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The relevance of gender quotas for gender diversity in different European governments

Abstract:

Gender equality is becoming a more important value day by day, which is also recognized by the United Nations itself. However, reaching gender equality is a difficult aspect. One measure to reach gender equality is by introducing gender quotas. Countries can implement legislated or voluntary quotas to have a more equal gender division in their national parliaments, which represents countries' citizens. Most of the existing theory discusses that gender quotas are expected to influence the gender division positively. This thesis tests whether quotas in general, legislated quotas, and voluntary quotas do influence the gender division of a countries' parliament. There have been performed 10 regressions to test the drafted hypotheses. Even though the correlation was expected to be positive, the results show the opposite. Found estimators representing the influence of (different kind of) gender quotas are unsignificant and remarkably low. However, the found effects are negative which goes against most of the existing theory. There is not a clear answer yet to the question if quotas influence the gender division, but if the negative results are correct, this need to be further researched. Therefore, more research and the inclusion of more variables would be beneficial.

Keywords: gender equality, United Nations, national parliaments, legislated quotas, voluntary quotas

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Introduction

Gender diversity is necessary for organizations for a lot of different reasons (Meta – Workplace, n.d.). However, "as of 1 January 2023, there are 31 countries where 34 women serve as Heads of State and/or Government" (UN Women, 2023), resulting in total gender diversity not being achieved. Therefore, the 5th Sustainable Development Goal (SDG) was developed, aiming to reach gender equality by 2030 (United Nations – Department of Economic and Social Affairs, n.d.). However, it is still unclear if this goal will be reached and how.

For an employer it is not only important to ensure gender equality on their workplace, but it is most important to hire the most suitable applicants for their company (Breaugh, 2013). Other aspects employers need to consider, are staying innovative, to be sustainable, to foster globalization, and to ensure diversity in the workplace. This has always been an important subject for organizations (Gross-Golacka et al., 2022), but nowadays it is getting more and more important to ensure this diversity in the workplace. Diversity in the workplace has multiple advantages, because of the inclusion of both men and women. Including both genders in a company ensures different perspectives and approaches to problems, a wider talent pool, benefits collaboration, better representability, and improved reputation (Meta – Workplace, n.d.).

Although gender equality has many benefits, full gender equality has still not been achieved. At this rate, it will take about 60 years to achieve full gender equality (European Institute for Gender Equality, 2020). Not reaching gender equality can be explained through socialization and prejudices. Society expects men to be firefighters and women to be nurses, which also applies to expectations about men in high functions of government and in companies (Skills 4 Training, 2023). Although the gender diversity in the workplace is improving and women represent a large part of the workforce, the representation of women is proceeding too slow and too incremental (United Nations, n.d.). Men are still dominating the boardrooms and the national parliaments are often described as gendered institutions with a male-dominated culture (Erikson & Josefsson, 2020). The European Commission even published a Directive which stated that women should be

represented for 40% in 2020 in companies in their Member Countries (Nekhili et al., 2020) and they eventually implemented a quota for European Member States in 2022, for the biggest companies in the Member States (NOS, 2022).

Even though there are already quotas to support gender diversity in European companies, there are not mandatory quotas for the public domain. The European Commission have not yet implemented gender quotas for the European Union Member States, but they advised their Member States to nominate more female participants to "boost female representation" (McDonald-Gibson, 2014). Nevertheless, countries can also decide themselves to introduce gender quotas in their parliaments. Some countries such as Belgium, Greece, and France introduced legislated quotas for their political parties, from which France was the first European country that implemented these kinds of quotas in 1999. One of the European countries that implemented voluntary quotas, is Türkiye. Several Türkish political parties implemented gender quotas since 1999. However, they are still one of the countries with the lowest female representation. Seventeen percent of their total parliament members was female in 2018, while they had voluntary quotas of respectively 25%, 33%, and 50%. France had a total women percentage of 39.07% in 2022 with a legislated quota, Iceland had in 2022 a total women percentage of 47.62% with voluntary quotas, and Denmark had a percentage of 43.02% in the same year without any quotas.

Remarkable is that quotas are implemented in the first place. As discussed, boardrooms and parliaments are controlled by men, so why do they accept gender quotas? Also, the effectiveness of quotas is still unknown, and academics still question the effectiveness of them. This article concludes that more research is necessary (Dahlerup, 2008). It is important to study and to understand the effectiveness and the results of gender quotas. They are implemented to stimulate companies, parliaments, countries, and societies to have more women in important positions, which are now ruled by men. However, the effectiveness and results of this solution are still vague. Quotas have more effect on the gender division on the long term than at the short term

since the introduction of the quota. And even though we would consider obligated candidate quotas as the most effective because these targets are mandatory, voluntary quotas and thereby political parties considering the equal gender distribution through quotas also turns out to be important (Paxton & Hughes, 2015). This shows that the relationship between different types of quotas and the gender division in the public workforce is still unclear (European Institute for Gender Equality, 2023; Institute for Democracy and Electoral Assistance et al., n.d.-c). Therefore, the research question of this thesis is: Are different types of gender quotas relevant for gender diversity in different European governments?

The academic relevance follows from that this research contributes to the question if gender quotas are a real addition to society to help reach equality, or that it only is beneficial in certain cases. According to Squires (1996) and Dahlerup (2009) gender quotas have both positive and negative consequences. Therefore, the opinions of the academic world are divided. Some may argue that gender quotas benefit the gender equality, while others may argue that they do not benefit the gender equality. This research provides an addition to this division by performing deductive research. Another reason that practical relevance is present is because gender equality is becoming increasingly important and therefore requires more research. Gender equality and ways to achieve it are a more well-known and more important aspect than before. The fact that this subject is receiving more attention can be explained by the usage of social media (Fu, 2022). Gender equality is a sensitive topic that is mainly discussed through social media, which has become much more popular these days. Therefore, the relevance of gender equality is more known nowadays, because of the increase in popularity of social media platforms. Why gender equality must be reached as soon as possible, is because it "prevents violence against women and girls. It's essential for economic prosperity. Societies that value women and men as equal are safer and healthier. Gender equality is a human right" (Victorian Government, 2023). This citation is in line with the reason of the UN to create SDG 5, namely because it "is not only a fundamental human

right, but a necessary foundation for a peaceful, prosperous and sustainable world" (United Nations, 2022).

The best way to answer the research question is with quantitative data. Therefore, the data collection comes from several sources, including the Inter-Parliamentary Union (n.d.), the Institute for Democracy and Electoral Assistance et al. (n.d.-c), and the European Institute for Gender Equality (2023). The method of analysis that is used, is based on a panel/time series cross-sectional design, with several regressions. There are multiple regressions performed for each hypothesis. For each hypothesis, there first are regressions without clustered standard errors and second with clustered standard errors to look at if this differs per regression.

First, diverse theory about the topic will be discussed. These theories result in diverse assumptions and hypotheses, to test the theories. Next, the research design, including the data collection and data analysis, is discussed to explain how the theory is tested. After the research design, there is a report of the empirical findings of this research, which is followed by the analysis. The analysis combines all the aspects of this research, such as the theory, hypotheses, and the analysis, to expectantly answer the research question. This thesis ends with a conclusion and after this the reference list can be found.

Theory

The topic gender equality is part of one of the Sustainable Development Goals (SDG's), created by the United Nations (UN). The specific frame of this SDG is: "Achieve gender equality and empower all women and girls" (United Nations – Department of Economic and Social Affairs, n.d.). The World Bank (2022a) states that women represented 49.7% of the total population in 2021. So, they represent half of the worlds' population, but not even one third of the worlds' management positions (United Nations, 2018). However, the United Nations (2018) names several aspects of why the equal representation of women is important, such as:

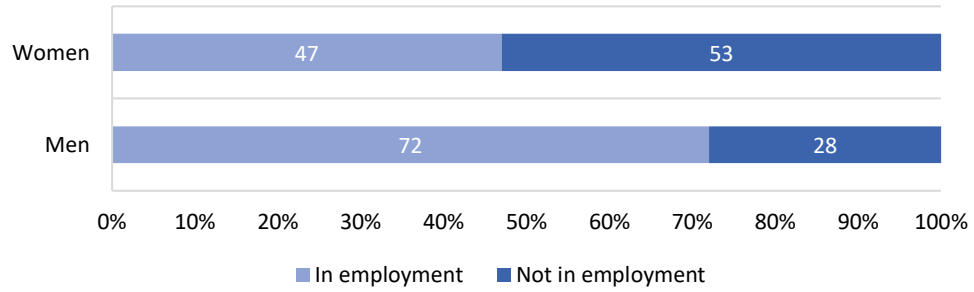
1. Good access to health care,

2. Reduce child marriages among women,
3. Disadvantages in education, and
4. Reduce physical and/or sexual intimidation and/or violence.

This thesis elaborates on the consequences of point three by the UN. Disadvantages in education also result in limited skills and opportunities in the labor market. The International Labor Organization (2017) also researched the gender gap more detailed. Figure 1 shows the difference between men and women. The graph shows the total labor force per gender as 100% and shows the participation percentage of each gender. As shown, women are underrepresented in the total labor force. Of all the women that can participate in the labor market only 47% of them participates. And compared to men, from which 72% of all the men participates in the labor market, this is a very low percentage.

Figure 1

Employment rate per gender.



Note. Adapted from "The gender gap in employment: What's holding women back?", by International Labour Organization, 2017.

The discussed percentages differ per country. In 2019 Rwanda, Cuba and Bolivia were countries that represented the highest percentage of women in parliaments, and Spain had the most women in ministerial positions (Bishu, 2022). According to data from Eurostat in an article from the

European Data Journalism Network (2021) Sweden and Finland had the highest rate of women in governments, with respectively 52.2% and 57.6% in 2019. Estonia, Poland, Hungary, Romania, and Croatia all had percentages below the 20%, and Greece even had a score of 9.8% which represented the lowest score in Europe. The representation of women in Spain was 50% according to the European Data Journalism Network.

Target audience

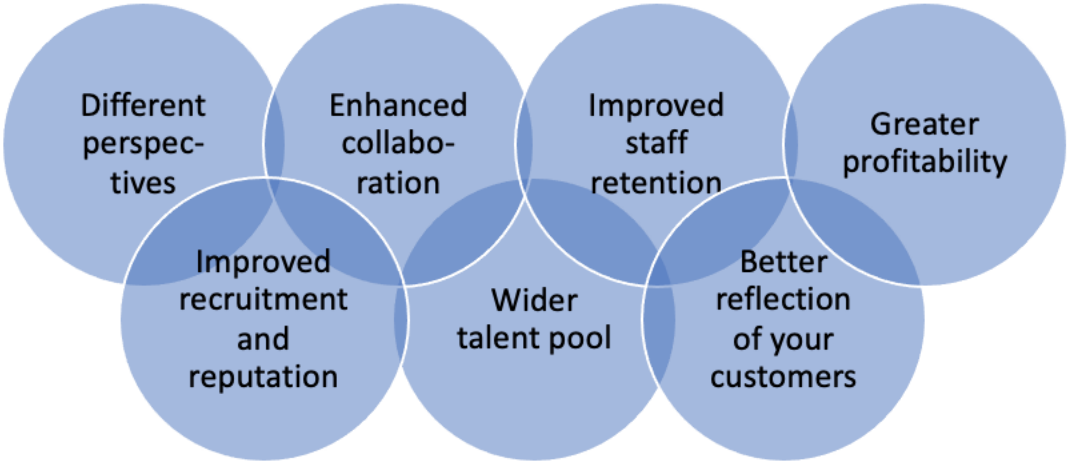
This research focuses on the public sector, and specifically on national governments. There has been several research done on this topic, for example by Bishu (2022) who, among other things, discusses "the gender gap in the public sector". They mention equality is one of the most important values in the public sector, including gender equality and equal opportunities for both genders. The gender inequality comes in different forms, for example through descriptive and prescriptive stereotyping. Descriptive stereotyping means that people judge based on characteristics of women and prescriptive stereotyping means that people judge women in their role in organizations or the society. Because of descriptive stereotyping, women are painted as soft, gentle, nurturing, which lowers their chances to equal opportunities in high leadership and male dominated positions. Gender stereotyping also includes interpreting the main priority of women as family and their professional achievement as the most neglected need, while the priority of the man is their career, and their neglected need is interpersonal connection. This gender stereotyping has a bad influence on the equal opportunities that women should have (Bishu, 2022).

Nevertheless, there has been done more research on stereotyping gender, which also discusses the positive consequences of recruiting women in organizations. Another interpretation of positive gender stereotyping is to recognize that both genders need to be represented in representative positions. Women representation has already increased globally in the last decade. It is important to have women representation because of multiple benefits, such as that women have different priorities and qualities than men, such as being more cooperative and more willing

to engage in negotiations (Naurin et al., 2019). Including more women in companies and striving for gender equality result in more benefits, which are shown in figure 2. For example, women having different priorities than men, such as health and education. Because of their different qualities and priorities than men, male and female politicians should work together to represent the population of their country and to create the most suitable solutions to the issues facing their country (Meta – Workplace, n.d.; Pepera, 2018).

Figure 2

Benefits of gender diversity in the workplace.



Note. Adapted from "7 benefits of gender diversity in the workplace" by Meta – Workplace, n.d.

Solutions

The question that remains, is how to make sure countries represent this gender diversity in the public workplace. There are diverse articles on how to ensure that countries live up to this goal. For example, Bishu (2022) provided its readers with several solutions to gender inequality, such as:

- Laws on equal employment,
- Work policies to provide better work-life balance, and

- Promotion of participation of unrepresented groups.

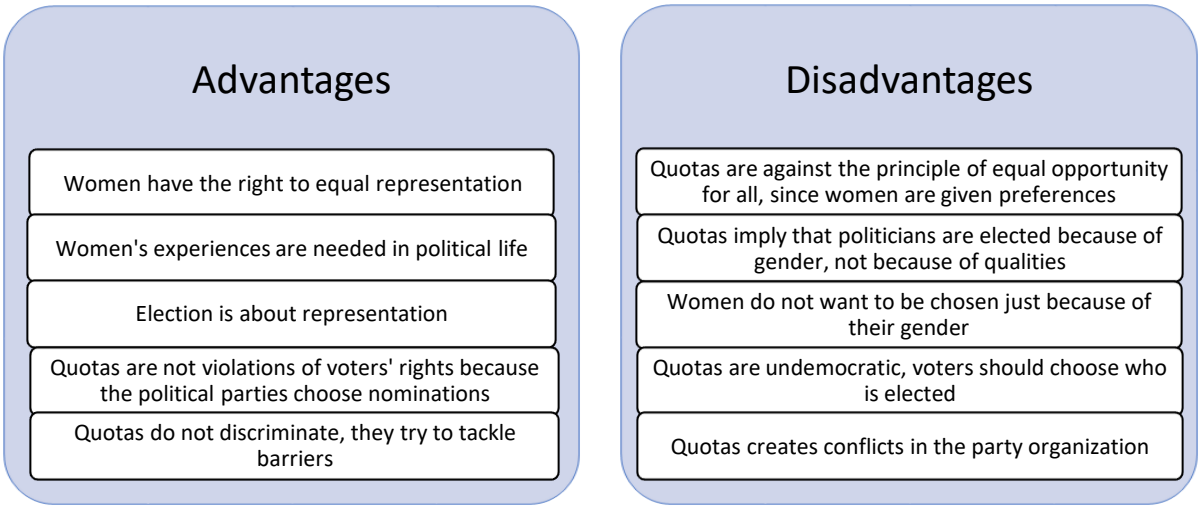
The United Nations recognizes how important the change to gender equality is and recognizes that this is necessary. The change is already happening, but it is too slow and too incremental. That is why they created SDG 5 and why they named several strategies that promoted the increase of women representation, such as: "Legal reform, strengthening gender-responsive social protection and public service delivery, quotas for women's representation, and support for women's movements" (United Nations, n.d.). One solution the UN recalls to reach gender equality is through gender quotas. In 1989 the first quota was agreed on in the United Kingdoms' Labor Party, because the women representation was increasing too slowly (Squires, 1996). The first gender quota in a board was implemented in Norway in 2003 (de Cabo et al., 2019) and the European Union also implemented a quota in European Member States in 2022, to have a quota in the biggest companies of their country (NOS, 2022). Although many countries have implemented quotas, most of them aimed at the private sector (Siebold, 2022). There has been found a positive relation between gender quotas and the number of females in companies with a spill-over effect on females in leadership positions (Wang & Kelan, 2012).

These quotas have different consequences, both positive and negative. Figure 3 shows several consequences of quotas. Some positive consequences are equal opportunities and equal representation. Moreover, the only thing that changes is that political parties need to choose a certain percentage of women for their nominations. Some negative consequences are that women may now be chosen because of their gender and not because of their qualities (Dahlerup, 2009). Another negative consequence that is not shown in figure 3, is that women do not want to receive special treatment but want to receive the same treatment as men. Expressly, women want to receive equal opportunities and treatment, such as men receive. Otherwise, the special treatment can be interpreted negatively by many individuals (Squires, 1996). Another negative consequence can be

that colleagues may not like the recruited women, because they feel like they were selected because of the quota and not because of their performances and qualities (Dorrough et al., n.d.).

Figure 3

Advantages and disadvantages of quotas.



Note. Adapted from "Gender quotas - quotas", by Dahlerup, 2009.

Hypotheses

In this thesis different kind of quotas are studied. Countries implement them in varying degrees of severity. One of the quota types is electoral party quotas for women, which are implemented by for example Austria, Belgium, and Sweden. These quotas require countries' political parties to have, for example, at least 40% of their candidates being female (Institute for Democracy and Electoral Assistance et al., n.d.-b). These quotas are introduced because women are underrepresented in parliaments since a long time ago. Paxton and Hughes (2015) mention that with the years the effect of quotas increased because of more awareness and more pressure from several actors, such as social media and gender activists. Besley et al. (2017) mention that some may worry about the conflict between representation and competence, but they state that this can also result in a working relationship with a truthful representation and a competent workforce.

Thus, several articles discuss the positive influence of gender quotas on the general share of women in parliaments. Therefore, and because the quotas are implemented to reach gender equality in the first place, hypothesis 1 (**H1**) is: European countries that implemented electoral quotas for women in their parliaments, result in a higher total share of women parliament members than countries without the implementation of electoral quotas.

Another distinction that can be made, is the distinction between hard and soft quotas. The general term of these quotas are 'mandatory' quotas, which is the opposite of 'voluntary' quotas. Hard quotas mean that if the desired distinction of men and women is not reached by an institution it will face consequences (Nekhili et al., 2020). The hard quotas can also be named 'binding quotas with sanctions', because of the consequences when neglecting the targets. Soft quotas can also be called 'binding quotas without sanctions' (Hendrikse, 2015). Soft quotas also need to be respected, but when institutes do not reach the targets there are no hard sanctions or hard consequences. Nevertheless, they can face "recommendations, warnings and reports" (Nekhili et al., 2020), to ensure that the countries will reach the targets in the future.

Another kind of quotas are candidate quotas. This type can be divided in voluntary candidate quotas, and legislated candidate quotas. Voluntary quotas are implemented by political parties themselves, as tactic to include more unrepresented groups in their election candidates, such as women. If the political parties do not reach this target, there are no sanctions because they implement it themselves. However, the political parties generally reach these targets because they are the ones that implemented it (Tjernström et al., 2012). Also, the Institute for Democracy and Electoral Assistance et al. (n.d.-b) mentions that "if the leading party in a country uses a quota this may have a significant impact on the overall rate of female representation". One example of a country that implemented voluntary quotas is Iceland. They implemented their quota in 1999, and four of the political parties that were part of the countries' parliament in 2022 implemented these voluntary quotas. Therefore, their unicameral parliaments exist of 30 women and 33 men in 2022, which means that women represent 47.6% of their parliament (European Institute for Gender

Equality, 2023; Institute for Democracy and Electoral Assistance et al., n.d.-c). Therefore, voluntary quotas are expected to have positive influence on gender diversity. On the other hand, legislated candidate quotas are also implemented to ensure a minimum representation of minority groups in the election candidates. The first country that introduced legislated quotas is France in 1999 (Institute for Democracy and Electoral Assistance et al., n.d.-c). These legislated quotas give the state the opportunity to implement sanctions when political parties neglect these quotas (Rodríguez & Ferreyra, 2010). One reason countries use gender quotas in the political world, is to ensure that the population is equally represented. In Belgium the introduction of legislated quotas resulted in increasing percentages of women in politics (Turan, 2015). The European Institute for Gender Equality (2022) mentioned that the gender equality in countries which implemented legislated quotas have increased since 2004, and they potentially can reach total gender equality in 2026. On the other hand, countries without legislated quotas cannot. Moreover, Paxton and Hughes (2015) stated that countries can best implement candidate quotas with rules, targets, and sanctions. Even though voluntary quotas and legislated quotas are both expected to have positive effects on the gender division of parliaments, legislated quotas are expected to have a higher influence. There are several theories that explain why legislated gender quotas influence the gender diversity better than voluntary quotas. Important to note is that legislated gender quotas are implemented by a higher force, for example the law, while voluntary quotas are implemented by the political parties themselves (Institute for Democracy and Electoral Assistance, n.d.-b). One theory that explains this, is the principal-agent theory. In this case, the constitution for example is the principal, and the political parties are the agents. The principal needs to ensure that the agents are acting in their best interests, which can be done through legislated quotas. If they implement legislated quotas, the agents must reach certain targets of female representation. On the contrary, voluntary quotas cannot be implemented by the principals, which does not ensure the targets being reached (Braun & Guston, 2003). One theory that also correlates with the principal-agent theory, is the theory of public accountability. But in the public accountability theory, the principal can be

seen as the public, so as many individuals together. This theory suggests that political parties have responsibilities to represent the interests of their public or target audience. The political parties can be interpreted as the agent, just as in the principal agent theory, and the public is the principal. When legislated quotas are implemented, this can ensure the public that the political parties are committed to the aspects that the public interpret as valuable, in this case diversity and equality. Voluntary quotas, implemented by only a few parties, can be interpret as not serious, which harms the public trust (Dowdle & Drahos, 2017). Because of these theories, hypothesis 2 (**H2**) is: European countries that implemented legislated candidate quotas have a higher share of women in their parliaments than European countries that implemented voluntary candidate quotas.

Another important aspect of countries is their parliament structure. The parliament structure of a country mostly has two variations. The first one is a unicameral structure, which means that there is only a Single/Lower House. The second structure is a bicameral structure. In this variation, the parliament contains a Single/Lower House and an Upper House. Both structures have advantages and disadvantages. These chambers are mostly chosen by the citizens and need to be representatives. In a bicameral structure, most of the time, the Lower House represents the citizens, and the Upper House represents the different classes of a country. The two chambers need to cooperate and cannot make decisions without the others approval. Even though this takes more time, it has a higher democratic accountability (Rom et al., 2022). Gender equality is connected to the structure of the parliament, through the connection between democracy and gender equality (Inter-Parliamentary Union, 2023). Countries such as Belgium, the Netherlands, Germany, and Poland have a bicameral structure, while countries as Greece and Sweden have a unicameral structure. Norway had a bicameral structure until 2009, and since 2010 they have a unicameral structure (Inter-Parliamentary Union, n.d.). However, the question remains if the structure of the chambers really influences the democracy and therefore the gender equality. A bicameral structure has more democratic checks because they have two chambers that are elected independently, that need to agree for decisions to be executed, unlike a unicameral structured

country in which only one elected chamber makes decisions on behalf of the citizens. Therefore, strengths of a bicameral structure are limited powers compared to a one chamber structure, better representation of the population, and the addition of more democratic checks (Bulmer, 2017; Unacademy, 2022). Democracy and gender equality are also correlated because democratization can create beneficial scenarios for improving gender equality (Andersen, 2022). Because of this existing literature and the lack of literature about the direct connection between quotas and the structure of the parliament, the third hypothesis (**H3**) is: European parliaments with a quota and a bicameral structure have a higher share of women in their parliaments than countries with a quota and a unicameral structure.

These are the most important hypotheses to consider when studying the effect of electoral quotas on the gender division of the public workforce. However, other variables are taken into account in this research because they may influence the gender division as well. For example, the political stability in a country, the effectiveness of the countries' government, and the electoral system of a country.

To conclude, the first hypothesis discusses electoral quotas in general, and wants to find a relationship between having an electoral quota and the division between men-women in parliaments. The second hypothesis discusses the difference between voluntary candidate quotas and legislated candidate quotas, which expects legislated quotas to have a bigger influence on women in parliaments. The third hypothesis discusses the expected influence of bicameral structures on the women in parliaments, because of the link between democracy and gender equality.

Research Design

This thesis studies the public sector, specifically the parliaments of several European countries. So far, most research and information are published about quotas in the private sector, not the public sector (Siebold, 2022). Although there are also a lot of countries that implemented quotas in the

public sector, there are still countries that do not use quotas at all. The distinction of countries, the used variables, the methods, and the empirical strategy of this research are discussed in the following section.

Data collection

This thesis aims to answer the research question: Are different types of gender quotas relevant for gender diversity in different European governments? The answer to this question is studied through quantitative analysis. It is important to study the causation of gender quotas on the gender diversity in the public sector to be able to answer the research question. For this research, preference is given to quantitative methods over qualitative methods, as it is not possible to interview/survey parliamentarians from 28 European countries, because of limited time and accessibility. Also, there is enough data available online to perform the desired regressions. To perform this, there has been created a dataset in Excel in which all the necessary variables are shown. In total, 28 countries are chosen, which are: Austria, Belgium, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Liechtenstein, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Serbia, Slovakia, Slovenia, Spain, Sweden, and Türkiye. Although the most part of the chosen countries are European Union (EU) Member States, there are also five countries that are not. Iceland, Liechtenstein, and Norway are not members of the EU, and Serbia and Türkiye are currently "in the process of integrating the EU legislation into national law" (SchengenVisaInfo, 2023). Also, some countries are chosen not to study, for example Hungary and Lithuania. This is because of limited available information, and because some countries such as Lithuania only have one political party with the implementation of a voluntary quota, which is not interpreted as sufficient use of quotas (Institute for Democracy and Electoral Assistance et al., n.d.-c).

The dataset that has been made is based on different sources added together. First, the potential implementation of an electoral quota for women in general and the structure of the

countries' parliament comes from the Inter-Parliamentary Union (n.d.). The data about what kind of quota a country implemented, and since when these quotas are implemented comes from the Institute for Democracy and Electoral Assistance et al. (n.d.-c). Except for the implementation date of Czechia, which comes from Mottlová (n.d.) and the implementation date of Portugal, which comes from Górecki and Pierzgalski (2021). All the countries have a particular country code to have a constant numeric variable for each country, which does not change over the years. This information comes from Hainke (n.d.) and represents the country codes that must be dialed from the Netherlands when trying to call a person in the country of destination. The data through the years about the lower houses, upper houses, the division of men and women in the houses, and the gender of the speaker of both houses, come from the European Institute for Gender Equality (2023). Data about the years 1999-2022 were available at the EIGE website, but the only available data in 1999 was about the division of gender in the upper houses. Therefore, the years 2003-2022 has been chosen. Moreover, four quarters of each year were available, but there has been decided to study the third quarter of each year, because these quarters included the most data points. However, for the year 2007 the second quarter is chosen because there was no third quarter in this year. Besides, all data points of the gender of the upper house speaker of the year 2022 are unknown. The control variable about the electoral systems of European countries comes from the Institute for Democracy and Electoral Assistance et al. (n.d.-a). The control variables government effectiveness and political stability come from the World Bank (2022b).

In the dataset, there has been made a distinction between various quotas, as explained in the 'theory' section before. Some countries implemented voluntary quotas, others implemented legislated quotas, and some countries did not implement quotas at all. Regarding voluntary quotas, Luxembourg is an exception, because with their unicameral structure they have both voluntary and legislated quotas. Regarding the countries with legislated quotas, there are also exceptions. For example, Ireland, Poland, and Slovenia. These exceptions all have a bicameral structure with

legislated candidate quotas for only the single/lower house (Institute for Democracy and Electoral Assistance et al., n.d.-c).

Dataset

The dataset includes a total of 560 data points. These data points include 28 countries in total. All countries are observed in 20 years, namely 2003-2022. There are diverse variables that are used, which are explained in the following section.

First, the variable that represents if the country contains an electoral quota (1) or not (0). Next, the variable that represents the structure of the parliament, which is either unicameral (0) or bicameral (1). The next variable is the kind of quota that countries implemented, which varies between:

(1) Legislated Quota,

(2) Voluntary Quota,

(3) No Quota,

(4) Legislated Quota for Single/Lower House,

(5) Voluntary Quota for Single/Lower House, and

(6) Voluntary and Legislated Quota for Single/Lower House.

There has also been created a new variable from the previous variable, to use in the regression, in which 0 represents countries having voluntary quotas and 1 represents countries having legislated quotas. Furthermore, the year of introduction of the quota is shown, and a 0 is given to the countries that did not implement a quota. Also, the number of men, women, and the total number of parliamentarians is shown. For the dependent variable, the total percentage of women in the countries' parliaments is shown, where 50% is shown as 0.5. This percentage number is the dependent variable which makes it a continuous, ratio variable, because the variables are ordered with equal distance and with a meaningful zero (Toshkov, 2016). The control variables government

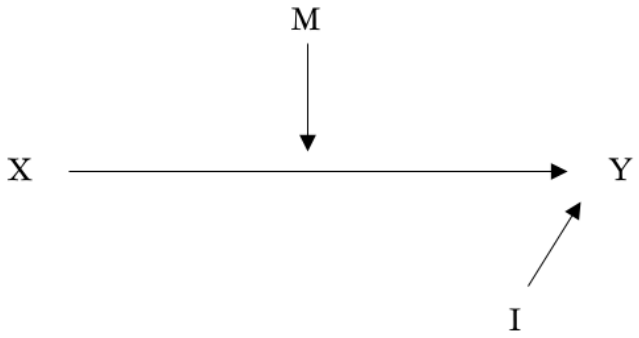
effectiveness and political stability (and absence of violence/terrorism) measures in a range where -2.5 is the lowest and +2.5 is the highest (World Bank, n.d.-a; World Bank, n.d.-b). The government effectiveness variable measures different aspects, such as "the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies" (World Bank, n.d.-a) and the variable political stability measures for example "the likelihood of political instability and/or politically-motivated violence" (World Bank, n.d.-b). The control variable of the electoral system of a country is divided in three kinds of electoral systems in the dataset with all different values, namely: proportional representation (1), plurality/majority (2), and mixed (3). Most of the European countries have proportional representation systems (Institute for Democracy and Electoral Assistance et al., n.d.-a).

Data analysis

This research includes 3 main variables. Having a quota is the independent variable or the main explanatory variable (X), and the division of men and women in parliaments is the dependent variable or the outcome variable (Y). Having a bicameral or unicameral parliament structure is interpreted as a moderating variable (M) and there are also several control variables (I), such as the electoral systems of countries, the government effectiveness, and the political stability. The relationship and placement of these variables is also visually represented in the causal diagram shown in figure 4.

Figure 4

Causal diagram of the variables that are used in this research.



Note. Adapted from "Research Design in Political Science", by Toshkov, 2016.

As mentioned before, this research is quantitative. The correlation between the X variable quotas and the Y variable gender division in parliaments is studied. These two variables can be correlated because of multiple reasons, but this research tries to prove that the relationship is based on causation. This research is also empirical positive research because the relationship between concepts and empirical facts is studied. It is based on deductive logic because theory is gathered at first, what resulted in hypotheses, and these hypotheses are tested. In this way, it aims to test existing theory. This research is of explanatory nature because it collects patterns on empirical facts but seeks for a deeper structure and connection by talking about effects and linking it to existing theories (Toshkov, 2016).

The research design that is used is panel design or time series cross-sectional design since there are multiple units at multiple points in time (Toshkov, 2016). The quantitative research is done through Stata, in which multiple regressions are performed. There are regressions with only the X and Y variable, compared with regressions with the addition of control variables. Also, some regressions are compared with regressions with the addition of controlling for clustered standard errors. The used dataset is based on clusters, which are the individual countries and in a specific period. Stata, therefore, can interpret the relationship between clusters wrong (Zach, 2021a),

because this dataset uses countries as cluster and not individuals, and each unit is studied over time. Therefore, it is important to account for standard errors to account for heteroskedasticity, and because of the kind of data, to use clustered standard errors (Miller, n.d.). It is important to account for the absence of heteroskedasticity because of the unreliability of the standard error if it is present. It is a requirement for quantitative analysis to have homoskedasticity, because "it identifies dissimilarities in a population" (Kenton, 2022), which can be accounted for with clustered standard errors. The expectation is that outcomes with and without clustered standard errors will be the same.

First, there are four regressions to test the first hypothesis. The effect of having electoral quotas is tested on the percentage of women in parliaments. Therefore, one regression is with only the X and Y variables and one regression is with the addition of three control variables, which are: the political stability of a country, the effectiveness of the government, and the electoral system of the government. Both these regressions are done through panel data regressions, and twice by controlling for cluster standard errors. Second, there are executed 2 regressions to test the second hypothesis. Both regressions test the influence of legislated and voluntary quotas on the percentage of women in parliaments. The second regression is done with the addition of accounting for clustered standard errors. As last, there are regressions performed to test if quotas have more influence in countries with bicameral structures or unicameral structures to test hypothesis 3. This is done through 4 regressions in total. The first two regressions are normal regressions from which the second one is accounting for clustered standard errors, and the last two regressions study those regressions with interaction effects, because the intended purpose of the third hypothesis is to check if the structure of the parliament together with the inclusion of an electoral quota have a bigger influence on the Y variable than just one independent variable.

Reliability and validity

In this section there are short notes on the aspects of reliability and validity. There are several types of reliability. For example, the test-retest reliability, which is high in this research because the data that is gathered in this research is unlikely to change when others use the same data. Information about countries' parliament structure, division of men and women in their parliaments, etc. are at high probability to be the same in other research. The high reproducibility of this research is beneficial to its reliability. However, the internal reliability of this research is expected to be as high as the test-retest reliability. The internal reliability of this research is above average, because two almost identical regression do not result in the same values, but they are very close (Middleton, 2023).

There are also different types of validity in its concept. For example, content validity which is aimed to be valued in this research because of all the aspects that are considered when studying quotas and its impact. Therefore, the internal validity of this research is also expected to be considered. Important aspects are being considered. Criterion validity is expected to be high because there is expected that quotas have positive influence on the gender division in parliaments. Lastly, the external validity of this research is expected to be high because the data subjects are not individuals, but countries. Therefore, this data exists of facts about countries' parliaments and because parliaments represent the citizens of a country, it is expected to have high external validity (Middleton, 2023).

Empirical findings

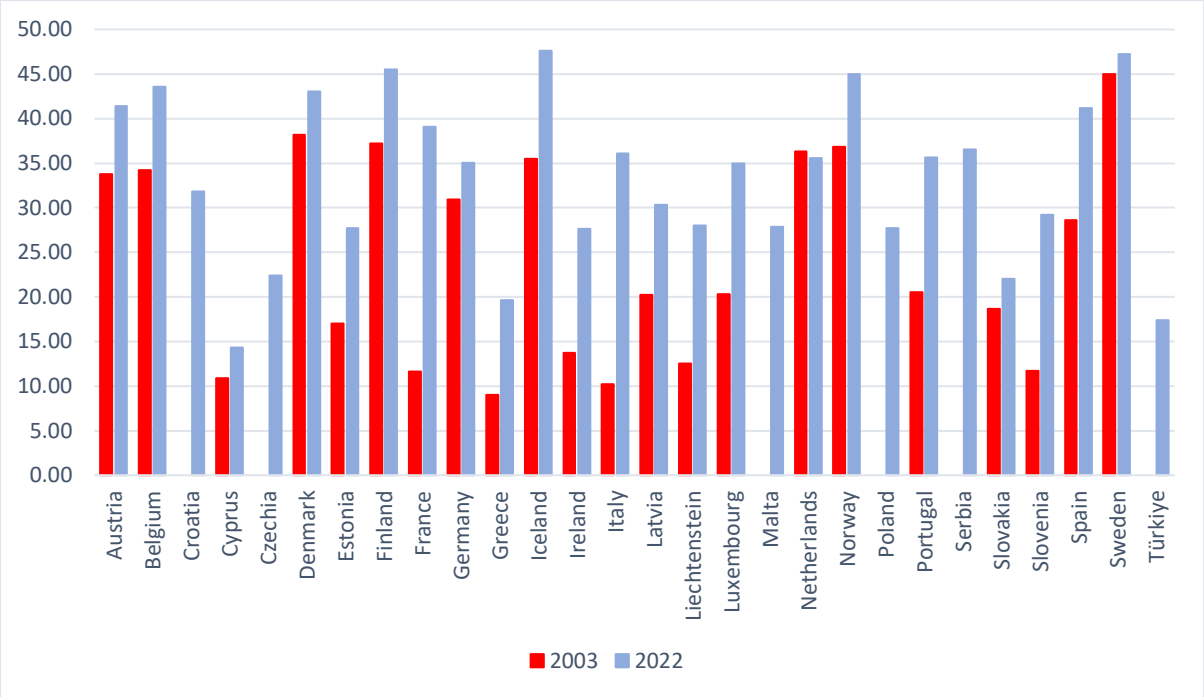
This section discusses the results and findings of this research and the additional regressions. First, some descriptive statistics will be discussed, which will be followed by the regression findings.

Descriptive statistics

This section shows and discusses some descriptive statistics about the gathered data. Figure 5 shows the 28 countries that are chosen for this study and their percentage of women in their parliaments in both 2003 in red and 2022 in blue. For Croatia, Malta, Serbia, and Türkiye there are missing values for the year 2003. As shown in figure 5, no country has reached the 50% and therefore total gender equality. The countries that are at or above 45% are Finland, Iceland, Norway, and Sweden which are Scandinavian countries (Norman, 2022). Finland has no quota, but always one of the highest women percentages, and Iceland, Norway, and Sweden all had voluntary quotas in both 2003 and 2022. In almost all countries, except for the Netherlands, there has been an increase in the number of women in parliaments in the year range of 2003-2022, which is remarkable. The countries with the biggest increase seem to be France, Italy, and Slovenia. Both Italy and Slovenia had no quota in 2003, and a legislated quota in 2022. France had legislated quotas in both years, since 1999. The countries with still the lowest women percentages, are Cyprus, Czechia, Greece, and Türkiye, from which all, except for Greece, have voluntary quotas.

Figure 5

Statistics about the percentages of women in European countries' parliaments in 2003 and 2022.



Note. From dataset in Excel.

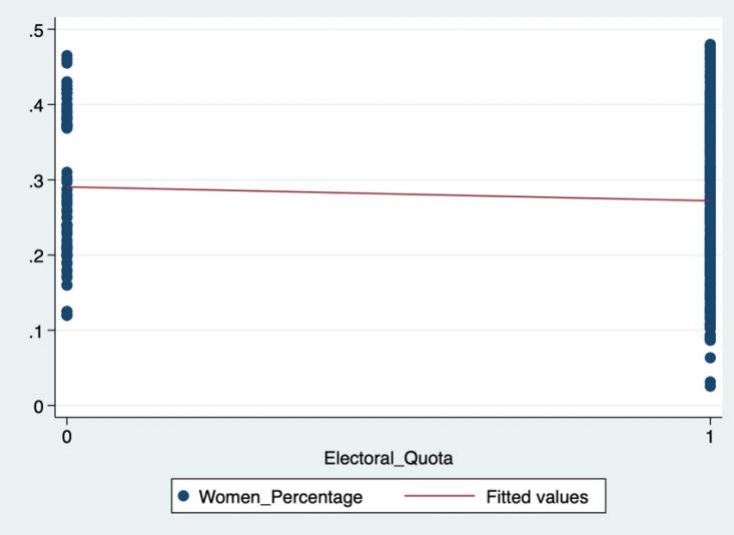
Bivariate statistics

Another aspect that can be considered, are correlations between the X and the Y variable. This is the strength of a correlation between two variables, which can be measured through Stata. If the correlation is -1, this means a perfect negative correlation, and +1 means a perfect positive correlation (UCLA, 2021).

These correlations are shown through scatterplots. Figure 6 shows the correlation between the independent variable, which is if countries have electoral quotas, and the dependent variable, namely the percentage of women in their parliaments. According to this scatterplot and the showed slope, there is a very weak relationship between these two variables. Also, expected was to have a higher percentage of women in parliaments when countries implemented a quota, which is value 1. However, the scatterplot in figure 6 shows the opposite.

Figure 6

Scatterplot about correlation between having an Electoral Quota and the Women Percentage

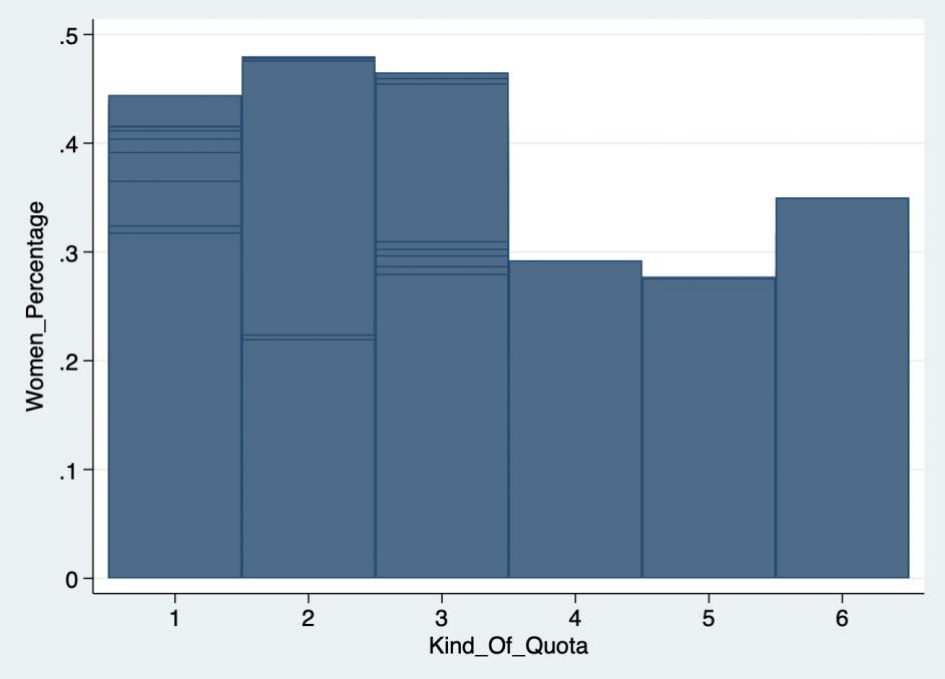


Note. From dataset

Figure 7 shows a bar graph of the relationship between different kind of quotas and again, the percentage of women parliament members. The expectation was that legislated quotas (value 1) have higher influence on the women percentages than voluntary quotas (value 2), and voluntary quotas (value 2) have higher influence on these percentages than no quotas (value 3). Nonetheless, as demonstrated in figure 7, voluntary quotas result in the highest women percentages, and legislated quotas result in the lowest effect of the three. So according to figure 7, the correct order is: voluntary quotas (value 2) > no quotas (value 3) > legislated quotas (value 1). As for the other three x-values, value 4 only applies to Poland and Slovenia which both have a bicameral structure with only legislated quotas for their lower houses. And the 5th value only applies to Ireland, which has a bicameral structure with only a voluntary quota for their lower house. As shown in figure 7, both these measures do not work, because their countries percentages are still below 30%. The last value only applies to Luxembourg which has both voluntary and legislated quotas for their lower house, as a unicameral structure. As figure 6 shows, this yields more with a percentage of about 35%.

Figure 7

Bar graph about the relationship between the Kind of Quota and the Women Percentages.



Note. From dataset

Regression results

This section discusses the results of the 10 performed regressions. There are three tables, from which table 1 shows the first four regressions that test the first hypothesis. Table 2 shows the two regressions that test the second hypothesis and table 3 shows the regression results that test the third hypothesis of this research. The constant values in the regressions mean the value of the Y variable while all the independent variables have the value of 0 (Zach, 2021b). The statements in the description of the tables are made based on the main independent variable considered in the particular hypothesis. The r-squared of regression models tell the readers about how well the used model explains the variance in the Y variable (Taylor, 2023). However, some models include control variables, but there has been chosen to only name the variables that are specifically included in the hypotheses in naming the r-squared.

First the regression results of table 1 will be discussed, which studies the effect of countries implementing electoral quotas in general on the gender diversity in European governments. Regressions 1 and 2 are performed without considering other independent variables that could influence the gender division of a parliament, which is relevant to study by comparing these results with the results of the other two regressions, which also consider other control variables. Regressions 2 and 4 are performed with accounting for clustered standard errors. Regressions 1 and 2 exist of a total of 542 observations, with a constant value of 0.291 ($SE^1 = 0.043$, $SE^2 = 0.041$) which means that the average value of women in parliaments is 29% when there are no electoral quotas. Regressions 3 and 4 exist of a total of 513 observations, with a constant value of 0.340 ($SE^3 = 0.053$, $SE^4 = 0.059$) which means that the average value of women in parliaments is 34% when there are no electoral quotas. According to regressions 1 and 2, a 1 percent increase in the variable electoral quota will lead to a change of the women percentage in parliaments with -0.20. When the other independent variables are accounted for as well, a 1 percent increase in the variable electoral quota will lead to a change of the women percentage in parliaments with -0.029. This means that when countries implement quotas (1) instead of no electoral quotas (0) this will have a negative effect on the division of women. However, these results are not significant so this cannot be stated with certainty. The r-squared that will be considered in the regressions is the between r-squared because the overall r-squared accounts for the whole dataset, and the within estimator accounts for estimates within a model. Therefore, the between r-squared is being used and is directly relevant (StataCorp, 2023). The between r-squared of model 1 and model 2 is 0.0070, which means that 0.7% of the variance in the variable women percentage can be explained by the variable of having an electoral quota. The between r-squared of model 3 and 4 is 0.0595, which means that 6% of the variance in the variable women percentage can be explained by the variable of having an electoral quota.

Table 1

Regressions to test the first hypothesis.

	(1) Women percentage	(2) Women percentage – CSE	(3) Women percentage	(4) Women percentage – CSE
Electoral quota	-0.020	-0.020	-0.029	-0.029
	(0.048)	(0.046)	(0.044)	(0.050)
Political stability			-0.049***	-0.049
			(0.012)	(0.031)
Government effectiveness			-0.013	-0.013
			(0.013)	(0.021)
Electoral system			0.006	0.006
			(0.031)	(0.024)
Constant	0.291***	0.291***	0.340***	0.340***
	(0.043)	(0.041)	(0.053)	(0.059)
N	542	542	513	513

Standard errors in parentheses

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

The second hypothesis tests the relationship between the kind of quotas that countries implemented and the division of gender in their parliaments. The results of these 2 regressions, from which one is a normal regression, and one is a regression which accounts for clustered standard errors (CSE), are shown in table 2. Both regressions have 265 observations. The constant of model 5 is 0.342 (SE = 0.059) and the constant of model 6 which accounts for CSE is also 0.342 (SE = 0.077), which means that the average value of women in parliaments is 34% when countries have voluntary quotas. A 1 percent increase in the variable legislated/voluntary quota means that countries have rather legislated quotas than voluntary quotas. In both model 5 without the CSE, as in model 6 with the CSE, a 1 percent increase in the variable legislated/voluntary quotas will lead to a change of the women percentage in parliaments with -0.037. This means that when countries install legislated quotas, the percentage of women in parliaments will decrease.

However, these estimators are not statistically significant. The between r-squared of both model 5 and 6 is 0.1502. This means that 15.02% of the variance in the variable women percentage in parliaments can be explained by the variable of having legislated or voluntary quotas.

Table 2

Regressions to test the second hypothesis.

	(5) Women percentage		(6) Women percentage – CSE	
Legislated/Voluntary quota	-0.037		-0.037	
		(0.047)		(0.056)
Political stability	-0.024		-0.024	
		(0.015)		(0.053)
Government effectiveness	-0.028		-0.028	
		(0.018)		(0.028)
Electoral system	0.016		0.016	
		(0.036)		(0.017)
Constant	0.342***		0.342***	
		(0.059)		(0.077)
N	265		265	

Standard errors in parentheses

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

Table 3 shows the results of the last four regressions that were performed in Stata. These regressions were performed to test the relationship between countries having electoral quotas, when having a unicameral or bicameral structure on the percentage of women in parliaments. Models 7-10 include control variables, from which model 7 is a normal regression, and model 8 is a normal regression which accounts for CSE. Model 9 and model 10 are regressions with interaction effects. Model 10 is also a regression with interaction effects but with accounting for CSE. All four models have a total of 513 observations. The constant of both model 7 and model 8 is 0.352 ($SE^7 = 0.056$, $SE^8 = 0.063$), which means that the average value of women in parliaments

is 35.2% when countries have no quotas and a unicameral structure. A one percent increase in the variable electoral quota leads to a change of the women percentage of -0.041 in model 7 and 8, when the structure of the parliament is included as control variable. Thus, when countries implement quotas, the percentage of women will decrease. A one percent increase in the variable structure of parliament, which means that countries are more likely to be bicameral, leads to an increase of the women percentage of 0.030. This entails that when countries are more likely to have a bicameral structure, this will influence the women percentage positively. However, both estimators are not statistically significant. Models 9 and 10 measure the relationship between the X and Y variable as mentioned at the beginning of this section, but as shown in table 4, the estimators of 0. electoral quota and 0. structure of the parliament are both 0 (.). This means that these values are omitted. The estimators of 1. electoral quota is in model 9 and 10 -0.041, which means that a 1 percent increase in the variable electoral quota increases the women percentage with -0.041. The estimator of 1. structure of the parliament is in model 9 and 0.030, which means that a 1 percent increase in the variable structure of the parliament leads to a change of the women percentage of 0.030. The between r-squared of all four models is 0.0478. This means that 4.8% of the variance in the variable women percentage in parliaments can be explained by the variables electoral quota and countries having legislated or voluntary quotas.

Table 3

Regressions to test the third hypothesis.

	(7) Women percentage	(8) Women percentage – CSE	(9) Women percentage	(10) Women percentage – CSE
Electoral quota	-0.041	-0.041		
	(0.048)	(0.060)		
Structure of parliament	0.030	0.030		
	(0.040)	(0.051)		
Political stability	-0.049***	-0.049	-0.049***	-0.049
	(0.012)	(0.031)	(0.012)	(0.031)
Government effectiveness	-0.015	-0.015	-0.015	-0.015
	(0.013)	(0.021)	(0.013)	(0.021)
Electoral system	-0.004	-0.004	-0.004	-0.004
	(0.034)	(0.026)	(0.034)	(0.026)
0. Electoral quota			0.000	0.000
			(.)	(.)
1. Electoral quota			-0.041	-0.041
			(0.048)	(0.060)
0. Structure of parliament			0.000	0.000
			(.)	(.)
1. Structure of parliament			0.030	0.030
			(0.040)	(0.051)
Constant	0.352***	0.352***	0.352***	0.352***
	(0.056)	(0.063)	(0.056)	(0.063)
N	513	513	513	513

Standard errors in parentheses

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

Discussion of the results

In the next section the results of the regression which are shown in the previous section 'empirical findings' will be combined to the theory and made hypotheses. This section will try to answer the

research question through answering the various hypotheses and by presenting the notable aspects of the performed regression results.

Hypothesis 1

Table 1 showed the regression results about the first hypothesis. Countries with the implementation of electoral quotas were expected to have a higher share of parliament members than countries without this implementation. Some remarkable aspects of the results of the regressions in table 1 are that the only statistically significant values are the constants and the estimators of the control variable political stability. Therefore, nothing can be certainly stated about the other results. Remarkable is that the found estimator of electoral quotas on the women percentage in parliaments is negative. The expectation was that electoral quotas would have positive influence on the gender division, however, there has been found a negative relationship. Although this relationship cannot be considered as certain because of the lack of significance, this is an interesting relationship. On the other hand, the variable political stability has negative influence on the gender division. So, when countries are less politically stable, the women percentage will increase, which is a remarkable finding. Another aspect is that the r-squared for model 1 and model 2 differs from the r-squared for model 3 and 4. The r-squared increases from 0.7% to 6% when multiple variables are included in the regression. Positively remarkable is that both the regression results of the regression without clustered standard errors (CSE) are as good as the same as the regressions with CSE. So to sum up, hypothesis 1 can nor be rejected nor accepted because of the lack of statistically significant results.

Hypothesis 2

The regression results to test the second hypothesis are shown in table 2. Because of theory about the principal-agent relationship between the public as the principal and the political parties as the agents, countries with legislated quotas were expected to have a higher share of women in their

parliament than countries with voluntary quotas. Some remarkable aspects of these regression results are the low number of total observations. This can be explained because only the countries with voluntary and legislated quotas are considered, which leaves the countries with no quotas implemented disregarded. And because there are 20 years considered, but some countries implemented quotas since 2019 instead of 2003, the number of observations decreases. Moreover, the control variables also have some missing values. Another remarkable aspect is that the results of the regression without CSE are the same as the results of the regression with CSE. The constants of both models are statistically significant. However, it is remarkable that no other variables are statistically significant. Also, the r-squared of both model 5 and model 6 is 15.02%, which is the highest r-squared found in this research. To sum up, table 2 did also fail to lead to statistically significant results. Therefore, hypothesis 2 can nor be rejected nor accepted.

Hypothesis 3

Table 3 shows the regression results to test the third hypothesis. Because of a lack of literature about this hypothesis and literature about the higher democratic accountability of bicameral structured countries, the expectation was that bicameral structured countries with gender quotas have a higher share of women representation in their parliaments than unicameral structured countries with gender quotas (Bulmer, 2017; Rom et al., 2022; Unacademy, 2022). Some remarkable aspects of these models are for example that the r-squared for all four models is the same value. However, this value is very low. That these values are the same in all models, seems trustworthy. It is also trustworthy that the results of the normal regressions and the regressions which account for CSE are of the same values. Again, the estimators of the electoral quotas and the structure of the parliament are not statistically significant. Therefore, the third hypothesis can nor be rejected nor accepted. Another remarkable aspect is the omitted results of the 0. electoral quota and the 0. structure of parliament variables. The estimator of the structure of the parliament

is positive, which means that having a bicameral structure indeed have a positive influence on the women percentage. However, because the results are not statistically significant, this cannot be concluded for certain.

General analysis

All r-squared values in the 10 regression models are very low. The highest r-squared is 0.1502, which means that 15.02% of the variance in the variable women percentage in parliaments can be explained by the variable of having legislated or voluntary quotas. It is positive that all found constants are statistically significant with a value of ***, which means $p<0.01$, which assumes that these results are reliable. None of the estimators in the main independent variables' electoral quotas, voluntary/legislated quotas, and structure of parliament are statistically significant. Therefore, the three hypotheses can nor be rejected nor accepted. The highest estimator of the variable electoral quota that is found is the one in models 7 and 8, which is -0.041 (4.1%), which is very low. Even if the results would be statistically significant, the effects would not be high. In the models that account for CSE, none of the results are statistically significant. However, in the models without CSE, the control variable political stability is statistically significant in every model with a value of ***, which means $p<0.01$, except for the estimators in model 5. The found relationship between the parliament structure and the gender division is not statistically significant, but it showed that having a bicameral structure has a positive influence on the women percentage, just as the theory expected. The control variable electoral system does not show any significant results, but it shows a negative relationship with the women percentage in table 4, but a positive relationship in tables 2 and 3. This means that when the electoral system variable increases (from 1 (PR) to 2 (plurality/majority) to 3 (mixed), the women percentage also increases. The government effectiveness variable resulted in having a negative influence on the gender division

in every model. It is not statistically significant, but it shows that an increase in the effectiveness of the government leads to a decrease in the percentage of women parliament members.

Discussion

This thesis studied the influence of electoral gender quotas on the gender division of diverse European governments and the relevance of this measure. The main conclusion of this research is that the regression did not result in significant results, and they show that this topic requires more research because of multiple aspects. First of all, because of the unsignificant estimators. Nothing can be stated with certainty and no statements would be valid and reliable. It is remarkable that the found effects between electoral quotas in general, legislated quotas, and voluntary quotas are negative. The quotas may not only influence gender equality, but also other aspects which are not enough considered. For example, equal opportunities, freedom, quality instead of quantity. There can be other factors that influence the effect of gender quotas on gender equality in parliaments and politics (Karekurve-Ramachandra & Lee, 2020; Knispel, 2020). Because of these opposite findings it would be beneficial to have further research, especially because quotas might endanger the gender division of national parliaments if these estimators are correct. Second, it would be interesting and beneficial to study the relationship between the structure of parliaments and the gender division of countries further because of the positive effect that has been found in the regression. The effect of quotas on gender equality may differ based on the cameral structure of a parliament. Third, the low r values are another reason more research is required. The r values are low because of the unsignificant and the low estimators, which makes sense. However, it would be interesting to study which variables do have significant effects on a countries' gender division and result in bigger, significant effects and higher r values. Finally, further research may delve deeper into the relationship between the control variable political stability that is used in this thesis and the gender division in parliaments. The results of the political stability of countries on the

gender division are, in most regressions, statistically significant. This variable may have a bigger influence on the Y variable than expected.

The results of this thesis are not as expected but are comparable to research done by Dimitrova-Grajzl and Obasanjo (2019). They stated that: "Our empirical findings suggest that affirmative action does not necessarily lead to substantive representation if legitimacy is compromised by a lack of fairness and competition". Therefore, the recommendation is to study the effects of gender quotas in more detail, with more data points, and with the inclusion of more control variables, such as fairness and competition in election systems, such as Dimitrova-Grajzl and Obasanjo (2019) discussed. This can also be an inductive study because of a research gap in potential control variables. Building on these results, which could also be negative, it is advisable to perform more research before setting mandatory quotas.

Conclusion

This thesis discussed the relevance of gender quotas for gender diversity in different European governments. The academic relevance comes from the divided opinions in the academic literature about the effects of gender quotas, from which for example Squires (1996) and Dahlerup (2009) discussed that it has both negative and positive effects. This thesis had three hypotheses, from which the first hypothesis expected countries with electoral quotas to have bigger influence on a countries' percentage of women in parliaments than countries without electoral quotas, the second hypothesis expected legislated quotas to have a bigger effect on this percentage than voluntary quotas, and the third hypothesis expected bicameral structured countries with the implementation of gender quotas to have a bigger effect on the women percentage than unicameral structured countries with gender quotas. All ten regressions resulted in quotas having negative effects on the percentages of women in parliaments. This is a remarkable result, even though they are not statistically significant. The results of both regressions without clustered standard errors and the regressions with accounting for clustered standard errors are closely related which is positive. The

research question cannot be answered with certainty, but because of the found negative correlations it is important to consider that gender quotas may have the opposite effect instead of the intended effect.

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