Master's Degree Dissertation

Does Management have a Gender?

Antecedents of Missing Women in Management Positions

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Abstract

In the last decades women, especially in the developed countries, had more opportunities of accessing a higher education and achieving careers traditionally pursued by men. Still, the percentage of women in the leading management positions is low. Are there specific antecedents, which explain the existing gap between men and women who made it to the very top of their careers?

Using data from the World Value Survey, this thesis shows that the factors influencing this gap are diverse but lead to the following key conclusions. In older generations the gender gap in management positions is stronger and more present, and an increasing age is a contra productive fact for women that pursuit a management position. Belonging to a middle- or high-income class and having high education is positively related to female employment in general, as well as in management positions.

Religion leads all in all to a lower participation in the labor market, and inhibits the career path of females more, than the one of males. The equality and liberalism that a democracy reinforces and promotes, reduces the difference between women and men in the labor market, fostering female participation. This inclination towards equality in the labor market and in high hierarchical positions is also supported by values such as trust and respect.

Typical management attributes such as competition and risk preferences are important for the acquisition of a supervisor position, but do not increase the probability of a competitive or more risk-taking woman in a supervisor position.

Acknowledgement

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Finally, I must express my very profound gratitude to my parents and family, and to my fellow students for providing me with unfailing support and continuous encouragement throughout my years of study and through the process of researching and writing this thesis. This accomplishment would not have been possible without them. Thank you.

Laura Suhner

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Introduction

Differences in gender participation in the labor market have remained large despite continued efforts to eliminate them. Women have been underrepresented and less employed in comparison to men, with a higher difference at the management level. This has been changing worldwide and especially in developed countries, where a positive increase in the female representation has been the trend. On average around 39% of females are employed in comparison to the 61% of male, although it is visible that in some countries the representation is close to 50% (see Figure 1) (The World Bank, 2020). This underrepresentation has however many antecedents that have been studied across various sciences, like psychology, economics, biology and politics, which have contributed with their own perspective to identify and understand the origin and causes for gender differences in the labor market as well as in management positions.

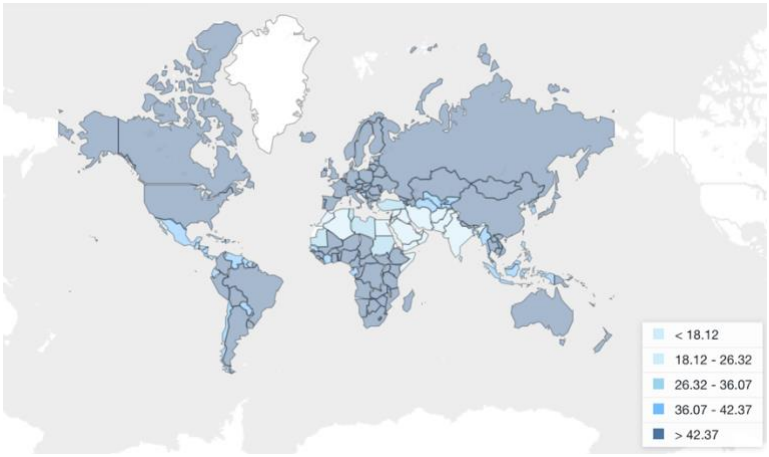


Figure 1: Map Female Labor Force in percent (The World Bank, 2020)

The economic perspective driven by the study of differences in human capital has been recently complemented with a growing wave of literature that attributed the gender gap to cultural and institutional traits (Tabellini, 2007).[1] These are linked to the prevalent perceptions, interpretations and exertion of values (Beutel & Marini, 1995), such as trust, respect and general morality. Also, psychological factors and preferences lead to observable systematic differences among female and male. A gender dependence is observed in the exertion of traits such as

[1] Human capital is the stock of habits, knowledge, social and personality attributes (including creativity) embodied in the ability to perform labor so as to produce economic value.

competition (Reuben, Sapienza, & Zingales, 2015), inclination towards negotiation (Akerlof, 2005), and risk preferences (Niedere & Vesterlund, 2007). Although the exertion of this attributes is mainly gender dependent, a correlation with cultural and social structure aspects (Gneezy, Leonard, & List, 2008) like tradition and history are observed and a premise of how these attitudes are exerted among its population, independent of the gender. This and also social norms, different aspirations (Azmat & Ferrer, 2017), identity (Akerlof, 2005) and biological factors, all have been the icebreaker of policymakers wanting to understand the source of the gender gap (Bertrand, 2011). These factors clarify many reasons for the gender gap in the workforce and management positions, which are not necessarily consistent and sometimes contradictive when they are observed and compared in a big picture. Thus, a gap with respect to how such factors interact, remains largely open in the debates.

The goal of this thesis is to find out how already-studied variables interact and establish the reasons of the existing labor market structure depending on the gender, and which interactions hold a higher statistical economic impact and significance. Based on this, the master thesis will be analyzing the impact of four main types of variables: *Demographics*, *Religion and Politics*, *Institution and Culture* and *Management Environment*. Demographics, like age, education, income-class, continent of residence and migratory background, are important aspects that need to be taken into consideration for a more accurate comprehension about the behavior of the widely studied psychological gender-dependent attributes. This, mainly with the intention of understanding if the studied elements have other, still unobserved characteristics. Having said this, there is still a lack of knowledge of how competition and risk preferences behave in combination with other factors such as demographics or institutions and culture. Moreover, how perceived trust or the importance of respect influences the willingness of women to participate in high career positions and how current living situations or surroundings, as well as culture, religion and political spectrum affect the gender difference. This shows the importance of analyzing the interaction of these four categories of variables together, in order to understand the correct antecedents of the prevailing gender gap. The objective of this study is to understand if by fixing certain variables like same background, opportunities and psychological preferences the gender gap is still prevailing or other aspects can influence it. If so, which are the background features that influence the gender difference the most and how the resulting economic significance is shaped.

The following key research questions will be elaborated in this master thesis: Which fundamental individual traits define the existing gender gap? How do perception and given personal traits influence the real outcome of employment and therefore gender prevalence in supervision/leading positions? What are the main factors that influence the lack of female representation in management positions and how do they interact between them? What antecedents and present factors shape the current situation and slow down the change in increasing gender equilibration in higher hierarchical levels?

The main findings are that age, high education and income lead to high possibilities of employment and occupancy of manger positions, independently of the gender. Increasing age is although an aspect, that promotes the gender gap in management positions the most. Risk inclination and a competitive character are also important attributes, but not as relevant as the economic status and education skills, and also do not necessary lead to a specific change in the female occupation, if they have those attributes. This is really important, as many authors have found out that the gender gap in management positions is driven by higher preferences for competition and risk (Niedere & Vesterlund, 2007), but actually we see that if a women has a high preference for competition and risk, these attributes will not lead to a change when acquiring supervisory positions.

Religion is a fact that inhibits participation in the labor market and the achievement of management positions, clearly more for women than men. This complements the fact, that religion is one of many important traits in gender inequality (Klingorová & Havlíček, 2015), and that this is also reflected in the unbalanced gender participation in the labor market. Europe, among all continents, shows the highest gender-equality in its labor market, whereas the other continents show in general a much lower female participation. The importance of values such as respect and trust for people in a democratic functioning society, influence the participation of each individual in the labor market and supervisory level, in which creativity, independence, and intellectuality are demanded. It is proven that females are more likely to express concern and responsibility for the wellbeing of others (Beutel & Marini, 1995), but in this case trust towards others and respect transmission through generations is important to be prevalent in the labor environment, and is equaly perceived among individuals, showing no gender dependency.

Finally, the interaction between all variables shows, that the attributes that most foster female participation in the labor market and the acquisition of supervising positions are highly

demandant on the economic status, education level and non-religious belief. Also, a tendency towards competition and risk-willingness are important facts required for being a manager, but do not imply a preference for female, if they have this attributes in order to get such a position.

The master thesis is structured as follows. First, I revise the relevant literature, which is the base for the development of hypotheses. This will be the base for the empirical analysis. Then I proceed with the analysis which will be divided mainly into two parts. The Methodology and the Data Analysis where the independent variables and the real labor outcomes (dependent variable) will be described. Next, I will complement this descriptive aspect with a statistical analysis to understand the significance and interactions between the potential shaping factors of the employment and leadership occupation regarding women and men. I will highlight the empirical results and discuss the potential conclusions of this work. Finally, I will present the limitation and potential future research opportunities in the fast-evolving topic of gender differences.

Theory and Hypotheses

Previous literature has taken several important steps to advance the reasoning behind the existent gender gap in the labor outcomes. To understand and critically analyze the background of the gender gap I will review the available and employed literature in order to develop the necessary and appropriate context for the upcoming research. The hypothesis of this work will be presented and then verified, justified, as well as corroborated after the corresponding theoretical literature.

Equality in gender is a recent and evolving topic, being primarily individuals of younger generations more eagerly looking forward to that equality than older ones. This comes hand in hand with the received education, which consists of the one received at home and the one acquired by institutions. The higher the institutional education, which is enabled by a high social status, the smaller the differences between genders in the outcomes regarding the rate of employment and type of position. This assumption is corroborated by the younger generation of a middle, respectively high-income class, willing and also having a higher possibility of attending a good and recognized education. As a consequence, better possibilities to enter good jobs and also leading positions are given. Always more women and men are equally prepared and have with high probability similar chances of pursuing and achieving leading positions. This statement

is based on the fact, that high education systems, are constructed in a way that not only the theoretical part is tough, but in which the process of acquiring and proving this knowledge, demands endurance, persistence, competition, and risk; important characteristic for the labor market and the acquisition of leading positions.

Why education? It has been studied multiple times, that personality differences between men and women may work in women's advantage. The focus so far has been on education. Women are now surpassing men in terms of educational achievements, specifically due to gender differences in behavioral aspects. Documentations show that among boys the ratio of attention deficit is higher (Szatmari, Offord, & Boyle, 1989) than among girls. Also, Goldin et al. (2006) show a higher incidence of arrest rates and school suspensions among teenage boys compared to teenage girls. The reason of gender differences however remains unclear. One hypothesis (Bjorklund & Kipp, 1996) is that women are better than men at delaying gratification. In a study of the Finnish education system (Pekkarinen, 2008), it has been shown how postponing the decision of choosing between vocational and academic tracks among students, led to a relative increase of the share of girls choosing the (more challenging) academic tracks, as well as a relative increase in the share of girls continuing into tertiary education. These behavioral aspects matter for the (reverse) gender gap in college attendance. Jacob (2002) shows that boys have much higher disciplinary and behavior incidents at school and that they spend fewer hours doing homework. The non-cognitive behavioral episode, as well as the higher college premium for women, can explain most of the female advantage in college enrollment.

As it has also been shown women are more educational-friendly and have therefore more discipline and a higher college premium; but does this influence their capabilities of assuming leading positions and all the corresponding attitudes? Gneezy et al. (2008) present a case study that appears to rule out a pure "nature-based" explanation for gender differences in attitudes towards competition. The idea behind this research consists in measuring gender differences in behavior across two distinct societies and taking a close look at opposite cultures when it comes to women's position in society. One culture is a patriarchal society and the other a matriarchal one. They find, that women behave differently between the two distinct societies, which goes against the perception that the behavioral differences between the genders are purely determined by genetics. The patriarchal society follows the same gender patterns as found in the western cultures (with 50% of the men choosing to compete compared to only 26% of women). He finds

the exact opposite development patterns in the matriarchal society (with 54% of women choosing to compete compared to only 39% of men). The willingness to compete is not purely driven by genetics. It remains possible that different socialization processes between these two societies result in a large evolutionary, cultural, and educational distance between them.

Education and human capital have a positive influence on economic growth and development. In particular, educating women increases human capital and growth (see: (Schultz, 1993); (Owen, Knowles, & Lorgelly, 2002); (Klasen, 2002)). The increased human capital of females directly impacts incomes and economic growth; however, there is a further benefit of educating women, because of the positive influence of mothers on the education and health of their children (Doepke, Tertilt, & Voena, 2011).

I will test if women with a good educational background, due to the fact that they had the opportunity to attend a good institution, leads to an ambitious and therefore more competitive and risk-taking behavior. Still some authors regard the genetic aspect an influencing factor (Niedere & Vesterlund, 2007), but not all take into consideration that this factor can be influenced additionally by education (Gneezy, Leonard, & List, 2008), leading to the first hypothesis:

Hypothesis 1: High academic education is positively related to female participation in management positions.

As well as the potential character of education, another factor that primary influences gender inequality is religion and culture, followed up by political institutions (Cooray & Potrafke, 2011). Klingorová & Havlíček (2015) also found, that religion is one of many important traits of gender inequality. Religious norms and traditions often define and assign the role of women in a society and therefore contribute to the formation of the inequality among the genders. They observed three categories: countries with a majority of unreligious population which showed the lowest levels of gender inequality; the Christianity and Buddhism which lead to an average level of gender inequality; and the Islam and Hinduism as the religions, which show the highest levels of gender inequality (Klingorová & Havlíček, 2015). However, religion is a factor, that presents an association with a high level of compassion and a lower level of materialism, which are aspects that reinforce the need for self-disclosure and supportiveness among others. Religion also leads to more predisposition for agreement and positive social behavior. In contrast, it leads to less

susceptibility for disagreement, negotiation, and task-oriented behaviors, that are key in the market orientation, most needed for management positions (Beutel & Marini, 1995).

Based on this, it is important to analyze if a prevailing and strong religious belief, leads to a reduction of the female presence in the labor market and therefore, religion being an important factor that shapes the gender inequality in the labor market instead of the genetical factor by its own, leading to the following hypothesis:

Hypothesis 2: Religious upbringing is positively associated with lower female participation in the labor market and the respective career type.

The relationship between institutions and/or culture and the gender gap has been studied and analyzed by many authors. Tabellini (2007) reports a causal effect between values and institutional outcomes. Individual values are consistent with generalized morality in societies that were ruled by non-despotic political institutions in the past and the well-functioning of them, are often observed in countries or regions, where the consistency between individual values and generalized morality is given. This vice-versa effect shows the causality regarding values and institutional results. The political outcomes are predicated with individual behaviors, which are defined by morality. This normative and collective value, which evolves slowly over time is an important and statistically significant channel through which the functioning of current institutions is influenced by distant political history. The civic culture and the education level of the populations is also a prerequisite to well-functioning and stable democracy, which prescribes abstract and internalized rules of generalized morality. Reciprocal cooperation, confidence and respect, viable law enforcement, low corruption, and high demand for social welfare is therefore more prevalent in such societies. Tabellini (2007) bases its analysis on two variables: trust towards others and respect transmission through generations. Enough evidence is given, to show that these values are consistent with generalized morality and correlated with the quality of the government (Tabellini, 2007). This finding is complemented with the perception of the values depending on the gender, which is studied by Beutel and Marini (1995). They develop their research of the gender difference based on three fundamental value orientations: compassion, materialism, and meaning in life. The following conclusions of Beutel and Marini (1995) are important, to understand the impact and influence of gender on the economic success and outcome, which embrace and require market values such as materialism and competition. It is proven that females are more likely to express concern and responsibility for the wellbeing of

others, as well as perceive importance in finding the purpose and meaning of life. This also has an impact on the market orientation, being female less reluctant to accept competition and materialism and therefore being these characteristics, potential measures that define the real outcome of the labor gender gap. Female relationships are marked by a higher emotional intimacy as well as empathy, and a greater need for self-disclosure and supportiveness among others, whereas males are characterized by making emphasis on mutual involvement in an impersonal way. This explains why women are more open to an agreement and rely positively on social behavior, while men engage more in disagreement, negotiation, and task-oriented behaviors. Beutel and Marini (1995) show that there is significant parallelism between the perception and character of gender and market values. Men are more aligned with this environment, due to lower compassion, higher avidity to materialism, and lower importance of finding meaning in life.

Social preferences are a systematic difference between genders. Women are more socially-minded than men and therefore, strong redistributive preferences might interfere with their financial success in the labor market. Stronger redistributive preferences could be partly responsible for women being less willing to compete or to negotiate. Croson and Gneezy (2009) and Eckel and Grossman (2008) summarize some experimental research that has been done in this field. They find evidence that it is broadly consistent with women giving away more than men. Other papers have demonstrated that women are today more left political minded than men (Edlund & Pande, 2002). However, the fact that this political gender gap has been changing over time (until the mid-1960s women were more conservative than men) and that this trend can be related to an increase in divorce risk and decline in marriage (Edlund, Haider, & Pande, 2005) suggests a more economic, rather than a purely psychological, explanation for women being more left-leaning: women may prefer more redistributive policies because they are more likely to be the beneficiaries of those policies, due to their lower average earnings. Fortin (2008) investigates the role of greed and altruism in explaining the gender wage gap and finds individual attitudes towards greed and altruism, but also ambition and leadership, to have the expected effects on a set of labor-market related behaviors and outcomes: individuals that display more greed and less altruism earn more. Moreover, women tend to score higher on most of those factors that are predictive of financially less attractive labor market outcomes. Actually, there is enough evidence that the gap in this soft factor between genders have shrunk a lot among the younger generation. Based on the previous literature the third hypothesis is:

Hypothesis 3: A working environment based on respect and fairness in evaluating performance increases the willingness of female participation in management positions.

The perception and execution of fundamental values come hand in hand with the perception and execution of market-oriented values. Market-oriented values are mainly shaped by competition, risk preferences, and attitudes toward negotiation. These psychological determinants have been studied before by many authors to understand why and if women shy away from competition. This reluctance to compete explains partly the prevailing gender gap among professionals. Bonin et al. (2007) empirically demonstrate that individuals who are less willing to take risks tend to sort into occupations with more stable earnings; which is an environment of risk-averse agents, which also tend to lower earnings on average. As Reuben, Sapienza and Zingales (2015) determine, gender explains 10% of the difference in competition, due to men willing to compete and women shying away from it. This leads to self-selection of the industry, which influences the level of earnings directly, being industries demanding different levels of competition and risk which induce higher return. Therefore, gender is a strong predictor of participation in the presented three industries (finance, consulting and other industries) as a function of competitive taste (Reuben, Sapienza, & Zingales, 2015). Niedere and Vesterlund (2007) among others, approach the taste for the competition from a slightly different perspective and also complements it with other different psychological factors such as overconfidence, risk preference, and feedback perception. By the creation of a tournament environment vs. a non-tournament environment with the help of a compensation scheme for the next performance, they observe that the gap is driven by the fact of men being more overconfident and the higher preferences of performing in a competitive environment, whereas risk and feedback aversion only play a minor role by the selection of the environment. Even though, Dohmen et al. (2011) show evidence of higher risk aversion among women in the general population. Dohmen et al. (2010) find that gender, but also parental education, age, and height have a quantitatively significant effect on one's self-assessed willingness to take a risk: the gender effect corresponds to about a quarter of a standard deviation reduction in the willingness to take a risk. The gender gap in risk attitudes is often explained with the gender gap in overconfidence. While both genders have been shown to display overconfidence, men appear particularly overconfident in their relative ability, especially when it comes to tasks that are perceived to be in the masculine domain (Beyer & Bowden, 1997). This larger relative overconfidence may make men more likely to enter riskier situations.

Negotiation can be viewed as a competition over resource distribution. The research on gender differences in competition and social preferences has been linked to gender differences in negotiation. While earlier analyses (Rubin & Brown, 1975) pointed towards a lack of consistent patterns, with many contradictory findings, more recent analyses (Stuhlmacher & Walters, 1999) started highlighting the importance of situational or contextual factors for gender differences in negotiation. Bowles et al. (2005) show that negotiation outcomes depend upon whether the individuals are told that they are negotiating for themselves or negotiating for others. In particular, women's performance in negotiation improves significantly when negotiating for someone else, opposed to for themselves; whether men negotiate for themselves or others has little effect on their negotiation performance. Bowles et al. (2005) relate this result with social preferences, such as feeling relatively less deserving (Major, 1987), or expecting more of a comeback if they negotiate for themselves (Rudman, 1998); (Rudman L. A., 1999). Finally, women may feel more obligated towards others than men do or may care more about others. Small et al. (2007) suggest that the negotiation language might be viewed as inconsistent with the norms of politeness that socially less powerful individuals are more likely to abide by.

While these studies often document economically large gender differences towards risk, competition and negotiation attitudes, or willingness to share with others, the real test for these new psychological perspectives on gender is whether they have any significance in explaining actual gender differences in the labor market (or labor-market relevant) outcomes. The existing research in this area is new and not conclusive due to many contradictory findings. Manning and Saidi (2010) used in their study the performance (or variable) pay at the occupation-level within British establishments. They find that fewer women in those occupations and establishments use variable pay instead of fixed pay contracts. While this is indeed what they found, the difference is quantitatively small, especially in contrast with the large gap in attitudes towards risk and competition observed in the laboratory. Lavy (2008) detects a real-world setting and studies how high school teachers' performance is affected when they are forced to participate in an academic subject-specific rank-order tournament where they are rewarded according to the relative performance of their classes. In contrast with the laboratory evidence, Lavy (2008) finds no statistical evidence that female teachers do worse under the tournament scheme. Besides, female teachers' performance in the tournament scheme does not appear to be statistically related to the gender mix of the comparison group. Örs et al. (2013) study the performance of men and women in the very competitive entrance exam to the Haute Ecole de Commerce (HEC) in France. They

find that women perform more poorly than men on the stressful and competitive entrance exam, with the performance distribution for men displaying much fatter tails, which is consistent with the competition hypothesis. Also a few descriptive field studies, have confirmed that women appear less likely to initiate negotiations. In a study from Babcock and Laschever (2003) of graduating professional school students, only 7% of female students attempted to negotiate their initial compensation offers, as compared to 57% of men.

Being a supervisor needs a certain temperament and personal character. Therefore, I assume that once women are in a leading position, they have a higher tendency to compete and to take higher risk in comparison to men, leading this to the following hypothesis:

Hypothesis 4: Women in leading positions have stronger preferences for risk-taking and competition as compared to men.

Continents, where the level of diversity is not extreme or non-existent at all, rather at a middle level (Europe and Asia), development is reinforced. This leads to a middle level of cooperative behavior in combination with a positive association towards an innovative activity. Quamrul and Oded deal with this topic among others in their research paper (2013). It has been demonstrated that throughout history, variation in migratory distance to various settlements across the globe affected the genetic diversity. It is verified that this has had a persistent hump-shaped effect on comparative economic development, therefore reflecting the trade-off between the beneficial and the detrimental effects of diversity on productivity. Resulting from it, the authors observed a hump-shaped effect on comparative economic development, detecting a trade-off between the effects of diversity on productivity. This means that the extreme high or less diversity leads to less development, whereas a middle level of diversity leads to optimal economic development. As they evaluated and figure out the beneficial and detrimental effects of diversity on productivity, they found out that the low diversity of Native American populations and the high diversity of African populations have been detrimental for the development of these regions and that the intermediate levels of diversity associated with European and Asian populations have been conducive for development (Quamrul & Oded, 2013). Genetic diversity is an index of expected heterogeneity, which leads on the one hand to a higher likelihood of distance and mistrust, resulting in lower cooperation, whereas on the other hand, it is a driver of knowledge accumulation and a process of selection. Being this said, an intermediate diversity level leads to an economically and statistically significant hump-shaped effect, finding that a middle level of

cooperative behavior in combination with a positive association with innovative activity are the key drivers of productivity and development (Quamrul & Oded, 2013). This literature describes the key drivers of productivity and development and induces the last assumption, if this key drivers could be the starting points and triggers for the reinforcement of equality among genders, due to more knowledge and also more inclination towards new structures and cultures, which means the inclusion of women at the management level. This is intended with the last hypothesis:

Hypothesis 5: A balanced diversity positively affects the participation of females in the labor market.

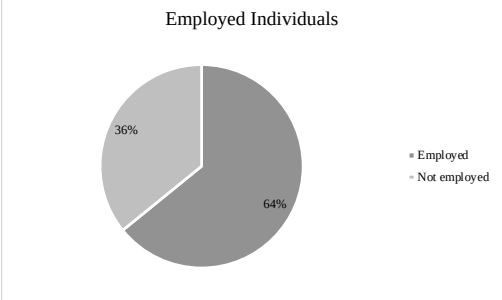
Study Design - Methodology

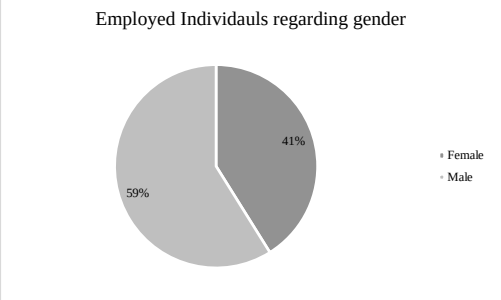
The Data used for this research paper is based on the World Value Survey [WVS] Wave 6, which was carried out from 2010 to 2014 (Inglehart, et al., 2014) by using a common questionnaire. The approach of this survey is to study the changes in beliefs, values, and motivation of people throughout the world and the impact on social and political life throughout almost 100 countries, which contains almost 90 percent of the world's population.

In the first place the specification that examines the differences in employment outcomes regarding gender specifications using cross-country evidence was used. The analysis relies on the data collected in the WVS, a compilation of national, individual-level surveys on a wide variety of topics, including preferences for values and political behavior, as well as competitive and risk scenarios. The survey also contains information on standard demographic characteristics, such as gender, age, education, labor market status, and income. The survey has been carried out six times (1981–1984, 1990–1993, 1995–1997, 1999–2004, 2005–2007 and 2010-2014). The coverage varies depending on the wave, from 22 countries in 1980 to 57 countries in the fifth wave. The sixth wave, the basis of this study, was carried out in 60 countries with more than 85,000 respondents. The WVS contains a richer set of questions on preferences for wealth redistribution but also regarding their labor market status.

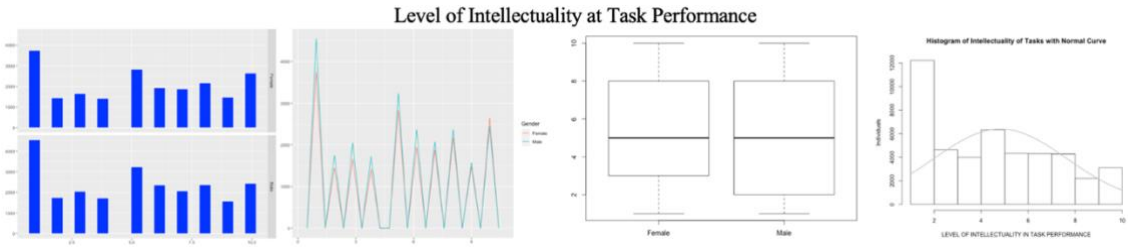
In particular, I run ordinary least squares (OLS) regressions on five different questions that represent the labor market outcome and could appropriately address the gender occupational differences in the market:

1. *Employment*: the question asks the respondent, "Are you employed now or not? If yes, about how many hours a week?" (Inglehart, et al., 2014). The answer could range from 1-3 for "paid employment" and 4-8 for "not paid employment", representing the first group as a person involved in the labor market and the second group as a person that is not active in the labor market because of being retired, a student or housewife.

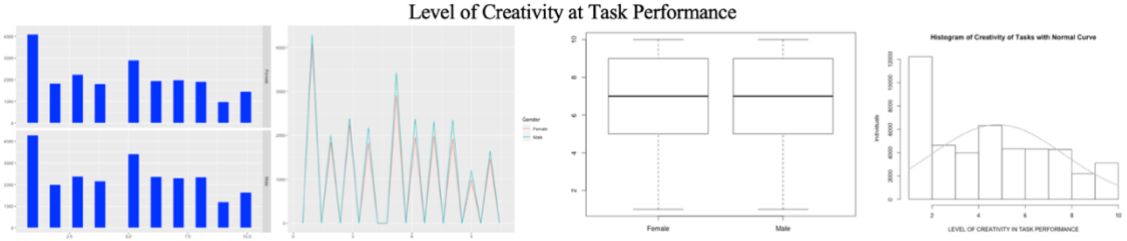




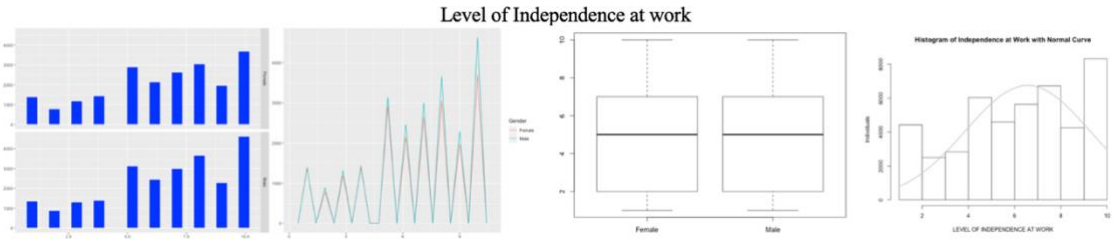
2. *Type of tasks*: Manual vs. intellectual: the question asks the respondent, "Are the tasks you do at work mostly manual or mostly intellectual?" (Inglehart, et al., 2014). The answer could range from 1 meaning "mostly manual tasks" to 10 meaning "mostly intellectual tasks".



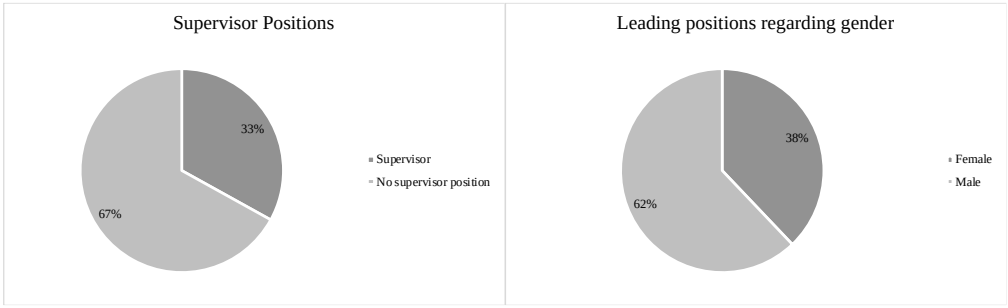
2.1. *Routine vs. creative*: the question asks the respondent, "Are the tasks you perform at work mostly routine tasks or mostly creative tasks?" (Inglehart, et al., 2014). The answer could range from 1 meaning "mostly routine tasks" to 10 meaning "mostly creative tasks".



2.2. *Level of independence*: the question asks the respondent, "How much independence do you have in performing your tasks at work?" (Inglehart, et al., 2014). The answer could range from 1 meaning "no independence at all" to 10 meaning "complete independence".



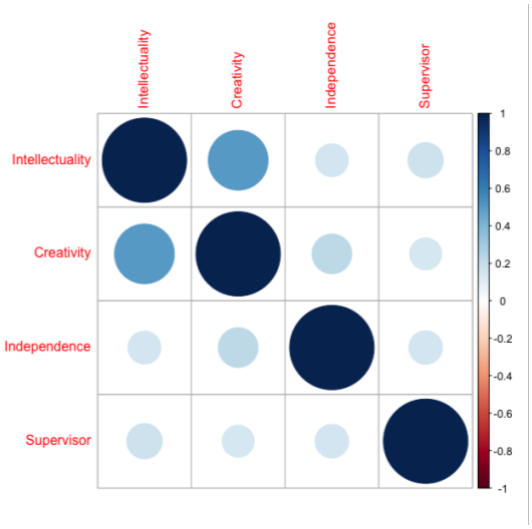
3. *Supervisor position*: the question asks the respondent, "Do you or did you supervise other people at work?" (Inglehart, et al., 2014). Being the answer "yes" or "no".



These five variables are going to be the dependent variables, in other words, the variables that I want to explain and understand where the roots of the different gender-dependent outcomes come from. On one hand the number of employed females and male is observed and on the other the different types of tasks. This implies the understanding of the type of position and work; an evaluation took place on how creative and intellectual the tasks of the employers are as well as the level of available independence in the execution of the corresponding tasks. Additionally, the existence of supervisory positions was analyzed.

The plots above show a difference of each dependent variable regarding the gender. Our sample consists of 45,347 individuals, 64% of them are employed and out of these, 41% are female and 59% male. Out of all employed individuals only 33% have or have had a supervisor position, out of them being only 38% women. More in deep, the type of tasks (see 2.1 and 2.2) as well as the prevailing independence at work, shows a similar distribution, pattern and median between the genders. As a goal I want to understand if the illustrated differences and similarities between genders are significant and if yes, what is the reason or antecedent of this difference.

All these outcomes are important, because they are an appropriate reconstruction of the scenarios that I want to understand related to the gender gap in the labor outcome. One specific scenario is management positions, which I reconstruct by defining them as a job in which higher creativity, intellectuality and independence is required. This is then reassured with the supervisory position in which one can see if the respondent has ever had or has a supervisor position. As in the shown graphs and correlation matrix (see Figure 2), there is a positive correlation between being a supervisor and the level of intellectual capacity mainly, followed by the level of creativity and independence when performing the tasks.



	Intellectuality	Creativity	Independence	Supervisor
Intellectuality	1	0.5	0.5	0.18
Creativity	0.5	1	0.22	0.14
Independence	0.15	0.22	1	0.16
Supervisor	0.18	0.14	0.16	1

Figure 2: Correlation Matrix

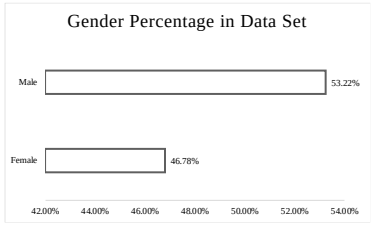
To be able to explain the dependent variables in an appropriate way and from many representative angles, I decided to create four main groups of variables. In the upcoming table (see Figure 3) the structure and division of the explanatory variables are shown.

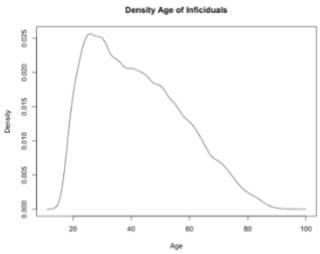
Demographics	Religion and Politics	Institution and Culture	Management Attributes
Gender	Religious belief	Democracy	Competition inclination
Age	Political position	Trust	Risk preferences
Continent of residence		Respect	Fairness perception
Income group			
Migration background			
Educational level			

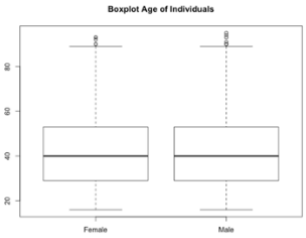
Figure 3: Independent Variables

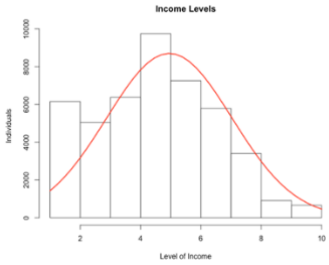
Demographics

The variables that fall under demographics are gender, age, income group, the migration background among individuals and the level of achieved education. The clean Data Set of the WVS Wave 6 consists of 53.22% of male respondents, and 46.78% of female respondents. As one can observe in the plots, the age distribution is mostly equal between gender. The median of the individuals' age is 40 years old, with a minimum age of 16 and a maximum age of 95.



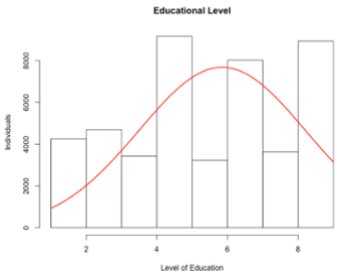




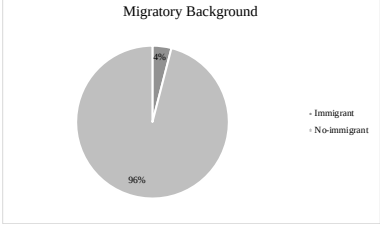


The income histogram supported by its normal distribution shows the distribution between the lowest and the highest group. The median is five at the scale of one to ten, being one the lowest income group and 10 the highest in the individual country. A higher concentration at the lowest tail (left side) makes it visible, that all individuals mainly belong to the lower-middle-income class, whereas only a minimal percentage belongs to the high-income group.

The education level shows a left-skewed distribution. Having said this, the education of the sample is mostly higher than the primary and secondary level but unfortunately incomplete in their accomplishment. The three prevailing education types are an incomplete secondary school of technical/vocational type, incomplete secondary of university-preparatory type, and some university-level education without a degree.

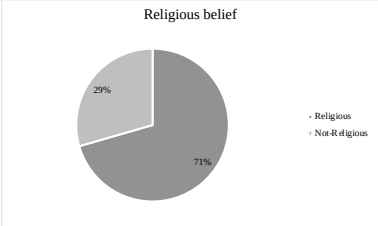


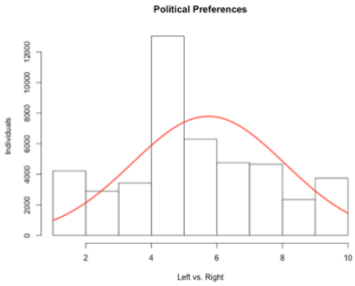
Respective to the migration background, where an individual is classified as an immigrant if he/she was not born in the country of living, only a minority of 4% of our dataset can be classified so.

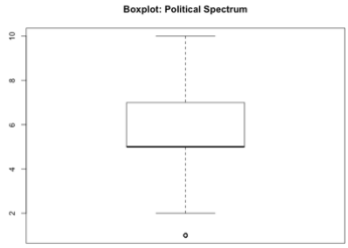


Religion and Politics

Religion and politics are interesting factors and descriptive variables of the gender gap. Here these two variables will be contemplated: religious or not, and a central political attitude versus an extreme (left or right) one. Religious are mainly 71% of the individuals in the WVS data set, whereas 29% are not religious or atheist.

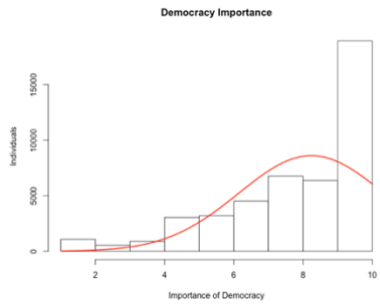


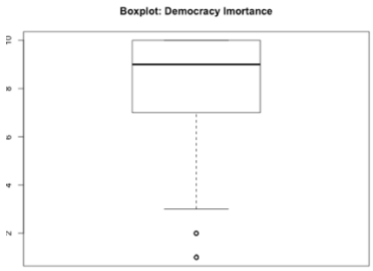




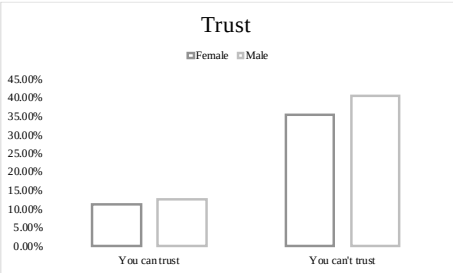
A concentration in the centrum with a slightly higher inclination towards the left side political wing, leads to a slight right-skewed distribution in the political spectrum, which is clearer in the boxplot. The median is 5, representing a central perception of political beliefs.

Institution and Culture

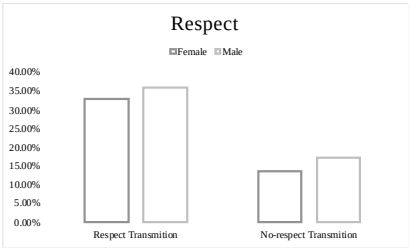




The perception of the importance of democracy is prevailing among the individuals of the data set. Being the median 9 and therefore the distribution left-skewed, one can observe that a political system based on the principles of democracy is still the most preferred among people.



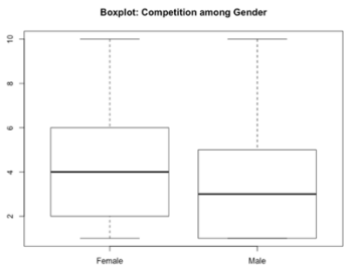
Although democracy as a system is the most important among people, one can see that trust in the integrity of the population is low and almost not different among gender. This could be due to the prevailing culture and functioning of the institutions as mentioned in the chapter of the literature review. Only 24% of our sample can trust most people, whereas 76% feel a need to be careful when dealing with trust among people.

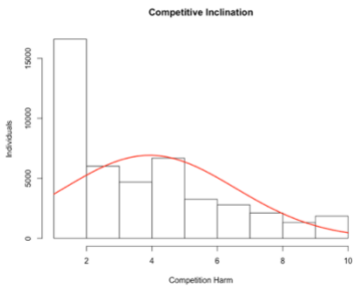


Despite the fact that trust is a cultural aspect that is not prevailing in almost everybody, respect is a value among 4 others, which people consider important and encourage their children to learn at home. It is an important value, being 69% of the population aware of the importance of it and therefore in favor of transmitting this value to their children as a priority.

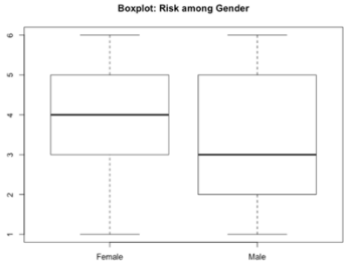
Management Attributes

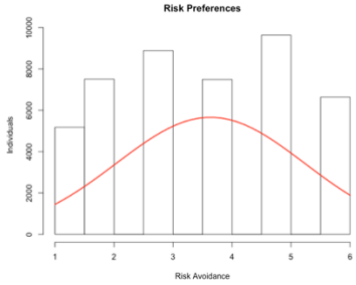
A leading position is mainly shaped due to a competitive and risk-friendly environment, where fairness is not prevalent. Therefore, these three questions will be potential variables to understand the possible gender gap.



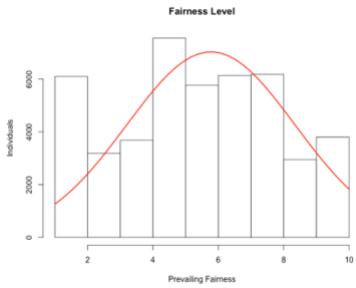


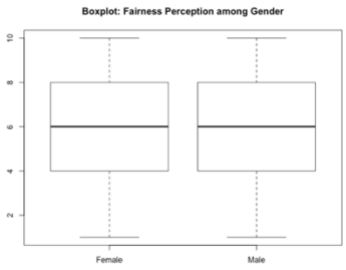
Competition can be good or harmful, depending on the perspective; if it leads to creative new ideas and stimulation of hard work or rather brings out the worst of people. From the WVS wave 6 one can read that a certain amount of competition is good but not "complete" competition. The mean is 4, which represents a right-skewed distribution as illustrated and shows that a sane amount of competition is beneficial in the eyes of mainly everybody. The mean is quite different among gender. The women





rate is one scale point higher than men (mean 4 vs. 3), meaning that they perceive competition a little bit more harmful than men do. Regarding risk preferences, females are more risk-averse than men (mean 4 vs. 3) by one point on the scale.





Fairness is an aspect that is equally perceived among women and men. The mean is 6, being the distribution left-skewed and the tendency inclined to think that people would try to be fair, instead of taking advantage for themselves.

I code all the outcomes and inputs as binary variables, except age (continuous variable), such that 1 represents the variable (dependent or independent) being true and 0 the variable which is not true, in other words, if the fact or situation doesn't take place[2]. The recoded and selected, dependent and independent variables are visible in the following Table (see Figure 4).

[2] A description of how the data was recoded, is reported in the supplementary Appendix.

		Name of the variable	Values	
Dependent Variables		Employment	Employed=1	Not employed=0
		Intellectuality	Intellectual task=1	Manual task=0
		Creativity	Creative task=1	Routine task=0
		Independence	Independence at work=1	No independence=0
		Supervisor	Supervisor=1	No supervisor position=0
Independent Variables	Demographics	Female	Female=1	Male=0
		Income	Middle-high income=1	Low-income=0
		Age	No recodification	
		Migration	Migrant=1	Non-migrant=0
		Education	High and completed education=1	No high/complete education=0
		Africa	Africa=1	Another continent=0
		Europe	Europe=1	Another continent=0
		America	America=1	Another continent=0
		Asia	Asia=1	Another continent=0
	Religion and Politics	Religion	Religious=1	Not religious / atheist=0
		Politics	Central political view= 1	Extreme political view=0
	Institution and Culture	Democracy	Importance of democracy=1	No importance=0
		Trust	Trustful surrounding=1	No trustful surrounding=0
		Respect	Importance of respect=1	Not important=0
	Management environment	Competition	Competition is good=1	Competition is not good = 0
		Risk	Risk friendly=1	Risk aversion = 0
		Fairness	Available fairness=1	Unfairness=0

Figure 4: Definition and Recodification of the Dependent and Independent Variables

Results

In this section I examine in a first step whether the selected independent variables are interesting and which effect they have on the outcome. In a second step I analyze in which way they interact with the variable of female (dummy variables) and determine whether they change the first effect of the female variable. Therefore, an understanding if management affinity has a gender and/or if some important antecedents diminish or increase the prevailing gender gap, will be provided. The effects of a singular independent variable will be given in a percentage. This percentage explains how big the deviation upon the dependent variable is corresponding to its mean (see

Figure 5), if the analyzed independent variable increases by one standard deviation [s.d.]. This always, considering that the remaining independent variables stay constant.

Outcome	Mean
Employment	0.6416521
Intellectuality	0.3669703
Creativity	0.3057534
Independence	0.5501356
Supervisor	0.3302313

Figure 5: Dependent Variables Means

As already mentioned, I run five OLS regressions to analyze the interaction of the female variable with all the selected variables chosen for the analysis. The data contains 45,347 observations. The independent variables explain from 5.2% to 9.9%, the variance of the dependent variables (labor outcomes). The variables explain 9.9 % of the task's intellectuality, 9.8% if a person is employed and 5.8% if the position is supervisory. Similar to the supervisor position is the explained amount of the task's creativity with 5.7%. The variable explained the less by the dependent variables is the independence level at work, with 5.2% (see Adjusted R2 in Figure 6). Although this model only explains the gender differences in the labor market by a maximum of 10% the important findings and recognitions are the interactions between the variables and the behavior of all variables when combining in one scenario. It also makes clear, that the labor market and the difference in gender participation is still explained by many other variables, making visible the complexity of this topic.

1.1. Demographics

Being a female has a significant effect upon three out of five outcome variables. As visible, the fact of being female harms being employed, referring that women are slightly less employed in general. An increase of one s.d. of this variable, is related to a decrease of 7.1% of employment with respect to its mean (0.64) by letting the remaining variables constant. A surprising and therefore hard interpretable issue among employed women, is that the fact of being female has a positive effect on the level of intellectual tasks and also on having a supervisor position. Here an increase of one s.d. is associated with an increase of 4.64% of intellectuality and 3.19% of supervisory positions in respect to their means (0.367; 0.33). Females have no significant effect upon the level of independence at the working space, neither on available creativity in the tasks performed at work. Visible is that being a woman has a negative effect on employment in

comparison to men, but that among the ones that are employed, they have a positive and significant effect on supervisory positions and intellectuality of tasks at their daily work, in comparison to men. It is important to say, that the question that stands here for supervisor positions, captures the fact of individuals being in charge of people, covering management position at all levels (low, middle and high).

Age, being a continuous variable -meaning the older the person the higher the effect- shows that being younger has a positive and significant effect on being employed. In other words, the resulting negative effect affects the older person as it gets more difficult to be employed with the age. The increase of one s.d. in the variable age is related to a decrease of 11.04% of employment. These effect changes of sign when comparing them with the other four outcomes, showing that the older the person the higher the level of intellectuality and creativity in the performance of tasks at work. Also, the level of independence is higher, and older individuals affect supervisory positions positively and significant. This increase is of 1.58% for intellectuality and creativity, 3.16% for independence and 7.89% for supervisory positions, with respect to an increase of one s.d. in the age variable. This is comprehensible, being younger people more employed in general and older people having normally higher positions and therefore confronted with more creativity and intellectuality with higher level of independence. The reason of this effect is mainly the long prevailing experience and knowledge that older people have acquired during their labor career. By interacting the variable age and female, it is visible that as women get older, the less the difference between female and men regarding being employed, due to the dummy variable leading to an increase of 2.37% upon the mean of the dependent variable, by one increase of its s.d.. The effect of age regarding women upon the other four dependent variables show that being older and a woman leads to a decrease on creativity (2.37%) and intellectuality (4.74%) of tasks and on the existing independence at work (2.37%) as well as supervisory position (7.11%). Having said that, it is visible that older females are more employed, but have much less supervisory positions and delete the positive effect females have on its own. In the older generations the gender gap in management positions is bigger.

Taking a closer look to the continent of origin of individuals, the effect or difference he/she has regarding the fact of being from Europe (this continent is reflected in the constant β_0, meaning Europe is the continent of reference), America, Asia, or Africa has a positive effect on being employed. The highest increase in employment by an increase of one s.d. of the variable

continent is given in Asia (3.79%), followed by America (3.33%) and last Africa (2.48%). Regarding the level of intellectuality at the workspace, being from America and Asia leads to a significant negative effect (2.66%, respectively 3.31%) in comparison to Europe. Being from Africa has therefore no significant effect. Having said this, coming from a country in Europe, leads to significantly more intellectual activities and tasks at the labor market. Regarding the creativity of the task, being from America has no significant effect upon this outcome, but being from Asia reduces the creativity level of tasks by a percentage of 3.6% with an increase of one s.d., which is different compared to an individual from Africa, showing a significant increment of 1% in the creativity level of the task at work by an increase of one s.d.. Independence is higher at work, if an individual is from America (+4.15%), followed by Africa (+1.22%), Europe, and last Asia (-1.22%). Regarding supervisor positions, the only significant and positive effect is given for individual's being from America, meaning that an increase of one standard deviation of this variable, is related to an increase of 1.84% in supervisory positions. Being from the other continents has no significant effect on individuals having a supervisory position.

Deducted from these coefficients it can be said, that Asia has in general more people employed, but the tasks that they perform are mainly manual and routine work in comparison to the other continents. Also, lower independence is available in Asia. In America more individuals are employed in comparison to Europe and Africa, where the availability of working places is the highest among the four continents, but intellectual tasks are also scarce like in Asia. Finally, the level of independence and supervisor positions in America is the highest among all four continents. In the level of creative task, America is similar to Europe, whereas Africa shows the highest effect of this characteristic. These aspects can have the cause in the fact that Europe is less hierarchical in its companies' structure, but therefore the tasks have an intellectual, as well as independent character, which is on average the highest among all continents. Asia has more employment but much more routine and manual tasks, with lower independence rates. This could be due to the fact that China is much more focused on the manufacturing sector, where these characteristics are less required. The visible difference between America and Africa with Europe could be because of the differences in the hierarchical structures of companies, as mentioned above. These reasons should although be analyzed and examined separately.

Regarding the interaction between the continents and females, being a woman from America, Asia or Africa, leads to a significant negative effect in some depended variables by an increase

of one s.d. of the dummy variable. Being a female and from Asia or America leads to a decrease of 4.65%, respectively 2.31% of employment and also to a decrease of the creativity level (0.71%, respectively 1.2%). The intellectuality also decreases in these two continents for females (1.2% and 2.48%), as well as in Africa (2.59%). An increase of 1% is given for African women on the level of independence at work.

Being from the middle- or high-income group of the corresponding residence country has a positive effect on all five outcomes. The highest effect is visible on the level of intellectuality with an 8.1% increase, followed by the fact of an individual having a supervisor position (6.4%). Both outcomes are most influenced by the income level, afterwards following the creativity (6.04%), then the level of independence (4.58%) and last the employment (3.46%). This makes sense, being people with a higher income able to have higher education and therefore better possibilities of employment, more demanding tasks and higher positions. Therefore, it is visible that high income influences more on supervisory positions than the fact of being employed. The interaction between female and income shows, that women from a middle- or high-income class in its region, decrease the effect females have upon supervisory position by 1.98% if the s.d. of the dummy variable increases by one. Nevertheless, the sum of both percentages (Female + Female*Income), still leads to an increase of 1.21% on supervisory positions with respect to its mean. The fact of being a woman from a middle- or high-income is related to an overall positive effect on supervisory positions.

The migratory background does not affect any of the five outcomes. In other words, being an immigrant does not influence the fact of being employed or not, how creative and intellectual your tasks are, if the individual has a supervisor position or not and neither upon the level of independence perceived, in case the individual is employed. This is intuitive, mainly because for an immigrant his biggest task is to search for a better life, meaning, a better job employment, better life conditions and security. Although this variable is not significant on its own, the interaction with female shows, that being a female and having a migratory background, makes the effect of female upon employment more negative. An increase of one s.d. of the dummy variable is related to a decrease of 0.53% of employment with respect to the mean, which would lead to a total decrease (sum with Female variable) of 7.6% with respect to the mean of employment. On the opposite, the fact of being an immigrant and a woman is related to an increase of 1% of the intellectuality at work.

Similar to the explanatory variable of income, the educational level has a significant and positive effect on all five outcomes. The biggest increase by a respective increase of one s.d. of the variable education, is of the intellectuality of the task (6.67%), followed by a supervisor position (3.71%), employment (3.56%) and the creativity of the tasks at the work (2.77%). Lastly, education leads to a really small increase of 1% on the independence an individual perceives at his job. This is congruent with the already presented reason of being education a strong predictor of employment and also position level. Education also creates some changes in the explanatory variable female, observed in its corresponding dummy variable. If a woman has a high and completed education, the negative effect of female upon employment is significantly reduced and the positive effect of gender upon the creativity and intellectuality of the tasks also increases. The increase of one s.d. of the dummy variable (Female*Education), is related to an increase of 2.1% on employment, 1.7% on intellectuality and 1.25% on creativity with respect to their means. An opposite effect is visible upon the dependent variable of being a supervisor. The fact of having high education and being a woman leads to a decrease of 0.76% on being a supervisor. Although, the sum of both percentages (Female + Female*Education) leads still to an increase of 2.43% on supervisory positions with respect to its mean. The fact of being a woman with a good and high education is related overall (Female + Female*Education) to an increase of supervisory positions.

1.2. Religion and Politics

Regarding the religious beliefs, it is visible and significant, that if a person is religious this has a negative and similar effect upon all five outcomes, except in the independence level. By an increase of one s.d. of the variable religion, a decrease of 1% of employment, 1.28% on intellectuality, 0.73% on creativity and 0.87% on management position is related. On the opposite an increase of 0.87% of independence is visible. Religious women have a bigger statistically negative effect upon employment and a negative effect upon supervisor positions. The negative effect is 2.16% on employment (total of 9.6%) and 1.14% on management position with respect to its mean, if the s.d. of the dummy increases by one. This shows the conservative view of religious people and therefore how the already negative effect that religion has upon the outcomes are being even more visible and rigid, if the individual is a woman.

The political view, more precisely referring to a central political perspective, has only a negative and significant effect upon the level of intellectuality (3.26%) and creativity of the tasks (3.02%)

and the level of independence (2.13%) at the working space. Whereas in being employed and having a management position, the effect is not significant and therefore absent. Having a central political inclination increases the positive effect female has upon the two dependent variables of being confronted with intellectual and creative tasks at work. This could be due to the fact of a more liberal view of the labor structure and the roles of women in society.

1.3. Institution and Culture

If an individual considers democracy a really important type of government, the effect of this perception is significant and positive upon all outcomes. An increase of one s.d. of the variable democracy, is related to an increase of 5.56% of independence, followed by 3.59% of intellectuality, 2.8% of creativity, 1.22% of supervisory positions and 1.1% of employment with respect to their means. If females consider democracy a really important type of government (Female*Democracy) an increase of 1.11% of employment is given by an increase of one s.d. of the dummy variable, of independence and supervisory positions a decrease of 1.12% and 1.07% is visible upon the female variable. Overall an increase of 2.21% on supervisory position is given for female that give importance to democracy. This result can be related to the equality and liberalism that the democracy reinforces and promotes and therefore reassures the identification with it and its values. This reduces the difference between women and men being employed and also the difference between the occupations of supervisor positions.

The perception of an individual, regarding the fact that he/she can trust people around them has a positive and significant effect upon all dependent variables except upon being employed and having independence at work. The highest increase by one s.d. change in the variable trust is the one of intellectuality with 2.95% followed by the creativity (2.22%) and management positions (1.07%). More specific, if a woman perceives a trustful environment, she is more inclined to accept the employment (+0.89% change of dependent variable by one s.d. change in dummy variable). The importance of respect has also a positive and significant effect on the fact of individuals showing more creativity on the performed tasks (0.69%), higher independence at work (1.85%) and also more supervisor position (0.79%). This outcome is general and doesn't lead to a particular difference for women.

1.4. Management Attributes

A competitive character is indeed needed for being employed, having a high level of independence and also being selected for a supervisor position. This is although not applicable to the level of creativity at work, which is moreover reduced if being competitive. An increase of one s.d. of the variable competition, is related to an increase of 9.3% of employment, 1.66% of independence and 2.15% of management positions. A decrease of 1.13% is related to the creativity. Being risk-friendly is also an attitude that fosters the fact of being a supervisor (+1%) and to be confronted with creativity (2.2%), intellectuality (0.6%), and independence at work (0.85%); which rather has a negative effect for being employed (-0.6%). In general, although a woman is competitive and risk-friendly; which she is not at a higher level than man, moreover at the same level; these are attributes that will not favor her to have a different outcome at the labor market (employed or supervisory positions). Being female and risk-friendly or competitive doesn't lead to a higher possibility of receiving a supervisor position.

If fairness prevails and the individual also perceives that, people are more open of being confronted with high creative and intellectual tasks, and also more independence at their work. The corresponding incrementations of one s.d. of the variable trust are 3.06%, 2.32% and 3.7%. On the contrary, the perception of fairness leads to a decrease of 0.64% on employment. Fairness although perceived, is not a deterministic nor an influential factor upon being a supervisor. More specific, if a woman perceives fairness in her surroundings, such as the working environment, the gap between female and male on the employment rate is reduced, and also females will be willing to have more independence at work. In other words, an increase of one s.d. of the dummy variable, is related to an increase of 1% on employment and independence.

Dependent Variable:	Employment	Intellectuality	Creativity	Independence	Supervisor
	(1)	(2)	(3)	(4)	(5)
Female	-0.142***	0.093***	0.022	0.027	0.064***
	0.024	0.024	0.024	0.026	0.024
Age	-0.007***	0.001***	0.001***	0.002***	0.005***
	0.0002	0.0002	0.0002	0.0002	0.0002
America	0.085***	-0.068***	-0.013	0.106***	0.047***
	0.01	0.01	0.009	0.01	0.01
Asia	0.078***	-0.068***	-0.074***	-0.024***	-0.009
	0.008	0.008	0.008	0.009	0.008
Africa	0.063***	-0.007	0.019*	0.031***	-0.007
	0.01	0.01	0.01	0.011	0.01
Income	0.073***	0.166***	0.124***	0.094***	0.131***
	0.006	0.006	0.006	0.007	0.006
Migration	-0.001	-0.018	-0.006	-0.009	-0.01
	0.016	0.016	0.016	0.017	0.016
Education	0.064***	0.135***	0.056***	0.019***	0.075***
	0.006	0.006	0.006	0.006	0.006
Religion	-0.021***	-0.028***	-0.016**	0.019***	-0.019***
	0.006	0.007	0.006	0.007	0.007
Politics	0.008	-0.066***	-0.061***	-0.043***	-0.008
	0.006	0.006	0.006	0.006	0.006
Democracy	0.027***	0.091***	0.071***	0.141***	0.031***
	0.008	0.008	0.008	0.008	0.008
Trust	-0.003	0.069***	0.052***	0.004	0.025***
	0.007	0.007	0.007	0.008	0.007
Respect	-0.003	0.006	0.015**	0.040***	0.017***
	0.006	0.006	0.006	0.007	0.006
Competition	0.019***	-0.00001	-0.023***	0.034***	0.044***
	0.006	0.006	0.006	0.007	0.006

Risk	-0.012**	0.012**	0.044***	0.017***	0.020***
	0.006	0.006	0.006	0.006	0.006
Fairness	-0.013**	0.047***	0.062***	0.075***	-0.001
	0.006	0.006	0.006	0.007	0.006
Female *Age	0.001***	-0.002***	-0.001***	-0.001**	-0.003***
	0.0003	0.0003	0.0003	0.0003	0.0003
Female * America	-0.081***	-0.087***	-0.042***	-0.004	-0.002
	0.014	0.014	0.013	0.015	0.014
Female * Asia	-0.124***	-0.032***	-0.019	-0.008	0.024**
	0.012	0.012	0.012	0.013	0.012
Female * Africa	0.006	-0.092***	-0.021	0.037**	0.015
	0.015	0.015	0.014	0.016	0.015
Female * Income	0.006	-0.01	-0.01	0.001	-0.044***
	0.009	0.009	0.009	0.01	0.009
Female * Migration	-0.037*	0.067***	0.014	-0.01	0.018
	0.022	0.022	0.022	0.023	0.022
Female * Education	0.047***	0.038***	0.028***	-0.014	-0.017*
	0.009	0.009	0.009	0.01	0.009
Female * Religion	-0.055***	0.015	0.005	-0.014	-0.024**
	0.01	0.01	0.01	0.01	0.01
Female * Politics	-0.003	0.028***	0.024***	-0.007	-0.004
	0.009	0.009	0.009	0.009	0.009
Female * Democracy	0.023**	0.017	-0.003	-0.025**	-0.022**
	0.011	0.011	0.011	0.012	0.011
Female * Trust	0.028***	-0.008	0.005	-0.001	0.011
	0.01	0.01	0.01	0.011	0.01
Female * Respect	-0.005	-0.006	-0.012	-0.005	-0.011
	0.009	0.009	0.009	0.01	0.009
Female * Competition	-0.002	0.001	0.002	0.003	-0.004
	0.009	0.009	0.009	0.009	0.009

Female * Risk	0.002	0.002	0.014	0.018*	0.014
	0.009	0.009	0.009	0.01	0.009
Female * Fairness	0.024***	0.005	0.008	0.025***	0.004
	0.009	0.009	0.009	0.01	0.009
Constant	0.836***	0.085***	0.131***	0.205***	-0.016
	0.016	0.017	0.016	0.017	0.016
Observations	45,347	45,347	45,347	45,347	45,347
Adjusted R2	0.098	0.098	0.057	0.051	0.058
Residual Std. Error (df = 45315)	0.456	0.458	0.447	0.485	0.457
F Statistic (df = 31; 45315)	159.261***	160.548***	89.011***	80.317***	90.334***
Note:			*p<0.1;	0.1; **p<0.05	; ***p<0.01

Figure 6: Regression of the Gender Antecedents

Findings

The results thus far show that the interaction of culture, values, institution, demographics and psychological attributes are really important and create a different perspective upon the labor market and the female role in it. All in all, the broad picture shows that the four aspects that most significantly influence the fact of having a supervisor position, independently of the gender, are:

- *Age with 7.89%*
- *Middle to high income class with 6.38%*
- *High and completed education with 3.71%*
- *Competition with 2.15%*

The aspects that create the highest benefits for females and therefore lead to higher probability of occupancy of supervisory positions are:

- *High and completed education with an increase of 2.43%*
- *Democratic importance with an increase of 2.12%*
- *Middle to high income with an increase of 1.21%*

The aspect that creates the highest disadvantage for females and therefore lead to high decreases of supervisory positions is age, with a decrease of 3.92%.

Gender in combination with the other variables, explains about 10% of the variance of the employment outcome, whereas only 5% explains the fact of being in a supervisor position or not. Stronger effects are due to demographics as well as the management and psychological attributes, that have been studied and argued so much, implying the fact that females do not have by nature the needed psychological attributes, such as competition or a preference for risk. But even if females are competitive and risk-friendly, these attributes do not imply a change for female in the occupancy of management positions, more clearly, they do not lead to a difference at all.

The five most important findings related to the study's predictions are the following. The fact of having a good and high education as well as belonging to a middle-high income group increases the probability upon being employed as well as having a higher complexity in the task's performance (creativity, intellectuality and independence) and also on the fact of having supervisory positions. By moving from secondary and unfinished high school to high and absolved education, the probability of being a supervisor increases by 3.71%, which is similar for the probability of being employed, 3.16%. The change to a higher education level also reduces the negative effect females have upon employment by 2.10%, and also reduces the positive effect gender has upon occupancy of supervisory levels by 0.76%. Belonging to the higher middle- or high-income group leads to a 6.38% higher probability of having a supervisory position, although reduces the positive effect female has upon being a supervisor by 1.97%. Being them the strongest effects of the demographic category and supporting the first hypothesis, it can be said, that having the same educational level, as well as a similar background and opportunity provided by the income class, the gender gap almost disappears and also is in favor of females being in supervisor positions. Age, therefore, shows that older males are the ones with more supervisor positions, leading increasing age to an increase of supervisory positions by 7.89%, but a decrease of female in that positions by 7.11%.

Strong religious beliefs reduce participation in the labor market by a probability of 0.96%, respectively 0.87% for being a supervisor. The fact of being religious also has a negative impact upon the female variable and decreases women positive effect by 2.61% on employment and 1.14% on supervisor positions. This result supports the second hypothesis. The fact of strong religious credence being linked to conservative views and predetermined roles of female and men in society, inhibits the change of women entering the labor market and automatically reduces the chance of being in a supervisor position (almost by the double amount).

If respect is a value that an individual, independently of the gender, perceives as important and also a priority in the transfer to children, a consequence upon management position is visible. Perceiving respect as fundamental lead to a 0.79% increase on management positions. Also, if trust is available and existing, individuals are more prone to acquire supervisor positions by 1.07%, as well as complex tasks. No change is visible specific for females' acquisition of supervisor positions, but it can be seen that a respectful and fair working environment is important for every individual to be part of the managing environment. If trust is perceived, the probability that a female is employed is although higher by 0.89%, in comparison to the situation where a female is aware of an unsecure and not trustworthy environment. This being said it can be admitted, that a working environment where respect and fairness in performance is perceived, an increased willingness of individuals participation in management positions is given. Therefore, the third hypothesis can be supported partially.

The fact of women in leading positions liking more risk and being more competitive is not supported (Hypothesis 4). A competitive female that has a supervisor position is not more competitive than men, respectively there is no significant visible effect on competition, neither gender. Moreover, the level of competition a person has as a supervisor is equal between females and males. There is no significant difference. By being competitive a 2.15% higher probability is given for acquiring a management position, independently of the gender. For the inclination towards risk the same conclusion applies, although the probability is higher by only 1% for each individual in the acquisition of management positions. An interesting finding, which addresses and questions the literature that tests either if a woman or man is more competitive or not (Niedere & Vesterlund, 2007) is the following. A competitive and risk-friendly character needs to be existing because it is an aspect that influences the fact of having a management position. But it doesn't make a significant change for females having that attributes to increase the fact of being promoted to a supervisor position. These being said, although females are less competitive and less risk-friendly, in real life, this doesn't influence being employed, neither being confronted with a specific demanding task nor being selected for a supervisor position.

As presented in the study of Quamrul and Oded (2013), a middle level of continents diversity fosters optimal economic development and productivity as well as innovation. Europe and Asia, where this middle level of diversity is shown, are the optimal places fostering the above-mentioned aspects. This finding can't be applied equivalently upon the labor outcomes regarding

gender, nor even the acquisition of a supervisor position. Therefore, this finding does not support the fifth hypothesis regarding the general labor market. However, other different, interesting and significant patterns where deducted. More equality among genders in supervisor positions is visible in Europe, whereas as a woman you have more possibilities to be a supervisor in Asia, by 0.9%. Although regarding the general employment, these continents are the once with the lowest female employment including Africa also. Europe is, therefore, the only continent where being a woman leads to a higher effect regarding being employed.

Discussion and conclusion

A large presence of the gender gap in the labor outcome and more specific in the management level is frequently debated and analyzed for policy discussion purposes. This paper contributes to this debate by providing a comprehensive and systematic analysis of the interactions among studied variables for the gender composition. Interesting and different findings were presented in the chapters before. These findings are confronted with some issues and limitations that need to be taken into consideration. The World Value Survey is a questionnaire that relies on perceptions and therefore subjectivity is prevalent. This subjectivity is given for example in what is perceived as an intellectual or a creative task at work, and what is understood under independence and supervisor positions. The level of these factors is not specified. Although it is proved that females are underrepresented in the management environment and also in labor work, this study shows that being female with specific attributes and characteristics is a fact that has a positive effect upon being a supervisor. The limitation although in this finding, is that the question for management and supervisory positions captures the fact of being in charge of people, representing all levels of management, from low, over middle, until high.

This master thesis only focuses on the interaction among variables and show that the gender gap is explained by many other variables that are left out. Therefore, this complex gender gap issue is a topic that will lead to interesting further researches. For example, it would be interesting to observe how personality explains part of this gap and how these traits may affect labor market earning through different channels. Personality traits are as important as productivity traits and cognitive skills in the management environment and can be translated in earnings or preference differences, such as occupational segregation or the willingness to take a risk and one's taste for

competition. These aspects have been started to be analyzed and observed based on the most commonly used inventory of personality traits described in the Big Five model (Digman, 1990). The Big Five personality traits are extroversion, agreeableness, conscientiousness, neuroticism and openness to experience. Psychologists have documented over the years gender differences in these five personality traits. How this would reinforce or diminish the management career would be interesting to examine. This and many other aspects, such as interpersonal skills, could be studied to elucidate if management has or not, or if a typical character trait and personality are among more important skills. Another aspect that has future discussion potential is, if competition and the willingness to take risk is prevalent among woman, a higher probability of acquiring a management position would be given. This is not visible in this thesis, on the contrary it shows that being a woman with such preferences, does not affect being a supervisor. Also, to test if the introduction of female quotas in companies is useful in the long term, or if promoting women's high education would lead to better and more appropriate elimination of this gap.

Summarizing the gender gap in the labor market is a complex and interesting topic that still is in its infancy and fledgling stage of being understood completely. Clear is, that future research will be needed to be able to understand other missing antecedents and to figure out the unexplained aspects of it.

Appendix

Appendix 1: Recodification of the Variables

With the purpose of establishing clearer tendencies, I summarized similar parameter values into one single code as follows. Employment, which could be answered in a range of one to eight, was recoded into one, for possible answers one to three and zero, for possible answers four to eight. One meaning that the individual is employed and zero that he/she is unemployed.

Regarding the types of tasks, I recoded the level of manual vs. intellectual tasks and routine vs. creative task identically, being the possible scale of the answer in the questionnaire the same. The individuals could rate the level of the properties of a task on a scale from one to ten, being one mostly manual, respectively routine tasks and ten mostly intellectual tasks, respectively creative tasks. Based on this and in order to see a clear effect, I recoded the variables again into one and zero. The value one was equivalent to the punctuation six to ten in the questionnaire, representing the intellectual and creative tasks. The value zero was equivalent to the answers one to five of the questionnaire, representing the manual and routine tasks.

How much independence do you have in performing your tasks at work? The answer was given also in a scale from one to ten, where one is equivalent to high independence in performing the tasks and ten equivalent to less or no independence at all in performing the tasks at work. I recode this answer into one for having independence at work, which embraced the numbers six to ten of the scale and zero as no independence at work, which encompassed the answers one to five of the scale.

Last but not least, the dependent variable of having had a supervisory position at work or not, was recoded as one if the answer was yes and zero if the answer was no.

Demographics: For each continent a variable was coded, except for the one that is reflected in the constant (no Australian individual in the data set): Europe, Africa, Asia, and America. Three variables were coded for three continents defined by one, if the individual is from that continent and zero if not. The gender is recoded as zero being equal to male and one if equal to female, whereas in the original questionnaire it was categorized as one if male and two if female. In the case of the income group, this answer is also presented on a scale from one to ten, indicating one the lowest income group and ten the highest income group of the country living in. Here one to

four was recoded as zero, representing the lower-income class and five to ten recoded as one, representing the middle-high income class. The variable age was opted not to be recodified and remained in the same way.

The migration background which is represented by the aspect of being born in this country or not is recoded as one, if the person is born in another country and therefore an immigrant and zero if born in the residence country, in other words, not being an immigrant.

The last demographic variable is the educational level, which the individual has attained. The possible answers are the following: 1=No formal education, 2=Incomplete primary school, 3=Complete primary school, 4=Incomplete secondary school: technical/vocational type, 5=Complete secondary school: technical/vocational type, 6=Incomplete secondary: university-preparatory type, 7=Complete secondary: university-preparatory type, 8=Some university-level education, without a degree, 9=University-level education, with a degree. As it is visible, there are two types of characteristics that define the type of education: the level and the completion status of it. I decided to define as one all the education above secondary level school and completed, whereas zero defines all the rest, which is mainly everything under secondary level and/or not completed. Therefore, also the willingness of studying can be interpreted by understanding the need and ambition of finishing it.

Religion and Politics: Religion was coded with one if a person is religious and with zero if a person is not religious or even if the person is atheist. In terms of political inclination, which is answered by the individuals based on a scale of one to ten, being one the equivalent for a right political inclination and ten for a left one. I created one variable which is one, if the individual shows a central political inclination, so no extreme in the political preferences and zero if they were (extreme left or right). These being said, in the scale from one to ten the values from four to six represent the central part and are coded with one, whereas the rest (one to three and seven to ten) is coded as zero.

Institution and Culture: How do the individuals perceive the importance of living in a country where the democracy is the government structure, is answered by the individuals on a scale from one to ten, being one not at all and 10 important. As this is also a good measure for solidarity and equality, the value was recoded as one for the importance of democracy/equality/solidarity taking the values of the scale from six to ten and the rest as zero, representing the little importance of

democracy and its value. Trust was recoded into one, if the individual answered that most people can be trusted and zero if the individual thought that he needed to be very careful regarding trusting people he didn't know. The respect transmission and therefore the importance of it over generations was recoded as one, if for the parents perceived it as an important value that has to be encouraged to be learned by the children at home and zero, if it was not part of the most important values to transmit.

Management environment: Competition answered based on a scale from one to ten, being recoded as one, if the competition is perceived as good and a stimulator for hard work and zero, for the individual having the perception of competition being harmful and a factor that takes the worst out of people. In a similar way the risk preference was recoded as one, if the person is considering taking a risk an important and representative characteristic of himself and zero, if the person perceives himself as risk-averse.

The perception of fairness is also being answered on a scale of one to ten, being one recoded for persons answering that people in their surroundings would try to be fair and zero, if they perceive the people around them would take personal advantage for their own benefit.

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