

Insper Institute of Education and Research

College of Economics and Administration

LUIZA MORELLI

**CULTURE: DETERMINING FACTOR IN FEMALE PARTICIPATION IN
POLITICS?**

São Paulo 2018
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Dissertation presented to the course of Economic Science, as a partial requirement to the attainment of the Bachelor's Degree from Insper Institute of Education and Research.

Advisor: Prof. Regina Madalozzo Ph.D.

São Paulo 2018

MORELLI, Luiza
Culture: Determining Factor in Female Participation in Politics? / Luiza
Morelli. – Insper. São Paulo, 2018. Dissertation- University of Economics and
Business.

Dissertation: College of Economics and Administration. Insper
Institute of Education and Research.

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São Paulo 2018

Dedication

I dedicate this to my advisor, who means so much to me as a teacher and as a friend, and without whom I wouldn't have done any of this. I also dedicate this dissertation to my family, who have been supportive throughout my whole life and specially in these last 4 years. And to my friends, who have been crucial to me in this amazing journey.

Abstract

Morelli, Luiza. Culture: Determining Factor in Female Participation in Politics? São Paulo, 2018. Dissertation – Business and Economics School. Insper Institute of Education and Research.

This study analyses the impact that the culture of a country has on its female participation in politics. To understand this interaction, a time series database (2006-2016) was created with female participation in respective legislative houses, the feminist values of those countries with economic indicators from the World Economic Forum, the different types of government (parliamentary or presidential) and socioeconomic indicators from the World Data Bank. Afterwards, a comparison between Brazil and the United States will be made, analysing more deeply the effect of cultural values since both have very diverse states.

Keywords: Culture. Female Participation. Senate and House. Brazil.

Resumo

Morelli, Luiza. Cultura: Fator Determinante na Participação Feminina na Política? São Paulo, 2018. Monografia – Escola de Economia e Administração. Insper – Instituto de Ensino e Pesquisa

Esse estudo analisa o impacto que a cultura de um país tem na sua representatividade feminina na política. Para entender essa interação, uma base de dados em painel foi criada que mostra a participação feminina nos centros legislativos respectivos, valores feministas (Global Gender Gap Index), os diferentes tipos de governo e indicadores econômicos de cada país. Em seguida, uma comparação entre o Brasil e os Estados Unidos será feita, analisando mais profundamente a diferença de valores culturais em cada estado.

Palavras-chave: Cultura. Participação feminina. Senado e Câmara dos Deputados. Brasil.

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1. Introduction

The lack of female participation in world politics is, unfortunately, still a contemporary issue. The first country to allow women to vote was New Zealand in 1893, over 100 years ago, but still barred them from running for a political seat. The first woman elected for chief of state was Khertek Anchimaa-Toka from 1940 to 1944 who was head-of-state of Tuva, where Russia is currently located. In Brazil, the right to vote was attained by women only in 1932 and its first female president, Dilma Rousseff, elected in 2010. Although not much time has passed since gaining the right to vote, women have conquered some room in the Senate and Congress. Today, 15 nations out of 193 in the world (7%)¹ have female chief of states, being 9 out of those of European countries. Historically, around 70 countries have had some sort of female leadership, ranging from full terms to just 14 hours. The longest mandate of a female chief of state was of Dame Eugenia Charlies from Dominica, who was prime minister from 1980 to 1995².

A lack of female representation in politics is noticeable, with only in recent years the number of female chief-of-state rising (Women in Politics Map, 2017). In 2001, the country with the highest participation of women in parliament was Denmark, with 37% of the members of parliament being female. Today, Rwanda has the highest percentage of women in parliament, with 54% of female participation³.

There seems to be a prejudice towards women in a position of power, especially in government, given that women are seen as the caretaker of the household and not as a good leader or person in position of power (Norris and Inglehart, 2001). In Brians (2005), it is discussed how the myth that all women vote for female candidates is untrue. In closer inspection, a determining factor is the party that the candidate is representing. Since the study was conducted in the United States, women that represented the Democratic party had a higher chance of being elected by women and men, while in the Republican party the chance was smaller. It was possible to see that there was also a prejudice with female voters towards women candidates.

The lack of egalitarianism in politics in the 21st century can be explained by a few factors, such as structural, political and cultural (Norris and Inglehart, 2001). When it comes to structural factors, an important point is a country's development. As a country develops, women become part of the labour force, later reaching leadership roles in society, which results in higher gender equality (Reynolds, 1999). This is still not seen today, as developed countries are

¹ Interparliamentary Union database 2018

² Interparliamentary Union database 2018

³ Interparliamentary Union database 2018

far behind when it comes to equality in politics or in the work force but are higher than developing ones⁴. According to Duverger (1955), political institutions have great influence in representation, while proportional representation results in greater diversity and majority elections tend not to have the same results.

The main goal of this research paper is to test the effect of one main factor: the culture of each nation on the proportion of women in politics, in this case, in parliament or congress. The main hypothesis is that with more feminist values in the country's culture, there is higher representation of women in office. In this way, the study may be divided into two parts. A worldwide time series analysis from 2006 to 2016 with feminist values as an independent variable and female representation in politics as a dependent variable to determine if the hypothesis above is true will be the first part. As a proxy for the latter, the Global Gender Gap Index from the World Economic Forum will be used, and for the former, the female participation in parliaments obtained from the Women in National Parliaments from the Inter-Parliamentary Union was determined as the best fit. The second part will make a more detailed comparison between Brazil and the United States, both countries with a wide range of cultural values in its territory. The World Values Survey will be used as proxy for feminist values and Women in National Parliaments from the Inter-Parliamentary Union as proxy for the female representation in legislative houses from the same period. The results of the model shows us that there is indeed a small but significant impact of culture in the proportion of women in politics, and the interesting discovery of a division of countries into 3 groups that also prove to be significant in this model.

This paper has 8 sections; Section 2 will discuss the literature that is relevant to this study, Section 3 presents the econometric theory behind the model, Section 4 shows the data that is used, Section 5 shows the results of both studies (time series and Brazil vs USA), and Section 6 concludes the study.

2. Preliminary discussion of literature

The literature in women's representation in government is diverse, with many papers focusing mostly in the United States or European countries. This leads to an analysis of nations with similar values, economic growth and government stability and, therefore, not a worldwide search with many different characteristics that can be analysed. When trying to understand the effect of feminist values on female participation in politics, it is necessary to not only look at

⁴ Global Gender Index 2017

the culture of a country and the number of seats in parliament that are occupied by women. A number of factors have also to be taken into account such as the type of government, as shown by Duverger (1955), and socioeconomic development, as analysed by Reynolds (1999).

Duverger's analysis was ground-breaking and later became known as the Duverger's law. The author looks at how a country having a majority or proportional representation (PR) voting system leads to a different number of minority politicians because voters have different incentives to elect those politicians or not. For example, if the system of a government is majoritarian and party A wins 51% of the votes in an election, then A wins the election, with the opposition gaining a small amount or none of the seats. If the system was PR, then seats in the house are proportional to the votes that the party got in election – if 50% of the population votes for party A and 30 % for party B then 50% of the house's seats goes to party A and 30% of the seats go to party B. With this, governments with proportional representation tend to have a more diverse number of politicians due to the fact that they reflect more easily the public's wishes. Duverger (1955) also shows that with PR it is easier for a female politician to get elected, mainly because they only need a smaller amount of votes so that they may have a seat in parliament in comparison to in a majority system. With this, it is important to look at the governments' system as it has a direct correlation with the number of female politicians. The author looks at specifically the turnout of female and male voters from 1930 until 1950 in the democratic countries. This shows that there is a staggering number of female voters that abstain when in comparison with their male counterparts. This can be explained also due to the fact that there isn't encouragement for women to vote, having only gained the right in recent years and still only being expected to be a housewife, this is possible to see in the smaller turnout of female voters when in comparison to male voters⁵ even in recent elections. Another important conclusion is that in a majority system, the female vote would have a bigger impact, as the party has a higher incentive marginally to win a female vote. Although, it makes sense for female votes, as mentioned before, it doesn't make it easier for female candidates to get elected, especially during a time where there were a miniscule number of female candidates.

A nation's level of socioeconomic development also has a great effect on the number of minority politicians as shown by Reynolds (1999). In his paper, the author looks at the factors that influence not only female members of the lower house but also female ministers of cabinet, and what stops them from breaking the glass ceiling. Looking at different areas around the world, it is possible to see that the impact of the same factors is different; where political institutions affect more Western countries and sociocultural factors affect more Asian countries,

⁵ <http://www.cawp.rutgers.edu/sites/default/files/resources/genderdiff.pdf>

but with socioeconomic development being proven significant in all. The author also takes into account a number of other factors, such as religion (Buddhist, Eastern, Orthodox, Muslim, Other, Protestant, and Traditional), portfolio allocation (which ministry is the female minister from, which reinforces the results from Hudy and Terkildsen (1993)), and number of years that women have been allowed to vote, of the 180 countries analysed. Reynolds, like the other authors mentioned in this study, only looks at the number of MPs (Members of Parliament) at the 1990s, which again narrows the analysis and effects of the different factors. When looking at the data, it can be seen that the number of female politician has improved greatly from the 1990s, but not close to enough. Socioeconomic development is significant when analysing gender equality at the lower house level, although it is not significant at the ministerial level. That is an interesting conclusion, but this study will only focus on the latter affirmation.

The party that the female and male candidate is tied to is also a factor that has been analysed in past literature and has been shown significant with interesting results. As seen by King (2003), being a woman is a disadvantage in the American Republican Party, while it is an advantage in the Democratic Party of the United States. As Briens (2005) also shows, there is a bigger chance that women are Democratic while there is a bigger chance that men be Republican. While Fox (1997) found that Republican women are more likely to vote for a Democratic female candidate than Republican men. The author also shows that there is a higher chance that a Republican woman will vote for a Democratic female candidate than a Democratic woman votes for a Republican female candidate. With this, she may have a bigger or smaller chance of winning an election than her male counterpart depending on the party that she is a member of.

The seat that female candidates are running for is also an important factor to be looked at. Hudy and Terkildsen (1993) test the perception of male and female candidates, and what part do stereotypes play in this, through questioning 297 students of the University of New York at Stony Brook. By first asking a number of questions regarding the students' opinions towards feminine (warm, gentle, feminine, sensitive, emotional, talkative, cautious, which were combined to form a warmth and expressiveness scale) or masculine traits (assertive, coarse, tough, aggressive, stem, masculine, active, rational, self-confident which were combined to construct an instrumentality scale) and which ones should a good politician at a higher level have, the results showed the expected: perceived good politicians had more masculine traits than feminine. The authors then conclude that with more "feminine" traits, the voters are more likely to vote for that candidate with projects that need compassion and trust such as women's issues and poverty, while candidates with more "masculine" traits were seen as better for areas like military, where being assertive was viewed as necessary.

Schwindt-Bayer & Mishler (2005) and Norris & Inglehart (2001) are studies that look specifically into the effect of culture in female representation. Both these studies try looking closely into the portion of female participation in parliaments and houses, and how the culture of each country affects that percentage. Both use the World Values Survey as proxy for culture and the Inter-parliamentary Union Database for female members of Lower and Higher Houses. In other words, both papers use only one specific period to analyse. Norris and Inglehart (2001) uses the answer of a specific question – “On the whole, men make better political leaders than women do.” on a 4-point scale, while Schwindt-Bayer and Mishler (2005) looks at the answer on citizen confidence in the legislature and separates into 2 groups, female and male participants. Also, both conclude the same; culture has a significant part in explaining the percentage of women in houses of government in each country. However, by relying on the World Values Survey, the authors of both papers cannot look at a longer period of time and the changes of women in government and countries’ cultures. This is why this study will use the Global Gender Index as it is possible to look at a greater period of time and with more precision, thus creating a panel data from 2006 until 2016 with information from over 100 countries’ government and values.

Rule (1994) also looks at what affects the proportion of women in Parliament or Congress in a number of countries. There are many variables that are shown as relevant, such as socioeconomic and type of government of that country, as mentioned before. But the most intriguing is that there is a variance of proportion of women in countries with different types of government in the same country lead to different proportion of women in legislative power. This will be the main point of focus of the second part of this study.

3. Method

To analyze the impact of culture on female participation in politics more deeply, this study will be divided into 2 parts. The first one will look at over 130 countries over a span of 10 years. These countries were chosen on the availability of data; taken from the Global Gender Gap (GGG) Indexes (Economic, Health and Education), the Inter-Parliamentary Union database, Population and GDP from the World Data Bank online and the kind of government of each country (such as candidate’s party, PR or Majoritarian, Presidentialism or Parliamentary), leading to 180 countries available. After merging the three databases, the complete database was left with 130 different countries (1305 variables). The exclusion of certain countries was due to the lack of information of some of the variables. For instance, there are non-democratic countries and, therefore, no women in Parliament or Congress; there are

also countries that do not have the GDP or Population information for all years in our time window, or not used in the GGG Index. The model used will be the following.

Equation 1

% of female members

$$= \alpha + \beta 1 * Economic_{(i)t} + \beta 2 * Health_{(i)t} + \beta 3 * Education_{(i)t} + \beta 4 * Majoritarian_{(i)t} + \beta 5 * Presidential_{(i)t} + \beta 6 * GDPPC_{(i)t} + \varepsilon$$

The Global Gender Gap (GGG) Index is constructed by the World Economic Forum since 2006 and released annually analysing the gap between women and men in the 4 big areas in each country: Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment. The last area will be excluded in reason that the variable which the study will test is political empowerment and therefore will not be needed. The Index itself of each country is an average of the 4 gaps from the areas mentioned before.

The Majoritarian dummy will be 1 if the countries election system is by majoritarian vote - in other words, the members of House of Representatives are elected by gaining >50% of the votes - and equal to 0 if the election system is proportional (PR) - i.e., the members of House of Representatives are elected proportionally to the percentage of votes they get⁶. The Presidential dummy will be 1 if the government system of that country is Presidential, in other words there is a President elected as the executive power and Senate/ House of Representatives as the legislative power, and will be 0 if there is a Parliamentary system, i.e., there is a parliament that is the legislative power with the Prime Minister or King being the executive power (with some exceptions: France, for example, has both a President and a Prime Minister).

The regression was first modelled as a panel, mainly because the data is variant through time and therefore a model that looks at the year of each data should be used. When looking at the results, however none of the explanatory variables were significant (especially the GGG Index variables) and therefore a different approach was used. When analysing closely, it was possible to see that the fixed effect was seen only in the countries' dummies making the other explanatory variables not significant. In other words, the GGG Index variables and all other variables were not significant because they didn't have as much effect on the female participation as the countries' dummies, fixed effect wise. This could be as a result of the GGG Index not reflecting each country's culture as well as a dummy, or that the GGG Index weren't

⁶ As an example: if candidate A gets 50% of the votes, his/her party gets 50% of the seats available, and so on. This was mentioned in the preliminary discussion of literature.

actually the best variable to analyse closely the culture itself, or that the dummies had other variables that weren't taken into account and therefore were significant. With the various number of possibilities as to why the dummies were significant when the GGG Index variables were not, a different model was needed as to look closely at the fixed effect that was only shown via the dummies.

With this, a tobit model - applied to each individual year - was chosen as the best alternative. The main reason being that, in the tobit model, the dependent variable (in this case the percentage of women in parliament ranging from 0-100) can be limited, unlike the OLS model (that uses variables ranging from $+\infty$ to $-\infty$). The upper limit chosen was the highest available percentage of women in Rwanda (65% in 2013-2015) and the lower limit was zero, since there can't be a negative percentage.

As mentioned by Reynolds (1999), a country's socioeconomic development has direct links with the female participation in government, making it necessary to add economic indicators - in this case, Gross Domestic Product (GDP) and population - which combined and used as GDP per capita in the model. The GGG Index is annual and follows a constant sample of 180 countries, unlike the World Values Survey which is every 10 and has a varying number of interviewed countries in every poll.

The second part of this work will look at two countries: Brazil and the United States of America. They were chosen based on the fact that both are very big countries, with a significant flow of immigrants in its history leading to a heterogeneous culture inside their own country. With this, it is possible to analyse the impact of culture of each state on the participation of women in House of Representatives. The databases used were the World Values Survey of 2010-2014, the female participation in House of Representatives (USA) and Chamber of Deputies (Brazil) from 2014 as proxy for female participation taken from the official websites of each government as well as the party each of those female candidates were from, and the Population and GDP from IBGE website (Brazil) and the U.S. Bureau of Economic Analysis (USA) and Census Bureau (USA) from 2010. The difference in years between the World Values Survey and the other variables is because the World Values Survey is done in waves, and the most recent wave we could analyse was in 2010-2014. The merging of all databases was used with State as the common variable. Later, the database was collapsed using State as the common variable again, leaving us with 65 observations. In other words, each observation in the database is equal to one state of each country, and each answer is the average of the answers of the interviewees of each state to each question in the World Values Survey. The model used will be the following.

Equation 2

% of female members

$$\begin{aligned} &= \alpha + \beta_1 * USA \text{ Dummy} + \beta_2 * GDP + \beta_3 * Population + \beta_4 \\ &* Education \text{ dummy}(i) + \beta_5 * V240(i) + \beta_5 * V250(i) + \beta_6 * V235(i) \\ &+ \beta_7 * V52(i) + \beta_8 * wage(i) + \beta_9 * V50(i) + \varepsilon \end{aligned}$$

The World Values Survey is used as proxy for culture, where each person's views on each subject can be seen and therefore create a "State culture" for each state for both countries. It is a survey delivered around the globe, where residents of each country are asked a number of questions regarding their views of different subjects such as abortion, gay rights, economics, etc. The World Values Survey started in 1981, with scientists from Sweden. It now has 7 different 'waves' of research, where each wave contains many countries in a specific period of time. The database of WVS used in this study refers to the 6th wave, where data was collected from 2010-2014. The answers from Brazilian and American subjects were from 2011 and 2012, respectively.

4. Data

As mentioned before, the Global Gender Gap Indexes and socioeconomic variables were the explanatory variables and the percentage of women in Parliament the dependent variable. The Economic Index from the Economic Forum contains, as mentioned in the World Economic Forum Report, the participation gap, the remuneration gap and the advancement gap. The participation gap is the ratio of women and men in the labour participation. The remuneration gap is the difference of wages between men and women for the same job and the advancement gap, "the ratio of women to men among legislators, senior officials and managers, and the ratio of women to men among technical and professional workers"⁷. The Health Index⁸ is based on the sex ratio on birth (how many boys to 100 girls born) taken from the UN and the life expectancy of men in comparison to those of women. The Education Index⁹ is made of the female and male literacy rate, the female and male net primary education enrolment rate, the female and male net secondary education enrolment rate and the female and male tertiary gross enrolment ratio. All these rates were retrieved from the UNESCO Education Indicators database. The Gross Domestic Product (GDP) of each country is in United States dollars and

⁷ Page 5 - The Global Gender Gap Report 2017 – World Economic Forum, 2017.

⁸ Page 6 - The Global Gender Gap Report 2017 – World Economic Forum, 2017.

⁹ Page 5 - The Global Gender Gap Report 2017 – World Economic Forum, 2017.

the population in the full number of people resident in each country, with the GDP per capita being the division of GDP by the population.

For the second part of the study, the percentage of women (and the party they belonged to) in House of Representatives and Chamber of Deputies was taken from the official Senate website from Brazil and the US from 2014, with the socioeconomic information of each state (GDP and Population) retrieved from Instituto Brasileiro de Geografia e Estatística (Brazil) and Bureau Economic Analysis (USA). The culture proxy for this model was made with questions from the World Values Survey, as mentioned before. The wave of 2010-2014 was chosen by reason that the culture of a country will only have impact on its closest election, which was the election in 2014, therefore it was necessary to look at the closest election to the wave. The Country dummy was created where if the country is Brazil the dummy equals 0 and if the country is the United States of America this dummy equals 1.

The questions were: V47 (renamed wage in the database) is the answer to the question “If a woman earns more money than her husband, it’s almost certain to cause problems” with possible answers being “strongly disagree”, “agree”, “strongly agree” and “disagree”; V50 is the answer to “When a mother works, the children suffer” with the same possible answers; V52 is the answer to “An university education is more important for a boy than it is for a girl” again with the same possible answeres; “Highest education achieved” (renamed education in the database); V250 is if the interviewee still lives with his/her parents; V235 is if the interviewee is the main earner of the family; and V45 (renamed job in the database) is the anaswer to the question “When jobs are scarce, men should have more right to a job than women”. Wage, Job, Politics, V52 and V50 were the questions chosen as feminist values as it was used in Mishler (2005), except V50 which was chosen as a replacement to the question “Women need children in their their life” given that the question was not the 6th wave, Jobs and Politics were also not used in Mishler but were tested given that were feminist questions as well, and later proved to be significant in the model.

Analysing Image 1, it is possible to see that the world average of women in parliament has grown in 10 years, in close to 37.5%, and stabilizing in the last 2 years. This increase may be due to quotas, voluntary or compulsory, that have been added to many countries’ legislations in the last 10 years. The IDEA (Institute of Democracy and Electoral Assistance)¹⁰ has an extensive database showing the different gender quotas that are present in each of the 198 countries of the world. Currently there are 55 countries (28.1%) with voluntary party quotas,

¹⁰ Created in 1995, has the objective do analyse develop comparative knowledge, assist in democratic reform, and influence policies and politics, focusing in three main impact areas: electoral processes, constitution-building, political participation and representation

against 41 (20.9%)¹¹ in 2006, showing an increase of 34.4% in voluntary gender quotas. This type of quota was adopted by Swedish parties in the 1970's and led to a growth in female participation, which now lies around 43%. Women have also been given the right to vote and to be able to be elected into office, such as in Iraq which gave the women the right to vote and created a 25% quota for women in its parliament¹² in 2005.

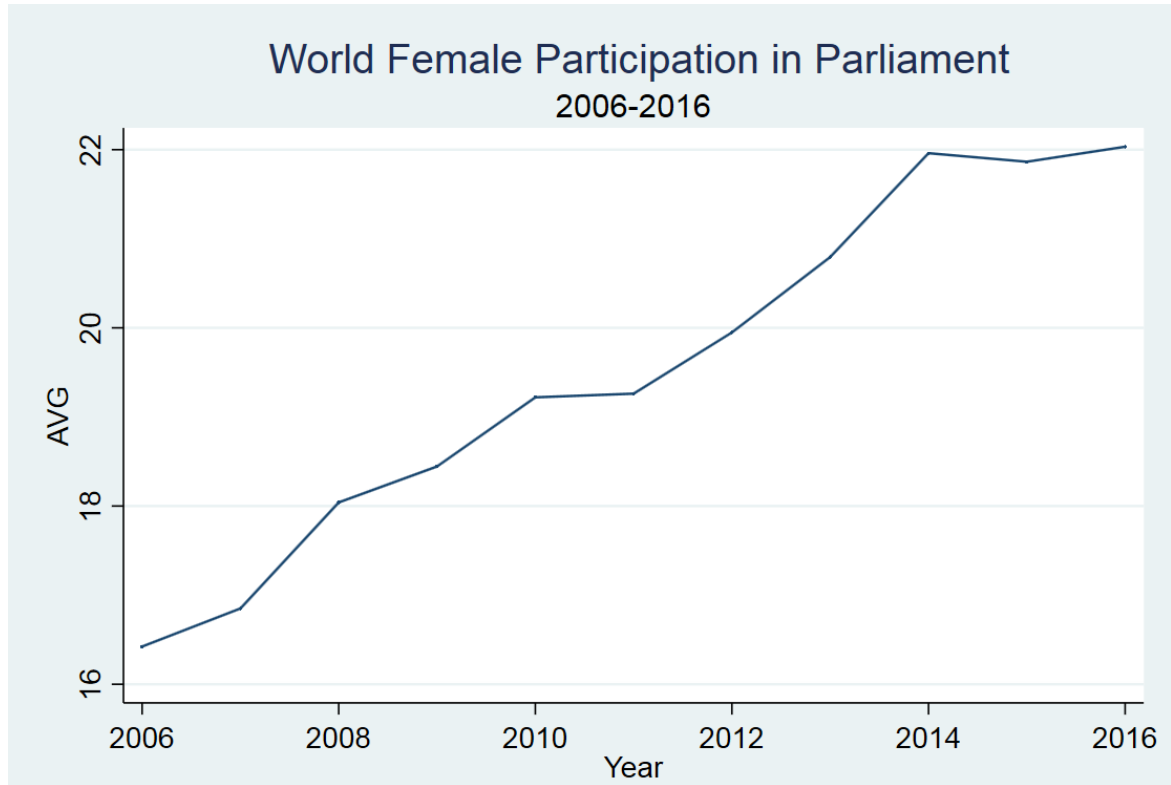


Image 1 – World Female Participation in Parliament 2006 - 2016

Table 1: Average of Global Gender Gap Indexes in 2006, 2009, 2012 and 2016.

	Economic	Health	Education
2006	0.595	0.972	0.937
2009	0.630	0.972	0.948
2012	0.646	0.971	0.949
2016	0.655	0.972	0.959

Looking at Table 1, it is possible to see that there is a growth in the Indexes along the 10-year frame that will be looked at in the model. The Economic index grows nearly 0.06 and the Education Index nearly 0.02. This already gives shows us that there may be a positive impact of the Economic index in the proportion of women when looking at Image 1 and table 1 together. There has been a growth of both Economic Index and participation of women as a

¹¹ <https://www.idea.int/data-tools/data/gender-quotas/voluntary-overview> - accessed 22/09/2018

¹² <https://www.idea.int/data-tools/data/gender-quotas/country-view/137/35> - accessed 22/09/2018

whole in politics in the last 10 years, nearly 10% in the Economic index. The growth of the Economic Index may be due to the smaller gender gaps and the higher participation of women in the labour market, and the stability of the Education and the Health Index may be due to the small difference between men and women in education and life expectancy in the last 10 years.

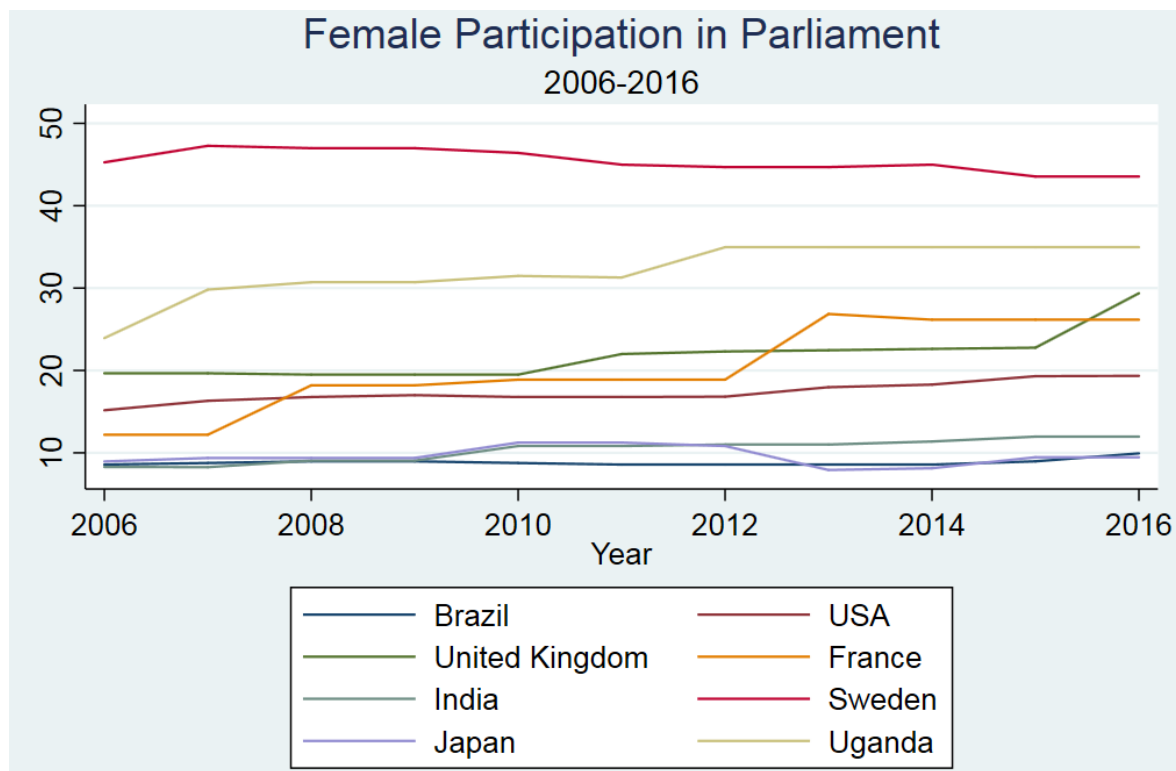


Image 2 – Female Participation in Parliament (select countries) 2006 - 2016

In the Image 2 above, we can look closer into this increase in the percentage of women in parliament. In certain countries such as France, United Kingdom and Uganda there was an increase of participation but in countries such as Brazil and the United States there was little variation in the last 10 years. This is an interesting matter, mainly because in these 10 years Brazil had a female president and the US had president Obama, who was a declared feminist, and there was no apparent impact of this on the participation of women in the House of Representatives.

As seen in political science theory (Duverger's law, 1955), with a PR voting system there will be a higher proportion of female seats to male than in majority system. Looking at Sweden this is apparently true, where the percentage of women is around 40%. But Brazil, also a PR government and with voluntary party quotas¹³, has fewer women in parliament than the U.S., a majoritarian-presidentialist government which has no quotas whatsoever. Even though a female president was elected in Brazil in 2010, the number of women in parliament hasn't

¹³ <https://www.idea.int/data-tools/data/gender-quotas/country-view/137/35>

changed significantly since, for example. As seen in Schwindt-Bayer and Mishler (2005), the culture is expected to have a significant impact on the proportion of women in government. Therefore, there may be a big impact of a countries' culture in the number of women in parliament that is not so simply seen. Which poses the question, why is there such a big difference between the Duverger's law and what is currently seen in countries today?

5. Results

The following section will show the results of the models mentioned before each year of the 10 year analysis (subsection A) and the results for the model for Brazil and the United States (subsection B). This will allow us to look more closely on the impact of each countries' culture proxy on the percentage of women in parliament, as well as the other variables that were used.

a. 10-year analysis

In the following table are the results of the tobit models for each year, as mentioned before¹⁴. They show the relation of the GGG Indexes, socioeconomic variables and the groups¹⁵ of countries and its' interection with the Economic Index, with the percentage of women in parliament.

Table 2 – Percentage of women in parliament - Model 1 for 2006, 2009, 2012 & 2016:

<i>Variables</i>	<i>2006</i>	<i>2009</i>	<i>2012</i>	<i>2016¹⁶</i>
<i>Economic</i>	0.3137** (0.1381)	0.2711** (0.1225)	0.1483 (0.1157)	0.1959 (0.1262)
<i>group 2</i>	0.2053* (0.1125)	0.1107 (0.0981)	0.1420 (0.0949)	0.1848* (0.1028)
<i>group 3</i>	0.25988** (0.1046)	0.1956** (0.0952)	0.1097 (0.0894)	0.2924** (0.0980)
<i>Economic*group2</i>	-0.2873 (0.1916)	-0.1115 (0.1615)	-0.1293 (0.1538)	-0.1959 (0.1622)
<i>Economic*group3</i>	-0.2461 (0.1769)	-0.0509 (0.1544)	0.1103 (0.1434)	-0.1337 (0.1533)

¹⁴ The rest of models for the remaining years are in the Appendix.

¹⁵ Countries in group 1: Armenia, Bahrain, Belize, Benin, Bhutan, Botswana, Brazil, Cote d'Ivoire, Egypt, Gambia, Georgia, Ghana, Iran, Kuwait, Lebanon, Liberia, Maldives, Mali, Malta, Nigeria, Oman, Sri Lanka, Swaziland, Ukraine, Yemen.

Countries in group 2: Azerbaijan, Bahamas, Bangladesh, Barbados, Bosnia, Burkina Faso, Chad, Chile, Colombia, Cyprus, Estonia, Fiji, Guatemala, Hungary, India, Ireland, Jamaica, Japan, Jordan, Kenya, Madagascar, Malaysia, Mauritius, Mongolia, Montenegro, Morocco, Panama, Paraguay, Qatar, Republic of Korea, Romania, Russian Federation, Tajikistan, Thailand, Turkey, USA, Uruguay and Zambia. Countries in group 3: Algeria, Angola, Argentina, Australia, Austria, Belarus, Belgium, Bolivia, Bulgaria, Burundi, Cabo Verde, Cambodia, Cameroon, Canada, China, Costa Rica, Croatia, Czech Republic, Denmark, Dominican Republic, Ecuador, El Salvador, Ethiopia, Finland, Greece, Germany, Greece, Guinea, Guyana, Honduras, Iceland, Indonesia, Israel, Italy, Kazakhstan, Kyrgyzstan, Lao PDR, Latvia, Lesotho, Lithuania, Luxembourg, Malawi, Mexico, Mozambique, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Norway, Pakistan, Peru, Philippines, Poland, Portugal, Republic of Moldova, Rwanda, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, Spain, Suriname, Sweden, Switzerland, Timor-Leste, Trinidad and Tobago, Tunisia, Uganda and United Kingdom.

¹⁶ The other results for each year are annexed. These years were selected because it was the closest to an even cut of the different years. Showing a 3-year difference between each model was the best because it is almost a full election cycle in parliament between 2 and 4 years.

<i>Health</i>	-0.2382 (0.8494)	0.0452 (0.6737)	-0.2015 (0.5943)	-0.0530 (0.7841)
<i>Education</i>	-0.0070 (0.0747)	-0.1104 (0.0710)	-0.0863 (0.0727)	-0.0017 (0.0968)
<i>GDPPC</i>	1.86e-0.6*** (4.52e-07)	7.51e-07** (3.67e-07)	2.40e-07 (3.22e-07)	4.66e-07 (3.90e-07)
<i>presidential</i>	0.0010 (0.0167)	-0.0018 (0.0141)	-0.0088 (0.01316)	0.02966** (0.0143)
<i>majoritarian</i>	-0.2871 (0.0174)	-0.0209 (0.0147)	-0.02718* (0.0141)	-0.0300** (0.1427)
<i>constant</i>	0.1231 (0.8372)	-0.0338 (0.6702)	0.2687 (0.5865)	0.0099 (0.7435)
<i>Observations</i>	128	129	129	131

The significance of the variables is as follows : $p < 0.01 = ***$, $p < 0.05 = **$, $p < 0.1 = *$ and the numbers in parenthesis are the standard deviations.

The Economic Index is significant for '06, '08, '09 and '10 (Results for 2008 and 2010 are in the Appendix), which shows us that there is a positive impact where there is a higher equality between men and women in the market place. As mentioned before by Reynolds (1999), more women in the labour force leads to a higher participation of women in later years which then leads to a higher number of women in parliament, so a positive impact of the Economic Index is expected. Again, this could also be due to the greater influence of richer countries, leading to more women in politics and in the job market as will be mentioned in the GDPPC analysis and with recent years more women in developing countries have become part of the labour force, leading to a loss of significance of the Economic Index variable. Another theory would be that the gender wage gap has been closing slowly since the 1970s and with a smaller wage gap throughout the last 10 years, leads to a smaller remuneration gap (average wage of men /average wage of women) and, therefore, the Economic Index becomes bigger¹⁷ as a whole.

The group that each country belongs to was determined by the coefficients of each country's dummy in the panel model (which as mentioned before wasn't used due to the lack of significance of the explanatory variables). Countries that had a negative and significant coefficient for its dummy were put in Group 1. Countries that had an insignificant coefficient, in other words, equal to zero for its dummy were put in Group 2. Countries that had a positive and significant coefficient for its dummy were put in Group 3. This led to the division of countries mentioned in the footnote of page 17.

The significance of the groups is now something intriguing. When looking at the list, it is possible to see that many of these are developed countries in group 3, which leads us to think

¹⁷Blau & Kahn (2017); The Gender Wage Gap: Extent, Trends, and Explanations. Page 792

that with a higher development (relating to the significance of a country's GDPPC as mentioned before) there is then a higher number of women in parliament. But there are also many countries that are developing, such as Uganda and Kazakhstan, which are in group 3 (the group that had countries with positive coefficient and it's coefficient is positive and significant in Model 1). Which insites another question, why has this group been shown to be significant in the models, especially in recent years? The importance of group 2 and 3 could be that there is something in them, culture or institutional-wise, that leads them to have a higher number of women in parliament than others, that have lower numbers or null.

Table 3: Percentage of countries with quotas, development and paid maternity leave

	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>
<i>Voluntary Party Seats</i>	25.0%	28.0%	49.0%
<i>Reserved Seats</i>	8.0%	31.0%	49.0%
<i>Both</i>	5.0%	6.0%	16.0%
<i>Developed</i>	12.0%	39.5%	46.0%
<i>Paid Maternity Leave</i>	76.0%	84.0%	78.0%

Most of the countries in group 2 and 3 have some form of gender quota¹⁸, especially when looking at reserved seats, and this definitely leads to a higher number of women in parliament. When looking at the percentage of voluntary party quotas and reserved seats, group 3 has a higher percentage in both comparing to the other two groups. There are many different types of quotas in countries today¹⁹; voluntary party quotas (as the name suggests, it is a quota that each party imposes on itself and is voluntary), reserved seats (where there is a certain number of seats reserved for women in parliament), and legislative candidates quotas (where there is a quota on the number of candidates each party can have). Which clouds the understanding of the similarity of all members of this group that have a positive and significant impact in how many women are in parliament.

One possibility would be that the number of countries with some form of gender quota is much higher in group 2 and 3 than in group 1 by a wide margin. This leads to a higher percentage of women, and can help explain why being part of group 2 and 3 is so important in the model ranging from 2006-2016. In table 3 above, it is shown how nearly half of the countries in that group have some form of gender quota in group 3, and certainly lead them to have an advantage in female participation in politics simply in comparison to other countries. Another possibility is that the number of developed countries in group 3 is higher than in any other

¹⁸ <https://www.idea.int/data-tools/data/gender-quotas>

¹⁹ <https://www.idea.int/data-tools/data/gender-quotas/quotas#different>

group, as is shown in table 3, with group 2 being a close second – with only 6.5 percentage points behind. As mentioned by Reynolds (1999), the higher the socioeconomic development, the higher the number of women in parliament.

Another possibility would be that the culture of each of these countries of group 2 and 3 is less sexist and therefore leads to more women being in politics due to less prejudice in each society, which could be tested in future studies. As shown in Mishler (2005), there is an important impact of culture in the participation of women in parliament. Even though the number of countries used in that paper was much smaller, the impact of culture was considerable and all countries used in Mishler (2005) paper are part of group 3, except United States, Finland and South Korea. This shows an important impact of the Economic Index and specially the importance of a common culture of countries in group 3.

An interaction between the Economic Index and the group dummy was created and used in the model as to test if the economic equality between women and men had any correlation with being part of group 2 or 3. As is shown in table 2, the interaction between those variables was not significant and, therefore, does not affect the proportion of women in parliament. This can happen for many reasons, one of them being that the importance of the Economic variable and the group dummy is already in their own variable and coefficient and, thus, does not show in the interaction. Another theory would be that because the Economic Index is significant due to it's relation to the GDP of that country (as will be mentioned in the analysis of the GDP variable), in other words, its impact is due to the economic development of the same country in the first years of analysis and in group 2 and 3 there are many developed and developing countries, which leads to no correlation between having a high Economic Index and being part of the before mentioned groups.

The Health Index is not shown to be significant in the model, as shown in table 2. This may be due to the fact that when analysing the Index, it varies between 0.98 and 0.919. In other words, the equality between men and women in health terms is very close in the countries analysed, leading to a null impact in the gender equality in politics. The same happens with the Education Index, which shows to be insignificant in the model. Again, this may be due to its lack of variance, where most the countries' Education Index is between 0.948 and 0.998. In other words, both Indexes aren't relevant due to high gender equality in education and health of the countries analysed.

As seen in table 2, the GDP per capita has a positive and significant impact in the percentage of women in parliament which has already been shown as true by Reynolds (1999). Although this is not new, the fact that this impact does not continue to be significant in more recent years is new. The GDPPC went from having a 0.3% positive and significant impact on

women's participation in parliament to a null one, which raises questions. This could be due to that fact that many countries that had a smaller GDPPC had a smaller number of women in politics than countries with a higher GDP per capita, but with an influence from richer countries, countries with smaller GDPPC started electing more women, leading the GDPPC to lose its significance. This could also have happened mainly due to developing countries adopting quotas, being those party voluntary or reserved seats in parliament. As mentioned before, there was an increase in mandatory quotas, which today represents 40% of countries having reserved seats for women in parliament in the last 10 years.

The fact that a country is presidential or parliamentary also shows us that there is a positive impact in the female participation in politics. The same is true for majoritarian or proportional voting, which agrees with political science theory (Duverger 1955), where there is a negative impact by majoritarian countries when in comparison to proportional ones. As mentioned before, in Duverger's Law, a country with proportional voting has a bigger diversity and representation in parliament due to the voting system. When there is a proportion of votes, there will be a greater variation of elected parliament members. On all the results for the years shown in table 2, the dummy for majoritarian shows that there are less 0.03% women in parliament with majoritarian in 2016 than in countries with proportional voting, agreeing with Duverger's law.

b. Brazil and USA

The following table is the result for the regression coefficients made from the database with Brazil and US variables with the Model 2 on page 18. The following part of the study focuses on analysing the culture effect on a more micro level, looking at 2 heterogeneous countries with a big territory and population. With this, it is possible to look at the effect of different values on the proportion of women in their respective Houses.

Table 4: Results for percentage of women in House of Representatives – Model 2

	1	2	3
<i>Country dummy</i>	1.8913 (10.562)	-70.72** (28.98)	-29.55 (31.30)
<i>GDP</i>	0.000051 (0.000016)	0.0000161 (7.31E-07)	0.0000194 (0.0000129)
<i>Population</i>	-1.54E-07 (7.08e-07)	7.01e-08 (6.54-07)	1.15e-07 (5.86e-07)
<i>Constant</i>	2.218 (9.93445)	-520.687*** (169.36)	-479.65** (165.82)
<i>Education</i>	-	15.1034* (8.3173)	-6.3232 (10.11)

<i>V240</i>	-	49.2335 (35.64)	23.93 (42.96)
<i>V250</i>	-	269.35*** (72.66)	202.27*** (71.93)
<i>V235</i>	-	-72.49** (33.12)	-101.43*** (31.92)
<i>V52</i>	-	-	47.01 (31.67)
<i>Wage</i>	-	-	2.12 (26.55)
<i>Politics</i>	-	-	-102.74*** (30.18)
<i>V50</i>	-	-	48.09** (24.33)
<i>Job</i>	-	-	114.64** (48.83)
<i>R²</i>	0.0031	0.0536	0.0925
<i>Observations</i>	65	65	65

Note: The significance of the variables is as such: $p < 0.01 = ***$, $p < 0.05 = **$, $p < 0.1 = *$ and the numbers in parenthesis are the standard deviations.

After the first model which looked at over 130 countries during 10 years, a second tobit model was used to analyse the impact of culture further. Two countries were chosen: Brazil and United States. As mentioned before, this is due to their heterogeneous culture, the fact that both are very big countries, populous and with a flow of immigrants in the 1800s. The variables used in this model is different to those in Mishler (2005) for many reasons. The authors were first only looking to compare the values that the interviewees had towards women in politics, but it was necessary to look at variables towards women, the characteristics of the interviewees and of the countries they were from. This led to the results in Table 4, above.

As mentioned before, the Country dummy was created where if the country is Brazil the dummy equals 0 and if the country is the United States of America (USA) this dummy equals 1. Examining the coefficients, the fact that the country is the United States is no different when in comparison to Brazil, also being insignificant in the third model, but being significant in the second model. The coefficient in the second model is negative and very high (-70.72), which leads to an interesting result. It is expected, because of Image 2 in page 20, that the United States would have an advantage when in comparison to Brazil, but in the model this is not seen. The average percentage of women in American states is close to 18% whereas the average for Brazilian ones is close to 9%. One possibility to this is that when looking specifically to the second model, there is also a significance of the education variable, and the United States does have a higher education rate when in comparison to Brazil. With this, the

U.S. may have an advantage when combining both explanatory variables, the country dummy and the education in the second model. In other words, the impact of the country dummy is actually replaced in the education variable.

As seen in the before mentioned table, it is also possible to see that the GDP has an insignificant impact in the number of women in House of Representatives of each state of the United States and Brazil. It was expected to have a significant and positive impact, due to Reynolds (1999). The insignificance of the GDP variable may also be due to the significance of the education variable in model 2. Since there is a higher level of education in the United States of America, this leads to a bigger turnout, and therefore more women elected²⁰. In other words, the education variable ends up representing the proportion of women in politics because it is the biggest difference between both countries.

The population variable is also insignificant in all models, as mentioned before. The population variable was also expected to be significant because of Reynolds (1999). As mentioned in the paragraph above, one possibility for this lack of significance would be that the education dummies of the interviewee are relevant, in other words, the impact of the country dummy, GDP, and population variables are already being seen in the education variable.

The education variable of the interviewees are significant in the second model, as can be seen from Table 4. This could be due to the high difference of level of education between both countries. In Brazil, only 16% have some form of University level-education (incomplete or not) and close to 33% have incomplete primary school, while in the United States is higher (close to 60% and 0.33%, respectively. As mentioned before, with a higher level of education there is a higher voter turnout and therefore a higher number of women elected - Sondheimer & Green (2014).

The other characteristics of the interviewee, such being the primary earner (V235) and owner of the house (V250), are significant in both models. In other words, they have a real impact in the percentage of women in House of Representatives or House of Deputies of each American or Brazilian state. Being the primary earner of the house, leads to a negative impact on the percentage of women in the state's Congress but when looking if you are owner of the house, leads to a positive and significant coefficient on the model. What it is in both variables that leads to their significance? This would need to be looked at closer in future studies as to why they have opposing coefficients, but one theory would be that being the primary earner

²⁰ Sondheimer & Green (2014)

and owner of the house are being used as proxy for the financial situation of the interviewee and balance each other out when the interviewee is both the primary earner and owner of the house or vice-versa.

The gender variable (V240), that equals 2 if the interviewee is female and 1 if the interviewee is male, is not significant and breaks the myth that “women voters only vote for female candidates”, as was already mentioned by Briens (2005) where he shows that Republican women have a higher chance of voting for a Democratic female candidate than Democratic women, for Republican female candidates. In other words, it was already expected that the gender of the voter not have a significant impact in the percentage of women in House of Representatives or Chamber of Deputies.

The wage variable has shown to be significant for the last regression, as the other feminist values: V50, the job variable and politics - but not V52 (university education is more important for men than women). This is expected, mainly by reason that Mishler (2005) has already shown us that feminist values are influential in the number of women in parliament of that country. The interesting results is that the politics variable has a significant and negative coefficient. One theory for this would be that because there is such a high impact of the other feminist values on the model, the politics variable ends up being negative as to balance the coefficients, and lead to a positive impact as a whole of the feminist values. In other words, when looking at the answers to the feminist questions chosen before, this leads us to believe that the variables do have a significant impact on the proportion of women in each state of both countries.

6. Conclusion

The objective of this study was to understand the influences that the culture of each country has on the proportion of women in its politics, being parliament or congress. This is due to the fact that there has a growth of participation of women in politics, but not evenly distributed among all countries, and with some having no growth at all in recent years. There have been many other studies that have tried to analyse this impact, but they looked closer at European and North-American countries in a specific period of time, usually one or two years – such as Mishler (2005) - leading to an analysis with very little different cultural effects and analysis throughout time.

With this, it was necessary to look at a big number of countries for a significant period of time. This led to an analysis of 180 countries for 10 years, which is equation 1 and its results

on page 22. There were many variables that showed to be significant along the years, such as the dummy for presidential or majoritarian type of government – as expected because of Duverger’s Law - or the Global Gender Gap Index variables, but specially the Economic Index. The results also showed that with the division of these 180 countries into 3 groups, there was a significant impact on being part of each group, specially group 2 or 3, and that there must be something in common between these countries that led to a higher percentage of women in politics. When looking at them closely, it was possible to see that most of the countries in group 3 were considered developed, with a high percentage of some form of gender quota in politics and paid maternity, as well as group 2 close behind in all of these categories. With this, it was possible to conclude that when looking at politics in a global perspective, culture is indeed an important factor in the participation of women in politics, but specially between the countries of groups 2 and 3.

It was also necessary to look at specific countries as to analyse culture more closely, which led to the second model and the results on page 26. The countries chosen were Brazil and United States of America, as mentioned before, because of their big population and territory, leading to a homogenous culture. The World Values Survey was used as to proxy for culture in these countries. The feminist values questions, based on those by Mishler (2005) and some more, were shown to be significant in the last model, as expected. The education variable of the interviewees was also significant, as expected due to Sondheimer & Green’s study. This then leads us to believe that with big countries with a homogenous culture, both populous and territory-wise, the state’s culture is also important in the percentage of women in politics in each state.

There are still many things that need to be analysed more closely in this study, such as the importance of the interviewees characteristics (V235 and V250), that have shown to be significant but one having a positive coefficient and the other a negative one. Another important analysis that still needs to be made, is to understand even more the common grounds of the countries part of group 3 and group 2, and what makes them so different of the countries in group 1. There could also have a deeper analysis as to why the GDP and population variables were not significant in both models, while it was expected that they were.

Nevertheless, there is indeed a significant impact of culture on the proportion of women in politics, where if there is a more feminist mindset in that country and a smaller gender gap in the economy, it leads to a higher proportion of women and vice-versa. There needs to be more studies in this field as to understand the impact closer, with a bigger time-frame and a

higher number of countries with answers of the World Values Survey as to analyse this more closely.

7. Bibliography

- Anzia, Sarah & Christopher, Berry. "The Jackie (and Jill) Robinson Effect: Why Do Congresswomen Outperform Congressmen?". *American Journal of Political Science* Vol. 55, No. 3, July 2011, Pp. 478–493
- BALTAGI, Badi H. *Econometric analysis of panel data*. 2. ed England: John Wiley, 2001. 293 p.
- Brians, Craig Leonard. *Women for Women? Gender and Party Bias in Voting for Female Candidates*. *American Politics Research* (2005)
- Carey, John M. and Hix, Simon. *The Electoral Sweet Spot: Low-Magnitude Proportional Electoral Systems*. *American Journal of Political Science*, Vol. 55, No. 2 (April • 2011), pp. 383-397
- Corinne A. Moss-Racusin, John F. Dovidio, Victoria L. Brescoll, Mark J. Graham and Jo Handelsman. *Science Faculty's Subtle Gender Biases Favor Male Students*. *Proceedings of the National Academy of Sciences of the United States of America* Vol. 109, No. 41 (October 9, 2012),
- Dahl, Gordon Kotsadam, Andreas and Rooth, Dan-Olof. *Does Integration Change Gender Attitudes? The Effect Of Randomly Assigning Women To Traditionally Male Teams*. *National Bureau Of Economic Research* 2018
- Dolan, Kathleen. *The Impact of Gender Stereotyped Evaluations on Support for Women Candidates*. *Springer Science+Business Media* (2009)
- Duverger, Maurice. *The Political Role of Women*. *UNESCO* (1955)
- Hill, David B. *Political Culture and Female Political Representation*. *The Journal of Politics UChicago* (1981)
- Huddy, Leonie and Terkildsen, Nayda. *Gender Stereotypes and the Perception of Male and Female Candidates*. *American Journal of Political Science* Vol. 37, No. 1 (Feb., 1993), pp. 119-147
- Huddy, Leonie and Terkildsen, Nayda. *The Consequences of Gender Stereotypes for Women Candidates at Different Levels and Types of Office*. *Political Research Quarterly* (1993)
- Koch, Jeffrey W. *Do Citizens Apply Gender Stereotypes to Infer Candidates' Ideological Orientations?* *The Journal of Politics UChicago* (2000)
- King, David C. And Matland, Richard E. *Sex And The Grand Old Party An Experimental Investigation Of The Effect Of Candidate Sex On Support For A Republican Candidate*. *American Politics Research*, Vol. 31 No. 6, November 2003 595-612

- Inter-Parliamentary Union, *Politics: Women's Insight, IPU Reports and Documents No. 36 (Geneva: IPU, 2000)*
- Lovenduski, Joni and Norris, Pippa. *Westminster Women: the Politics of Presence. Political studies Association. vol 51. 2003. 84–102*
- Mezey, Susan Gluck. *Does Sex Make a Difference? A Case Study of Women in Politics. The Western Political Quarterly (1978)*
- Norris, Pippa and Inglehart, Ronald. *Cultural Obstacles to Equal Representation. Journal of Democracy, Volume 12, Number 3, July 2001, pp. 126-140*
- Reynolds, Andrew. *Women in the Legislatures and Executives of the World: Knocking at the Highest Glass Ceiling, World Politics. Vol. 51 (July 1999), pp. 547–72.*
- Rule, Wilma. *Women's Underrepresentation and Electoral Systems. Political Science and Politics, Vol. 27, No. 4 (Dec., 1994), pp. 689-692.*
- Sundström, Aksel *What determines women's political representation at the local level? A fine-grained analysis of the European regions. International Journal of Comparative Sociology (2015)*
- Schwindt-Bayer, Leslie A. and Mishler, William. *An Integrated Model of Women's Representation. The Journal of Politics, Vol. 67, No. 2 (May., 2005), pp. 407-428*
- UN Women. *Women in politics 2017 map 2017*
- Sondheimer, Rachel Milstein and Green, Donald P. *Using Experiments to Estimate the Effects of Education on Voter Turnout. American Journal of Political Science, Vol. 54, No. 1 (Jan., 2010), pp. 174-189*
- <http://archive.ipu.org/wmn-e/classif.htm> - accessed 03/03/2018
- <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2016&start=2006> - accessed 20/03/2018
- https://tcddata360.worldbank.org/indicators/af52ebe9?country=BRA&indicator=27962&viz=line_chart&years=2006,2016 - accessed 20/03/2018
- <http://www.onumulheres.org.br/planeta5050-2030/conferencias/> - accessed 20/05/2017
- <http://archive.ipu.org/parline-e/parlinesearch.asp> - accessed 01/06/2017
- <https://www.idea.int/data-tools/data/gender-uotas> - accessed 22/09/2018
- <http://www2.camara.leg.br/a-camara/documentos-e-pesquisa/fiquePorDentro/temas/composicao-da-camara-dos-deputados-2015-2019-fev-2015/eleitores-por-partido> - accessed 10/10/2018
- <http://www.cawp.rutgers.edu/sites/default/files/resources/genderdiff.pdf> - accessed 10/10/2018

8. Appendix

<i>Economic*g roup3</i>	<i>Economic*g roup2</i>	<i>group 3</i>	<i>group 2</i>	<i>Economic</i>	<i>Year</i>
0.0477 (0.1873)	-0.0587 (0.1018)	0.1098 (0.1109)	0.0673 (0.1298)	0.1883 (0.1298)	2007
-0.0155 (0.1537)	-0.1386 (0.09)	0.1534* (0.0923)	0.1164 (0.1168)	0.2655** (0.1168)	2008
-0.0252 (0.153)	-0.0928 (0.0886)	0.1938** (0.0925)	0.1087 (0.1132)	0.2102* (0.1132)	2010
0.0324 (0.1693)	-0.1034 (0.0991)	0.1544 (0.1022)	0.1185 (0.13332)	0.2065 (0.13332)	2011
-0.1261 (0.1549)	-0.1722 (0.0897)	0.2710** (0.0961)	0.1621* (0.1163)	0.1966* (0.1163)	2013
-0.0198 (0.1776)	-0.1198 (0.1067)	0.2128** (0.1112)	0.1337 (0.1454)	0.1821 (0.1454)	2014
-0.015 (0.1489)	-0.1624 (0.0945)	0.2096** (0.0954)	0.1633* (0.1156)	0.1995* (0.1156)	2015
-0.1337 (0.1622)	-0.1959 (0.098)	0.2924** (0.1028)	0.1848* (0.1262)	0.1959 (0.1262)	2016

	<i>majoritarian</i>	<i>presidential</i>	<i>GDP</i>	<i>Education</i>	<i>Health</i>			
(0.0167)	-0.0137	(0.0153)	(0.0000000185)	1.35E-08	(0.7545)	0.0122	0.0241	(0.1684)
(0.0145)	-0.0222	(0.0141)	(0.0000000318)	6.08e-07*	(0.0677)	-0.0364	0.1814	(0.1477)
(0.0148)	-0.0328**	(0.0141)	(0.0000000369)	4.74E-07	(0.075)	-0.1354	-0.174	(0.1444)
(0.0151)	-0.02853*	(0.01429)	(0.0000000334)	3.40E-07	(0.0765)	-0.1335	-0.3284	(0.1623)
(0.0139)	-0.0312**	(0.0130)	(0.0000000309)	3.40E-07	(0.0687)	-0.0961	-0.2391	(0.1426)
(0.0148)	-0.0282*	(0.0145)	(0.0000000339)	2.01E-07	(0.0843)	-0.0559	-0.6471	(0.1689)
(0.0137)	-0.0319**	(0.0136)	(0.000000039)	1.64E-07	(0.0863)	-0.0365	-0.1371	(0.1451)
(0.1427)	-0.0300**	(0.0143)	(0.000000039)	4.66E-07	(0.0968)	-0.0017	-0.053	(0.1533)

<i>constant</i>	
-0.06288	(0.6801)
-0.2175	(0.6087)
0.2501	(0.6295)
0.3984	(0.6775)
0.2872	(0.6288)
0.656	(0.7825)
0.1273	(0.7184)
0.0099	(0.7435)

Note: The significance of the variables is as such: $p < 0.01 = ***$, $p < 0.05 = **$, $p < 0.1 = *$ and the numbers in parenthesis are the standard deviations.