neutrals" and "non-endorsers" ($p < .01$). I.e. endorsers of traditional gender roles significantly want the ideal leader to be more communal (first three traits), but also more ambitious, compared to the respondents with neutral attitude. Only when it comes to the agentic trait, also "non-endorsers" significantly argue for a higher presence of ambitiousness compared to the "neutrals". However, opinions of "endorsers" and "non-endorsers" do not diverge significantly in a single case.

Also, a significant difference was found between subjects of the groups with regard to the assessment of the mean of all agentic characteristics ($p = <.05$). Endorsers of traditional gender roles tended to rate the ideal manager significantly higher on agentic traits in total than the "neutrals". When favoring traditional gender roles, the perfect manager was rated significantly higher in terms of agentic characteristics than the test subjects with a neutral position. However, the same effect was found for the mean of all communal traits. Again, there is no significant difference between "endorsers" and "non-endorsers". The results can therefore not support the hypothesis H2a.

As an Add-up (1), I have looked into the description of the ideal manager as such for the whole sample, asking if the ideal manager is described rather with agentic or communal traits. A t-test for paired samples was used for verification (see Table 6). The test was carried out once for the entire sample and once separately for women and men.

All comparisons show significant differences between the assessment of the male and female characteristics of an ideal manager (p = <.01). Both the entire sample, as well as men and women separately, rate communal traits more important for their ideal manager than agentic traits. Women show a higher difference between the assessment of female and male characteristics for their ideal manager.

T-test results					
Item	Group	N	Mean	Std. deviation	Sig. (two-tailed)
Total sample	Ideal_agentic traits	375	17.62	2.44	.000
	Ideal_communal traits	375	19.32	2.92	
Men	Ideal_ agentic traits	272	17.63	2.35	.000
	Ideal_ communal traits	272	19.16	2.72	
Women	Ideal_ agentic traits	100	17.71	2.39	.000
	Ideal_ communal traits	100	19.88	3.08	

Table 6 Add-up 1 t-test results

To investigate how both groups (1 and 2) responded to question 5, I have plotted the mean answers in Figure 29. It can be seen that group 1 in average regarded aggressiveness as more important, while caring as less important than group 2. When taking into consideration that group 1 was exposed to rate a female colleague and decisionmaker in the questions beforehand, these differences could mean that, triggered by thinking of a female person, they were then tempted to rate the ideal manager higher on aggressiveness and lower on carefulness, stressing unconsciously the importance of agentic traits for managers.

The diverging stacked bar chart (Figure 30) compares the answers in question 2 and 5, revealing that apart from "aggressive" all characteristics were rated higher for the ideal manager than for the colleague. Also, female characteristics were in total rated higher in both questions than male characteristics. "Fair-minded", "self-confident", "ambitious" and "independent" were strikingly rated most as "completely true" for the ideal manager, while only one of them is a communal trait. For an overview on the ratings on 2 a) and 5 with regards to differences between the answers of male and female respondents for each group 1 and 2, see Figures 35 and 36.
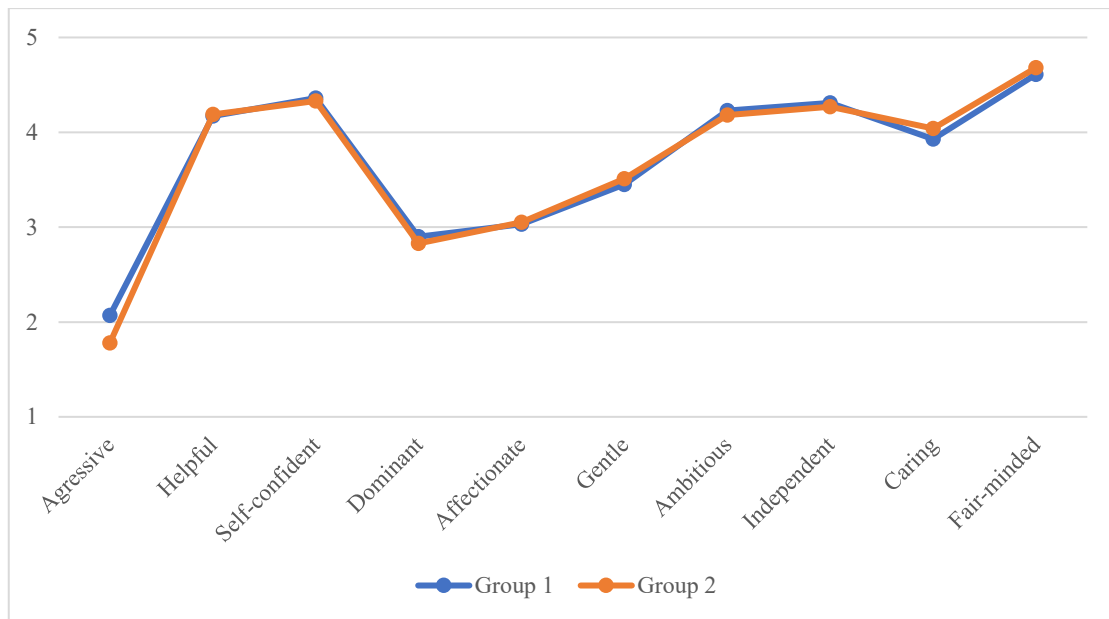
Figure 29 Group comparison of means of rating on question 5 (ideal manager)
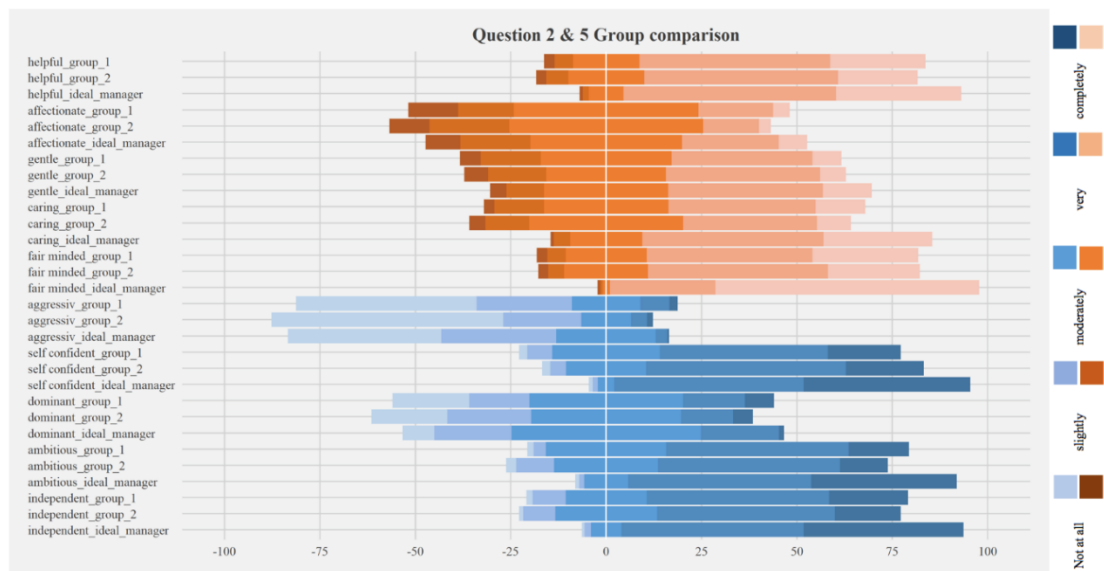
Figure 30 Group comparison of percentages of answers on question 2 a) and 5

H2b: There is a difference in perceived likelihood of communal behavior between male and female leaders: Female leaders are rather expected to act with communal behavior than male leaders.

To be able to test the hypothesis H2b I created a new variable by joining the results of the first vignette under question 3 of a), b) and c) ("How likely do you think it is that Sophia / Miranda / Sabrina praises her team and holds a feedback round before starting the next project?". I've then compared the total value of the perceived likelihood of communal behavior of the manager for each group (leading to a range from 0 to 15).

A t-test for independent samples was used to examine the hypothesis H2b. As can be seen in Table 7, the test showed a significant difference between the groups and the assessment of the likelihood of communal behavior (p = <.01). The expectation for women was 11.02 on average, while for men it was estimated at 10.36. The alternative hypothesis can be accepted, i.e. women are expected to act communally to a higher extent than men.

T-test results					
Item	Group	N	Mean	Std. deviation	Sig. (two-tailed)
Likely	female	184	11.02	2.03	.002
	male	191	10.36	2.13	

Table 7 H2b t-test results

As an Add-up (2), I have looked into detail if there were differences in the rating of perceived likelihood of communal behavior between the three different seniority levels within a group. I have therefore compared vignette scores for group 1 for the first item and for each seniority level (same for group 2), e.g. 3a) Item 1 vs. 3b) Item 1 vs. 3c) Item 1. An ANOVA with repeated measurement was used. Differences between the three seniority levels of the fictitious persons were analyzed. Sphericity was not given, leading to the use of the Huynh-Feldt correction.

The test has brought evidence that both group 1 and group 2 showed significant differences between the items (p = <.01). For group 1, a significant difference between the responses to 3a) and 3b) and between 3b) and 3c) was found. Perceived likelihood of communal behavior rating in 3b) was 0.304 smaller than in 3a) and 0.408 smaller than in 3c). The order with increasing rating is therefore: Miranda (junior), Sophia (middle), Sabrina (senior), i.e. the higher the seniority level, the more likely respondents found women to behave communally. For group 2, the first item in 3c) was rated significantly higher than 3a) and 3b). In group 2, it can therefore be deduced that Benjamin with most experience was rather expected to behave communally than the two younger reference

persons. The position in the hierarchy does therefore moderate the effect measured in H2b.

Figure 31 compares the answers of the groups for question 3.
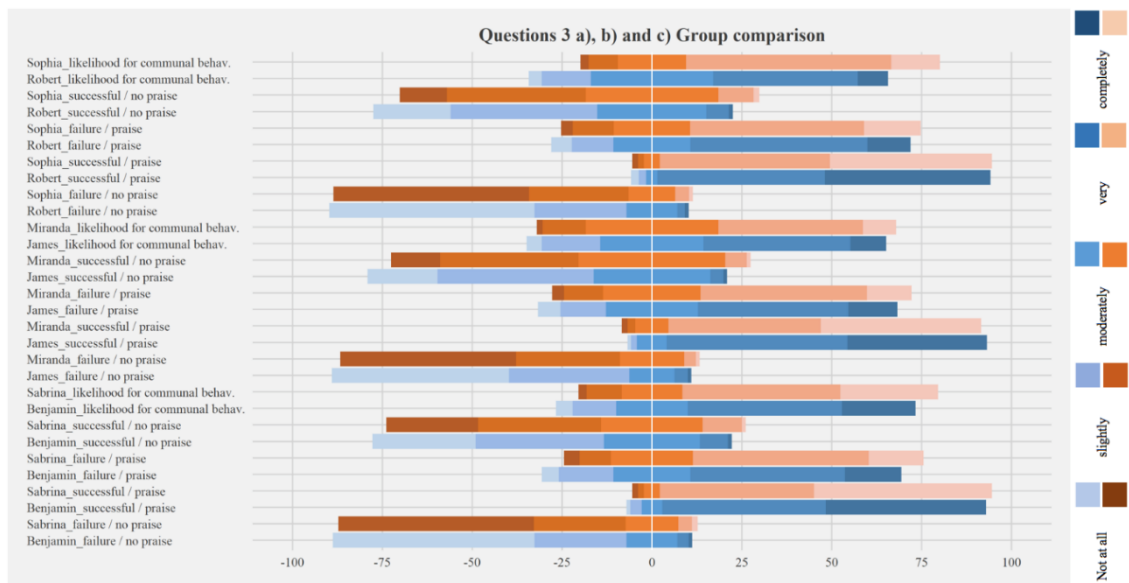
Figure 31 Group comparison of percentages of answers on questions 3 a), b) and c)

Besides the separate testing of the groups, I have recoded the three seniority levels and used a general linear model with repeated measures to find interactions as well. Sphericity was not given, leading to the Greenhouse-Geisser correction. The descriptive statistics show that mean values for group 1 are higher in every seniority level than for group 2, i.e. women are expected to show communal behavior to a higher extent (which has been shown also in H2b). For instance, women rated the expected communal behavior .395 higher than men in the middle level. Generally speaking, the intercept explains most of the variance and even though group and seniority are significantly different from zero, their effect sizes (and therefore partial eta squared) are small. However, the overall predictive model shows no significant interaction between the group variable and the seniority variable that would explain differences in the rating of expected communal behavior ($p = .053$) (see Table 8). Once we look at the three sublevels of the model, there are significant interactions in the middle and senior level.

Regression results						
	Parameter	*B*	*SE B*	t	Sig.	η_p^2
Within-Subjects Effects						
Intercept	-	-	-	-	.000	.965
Group	-	-	-	-	.001	.032
Seniority	-	-	-	-	.000	.041
Seniority * group	-	-	-	-	.053	.008
Parameter Estimates						
Junior level	Intercept	3.353	.068	49.352	.000	.868
	Group 1(f)	.098	.097	1.008	.314	.003
	Group 2 (m)	0ª	.	.	.	.
Middle level	Intercept	3.363	.064	52.426	.000	.881
	Group 1(f)	.395	.092	4.308	.000	.048
	Group 2 (m)	0ª	.	.	.	.
Senior level	Intercept	3.621	.075	48.108	.000	.862
	Group 1(f)	.242	.108	2.245	.025	.013
	Group 2 (m)	0ª	.	.	.	.

Table 8 Add-up 2 Regression results (a. Parameter set to zero because of redundancy.)

As an Add-up (3), I have searched for support of the hypothesis that there is a difference between male and female respondents' voting of expected communal behavior of male and female leaders. Are there differences between the perceived likelihood of communal behavior within the groups depending on the gender of the respondent?

A t-test for independent groups was used to test the hypothesis. As can be seen in Table 9, the test showed a significant difference for Group 1 between the female and male respondents regarding the assessment of Sophia's (middle level) likelihood of communal behavior (p = <.01). Women rate the likelihood of the female manager at 3.98 as significantly higher than the male respondents with a mean rating of 3.66. There was no significant difference for Miranda (junior) and Sabrina (senior), although there is also a trend for Miranda. For group 2, in none of the three male managers a significant difference between the assessment by women and men was found. Gender only partially moderates the effect of H2b.

T-test results Group 1					
Item	Gender	N	Mean	Std. deviation	Sig. (two-tailed)
Middle level female	male	127	3.66	.88	.009
	female	55	3.98	.68	
Junior level female	male	127	3.38	.89	.85
	female	55	3.62	.78	
Senior level female	male	127	3.90	.95	.468
	female	55	3.78	1.07	
T-test results Group 2					
Item	Gender	N	Mean	Std. deviation	Sig. (two-tailed)
Middle level male	male	145	3.38	.93	.667
	female	45	3.31	.92	
Junior level male	male	145	3.29	1.10	.120
	female	45	2.56	.99	
Senior level male	male	145	3.58	1.09	.343
	female	45	3.76	1.07	

Table 9 Add-up 3 t-test results

As there was support for H2b, age as a moderator was examined by a simple mean comparison. Calculating the mean value of the total values for questions 3a) Item 1, 3b) Item 1 and 3c) Item in Group 1, it can be seen that respondents aged 58+ expected communal behavior from a female leader to a higher extent (12.18), followed by the youngest age group (11.81) and respondents aged 48-57 (11.33), compared to those aged 28-47. I.e. I can deduct that mostly the youngest and the oldest generation within the companies expect female leaders to behave according to the traditional gender roles. Using a Pearson correlation, the relationship between age and previous experience with female and male superiors was tested. The test reveals a significant negative relationship with regard to the number of female managers. The older the respondents, the fewer female superiors they have experienced ($p = .013$; $r = -. 129$). This relationship is not significant for male superiors ($p = .507$). I.e. the above-mentioned assumption has to be interpreted with caution. As respondents from the oldest age group have not been in contact with female managers themselves to a great extent, they may maintain traditional gender thinking because stereotypes have not been disproved with contrasting experiences. On average, respondents aged 58+ have had 1.2 female managers compared to 8.8 male managers. The same may be true for the youngest generation: on average, respondents aged 18-27 have had 1.1 female managers compared to 3.9 male managers.

Regarding the position in the hierarchy, it can be seen that the expectation of communal behavior of a female leader was on average highest from respondents in top-level management (11.64), followed by middle-level management (11.09). However,

employees without managerial responsibilities expected communal behavior almost to the same extent (11.01) as middle-level management respondents. Splitting up into male and female respondents, it is outstanding that female respondents without managerial responsibilities scored higher on these questions (11.56) than their same-sex peers with managerial responsibilities, as well as considerably higher as male respondents without managerial responsibilities (10.90). However, both for age and position in the hierarchy mean differences were quite small.

Additionally, self-experience in leadership as a moderator was investigated: mean values between those with and those without self-experience hardly differed (11.04 compared to 10.99, respectively).

Finally, respondents working in core IT functions expected communal behavior from female leaders to a lower extent than respondents working in support functions. Again, the difference was small (10.94 compared to 11.22, respectively).

H2c: There is a difference in leadership competence attribution between male and female leaders: female leaders are evaluated less competent than male leaders (prescriptive).

For this hypothesis, I created another variable for each vignette of a seniority level by building total values for all three persons (over 3a), b) and c)) for each vignette on the question "How competent would you rate X when it comes to his leadership competence?". I.e. summing up the scores for "successful – no praise" for Sophia, Miranda and Sabrina, for "failure – praise", for "successful – praise" and for "failure – no praise", and all the same for group 2 (male leaders) (leading to a range from 0 to 15). A comparison between the four scenarios between the groups has led to the following results.

A t-test for independent groups was used to test H2c. Like table 10 shows, the test revealed a significant difference between the groups regarding the assessment of the first scenario (p = .01). The mean for women was 7.07 on average, while the expectation for men was 6.58. The test of scenarios 2, 3 and 4 were, however, not significant. Only with "successful – no praise" a difference between the groups was revealed, in which a male leader was rated lower on leadership competence than a female leader. Therefore, H2c can be rejected.

T-test results					
Item	Group	N	Mean	Std. deviation	Sig. (two-tailed)
"successful–no praise"	female	184	7.17	2.31	.010
	male	191	6.58	2.14	
"failure–praise"	female	184	10.81	2.63	.198
	male	191	10.44	2.92	
"successful–praise"	female	184	13.07	2.01	.481
	male	191	12.92	2.07	
"failure–no praise"	female	184	5.19	2.49	.334
	male	191	5.00	2.26	

Table 10 H2c t-test results

Besides the t-test, I have recoded also the project outcome and the reaction of the manager and used a general linear model with repeated measures to find interactions between the variables group, seniority, project outcome and reaction that would explain some of the variation in the rating of competence. Sphericity was not given in one case resulting in the Greenhouse-Geisser correction. The predictive model shows two significant interactions, i.e. seniority * reaction (p = .000) and reaction * project outcome (p = .002) (see Table 11). Reaction and project outcome are, as expected, the main predictors of the model. Parameter estimates can be found in Table 26 in the appendix.

Regression results		
Within-Subjects Effects		
	Sig.	η_p^2
Seniority	.214	.004
Seniority * group	.587	.001
Reaction	.000	.801
Reaction * group	.743	.000
Project outcome	.000	.521
Project outcome * group	.695	.000
Seniority * Reaction	.000	.029
Seniority * Project outcome	.053	.008
Reaction * Project outcome	.002	.026

Table 11 H2c Regression results

Even though H2c cannot be supported and therefore the presumed moderator effects cannot be verified, I still investigated if there are moderators that affect the trends which came to light:

Add-up 4: To look at differences of competence rating of the scenarios with all three fictitious persons, a comparison between the four situational vignette variations was done within the groups, based on the total values used in H2c. An ANOVA with repeated measures has brought the following evidence: A significant difference could be found for both groups (p = <.01) between all four situational vignette variations. Vignette 3 was rated best for both women and men, followed by 2, 1 and finally 4. The vignette combination "successful – praise" was thus assessed as most competent, "failure – praise" follows. "Successful – no praise" and "failure – no praise" are consecutively seen as less competent. Communal behavior is a signal of leadership competence regardless of the outcome of the project and the gender of the person acting.

Additionally (Add-up 5), I compared mean answers for each group within 3a), b) and c) separately. Both group 1 and group 2 showed significant differences between the items in 3a) (p = <.01). Both were not spherical, so the Huynh-Feldt correction was used. For group 1, the mean values show the largest value for item 3, the same as for group 2. Both group 1 and group 2 showed significant differences between the items under 3b) (p = <.01). Table 12 shows the highest value for item 3. Both group 1 and group 2 showed significant differences between the items in 3c) (p = <.01). The highest value is at the

third item. Communal behavior is a signal of leadership competence also regardless of the seniority level of the fictitious person.

Descriptive statistics question 3					
Group 1 – 3a)	N	Minimum	Maximum	Mean	Std. deviation
Middle level, "successful–no praise"	184	1.00	5.00	2.4837	.89915
Middle level, "failure–praise"	184	1.00	5.00	3.6522	.94591
Middle level, "successful–praise"	184	1.00	5.00	4.3750	.68203
Middle level, "failure–no praise"	184	1.00	5.00	1.6957	.91424
Group 2 – 3a)					
Middle level, "successful–no praise"	191	1.00	4.00	2.2199	.85460
Middle level, "failure–praise"	191	1.00	5.00	3.5026	1.03555
Middle level, "successful–praise"	191	1.00	5.00	4.3351	.79655
Middle level, "failure–no praise"	191	1.00	4.00	1.6021	.80707
Group 1 – 3b)					
Junior level, "successful–no praise"	184	1.00	5.00	2.4239	.83938
Junior level, "failure–praise"	184	1.00	5.00	3.5380	.95738
Junior level, "successful–praise"	184	1.00	5.00	4.2989	.79121
Junior level, "failure–no praise"	184	1.00	5.00	1.7880	.92546
Group 2 – 3b)					
Junior level, "successful–no praise"	191	1.00	4.00	2.2147	.79538
Junior level, "failure–praise"	191	1.00	5.00	3.4398	1.07375
Junior level, "successful–praise"	191	1.00	5.00	4.2565	.74137
Junior level, "failure–no praise"	191	1.00	5.00	1.7173	.86064
Group 1 – 3c)					
Senior level, "successful–no praise"	184	1.00	5.00	2.2609	.97923
Senior level, "failure–praise"	184	1.00	5.00	3.6196	.99003
Senior level, "successful–praise"	184	1.00	5.00	4.3913	.74594
Senior level, "failure–no praise"	184	1.00	5.00	1.7065	.92963

Group 2 –3c)					
Senior level, "successful–no praise"	191	1.00	4.00	2.1414	.92675
Senior level, "failure–praise"	191	1.00	5.00	3.4974	1.07544
Senior level, "successful–praise"	191	1.00	5.00	4.3246	.74648
Senior level, "failure–no praise"	191	1.00	4.00	1.6335	.84088

Table 12 Add-up 5 mean comparison

H2d: When acting communally, female leaders are evaluated less competent than if male leaders are acting communally.

To test hypothesis H2d, total values were formed for the situations across 3a), b) and c) (seniority levels) in which communal behavior was shown, i.e. items 2 ("failure – praise") and 3 ("successful – praise"). A t-test for independent samples was used. There is no significant difference between group 1 and group 2 in terms of communal behavior (p = .221) (see Table 13). However, there is a slightly higher mean in group 1 than in group 2. The mean therefore basically suggests that female managers are assessed more competently if they behave communally than male managers, even though there was no significant result. H2d has to be rejected.

T-test results					
Item	Group	N	Mean	Std. deviation	Sig. (two-tailed)
Total value_ communal behavior	female	184	3.9792	.65381	.221
	male	191	3.8927	.71039	

Table 13 H2d t-test results

Even though there is no support for H2d and moderator effects can therefore not be verified, I still investigated as an Add-up (6) if there is a difference between male and female respondents' voting of competence of male leaders / female leaders. To test this hypothesis a t-test for independent samples was used. Like Table 14 shows, there was no significant difference between the total values calculated for each corresponding item from 3 a), b) and c) in group 1. In group 2, there is a significant difference between male and female respondents in the total value of item 3, "successful–praise" (p= .016). There are higher mean values for female respondents than for male respondents. I.e. women rated a male leader in this scenario significantly higher than male respondents, which means a partial support for the hypothesis that gender moderates the effect of H2d.

Figure 37 and 38 give an overview of the differences between male and female respondents in their answering to question 3.

T-test results for group 1					
Item	Gender	N	Mean	Std. deviation	Sig. (two-tailed)
Total value "successful–no praise"	Male	127	2.3753	.75124	.623
	Female	55	2.4364	.80347	
Total value "failure–praise"	Male	127	3.6614	.88689	.356
	Female	55	3.5333	.78200	
Total value "successful–praise"	Male	127	4.3543	.64754	.414
	Female	55	4.4364	.55508	
Total value "failure–no praise"	Male	127	1.7402	.81424	.747
	Female	55	1.6970	.85892	
T-test results for group 2					
Item	Gender	N	Mean	Std. deviation	Sig. (two-tailed)
Total value "successful–no praise"	Male	145	2.2230	.70935	.222
	Female	45	2.0741	.72436	
Total value "failure–praise"	Male	145	3.4092	.97638	.085
	Female	45	3.6963	.95299	
Total value "successful–praise"	Male	145	4.2345	.67257	.016
	Female	45	4.5185	.71264	
Total value "failure–no praise"	Male	145	1.6759	.74010	.293
	Female	45	1.5407	.78267	

Table 14 Add-up 6 t-test results

4.3.3. Women's Quotas

H3a: There is a difference in fairness perception of advancements between a situation without and with quota: In the presence of quotas, men as well as women perceive the advancement of women as less fair.

A t-test for paired samples was used to test hypothesis H3a. Like table 15 shows, the test revealed a significant difference in group 1 for pair 3 in the survey questions 4a) and b) ("She selects Stephanie. Compared to her male colleague, she did not show much effort in her current role. She has little experience.") ($p = <.01$). Comparing the mean values, it can be seen that Stephanie's promotion without a quota is considered less fair than with a quota. All other pairs were not significant. So, in the case of a female decision-maker, there was an increase in the fairness rating only in one case in the presence of the quota.

No pair was significant in group 2. The introduction of a quota does not change the assessment of the fairness of a promotion by a male decision-maker.

T-test results Group 1					
Item		N	Mean	Std. deviation	Sig. (two-tailed)
Charlotte Hard work – much experience	No quota	184	4.38	.7	.447
	quota	184	4.4	.75	
William Hard work – much experience	No quota	184	4.35	.74	.613
	quota	184	4.33	.75	
Stephanie no effort – little experience	No quota	184	1.39	.71	.002
	quota	184	1.53	.79	
Thomas no effort – little experience	No quota	184	1.35	.67	.347
	quota	184	1.39	.77	
T-test results Group 2					
Item		N	Mean	Std. deviation	Sig. (two-tailed)
Charlotte Hard work – much experience	No quota	191	4.41	.8	.194
	quota	191	4.45	.77	
William Hard work – much experience	No quota	191	4.39	.80	1.000
	quota	191	4.39	.81	
Stephanie no effort – little experience	No quota	191	1.36	.62	.145
	quota	191	1.40	.62	
Thomas no effort – little experience	No quota	191	1.32	.55	.848
	quota	191	1.31	.60	

Table 15 H3a t-test results

Figure 32 shows a comparison of the answers of each group 1 and 2 for each item in question 4 a) and b).
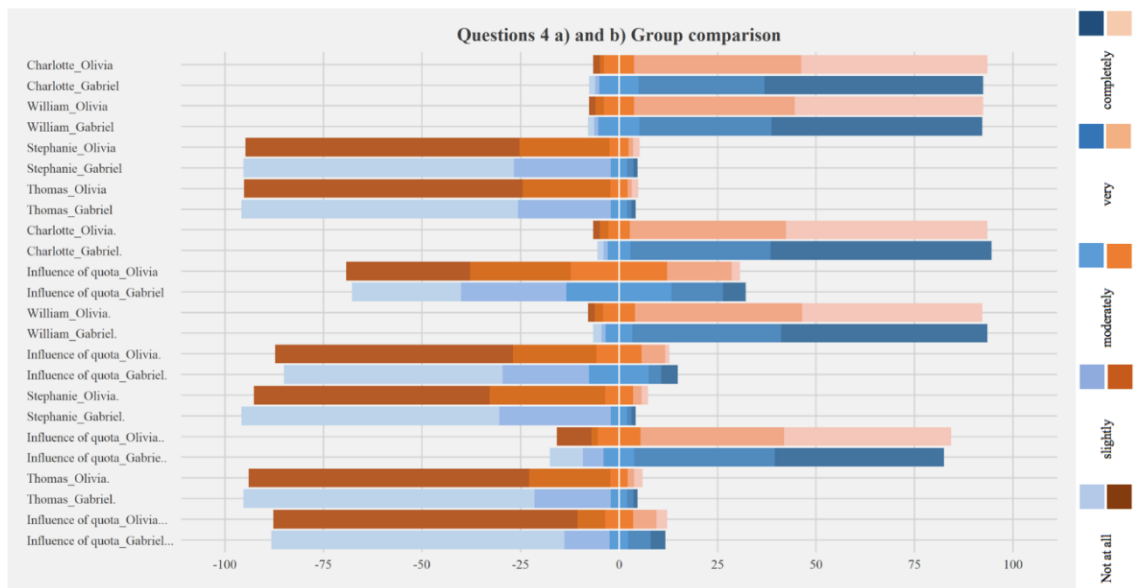
Figure 32 Group comparison of percentages of answers on question 4 a) and b)

As expected, Stephanie's and Thomas' hiring were mostly rated as "not at all" and "slightly" fair, while Charlotte's and William's hiring were mostly rated as "very" and "completely" fair in both scenarios. With a male decision maker, i.e. group 2, more respondents viewed Charlotte's and William's hiring as "completely fair" in both scenarios and Stephanie's hiring as "not at all" fair in the presence of the quota, compared to group 1. The influence of the quota on the hiring decision for Stephanie was rated higher in group 1 than in group 2. I.e. respondents expected a female decision maker to be influenced to a greater extent by the quota than male decision makers.

H3b: Cross-sex fairness ratings: In the presence of quotas, female respondents will perceive the advancements of a female fictitious person as less fair than male respondents.

To test hypothesis H3b a t-test for independent samples was used. For that purpose, the difference between the corresponding items in 4a) and b), i.e. between the fairness perception in a situation without and with a quota, was calculated. There were no significant differences between the sexes for the individual pairs within group 1 or group 2 (see Table 16). No support for the hypothesis H3b could be found.

T-test results Group 1					
Difference quota – no quota	Gender	N	Mean	Std. deviation	Sig. (two-tailed)
Charlotte	Male	127	.0079	.51171	.411
Hard work – much experience	Female	55	.0727	.42403	
William	Male	127	.0079	.55629	.297
Hard work – much experience	Female	55	.0909	.64615	
Stephanie	Male	127	.1496	.65561	.820
no effort – little experience	Female	55	.1273	.47354	
Thomas	Male	127	.0709	.59336	.228
no effort – little experience	Female	55	.0364	.42876	
T-test results Group 2					
Difference quota – no quota	Gender	N	Mean	Std. deviation	Sig. (two-tailed)
Charlotte	Male	145	.0483	.37880	.470
Hard work – much experience	Female	45	.0000	.42640	
William	Male	145	.0069	.38182	.670
Hard work – much experience	Female	45	.0222	.45171	
Stephanie	Male	145	.0345	.36159	.635
no effort – little experience	Female	45	.0667	.49543	
Thomas	Male	145	.0069	.36318	.915
no effort – little experience	Female	45	.0000	.42640	

Table 16 H3b t-test results

As an Add-up (7), I looked into the second question in 4b "To which extent do you think that the target quota influenced the decision?" in more detail to investigate if the perceived impact of the quota on the decision can explain the differences between 4a and b with the help of a simple regression analysis. As there have been almost no differences between the answers for the situation without and with quota, violations of the prerequisites were found in advance, which is why it is not advisable to base interpretations on the results. Also, R^2 is very small.

A significant model was found for the influence of the believed influence of the quota on the differences betweens answers in question 4 a) and b), $R^2 = .039$, $F (1. 182) = 7.348$, $p = .007$ (see Table 17).

The predictor had a significant predictive power with regard to outcome ($\beta = .197$, $p = .007$). The alternative hypothesis can be accepted, but this result could be due to the prerequisite violations.

Regression results				
	B	*SE B*	β	*R²*
Model 1	-	-	-	.039**
Believed influence of quota	0.101	0.037	.197**	-

Table 17 Add-up 7 regression results
Significance is marked with asterisks (<0.05; <0.01**).*

Figures 39 and 40 depict the different answers of female and male respondents when it comes to the quota within the groups. Female respondents in group 1 perceived more influence of the quota on the hiring of Charlotte and Stephanie, while less influence on the hiring of William and Thomas than male respondents. I.e. female respondents expect the female decision maker to be more influenced by the quota if they hire a woman, while being less influenced if they hire a man, compared to male respondents.

In group 2, male and female respondents differed also slightly in the fairness rating, which is rather not the case in group 1. Female respondents rated the hiring of Charlotte and William as less fair, and the hiring of Stephanie and Thomas as fairer than male respondents in both scenarios. All in all, respondents estimated the influence of the quota on the hiring of a male succession candidate as rather small. Strikingly, the influence of the quota on the hiring of Charlotte was experienced much lower by male respondents than by female respondents. The same effect, even though to a lesser extent can be seen for the hiring of Stephanie. Men perceived the quota to influence the hiring of male succession candidates by a male decision maker to a higher extent than women. I.e. with a male decision-maker, men expect that the hiring decision for a man is influenced to a greater extent by a quota and to a lesser extent for a woman, compared to women.

5. Summary & Interpretation

5.1. Main Findings

When it comes to the first concept, gender roles, according to the test results, I could not find support for the hypothesis that the female are rather attributed communal traits, and the male agentic traits. Only when it comes to aggressiveness, there was a significant difference between the rating of male and female colleagues, showing that on average female colleagues were rated higher on this trait than male colleagues. Also, tendencies can be derived from a mean comparison, revealing a higher rating for female colleagues also on three more of five agentic traits. Only self-confidence showed to be rather attributed to men. These results indicate that unlike the supposition, women are rather attributed agentic traits, while there is hardly any difference between the gender regarding communal traits.

To check if there is somehow a connection between the characterization of the colleague and the assigned competence, I first investigated if there was a difference between the competence rating of female and male colleagues. This hypothesis was also rejected, as there was no statistically significant result. An observation was, however, that on average female colleagues were rated slightly more competent than male colleagues. Also, it has been noticed that the spread for female colleagues was higher, meaning that more respondents picked their answer at the outer borders of the likert scale than in the center, compared to the rating of male colleagues. This could be an indicator of disagreement within the sample, when it comes to the rating of female coworkers at the IT workplace. Notwithstanding, this observation can be due to the fact that respondents rated a concrete real-life person and that female colleagues were perceived to differ to a greater extent than male colleagues.

When comparing the characterization of female colleagues and the competence attribution made by male and female respondents, I observed that women compared to men see their same-sex peers as behaving more communally as well as independently, while less agentically when it comes to the remaining four traits. This reveals that women rather endorse traditional gender roles in the sense that they rate their peers lower on agentic traits, than do men. For group 2, strikingly, exactly the opposite was found when it comes to communal traits: men rated their same-sex peers higher on all five communal

traits and only higher on ambitiousness and independence, compared to women. I.e. women seem to view men as less communal, in line with a traditional gender role thinking, but men do not view their same-sex peers as aggressive, self-confident and dominant as women do. Also, for all of the characteristics, the difference in the attribution level was much higher than in group 1, meaning that women and men rated more similarly in group 1, while opinions diverged to a greater extent when it comes to male colleagues. It can be concluded, that women rather maintain the dichotomous relationship male-agentic and female-communal compared to men and that the opinions of male and female about male colleagues differ in a greater way than about female colleagues.

The competence rating of the colleague within the groups has shown that 85% of all female respondents in group 1 rated their same-sex peers as very or completely competent, compared to 80% of male respondents. In group 2, 78% of all women rated their male colleagues as very or completely competent, while 83% of all men did so. Combining this with the insights gathered above, women see their same-sex peers as more competent than men, even though they see them as rather behaving communally. Men see their same-sex peers as more competent than women, even though they also attach rather communal behavior to them. The results do not permit the interpretation of an interdependence between the characterization and the competence attribution at this point. However, I can conclude that there is a same-sex preference or bias, leading to a higher competence rating by men to men and by women to women and that communal behavior is desirable for each gender.

With the help of a combination of a multiple regression analysis, I could demonstrate that there is indeed a connection between the attribution of traits and the competence rating of the colleague. Our model could explain 38 % of the variance, with only communal and agentic behavior being significant and communal behavior carrying the stronger influence. There is therefore only support for the alternative hypothesis H1c in the sense that there is an interdependence between the variables, but not in the way I initially expected.

For H1, *Traditional gender roles still persist in organizations,* I can conclude that my results cannot support the hypothesis. Traditional gender roles, i.e. the attribution of communal characteristics to women, and agentic traits to men, have not been found. Rather, women were assessed to behave more agentically. Trends however indicated, as stated beforehand, that women rather tended to still support traditional gender thinking by attaching communal behavior to their same-sex co-workers.

The second level of analysis, role congruity & leadership, was theorized to be connected to an existing traditional gender role thinking. Traditional gender roles were assumed to support the incongruity between the female and the leader role. For the descriptive stereotype, even though for existing gender-role prejudice as such there was no support in the sample, I needed to set decision criteria that would separate the sample into three groups and which would make it possible to be replicated in a study in future: group "neutrals", group "endorsers of traditional gender roles" and group "non-endorsers". The results show that "endorsers'" and "neutrals'" attitude towards the characteristics "helpful", "self-confident" and "gentle" differed, with endorsers of traditional gender roles rating these traits significantly higher. For ambitiousness, the difference was both significant between "neutrals" and "endorsers" as well as "neutrals" and "non-endorsers". For the total agentic and total communal characteristics, again, the difference between the "neutrals" and the "endorsers" is significant, revealing that "endorsers" rated both groups of traits higher than "neutrals". However, opinions of endorsers and non-endorsers did not diverge significantly in a single case. The results can therefore not support the hypothesis that endorsers of traditional gender roles would describe the ideal leader rather with agentic traits.

In line with the findings above, when looking at the description of the ideal manager as such, there is evidence that the ideal manager is rather described with communal characteristics. Both the entire sample, as well as men and women separately, rated communal traits more important for the ideal manager than agentic traits. I.e. in the sample, leadership is clearly rather connected with communal behavior, so that there is no evidence for a descriptive stereotyping.

When it comes to the likelihood of communal behavior, the first item of question 3 for each and every fictitious person was analyzed. A t-test revealed that women are expected to act communally to a higher extent than men, i.e. female leaders are expected to behave according to the traditional gender roles. Involving the seniority of each of the three leaders, it was shown that the more experienced the manager, the more respondents expected communal behavior. Interestingly, female respondents expected the most experienced female leader, Sophia, to behave communally to a higher extent than male respondents, i.e. in this case, women strongly followed the principle of traditional gender thinking.

Regarding the competence attribution and with that the prescriptive stereotype towards female leaders, survey question 3 offered to look at the competence rating of

each three female and male leaders of different seniority, who behaved communally (praise) in two situations. First, the results suggest that comparing the total scores for each of the four conditions across the three seniority levels, there was only a difference between the groups in the scenario "successful project – no praise". A male leader was rated less competent than a female leader. I conclude that there is no prescriptive stereotyping in the first place, that supports the idea that men are better leaders than women. This was also underlined by the result that in both groups the vignette combination "successful – praise" was assessed as most competent, followed by "failure – praise". I.e. communal behavior is a signal for leadership competence, regardless of the outcome of the project and the gender of the fictitious manager. Comparing the ratings across the seniority level of the latter, it can be seen that communal behavior was rated more competent than non-communal behavior, which means that despite different seniority levels, communal behavior is still associated with leadership competence.

The hypothesis, that female managers are seen less competent when acting communally than male managers, was rejected, too. In contrast, there is a trend in the mean value that female managers were assessed more competent than male managers. Analyzing differences between the answers of female and male respondents, only in the scenario "successful project –praise" women rated a male leader significantly higher on competence than male respondents.

Summarizing the results that have been gathered through the tests of the hypotheses H2a) – d) and the Add-ups 1–6, which were added once the first hypotheses were rejected, no support for H2, *Traditional gender roles support the incongruity between the female and the leader role and affect perceived leadership competence*, was found. Gender role thinking was not present in the sample and leadership competence was clearly associated with communal behavior, which indicates a non-existence of an incongruity between the female and the leader role.

With regards to the third and last level of analysis, women's quotas, results on the difference between a situation without and a situation with quota have been very clear. There is only one scenario, in which the introduction of the quota has revealed more perceived fairness attached to the hiring decision (for a female successor), while all other scenarios did not significantly differ. I.e. fairness perception does not change with the introduction of the quota.

Also, no significant differences between the scenarios were found when looking at the ratings of female and male respondents. Tendencies, however, show that female

decision makers are believed to be influenced by a quota to advance a woman to a greater extent by women, while male decision makers are believed to be influenced by a quota to advance a man to a greater extent by men. This indicates that men suspect their same-sex managers to work against a quota by preferring men, while they suspect that female managers do not support the quota by preferring women to the degree women suspect that.

In sum, H3, *Women's quotas moderate the relationship between perceived leadership competence and perceived fairness of advancement,* cannot be supported. There are no significant results that would indicate that quotas alter the beliefs that more competent leaders should be promoted, regardless of the gender of this leader.

5.2. Interpretation & Recap of Literature

The results of the empirical study within this thesis have brought about quite contrasting insights compared to the initial hypotheses based on the literature and former research. On the one hand, it can be derived that a shift in the so-called traditional gender roles has taken place, even in this male-dominated industry, as it was proposed by Haines et al. (2016) and Bongiorno et al. (2014). The characterization and assessment of competence of colleagues has revealed that women are even depicted more agentic than men and that competence increases with the attribution of communal traits. This is evidence for the assumption that agentic behavior by women is neither punished nor is it a barrier to successful social interaction anymore, as predicted by Eagly (1987) and discovered by Allen et al. (2016). It can be interpreted that women in the IT industry have particularly developed agentic traits, in order to adapt to the male-dominated social surrounding and to be successful, in line with Eagly & Carli (2007a) and Powell (2011). Following the reasoning of social role theory, the gradual conquest of the IT industry by the female and the acquisition of typical male traits has led to a change in the sex differences in social behavior (Eagly, 1987). However, as agentic behavior is originally contrasting with the underlying gender role, when applying the strategy to behave more agentic, women are perceived as more aggressive, because gender-role expectations have not undergone this change yet. New stereotypes of "bossy" female managers evolve (Allen et al., 2016). This could mean that the societal norms have not completely changed, and untypical behavior is still noticed, but it does not lead to a negative impact on the perceived competence.

Concerning the characterization and preferred traits for the ideal manager, it has become clear that communal behavior is clearly favored, and no descriptive stereotyping occurs in the sample, in contrast to the expectation based on gender role congruity theory by Eagly & Karau (2002) and evidence from Bongiorno et al. (2014). Also, competence ratings showed that female managers are even rated more competent, from which I conclude that there is as well no evidence for a prescriptive stereotyping which would predicate that women are less competent leaders, in line with research by Diekman (2007). In contrast, my results support the hypothesis, that there is no incongruity between the traditional female and the leader role and that an androgynous view of the ideal manager does prevail in today's male-dominated IT society, in line with findings made by Atwater et al. (2004) and Powell et al. (2002) and the thoughts about a "transformational" leadership style by Eagly & Sczesny (2009). As no preference for a male or a female manager could be found even when the fictitious person performed badly, it can be deducted that there is also no support for the assumption that female leaders are expected to perform better to be rewarded to the same extent as their male peers or that they are evaluated worse if not acting agentic (as originally proposed by Eagly & Karau, 2002; Kalev, 2009; Esser et al., 2018; Bongiorno et al., 2014; Elesesser & Lever, 2011; Ritter & Yoder, 2004). It is interesting to state at this point, that if communal behavior has evolved to be linked to positive and successful leadership, and female peers in the IT industry have been rather described with agentic traits, this would predict a new incongruity between the two roles by role congruity theory (Eagly & Karau, 2002). However again, there was no support for a therefore resulting discrimination in competence of female leaders. One possible cause for the non-existence of a gender bias in the male-dominated IT sector is that, compared to more gender-balanced industries, active promotion of gender diversity was omnipresent in this sector. For the underrepresentation of women, the IT sector has been picked out as a central hotspot and the media presence may have altered the beliefs about women who actually enter the industry.

Support for the so-called "Queen Bee" effect (Gils et al., 2018) can be taken from the result that women tended to evaluate successful and communally-acting same-sex leaders as less competent to a greater extent than men. Intra-gender competition, as mentioned also by Elsesser & Lever (2011) seems to play a role for the female gender, especially in their minority situation in a male-dominated industry.

The analysis of how gender roles might become visible when introducing women's quotas has primarily led to the conclusion that a quota has no influence on the perceived fairness of advancements. This means, in a second step, that there is no preference for male or female successors and that a quota does not alter the belief that the most competent person should be promoted. There is therefore no evidence for the assumption that men would feel discriminated by a quota regulation. Looking at these results while having in mind that there was also no evidence for persisting traditional gender roles or an incongruity between the female and the leader role, I can deduct that if women are promoted or hired because they outperform a male competitor, quotas do not question their expertise. The fairness of the promotion of a person with low experience and bad performance has been rated as unfair in the situation with quota as in the situation without. This can be interpreted in the way that respondents did not think that decision-makers were solely influenced by the quota when making their decision.

I therefore conclude that, in the absence of traditional gender thinking, quotas are not perceived to discriminate men, nor women. Nevertheless, there is an indication for same-sex competition again, as women expect female decision makers to hire women for the quota's sake to a greater extent than men and men expect male decision makers to hire men to hinder the advancement of women to a greater extent than women. It seems like the original dialogue about discrimination between the female and the male gender has evolved to an intra-gender competition, that tries to hide behind the traditional stereotyping. The assumption that women feel underestimated and promoted because of their sex only must therefore not stem from discrimination by men or existing gender roles but could stem from the competition between female colleagues. In the same way, men rather impute to their same-sex peers that they do not advance the more competent woman than alleging that women would prefer female candidates for the quota's sake. In sum, the insights that can be taken from the gathered data is too meager to be able to draw seminal conclusions.

5.3. Limitations

There are several limitations to the applicability of the results of the study. First of all, it did not investigate social psychological mechanisms that affect the (de)construction of gender biases, but it rather is only a snapshot of the current state of the art. Also, the

generalization of the results is limited to the IT sector and may not exceed the Austrian borders.

Concerning the methodology, it has to be mentioned that a certain kind of priming could be expected if respondents are asked to rate only a female or a male fictitious person. It may be fruitful to randomize the allocation of the questions separately, as well as the ordering of the vignette items to avoid sequencing effects. Also, the traits used for the characterization of male individuals have shown to not measure the same construct and should therefore be revised.

Furthermore, the interpretations would be even stronger if the sample would contain equal numbers of respondents of the same gender, equal representation of age groups as well as equal numbers of respondents out of the different departments and hierarchical levels.

Generally, it might have been more effective if the research questions were formulated even more precise in the beginning, even though I could extend the hypotheses by Add-ups during the examination of the data and was therefore able to fine-tune the testing. Due to that some very interesting and decisive findings could be made. The prior research landscape, especially in the quota area, is quite scarce, which made it also even more complex to develop a suitable model which would not go beyond the scope of the thesis.

Future research may focus on the influence of quotas once they have been in force for some time, as we can expect time-delayed response in the effects on social relations. Also, the shift of what we call gender roles may change direction again or the quite recent introduction of the third gender may completely break up the dichotomous relationship.

6. Conclusion

Gender mainstreaming has borne fruit. As the results of the underlying study suggest, it is not traditional gender stereotyping that would give reason to the continuing underrepresentation of women in the IT. The insights cannot explain the existence of the glass ceiling and the gender pay gap either. Role congruity theory maintains that the incongruity between the female and the leader role hinders women from moving up the career ladder (Eagly, 2002). In absence of this incongruity, it remains questionable what precisely is behind those phenomena.

What can clearly be deducted is that quotas do not a have a negative effect or intensify prejudice against women. Surely, nobody is immune to unfairness treatment and there will be hiring and advancement decisions based on variables that should not be primary taken as decision criteria. However, this thesis has brought evidence that people do not expect a general misuse of quotas.

The outcome of the quantitative study does, however, not mean that women do not have to be supported, especially in the IT field. Organizations should voluntarily install women's quotas in upper management, to counteract the glass ceiling. It is also a clear step in the direction of gender diversity at the workplace, if the representation of women at the upper level inspires lower levels in an organization. Role models for successful female leadership should be supported and promoted. It is however not contributing to a fair and balanced gender involvement at the workplace if organizations try to fulfill quotas to escape pressure from stakeholders (as proposed by Krivkovich et al, 2017), or to increase acceptance among partners and customers. A positive employer branding image can only be maintained in the long-term if the pretended values are actually found also inside the company. I.e. if women for instance are given only non-executive positions in boards or in the management level, the discrimination will foment internal disputes and perceived injustice, which will eventually become visible in company success and standing in society.

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Appendix

Additional Tables and Figures

Gender	Frequency	Percent
Male	272	72,5
Female	100	26,7
Diverse	3	,8
Total	375	100,0

Table 18 Gender distribution

Age	Frequency	Percent
Invalid answers	3	,8
18-27	57	15,2
28-37	90	24,0
38-47	87	23,2
48-57	110	29,3
58+	28	7,5
Total	375	100,0

Table 19 Age distribution

City	Frequency	Percent
Invalid answers	5	1,3
Brunn am Gebirge	5	1,3
Graz	2	,5
Innsbruck	74	19,7
Klagenfurt	13	3,5
Linz	16	4,3
Mödling	2	,5
Neutal	2	,5
Salzburg	2	,5
Vienna	253	67,5
Wels	1	,3
Total	375	100

Table 20 Distribution of head quarters

Level		
	Frequency	Percent
Employee without managerial responsibilities	232	61,9
First-level management	71	18,9
Middle-level management	55	14,7
Top-level management	17	4,5
Total	375	100,0

Table 21 Distribution in hierarchical levels

Annual gross income		
	Frequency	Percent
0 – 30.000	51	13,6
30.001,- – 55.000	116	30,9
55.001,- – 85.000	119	31,7
85.001,- and above	89	23,7
Total	375	100,0

Table 22 Distribution in annual gross income groups

Functional area		
	Frequency	Percent
IT business	269	71,7
Support functions	106	28,3
Total	375	100,0

Table 23 Distribution in functional areas

Drop-outs		
Last edited page	**Total questionnaires**	**Cumulative**
13	375	375
12	3	378
11	3	381
10	11	392
9	3	395
8	6	401
7	6	407
6	31	438
5	5	443
4	26	469
3	16	485
2	75	560
1	83	643
Total	375	643

Table 24 Drop-outs listed in the course of the survey

Group			
		Frequency	**Percent**
Valid cases	**Group 1 (Female)**	184	49,1
	Group 2 (Male)	191	50,9
	Total	375	100,0

Table 25 Group distribution

Regression results						
Parameter Estimates						
	Parameter	*B*	*SE B*	t	Sig.	η_p^2
Junior level /success /praise	Intercept	4.253	.054	78.608	.000	.944
	Group 1(f)	.072	.077	.925	.356	.002
	Group 2 (m)	0ª	.	.	.	.
Junior level /success /no praise	Intercept	2.211	.059	37.357	.000	.790
	Group 1(f)	.218	.085	2.577	.010	.018
	Group 2 (m)	0ª	.	.	.	.

Junior level /failure /praise	Intercept	3.437	.073	46.765	.000	.855
	Group 1(f)	.118	.105	1.124	.262	.003
	Group 2 (m)	0ª	.	.	.	.
Junior level /failure /no praise	Intercept	1.711	.065	26.463	.000	.654
	Group 1(f)	.075	.092	.814	.416	.002
	Group 2 (m)	0ª	.	.	.	.
Middle level /success /praise	Intercept	4.332	.052	82.536	.000	.948
	Group 1(f)	.064	.075	.853	.394	.002
	Group 2 (m)	0ª	.	.	.	.
Middle level /success /no praise	Intercept	2.216	.064	34.884	.000	.767
	Group 1(f)	.273	.091	3.009	.003	.024
	Group 2 (m)	0ª	.	.	.	.
Middle level /failure /praise	Intercept	3.500	.071	49.089	.000	.867
	Group 1(f)	.176	.102	1.725	.085	.008
	Group 2 (m)	0ª	.	.	.	.
Middle level /failure /no praise	Intercept	1.595	.062	25.618	.000	.639
	Group 1(f)	.098	.089	1.096	.274	.003
	Group 2 (m)	0ª	.	.	.	.
Senior level /success /praise	Intercept	4.321	.052	82.324	.000	.948
	Group 1(f)	.097	.075	1.286	.199	.004
	Group 2 (m)	0ª	.	.	.	.
Senior level /success /no praise	Intercept	2.137	.069	30.919	.000	.721
	Group 1(f)	.127	.099	1.284	.200	.004
	Group 2 (m)	0ª	.	.	.	.
Senior level /failure /praise	Intercept	3.495	.075	46.827	.000	.856
	Group 1(f)	.143	.107	1.337	.182	.005
	Group 2 (m)	0ª	.	.	.	.
Senior level /failure /no praise	Intercept	1.626	.064	25.389	.000	.635
	Group 1(f)	.077	.092	.841	.401	.002
	Group 2 (m)	0ª	.	.	.	.

Table 26 H2c Regression results, parameter estimates (a. Parameter set to zero because of redundancy.)
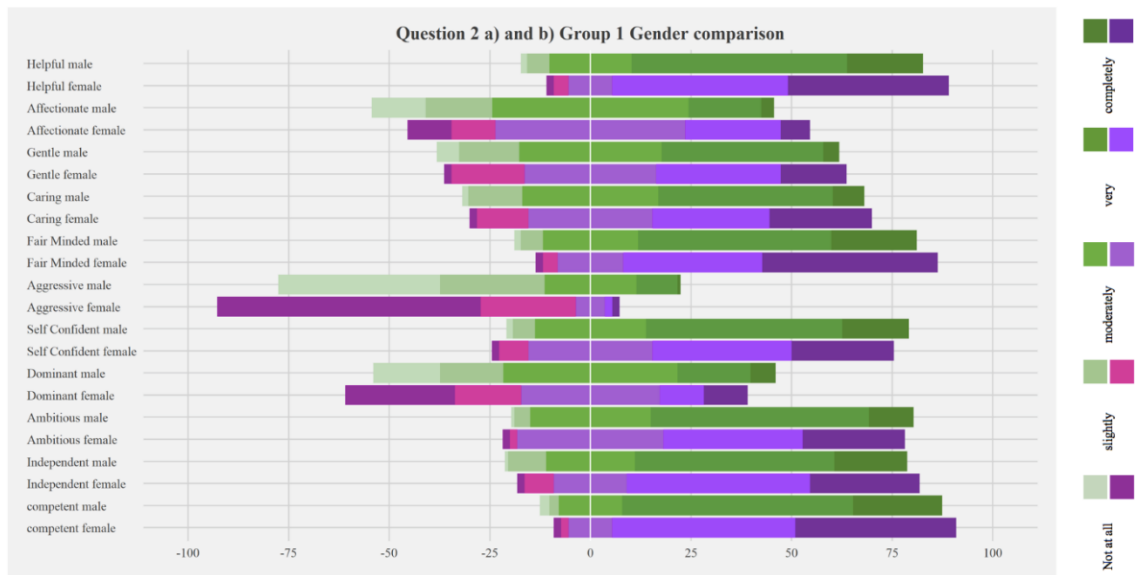
Figure 33 Gender comparison of answers to question 2 a) and b) in Group 1
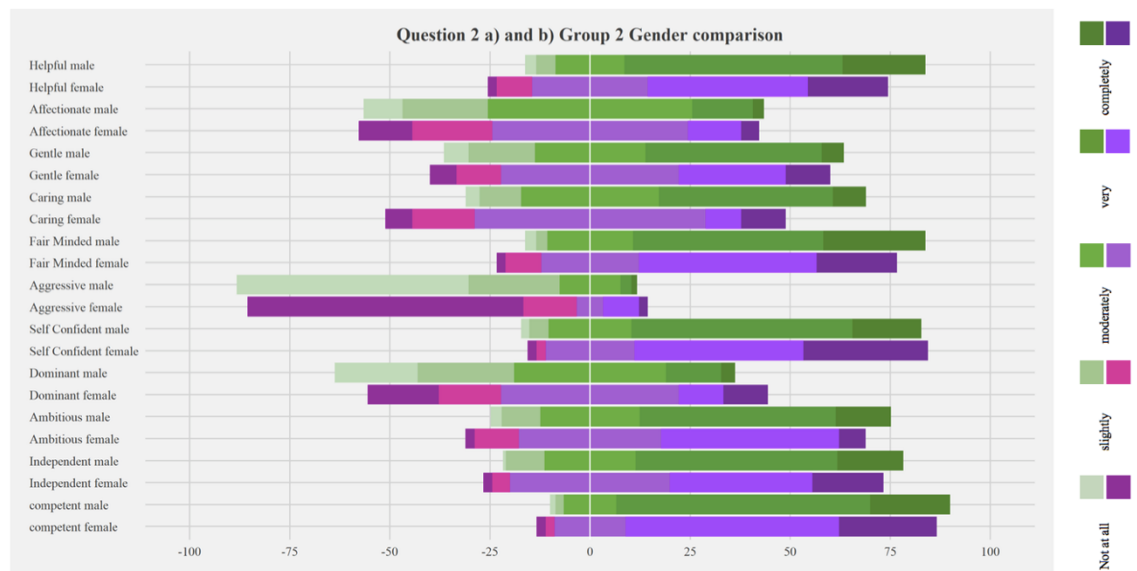
Figure 34 Gender comparison of answers to question 2 a) and b) in Group 2
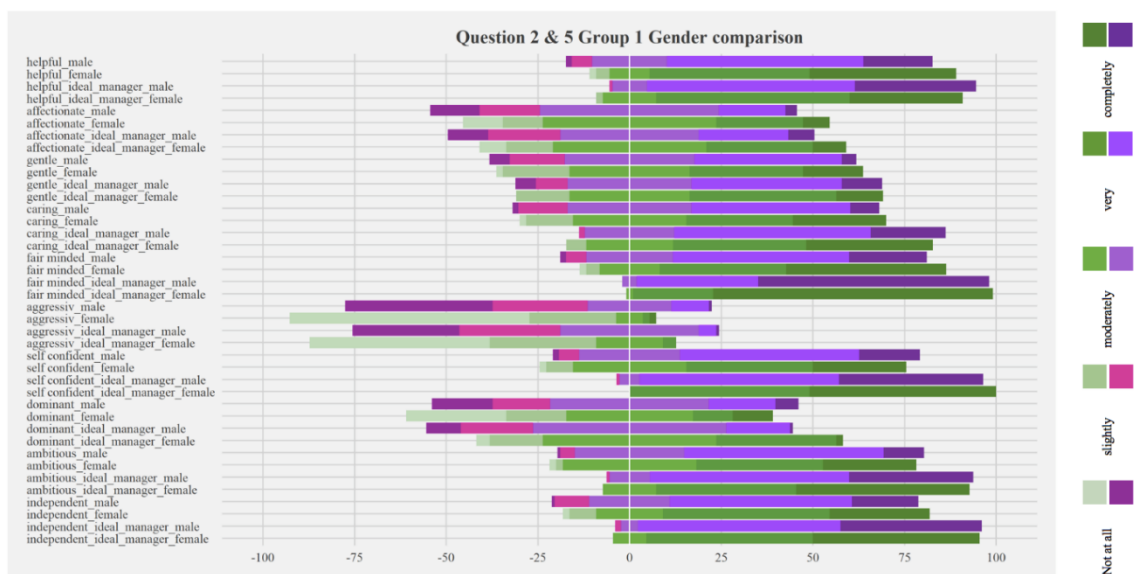
Figure 35 Gender comparison of answers to question 2 and 5 in Group 1
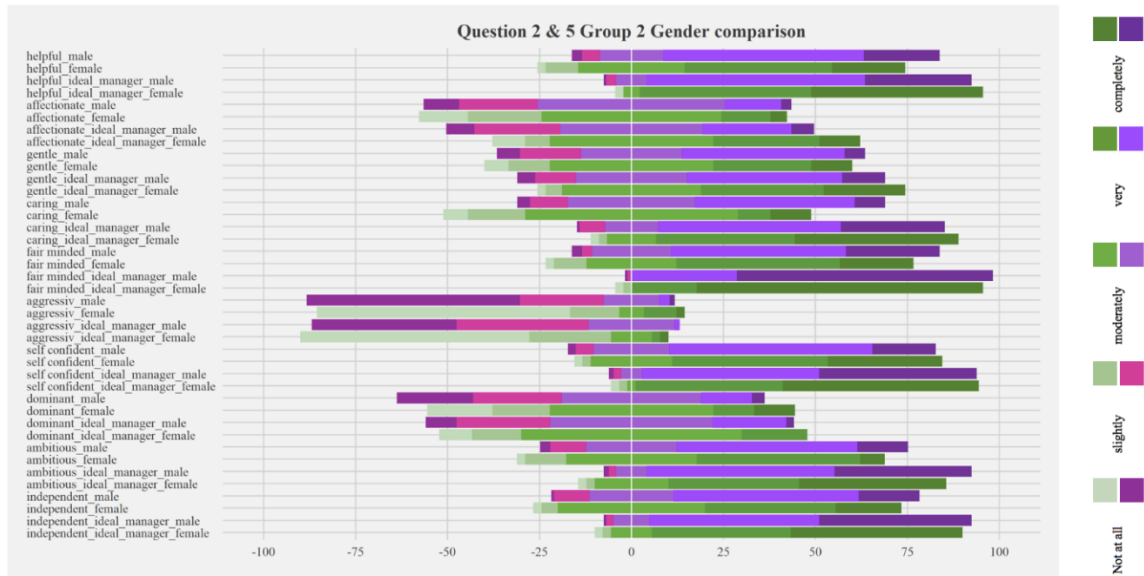
Figure 36 Gender comparison of answers to question 2 and 5 in Group 2
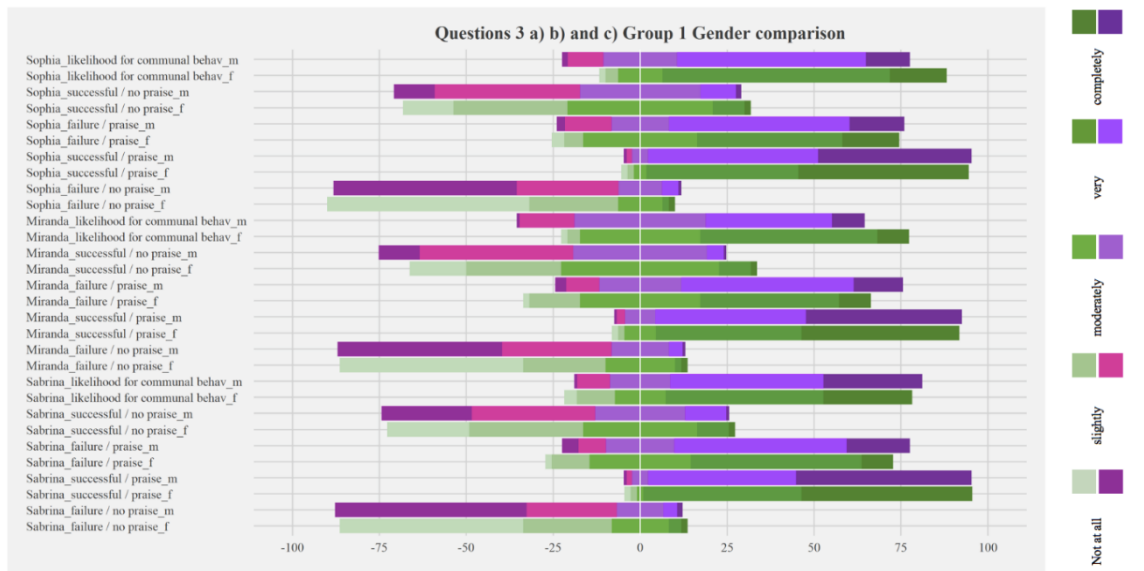
Figure 37 Gender comparison of answers to question 3 in Group 1
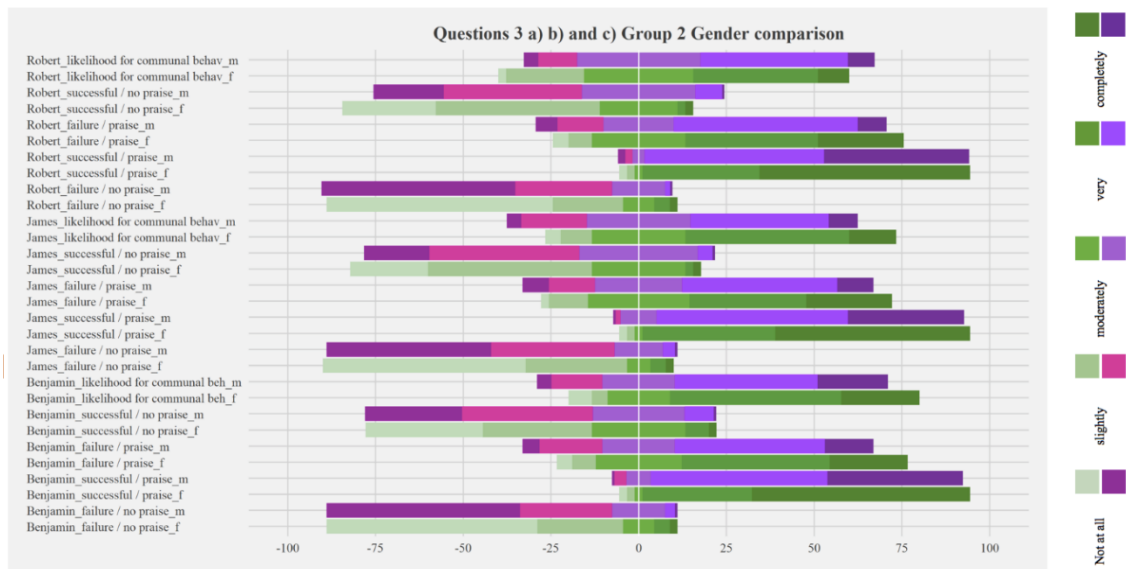
Figure 38 Gender comparison of answers to question 3 in Group 2
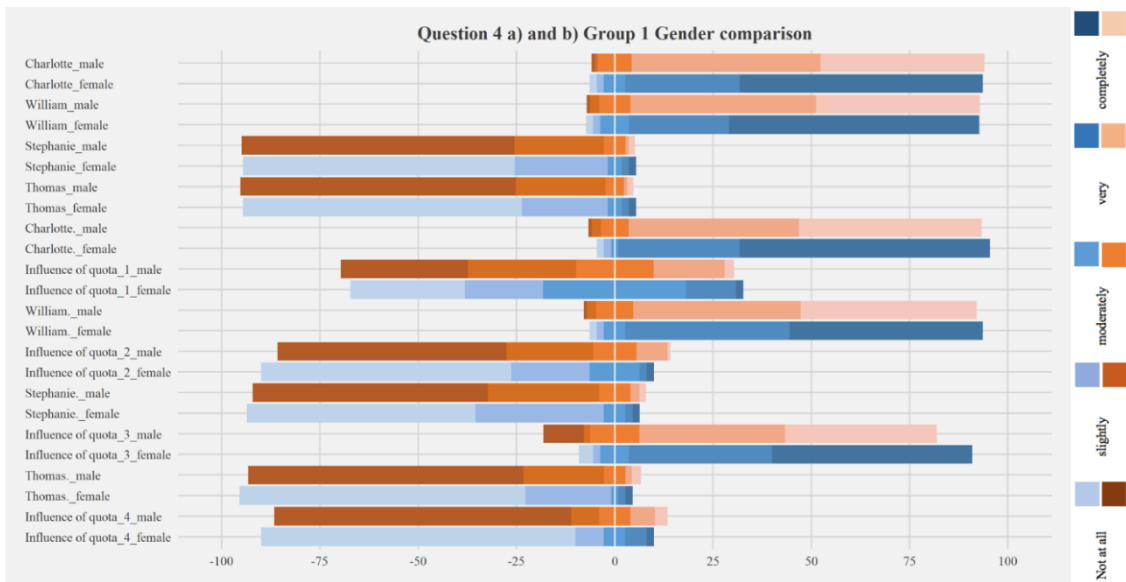
Figure 39 Gender comparison of answers to question 4 in Group 1
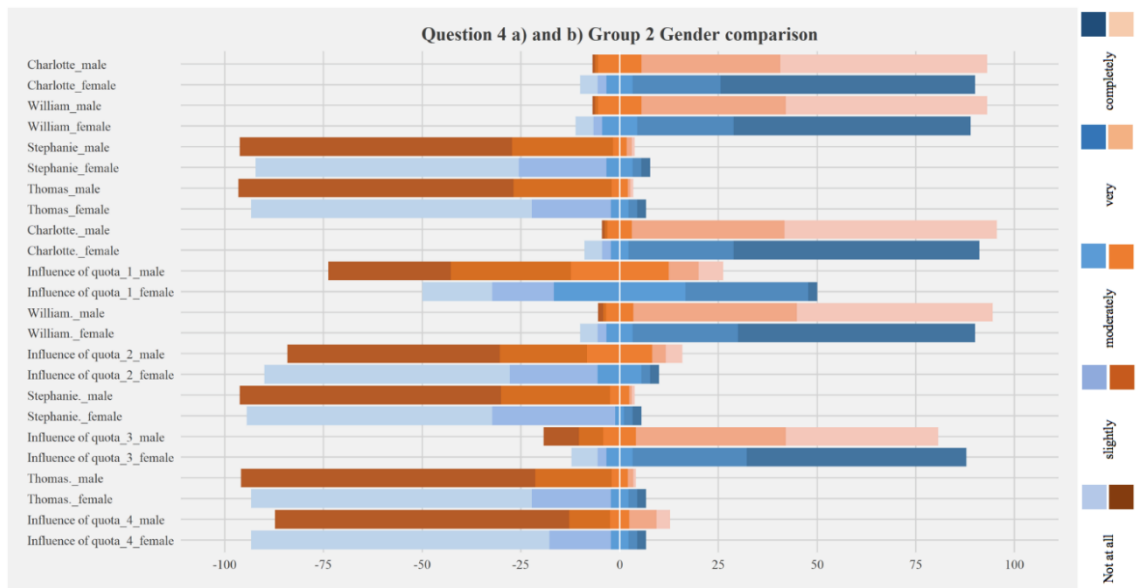
Figure 40 Gender comparison of answers to question 4 in Group 2

Survey

Survey for my master's thesis in IT sector in Austria

Thank you for participating in this survey, it forms the basis of my master's thesis at the University of Vienna. So, it is you who enables me to graduate!

Your participation is voluntary. You may choose not to participate, and you may withdraw at any time of completing the survey. All provided data will be kept strictly confidential and anonymous. The survey does not contain information that will personally identify you. The results are used for academic purposes only.

You may need about 10 minutes to complete the survey. Please read and answer all the questions carefully.

Consent Form

By clicking "Agree" you confirm that:
- you have read the above information
- you voluntarily agree to participate
- **you work in a company in the IT sector in Austria**

☐   Agree

☐   Disagree (don't participate)

Start

1. **To start with…**

   a) Please specify your gender.

   ☐ Male
   ☐ Female
   ☐ Diverse

   b) Please enter your age.

   _____

   c) Please indicate to which functional area you belong within your company.

   ☐ IT business (all divisions in core business functions)
   ☐ Support functions (HR, Finance, Marketing, Administration, Legal, Accounting, Procurement, Management, etc.)

   d) Please select a level within the organization that best suits your current role.

   ☐ Employee without managerial responsibilities
   ☐ First-level management
   ☐ Middle-level management
   ☐ Top-level management

   e) Please select the range of annual gross income in Euros (€) that you currently earn.

   ☐ 0 – 30.000,-
   ☐ 30.001,- – 55.000,-
   ☐ 55.001,- – 85.000,-
   ☐ 85.001,- and above

   f) Please enter the city where your organization is headquartered in Austria.

   _____

   Next

GROUP 1:

2.   a) Please think of a *female* colleague within your organization who has a job with similar responsibility to yours:

To which degree would you attach the following characteristics to her?

Characteristic		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
Aggressive						
Helpful						
Self-confident						
Dominant						
Affectionate						
Gentle						
Ambitious						
Independent						
Caring						
Fair-minded						

Next

GROUP 1:

2. b) How competent would you rate this colleague whom you thought of?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Next

GROUP 2:

2. a) Please think of a *male* colleague within your organization who has a job with similar responsibility to yours:

To which degree would you attach the following characteristics to him?

Characteristic		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
Aggressive						
Helpful						
Self-confident						
Dominant						
Affectionate						
Gentle						
Ambitious						
Independent						
Caring						
Fair-minded						

Next

GROUP 2:

2. b) How competent would you rate this colleague whom you thought of?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Next

GROUP 1:

3. **a) Please think of the following scenario**:

Sophia (f, 35) is a Senior IT Architect. She has 11 years of working experience in IT Architecture and leads a team of 6 employees. Her annual gross income amounts to EUR 55.000,-.
Her last project was very successful.

How likely do you think it is that Sophia praises her team and holds a feedback round before starting the next project?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
likely						

Next

GROUP 1:

3. a) For the next 4 questions, please still think of the same person:

Sophia (f, 35) is a Senior IT Architect. She has 11 years of working experience in IT Architecture and leads a team of 6 employees. Her annual gross income amounts to EUR 55.000,-.

Now, imagine this happens:

Her last project was very successful. However, she did not praise her team, but directly went on to the next project.

How competent would you rate Sophia when it comes to her leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Her last project was a complete failure. However, she praised her team and held a feedback round before starting the next project.

How competent would you rate Sophia when it comes to her leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Her last project was very successful. She praised her team and held a feedback round before starting the next project.

How competent would you rate Sophia when it comes to her leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Her last project was a complete failure. She did not praise her team and directly went on to the next project.

How competent would you rate Sophia when it comes to her leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Next

GROUP 1:

3. b) Please think of this different scenario now:

Miranda (f, 26) is a Junior IT Architect. She has 2 years of working experience in IT Architecture and leads a team of 2 employees. Her annual gross income amounts to EUR 30.000,-.
Her last project was very successful.

How likely do you think it is that Miranda praises her team and holds a feedback round before starting the next project?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
likely						

Next

GROUP 1:

3. b) For the next 4 questions, please still think of the same person:

Miranda (f, 26) is a Junior IT Architect. She has 2 years of working experience in IT Architecture and leads a team of 2 employees. Her annual gross income amounts to EUR 30.000,-.

Now, imagine this happens:

Her last project was very successful. However, she did not praise her team, but directly went on to the next project.

How competent would you rate Miranda when it comes to her leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Her last project was a complete failure. However, she praised her team and held a feedback round before starting the next project.

How competent would you rate Miranda when it comes to her leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Her last project was very successful. She praised her team and held a feedback round before starting the next project.

How competent would you rate Miranda when it comes to her leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Her last project was a complete failure. She did not praise her team and directly went on to the next project.

How competent would you rate Miranda when it comes to her leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Next

GROUP 1:

3. c) Please think of this different scenario now:

Sabrina (f, 48) is an IT Architect. She has 24 years of working experience in IT Architecture and leads 4 teams. Her annual gross incomes amounts to EUR 85.000,-.
Her last project was very successful.

How likely do you think it is that Sabrina praises her team and holds a feedback round before starting the next project?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
likely						

Next

GROUP 1:

3. c) For the next 4 questions, please still think of the same person:

Sabrina (f, 48) is an IT Architect. She has 24 years of working experience in IT Architecture and leads 4 teams. Her annual gross incomes amounts to EUR 85.000,-.

Now, imagine this happens:

Her last project was very successful. However, she did not praise her teams, but directly went on to the next project.

How competent would you rate Sabrina when it comes to her leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Her last project was a complete failure. However, she praised her teams and held a feedback round before starting the next project.

How competent would you rate Sabrina when it comes to her leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Her last project was very successful. She praised her teams and held a feedback round before starting the next project.

How competent would you rate Sabrina when it comes to her leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Her last project was a complete failure. She did not praise her teams and directly went on to the next project.

How competent would you rate Sabrina when it comes to her leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Next

GROUP 2:

3. a) Please think of the following scenario:

Robert (m, 35) is a Senior IT Architect. He has 11 years of working experience in IT Architecture and leads a team of 6 employees. His annual gross income amounts to EUR 55.000,-.
His last project was very successful.

How likely do you think it is that Robert praises his team and holds a feedback round before starting the next project?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
likely						

Next

GROUP 2:

3. a) For the next 4 questions, please still think of the same person:

Robert (m, 35) is a Senior IT Architect. He has 11 years of working experience in IT Architecture and leads a team of 6 employees. His annual gross income amounts to EUR 55.000,-.

Now, imagine this happens:

His last project was very successful. However, he did not praise his team, but directly went on to the next project.

How competent would you rate Robert when it comes to his leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

His last project was a complete failure. However, he praised his team and held a feedback round before starting the next project.

How competent would you rate Robert when it comes to his leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

His last project was very successful. He praised his team and held a feedback round before starting the next project.

How competent would you rate Robert when it comes to his leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

His last project was a complete failure. He did not praise his team and directly went on to the next project.

How competent would you rate Robert when it comes to his leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Next

GROUP 2:

3. b) Please think of this different scenario now:

James (m, 26) is a Junior IT Architect. He has 2 years of working experience in IT Architecture and leads a team of 2 employees. His annual gross income amounts to EUR 30.000,-.
His last project was very successful.

How likely do you think it is that James praises his team and holds a feedback round before starting the next project?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
likely						

Next

GROUP 2:

3. b) For the next 4 questions, please still think of the same person:

James (m, 26) is a Junior IT Architect. He has 2 years of working experience in IT Architecture and leads a team of 2 employees. His annual gross income amounts to EUR 30.000,-.

Now, imagine this happens:

His last project was very successful. However, he did not praise his team, but directly went on to the next project.

How competent would you rate James when it comes to his leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

His last project was a complete failure. However, he praised his team and held a feedback round before starting the next project.

How competent would you rate James when it comes to his leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

His last project was very successful. He praised his team and held a feedback round before starting the next project.

How competent would you rate James when it comes to his leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

His last project was a complete failure. He did not praise his team and directly went on to the next project.

How competent would you rate James when it comes to his leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

GROUP 2:

3. c) Please think of this different scenario now:

Benjamin (m, 48) is an IT Architect. He has 24 years of working experience in IT Architecture and leads 4 teams. His annual gross incomes amounts to EUR 85.000,-.

His last project was very successful.

How likely do you think it is that Benjamin praises his team and holds a feedback round before starting the next project?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
likely						

Next

GROUP 2:

3. c) For the next 4 questions, please still think of the same person:

Benjamin (m, 48) is an IT Architect. He has 24 years of working experience in IT Architecture and leads 4 teams. His annual gross incomes amounts to EUR 85.000,-.

Now, imagine this happens:

His last project was very successful. However, he did not praise his teams, but directly went on to the next project.

How competent would you rate Benjamin when it comes to his leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

His last project was a complete failure. However, he praised his teams and held a feedback round before starting the next project.

How competent would you rate Benjamin when it comes to his leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

His last project was very successful. He praised his teams and held a feedback round before starting the next project.

How competent would you rate Benjamin when it comes to his leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

His last project was a complete failure. He did not praise his teams and directly went on to the next project.

How competent would you rate Benjamin when it comes to his leadership competence?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
competent						

Next

GROUP 1:

You are almost done!

4. a) Please think of this scenario:

Olivia moves up the hierarchy, leaving her current managerial position to be filled by one of the two-person team. She has to decide whom to advance.

She selects Charlotte. Compared to her male colleague, she has worked very hard to achieve her current role. She has loads of experience.

How fair do you rate the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
fair						

She selects William. Compared to his female colleague, he has worked very hard to achieve his current role. He has loads of experience.

How fair do you rate the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
fair						

She selects Stephanie. Compared to her male colleague, she did not show much effort in her current role. She has little experience.

How fair do you rate the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
fair						

She selects Thomas. Compared to his female colleague, he did not show much effort in his current role. He has little experience.

How fair do you rate the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
fair						

Next

GROUP 1:

4. b) Imagine the company Olivia works for has set a female quota for managers.

Their target is to have 50% women in all manager roles, which has not been met yet. Olivia moves up the hierarchy, leaving her current managerial position to be filled by one of the two-person team. She has to decide whom to advance.

She selects Charlotte. Compared to her male colleague, she has worked very hard to achieve her current role. She has loads of experience.

How fair do you rate the decision?

		Not at all	Slightly	Moderately	Very	Completely
		1	2	3	4	5
fair						

To which extent do you think that the target quota influenced the decision?

		Not at all	Slightly	Moderately	Very	Completely
		1	2	3	4	5
extent						

She selects William. Compared to his female colleague, he has worked very hard to achieve his current role. He has loads of experience.

How fair do you rate the decision?

		Not at all	Slightly	Moderately	Very	Completely
		1	2	3	4	5
fair						

To which extent do you think that the target quota influenced the decision?

		Not at all	Slightly	Moderately	Very	Completely
		1	2	3	4	5
extent						

She selects Stephanie. Compared to her male colleague, she did not show much effort in her current role. She has little experience.

How fair do you rate the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
fair						

To which extent do you think that the target quota influenced the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
extent						

She selects Thomas. Compared to his female colleague, he did not show much effort in his current role. He has little experience.

How fair do you rate the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
fair						

To which extent do you think that the target quota influenced the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
extent						

Next

GROUP 2:

You are almost done!

4. a) Please think of this scenario:

Gabriel moves up the hierarchy, leaving his current managerial position to be filled by one of the two-person team. He has to decide whom to advance.

He selects Charlotte. Compared to her male colleague, she has worked very hard to achieve her current role. She has loads of experience.

How fair do you rate the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
fair						

He selects William. Compared to his female colleague, he has worked very hard to achieve his current role. He has loads of experience.

How fair do you rate the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
fair						

He selects Stephanie. Compared to her male colleague, she did not show much effort in her current role. She has little experience.

How fair do you rate the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
fair						

He selects Thomas. Compared to his female colleague, he did not show much effort in his current role. He has little experience.

How fair do you rate the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
fair						

Next

GROUP 2:

4. b) Imagine the company Gabriel works for has set a female quota for managers.

Their target is to have 50% women in all manager roles, which has not been met yet. Gabriel moves up the hierarchy, leaving his current managerial position to be filled by one of the two-person team. He has to decide whom to advance.

He selects Charlotte. Compared to her male colleague, she has worked very hard to achieve her current role. She has loads of experience.

How fair do you rate the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
fair						

To which extent do you think that the target quota influenced the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
extent						

He selects William. Compared to his female colleague, he has worked very hard to achieve his current role. He has loads of experience.

How fair do you rate the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
fair						

To which extent do you think that the target quota influenced the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
extent						

He selects Stephanie. Compared to her male colleague, she did not show much effort in her current role. She has little experience.

How fair do you rate the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
fair						

To which extent do you think that the target quota influenced the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
extent						

He selects Thomas. Compared to his female colleague, he did not show much effort in his current role. He has little experience.

How fair do you rate the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
fair						

To which extent do you think that the target quota influenced the decision?

		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
extent						

Next

5. Please think of your *ideal* perception of a manager. How would you describe this person based on the characteristics given below?

Characteristic		Not at all 1	Slightly 2	Moderately 3	Very 4	Completely 5
Aggressive						
Helpful						
Self-confident						
Dominant						
Affectionate						
Gentle						
Ambitious						
Independent						
Caring						
Fair-minded						

Next

6. **Last but not least: Please answer the following questions:**

    a) **Have you ever led or are you currently leading other members of an organization?**

        ☐ Yes
        ☐ No

    b) **Think of all managers whom you reported to until now. How many of them were female, how many were male?**

        _____ female

        _____ male

    c) **Think of the best manager you had until now. Please indicate the gender of this manager.**

        ☐ Female
        ☐ Male

    d) **What do you think is the purpose of this study? If you have no idea, type "n".**

        ☐ **Next**

Thank you for completing this questionnaire!

Your answers were transmitted, you may close the browser window or tab now.

Abstract

This thesis investigates the current status of the endorsement of traditional gender roles in organizations in the IT sector in Austria, that would explain the existence of an incongruity between the female and the leader role (as proposed by role congruity theory). I have also examined if there is a connection between the introduction of women's quotas and stereotyping. The results show that there is no evidence for an existing gender bias when it comes to traditional characteristics of men and women. Also, there is support for the rise of an androgynous leadership style, i.e. it is no more typical male traits which people relate to leadership, leading to the disappearance of an incongruity that hinders women to access management levels. Quotas were examined to have no effect on the fairness perception of advancements, and to possibly be a fruitful mechanism to overcome existing gender diversity barriers.

German Summary / Zusammenfassung

Diese Arbeit untersucht den aktuellen Stand der Befürwortung traditioneller Geschlechterrollen in Organisationen des IT-Sektors in Österreich, die das Bestehen einer Inkongruenz zwischen der weiblichen und der Führungsrolle erklären würde (wie die Rollenkongruenztheorie offeriert). Es wurde auch analysiert, ob es einen Zusammenhang zwischen der Einführung von Frauenquoten und der Aufrechterhaltung von Stereotypen gibt. Die Ergebnisse zeigen, dass es keine Hinweise auf geschlechtsspezifische Vorurteile gibt, wie es traditionelle Geschlechtermodelle vertreten würden. Auch konnten Hinweise darauf gefunden werden, dass die Führungsrolle nicht mehr mit typisch männlichen Merkmalen in Verbindung gebracht wird, was auf die Verbreitung des androgynen Führungsstils hinweist. Daher gibt es keinen Beweis für die angenommene Inkongruenz, die Frauen daran hindert, Zugang zur Managementebene zu erhalten. Es wurde auch gezeigt, dass Quoten keinen Einfluss auf die Fairnesseinschätzung von Beförderungen haben und ein fruchtbarer Mechanismus zur Überwindung bestehender Hindernisse für die Geschlechtervielfalt sein können.