WOMEN´S POLITICAL EMPOWERMENT AND LOWERED SOCIO-ECONOMIC BARRIERS UNDER THE CONTEXT OF CORRUPTION

A quantitative cross-country study of the effect of women´s political empowerment on socio-economic barriers moderated by corruption

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Abstract:

This thesis theorizes that higher levels of women's political empowerment (WPE) lower socio-economic barriers to development across countries and that this is moderated by countries' level of corruption. Using cross-sectional data from more than 100 transitioning and developing countries from 2009 and 2014 this thesis develops upon the results of previous research on WPE and poverty reduction under different contexts by extending the analysis to include a measurement of political empowerment including both empowerment in official political positions, *formal empowerment*, and as political empowerment of ordinary citizens in civil society, *informal empowerment*. Level of corruption is further examined as a variable that potentially moderates the expected negative relationship between WPE and socio-economic barriers. However, the thesis fails to provide robust evidence for either the negative relationship between WPE and socio-economic barriers, or the moderating effect of corruption. Instead, the main results of this thesis are that corruption does not have a moderating effect on the relationship between WPE and socio-economic barriers, and that other aspects, technological change in particular, seemingly matter more for the variance made in socio-economic barriers than WPE.

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1. Introduction

Women do not hold equal power to men in any state. Hence, in the introductory chapter of "*Measuring Women's Political Empowerment across the Globe*", Alexander et al. (2018) call out for global efforts to increase the political agency of women. Incentives to empower women politically are largely driven by the fact that women continue to be the largest marginalized group globally, however, women's political empowerment (WPE) has further been found to have positive repercussions on economic growth, poverty reduction and improved livelihoods. This is emphasized by Besnier (2020) who advocate for the relevance of WPE for several of the Sustainable Development Goals, such as poverty reduction, reducing inequality, and improving health, in addition to gender equality.

The aim of the SDGs is to set a shared global agenda for sustainable development, and the goals are crucial for setting the agenda for policy making in international administration and global governance throughout public and private institutions (UN 2022). Understanding the mechanisms and contexts where WPE has the largest effect on these issues is thus important for effective policymaking and increasing the incentives to focus on WPE in all states.

Whilst there is extensive literature on the positive relationship between gender equality and poverty reduction, and on the interconnectedness between ender and corruption, less research has been done on the possible moderating effects of corruption. This thesis aims to contribute to the current literature by examining the moderating effect of corruption on WPE's effect on *socio-economic barriers*.

Increased WPE, through higher levels of participation of women in both formal political institutions as well as informal political spheres, such as civil society organizations and the media, is argued to lower socio-economic barriers through the following mechanisms 1) more responsible and consequential spending, 2) increased human capital and 3) policy preferences increasing public goods and the public service sector. Moreover, the expectation is that the effect will be greater under low levels of corruption due to the disproportionate obstacles corruption poses towards women.

Through a large cross-country study, using an Ordinary Least Square (OLS) multivariate regression model with an interaction term, this thesis examines the effect that WPE has on socio-economic barriers moderated by levels of corruption. Applying data from more than 100 developing and transition countries this thesis hopes to contribute to potentially answering the question of "Under what contexts will empowering women politically have the

largest effect on lowering socio-economic barriers?" By answering the research question "How do levels of corruption moderate the negative relationship between Women´s Political Empowerment and Socio-Economic Barriers?".

The key findings of this thesis is that corruption does not moderate the relationship between WPE and socio-economic barriers, and that other aspects, especially technological change, seems to matter more for lowering socio-economic barriers. These results contradict the expectations of this thesis.

Prior to interpretation of the results, an extensive literature review leading up to the theory and hypotheses will be presented. Thereafter, the results will be discussed in relation to the literature review, before a conclusion that reflects upon those results and makes suggestions for future avenues of .

2. Literature review
2.1. Women's Empowerment and poverty reduction

Gender equality and efforts to empower women is broadly recognized as having positive repercussions on economic development in terms of poverty reduction and economic growth (Buvinic and Kind 2007, Chant and Sweetman 2012, Coleman 2004, Duflo 2012, Peterson and Powers 2019). The correlation has gained ground both in academia and in policy-making the last decades visible by the first sentence on the World Bank's Gender webpage: "Gender equality is central to the WBG's own goals of ending extreme poverty and boosting shared prosperity in a sustainable matter" (World Bank 2022). This section will account for the literature arguing that gender equality through empowerment of women is crucial in reducing poverty and inequality, thereby decreasing socio-economic barriers for a state's citizens.

There is a large strand of literature arguing that empowering women is crucial not only to achieve gender equality, but as a means to eradicate poverty (Buvinic and Kind 2007, Chant and Sweetman 2012, Coleman 2004, Duflo 2012, Peterson and Powers 2019). Globally, women take up a smaller part of the formal workforce relative to men, thereby contributing less to the formal economy of a state through paid work. Hence, increased participation of women in the formal workforce is expected to contribute to economic growth as previously unused attributes to the formal economy (Buvinic and Kind 2007. Peterson and Powers (2019) exemplify this by stating that if women in the United States (US) participated in the formal economy to the same degree as they do in Norway the American economy would grow by $1,6 trillion. Moreover, Klasen and Lamanna (2009) test a similar theory through a

global cross-country regression, finding that there is a positive relationship between higher shares of women participating in the formal labor force and economic growth measured as Gross Domestic Product (GDP) growth. These results suggest that the relationship is not exclusive for either highly advanced countries or developing countries.

Stotsky (2006) has done a comprehensive literature review on gender and macroeconomics in developing countries where she identifies several mechanisms that make empowering women conducive for economic growth. First, women are argued to be less risk-taking than men, rather orienting resources toward long term savings and investments. Additionally, she identifies that when given the opportunity 1) women will allocate resources so that it benefits the household, 2) that increased human capital of mothers increase that of their children as well and 3) that when represented in formal politics the same mechanisms will result in larger public service spending.

Coleman (2004) supports the three mechanisms identified by Stotsky arguing that women invest more in human capital when given control over resources and that their policy-preferences are more conducive to poverty reduction. Therefore, women are expected to decrease how profoundly the economic situation in a state poses as an obstacle to its citizens when empowered politically, both as actors within formal institutions and as ordinary citizens. This is done through more *responsible and consequential spending*, *increased human capital* and *conducive policy preferences* relative to men. The mechanisms presented in this section are connected to the smaller strand of literature on women's *political* empowerment, which will be the focus of this thesis and further accounted for in the next sections.

2.2. Political empowerment of women and poverty reduction

Women can be empowered politically in different ways, thereby influencing the reduction of socio-economic barriers through different mechanisms. They can be politically empowered as politicians with descriptive positions, referred to here as *formal WPE*, or they can be politically empowered as ordinary citizens and in civil society positions, referred to as *informal WPE*.

The largest strand of literature on WPE and economic outcomes focuses on formal WPE, this section will thus account for this followed by an account of the literature on informal WPE and newer research that has combined the two with the construction of the Women´s Political Empowerment Index (WPEI) from the Varieties of Democracy project. Moreover,

participation of women through both formal- and informal WPE is theorized to have positive repercussions on economic development due to their different policy-preferences. These differences will be accounted for in the next section.

2.2.1. Policy Preferences, public good services and poverty reduction

Women continue to be the largest marginalized group globally (Alexander and Jalazai 2020) and are also more dependent on public goods and services relative to men (Hossain and Musembi 2015). Studies conducted on a state level in India (Chattopadhyay and Duflo 2004) and Sweden (Svaleryd 2008), regional level of Europe (de Siano and Chiarielle 2021) and globally (Mechkova 2022) find that women are more focused on issues connected to education, health, childcare, and environmental concerns. In addition to benefitting women's status in society, such investments are connected to sustained economic growth and the increased human capital of whole populations (Bose et al. 2007, Lupu et al 2018). Politics in line with women's preferences, which increase with higher shares of women in formal politics, should thus contribute to both economic growth and poverty reduction (Awaworyi Churchill et al. 2017, Yousif 2008).

2.2.2. Formal Women's Political Empowerment

Formal WPE has been examined in relation to issues closely connected to socio-economic barriers. These issues include child health which is argued to affect both human capital and economic growth (Besnier 2020, Bhargava et al.2001) and inequality (Naveed and Wang 2021). However, when political empowerment of women is discussed in relation to poverty reduction, it is mostly in regard to how women are more prone to invest in public goods and services thereby improving institutional quality and human capital (Chattopaday and Duflo 2004, Jayasuriya and Burke 2013). A growing strand of literature shows that higher descriptive representation of women in national legislatures is positively correlated with higher public service spending (de Siano and Chiariello 2021, Mavisakalyan 2013, Mechkova 2022, Svaleryd 2008), suggesting that formal WPE should contribute to lower socio-economic barriers through provision of public services and growth.

Through an experimental comparative study between two different Indian states, where one third of the Village Council positions has been reserved for women since the 1990s, Chattopadhyay and Duflo (2004) find support for the hypothesis that women and men have different policy preferences, with women investing more in public goods linked to their concerns. Women's concerns differ in the two different regions, but in both states women are

more concerned with welfare programs relative to men as they depend more on welfare programs. The number of women versus men in the Village Council positions thus result in different policy outcomes.

Whilst Chattopadhyay and Duflo (2003) focus on gendered preferences on a state-level, Mavisakalyan (2013) does a cross-country analysis where they find a positive correlation between the share of women in cabinet and public health spending. Analyzing 17 Western European countries de Siano and Chiarello (2021) find similar results, showing that overall social spending increased with formal WPE.

The literature on formal WPE shows clear evidence that women's policy preferences are manifested in policy outcomes. How the same mechanisms are expected to be reflected in informal WPE will be the focus of the following section.

2.2.3. Informal Women's Political Empowerment

Women can also be politically empowered as ordinary citizens. The effect of informal WPE on issues related to socio-economic outcomes has not been researched to the same degree as formal WPE, but there is evidence to suggest that empowering voters (Clayton et al. 2019), civil society participants (Nadje 2003, Ikelegbe 2005) and those forming the public debate (Craft and Wanta 2004, Dahlum et al. 2021) should have a positive effect on economic outcomes.

Clayton et al. (2019) conduct a study from 17 sub-Saharan African countries where they find robust evidence that women, both as representatives in parliament and as ordinary citizens, prioritize issues of poverty reduction and health-care relative to that of men in formal- and informal politics. These results convincingly suggest that there is congruence between the policy preferences of politicians and ordinary citizens, and that there are clear gender differences. This, in turn, suggests that empowering women as voters potentially leads to increased prioritization of poverty-reducing issues. Clayton et al. (2019) are one of the few studies that examine the congruence between women in formal- and informal WPE, and to their knowledge the first that examines how gender affects priorities across domains extending that of women's rights.

As emphasized in Clayton et al. (2019) there is little research on ordinary female citizens attitudes towards poverty alleviation, especially in developing and transitioning countries. However, there are studies that have analyzed gendered attitudes on issues of poverty amongst citizens and engagement in civil society, providing evidence that informal WPE

should affect socio-economic barriers (Craft and Wanta 2004, Ikelegbe 2005, Kraft and Yoon 2009, Nadje 2003).

Ikelegbe (2005) studies gendered engagements of community-members in the oil economy in the Niger Delta regions, finding that women's groups focus more on issues concerning poverty and access to welfare benefits relative to other Civil Society Organizations (CSOs). This corresponds to the findings of Nadje (2003) who studies the contributions of women's movements in the Middle East, showing that whilst they discover great heterogeneity between the different states, generally women's movements focus on issues of modernization and development, including poverty alleviation, illiteracy and healthcare. Exemplified with Jordanian women's organizations where poverty alleviation and illiteracy are on the uttermost agenda despite the severe honor crimes Jordanian women have been subjected to, which one could expect to be of more importance than issues that influence the socio-economic barriers of the whole population. Moreover, in addition to in CSOs and women's movements, the interests of women are argued to be reflected in media.

Studies find that the social and political views of editors and journalists has an impact on the kind of news that are presented (Craft and Wanta 2004). Additionally, and especially in newsrooms with high percentages of women, female journalists are found to focus more on "women's interests" (Kim and Yoon 2009). Kim and Yoon (2009) do not define "women's interests", but Craft and Wanta (2004) refer to a study where it is defined as child-care and equal pay. A larger share of female journalists is suggested to have a positive impact on lowering socio-economic barriers as female journalists promote more news connected to issues of human capital relative to men. Additionally, female journalists are argued to use more female sources, thereby lifting the voices of ordinary female citizens (Craft and Wanta 2004). Moreover, Dahlum et al (2020) argue that increasing informal WPE is important as it increases the information available for policymakers and an increased share of female journalists is thus expected to amplify this mechanism.

2.2.4. Combining formal and informal political empowerment
Since the construction of the *Women's Political Empowerment Index* (WPEI) through data collected under the Varieties of Democracy project, which combines three aspects of WPE: that of political participation, civil society participation and civil liberties (Sundström et al. 2017), more research combining formal and informal WPE has been published. This section will account for the literature working with data that combines measures of formal WPE,

informal WPE and civil liberties to assess the effect of WPE broadly conceived on issues closely connected to that of poverty reduction and reducing socio-economic barriers, with Besnier (2020) examining the effect on child health, Naveed and Wang (2021) on income inequality and Dahlum et al (2021) on technological change.

Besnier (2020) examines WPEI´s effect on child health through a cross-country panel data regression in high-, middle-, and high-income countries, concluding that WPEI has a positive correlation with improved child health, emphasizing how these findings support the importance of focusing on WPEI to achieve the Sustainable Development Goals (SDGs), as empowering women contributes to several of the goals, including poverty reduction, inequality and health in addition to gender equality. Improved child health is a strong indicator of a conducive development of a state, still it is a narrow contribution to the larger set of SDGs that Besnier refers to, which is picked up on by other studies.

Naveed and Wang (2021) study the negative correlation between WPEI and inequality. Through panel data from 1945 to 2015 they examine WPEI's effect on income inequality on a global scale finding that increasing women's empowerment in all three aspects has a statistically significant effect on reducing income inequality, with formal political participation having the largest effect in upper-middle income countries when disaggregating the measurement (Naveed and Wang 2021). Both Besnier (2020) and Naveed and Wang (2021) support the theory that higher levels of formal WPE should decrease socio-economic barriers.

Dahlum et al. (2021) find that all three aspects of WPEI contribute to economic growth, but that the largest effect is when aggregated, supporting the choice to combine formal and informal WPE. Through a panel data analysis of 182 countries over 221 years they examine the effect of WPEI technological change, finding that empowering women politically through increasing the political talent pool, allowing for critical debates, and giving women the opportunity to voice their opinions in civil society through bottom-up pressures will lead to a fruitful environment for technological change, and, thus, economic growth.

In summary, studies find that combining formal- and informal political empowerment of women with civil liberties of women will have positive repercussions on child health, income inequality and technological change. These outcomes are all connected to that of socio-economic barriers, suggesting that increased formal and informal WPE should affect socio-economic barriers. However, there are several studies showing that in order for increased

WPE to have an impact there needs to be certain structures present. The next section will provide an account of the context-dependency of WPE.

2.3. Context-dependency of Women's Political Empowerment

There are several theories as to which conditions need to be present for increased participation of women in politics to have an impact. Wängnerud (2010) refers to Goetz (2007) and Vijayalakshmi (2008) in stating that increased formal WPE, measured as the percentage of women in parliament, is no shortcut to good governance, which is supported by Alexander et al. (2016) who argue that WPE is something that women do rather than something they have and thus there needs to be a presence, or absence of, certain structures allowing women to act. This section will account for the literature examining the context-dependency of WPE.

Jayasuriya and Burke (2013) examine the effect that the percentage of women in parliament has on economic growth. They find that there is no significant evidence of the correlation up until 1973, but that after the third wave of democratization in 1993 there is a significant positive relationship. Their findings suggest that the effect of formal WPE is dependent on certain democratic contexts in order to have a positive effect on economic growth. De Siano and Chirello (2021) also find that the positive correlation between WPE and welfare policies has spillover effects to neighboring countries, whilst Maviskalyan (2013) finds that the positive correlation between women in cabinet and public health expenditures increases when the leaders in the state have daughters. Another context that is frequently discussed in relation to WPE, but mostly in relation to the mutual interconnectedness, and not in regard to interaction, is corruption which will be discussed and accounted for in the following section.

2.3.1. Gender and corruption

The strong interconnectedness between WPE and corruption makes corruption an interesting contextual variable. The direction of the relationship has been disputed, but the mutually reinforcing relationship is clear (Alexander 2021). Several studies have found that women are less likely to partake in corrupt practices, and since Swamy et al (2001) wrote one of the first articles on the effect of empowering women on corruption levels, there has been extensive research analyzing the relationship. Today the relationship between WPE and lower levels of corruption is well-established in academia and policymaking (Alexander 2021, Dollar et al 2001, Esarey and Schwindt-Bayer 2018, Stensöta 2015), suggesting that levels of corruption should have a moderating effect on the effect of WPE on other outcomes.

WPE and corruption has been extensively researched with corruption as a dependent variable moderated by measures of state capacity, such as property rights for women (Dopke and Tertilt 2012), human capital-intensive economies (Doepke and Tertilt 2019), electoral accountability (Esarey and Schwindt-Bayer 2018), spending and density of health and human services (Alexander et al. 2019) and strong welfare states (Alexander 2021, Stensöta et al. 2015, Torgler and Valev 2010). However, corruption has seldom been examined in combination with WPE to explain variance in socio-economic outcomes. The next section will account for the work done with corruption as a moderator of WPE on outcomes connected to socio-economic barriers.

2.3.2. Women's Political Empowerment under contexts of corruption

Mechkova´s (2022) dissertation is an important contribution to this thesis as it is one of the few studies that apply corruption as a moderating variable. She examines how corrupt political networks influence the impact of the women's political empowerment index (WPEI) on technological change and child mortality rates, arguing that under low levels of corruption the effect of WPEI on technological change and child mortality will be relatively higher than under high levels of corruption. The results of Mechkova's (2022) study suggest that as rampant corruption decreases women's agency to promote their interests, levels of corruption would affect the effect WPE has on economic outcomes. She further argues that women's agency should increase under low levels of corruption, thereby supporting the theory that the effect of WPE on socio-economic barriers should be moderated by levels of corruption. Moreover, she emphasizes that women advocate more for issues related to poverty alleviation, wealth redistribution, access to water and social welfare, corresponding to previous literature.

Studies show that levels of corruption might both strengthen and interrupt the effect of WPE. Mechkova (2022) finds that under rampant corruption the relationship turns negative, arguing that empowering women politically might be used strategically by the ruling elite to legitimate other actions that are in fact harmful for development. This is supported by Nistotskaya and Stensöta (2018) who, through a study of 80 subnational political units in Russia, find that in contexts of rampant corruption the effect of increased representation of women on the positive societal outcomes it is expected to increase will be interrupted and even reduced. Moreover, there is a strand of literature arguing that corruption disproportionately affects women negatively, suggesting that the studied mechanisms of corruption should hold for other outcomes as well. The negative impacts of corruption will be

further elaborated in the next section when the obstacles of corruption towards women are discussed.

2.4. Corruption as an obstacle to Women's Political Empowerment

Research shows that corruption disproportionately affects women negatively (Hossain and Musembi 2015, SIDA 2015, Stockemer et al. 2021, Sundström and Wängnerud 2016, Lindberg and Stensöta 2018), suggesting that low levels of corruption should increase the positive effects of WPE and that high levels of corruption should decrease the effects. Three reasons to why corruption disproportionally hurts women's political agency will be elaborated upon. These are *1) corruption reinforces women's marginalization, 2) corruption reinforces male networks and, lastly, 3) women are victims of sexual exploitation and extortion.*

2.4.1. Reinforces structures of marginalization

The presence of rampant corruption affects whole populations, still marginalized groups are arguably the largest receivers of the negative impacts, and globally being born a woman equals to being born into marginalization. Thus, rampant corruption disproportionately hurts women through reinforcement of the structures that marginalize them.

Women depend more on public services than men being the main caretakers of children and elderly and have a higher dependence on reproductive health services (SIDA 2015, Hossain and Musembi 2015). Moreover, corruption makes public services and goods harder to reach for the poor, where women are disproportionately represented, amplifying the marginalization (SIDA 2015). Additionally, studies from developing countries imply that women have larger obtention of public-health services and thus are subjected to more corruption relative to men, even in vulnerable positions such as giving birth where they have little opportunity to resist (Hossain and Musembi 2015). Lastly, when a household is forced to prioritize bribes, resources to girls in the households are often deprioritized, further marginalizing women (Hossain and Musembi 2015).

2.4.2. Male networks as obstacles to women's political agency

In addition to reinforcing structures of marginalization, rampant corruption reinforces male political networks often referred to as "old boys networks" (Stockemer et al. 2021). Hypothesizing that old men benefit more from corruption in politics than younger men, Stockemer et al. (2021) find that corruption does not discriminate based on age, but that all men benefit from nepotic and clientelist networks.

Lindberg and Stensöta (2018) show that as women are perceived as being more reluctant to engage in corruption, men are skeptical to trust women into corrupt networks. Additionally, due to patriarchal structures, women have historically, and continue to be, excluded from these male dominated networks. The exclusion of women and the reinforcing benefits for men being a part of them, weakens women's agency as political participants. Moreover, it is often expected that you can bring social, financial, or political capital beneficial for the group to gain access to these networks, which women are less likely to have (Stockemer et al. 2021). Additional support to the hypothesis that corrupt networks in politics is an obstacle to the advancement of women is offered by Sundström and Wängnerud (2016) through a statistical analysis of corruption on the share of elected women in local councils, however, they emphasize that they can only offer theoretical arguments to explain the relationship.

2.4.3. Sexual exploitation and extortion

Lastly, women are subjected to corruption through sex extortion and sexual exploitation, greatly affecting their agency. Sex extortion is often unreported or underreported and high levels of perceived corruption are associated with higher levels of sexual extortion (Feigenblatt 2020). Sexual extortion is especially discussed in relation to education, and how sex extortion is used to pay for studies, resulting in girls ending their education or being forced to engage in sexual favors (SIDA 2015, Hossain and Musembi 2015). Moreover, with the wake of the MeToo movement sexual harassment within formal politics has been increasingly recognized as a barrier for women to get their voice heard (Chandra and Erlingsdóttir 2021). Still, little research has been done on how sexual exploitation and extortion limits women's political agency (Alexander 2021, Lindberg and Stensöta 2018).

3. Theory and hypotheses

In summary, the literature offers convincing evidence to suggest that WPE both in formal political positions and as ordinary citizens in civil society should matter for socio-economic barriers. Women are more likely to invest and advocate for policies and issues connected to improving human capital and public services throughout society, which is associated with economic growth, lowering inequality, and poverty reduction. Moreover, research shows that corruption disproportionality hurts women through further marginalization, exclusion from political networks and increased vulnerability to sexual extortion and harassment, and that rampant corruption thus decreases women's agency to act and influence. Rampant corruption has additionally been shown to disrupt the effect of WPE, turning positive correlations negative. Levels of corruption is thus expected to moderate the relationship between WPE

and how profoundly poverty is an obstacle for individuals in society, measured as socio-economic barriers.

3.1. The effect of Women's Political Participation on socio-economic barriers

Based on the literature review three expectations forming the basis for the hypothesis that women's political participation has a statistically significant and positive correlation with lowered socio-economic barriers can be drawn: *1) empowering women should contribute to economic growth and subsequent poverty reduction, 2) empowering women as politicians or in formal political decision-making roles should contribute to sustained economic growth and reduction of inequalities due to responsible spending and increased public goods and services, 3) empowering women politically as individuals should contribute to poverty reduction through pressures on policy-makers and increased information on issues connected to poverty reduction.* Based on this a fourth expectation is made- *when women are politically empowered throughout society there will be a decrease in socio-economic barriers of a state's citizens*. This supports the following hypothesis:

(H1) There is a negative correlations between higher levels of women's political empowerment and socio-economic barriers across countries.

3.2. The effect of Women's Political Participation on socio-economic barriers moderated by levels of corruption

There is strong evidence to suggest that there will be a positive correlation between high levels of WPE and low levels of socio-economic barriers, however, less research has been done to investigate under which contexts the marginal effect increases. Democratic structures and an environment where women can influence from below are lifted as contexts where the effect on economic outcomes is expected to be greater, but most contextual literature on the effect of WPE on societal outcomes is done on corruption and not economic development (Alexander 2021, Esarey and Schwindt-Bayer 2018). The interconnectedness between high levels of WPE and low levels of corruption is well argued for, and in her dissertation Mechkova (2022) provides evidence that low levels of corruption are a condition for improved liberties, agency, and political participation of women to have a negative correlation with child mortality, which changes under high levels of corruption, corresponding to the findings of Nistotskaya and Stensöta (2018) in regard to formal WPE.

Supporting the research showing that rampant corruption might interrupt the mechanisms that WPE is expected to improve, this thesis theorizes that when corruption in a state is low

women will gain greater agency both in formal and informal politics thereby increasing the negative correlation with socio-economic barriers through the strengthened mechanisms of more consequential and responsible spending, increased human capital and increased spending on public service sectors and goods.

In conclusion, through the disproportionate obstacles of corruption posed to women there is evidence to suggest that the effect of WPE on socio-economic barriers will be greater under contexts of low corruption and weaker under rampant corruption. Thus, I theorize that in states with low levels of corruption the negative effect of women´s political empowerment on socio-economic barriers will be greater than in countries with high levels of corruption. This leads to the following hypotheses:

(H2) Low levels of corruption increase the negative effect of women's political empowerment on the levels of socio-economic barriers across countries.

(H3) High levels of corruption decrease the negative effect of women's political empowerment on the levels of socio-economic barriers across countries.

Figure 1. The moderating effect of corruption on WPE´s effect on Socio-Economic barriers
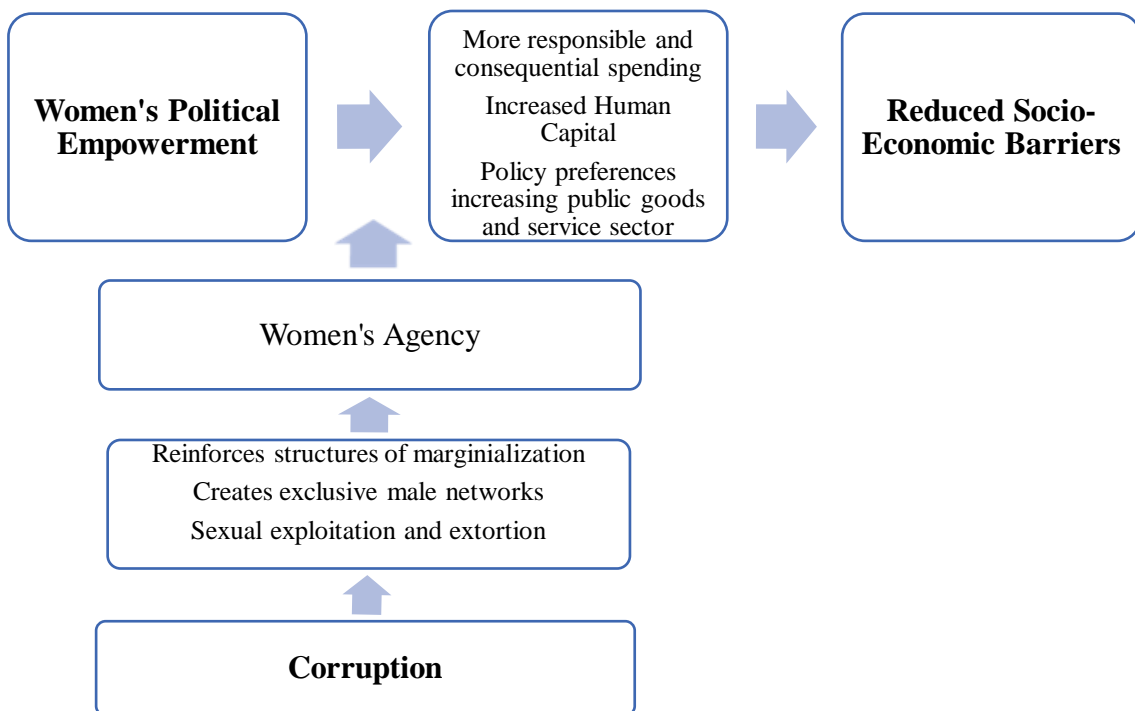
The model above accounts for the theory presented, however, it is important to note that only the variables in bold will be accounted for, whilst the rest forms the theoretical background as

to why we expect to observe that corruption will moderate the relationship between WPE and socio-economic barriers. This is a limitation of this thesis which will be further elaborated on with a discussion of future research in the conclusion.

4. Data and measurements
4.1. Data and dataset

The hypotheses will be tested using data from several well-known data sources and merged into one dataset. The data is retrieved from the Quality of Government (QoG) cross-sectional and time-series dataset, Varieties of Democracy (V-dem) time-series dataset and the Bertelsmann Stiftung Transformation Index (BTI). These are all well-known and well-used datasets with high credibility when it comes to data gathering and scope (Coppedge et al. 2021, Teorell et al. 2021).

The explanatory variables included to test the reliability of the relationship between the independent variable, WPE and the dependent variable, socio-economic barriers, are corruption, democracy, GDP, trade openness, property rights, broadband and protestants. The reasoning and operationalization of each variable will be elaborated upon.

Scope of the data

The Bertelsmann Stiftung Transformation Index (BTI) focuses solely on developing and transitioning countries leaving highly advanced countries out. However, they are quite liberal in their definition of transition countries, only excluding those countries that were members of the Organization for Economic Co-Operation and Development (OECD) in 1989, ending up with a scope of 129 diverse countries (BTI 2022).

The reason for excluding OECD countries in the BTI dataset is that they argue that these countries have already achieved most of the transformations that they measure. This might have implications for the validity of the results, as some countries expected to have high levels of WPE and low levels of corruption, such as Sweden and New Zealand, are excluded from the dataset. However, as these countries are expected to have had low socio-economic barriers in the years 2009 and 2014, when explanatory and moderating variables are measured in this thesis, and have been progressive in terms of women's participation and rights, the mechanisms that accounted for the lowered socio-economic barriers might have happened prior to the years examined in this thesis, making it reasonable to leave these countries out.

Lagging of variables

The mechanisms resulting from WPE are expected to be slow-moving, and increased WPE is thus not expected to give immediate results. To show how states progress gradually as a result of increased WPE, Wängnerud (2009) compares Sweden and Rwanda as two countries with high and similar percentages of women in national parliament in 2006 and 2008 respectively. The correlation between high numbers of women in parliament and low levels of corruption is well-established, still, at the time, Rwanda was a state with rampant corruption, however, approximately ten years later, in 2017, Rwanda (shared 20) and Sweden (12) both were both amongst the top 20 least corrupt countries in the world according to the Bayesian Corruption Index (BCI), retrieved from the QoG time-series dataset, Rwanda´s progress gives evidence to how the results stemming from increased WPE are slow-moving and, thus, legitimize the choice to lag the variables with five and ten years.

Explanatory- and moderating variables will all be lagged by 5 and 10 years. The most recent data on socio-economic barriers is from 2019 and the years 2014 and 2009 will thus be isolated from the time series dataset and merged into a new dataset. This follows the logic presented by Dahlum et al (2021: 19) who lagged their conceptualization of WPE with several years, including statistically significant results from both five and ten years, based on the argument that substantial time will have to pass for increased WPE to have effects on slow-moving processes such as policy-changes and the subsequent growth and structural change of the economy. Corruption levels on the other hand are expected to influence women's current agency and are thus also lagged with the same intervals as WPE. The same goes for all of the control variables, with the exception of the percentage of protestants which is from 1970/80 in all models. While I have noted that it will take time to observe the effect of WPE, there is no definite answer to when one would expect to see results of increased WPE, which is an obvious weakness of the thesis' research model.

With the exception of socio-economic barriers, all variables have been coded so that the highest value represents better values. Hence, a negative coefficient indicates that higher levels of the relevant variable are expected to lower socio-economic barriers.

4.2. Operationalization of concepts

4.2.1. Dependent variable: Socio-Economic Barriers

Increased WPE is expected to contribute to economic growth, poverty reduction, reduced inequality, improved health and increased human capital due to women's more responsible and consequential spending and conducive policy preferences relative to men's. The listed aspects are all connected to socio-economic barriers, which is the outcome this thesis aims to explain. Socio-economic barriers are measured through the Socio-Economic Barriers Index from BTI, but the data used in this thesis is retrieved through the QoG cross-sectional dataset.

The index measures *to what extent significant parts of the population are fundamentally excluded from society due to poverty and inequality* (Donner et al. 2020: 26). Data is available from 129 developing and transitioning countries from the year 2019. The index runs from 1-10, but is recoded to match WPE, running from 0-1 with 0 equaling "Poverty and inequality are minor and not structurally ingrained" (Donner et al. 2020: 26) and 1 being "Poverty and inequality are extensive and structurally ingrained." (Donner et al. 2020: 26) This is done in order to get a more intuitive interpretation of the results where a 0.1 increase in socio-economic barriers would indicate the same amount of change as a 0.1 increase in WPE.

4.2.2. Main explanatory variable: Women's Political Empowerment

The complexities of measuring women's empowerment were first emphasized in Malhotra et al. (2002) "Measuring Women's Empowerment as a Variable in International Development" which has influenced the field and been cited 1515[1] times in the 20 years since then. Recently, more focus has been given to women's *political* empowerment (WPE) as an equally complex concept. Several articles have been written on the need for a thorough definition of WPE (Alexander 2016, Malhotra et al. 2002), and in 2017 Sundström et al. answered to the lack of an adequate measure by creating the Women's Political Empowerment Index (WPEI) combining indexes of Women's Civil Liberties, Political Participation and Civil Society Participation.

Previous literature shows evidence that empowering women politically both in formal politics and as ordinary citizens in civil society should matter for socio-economic barriers. To get the combined effect of women's role as political agents in society, WPE will be operationalized

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[1] 7.4.2022. Google Scholar

through indicators of both formal and informal WPE, thereby providing a picture of how profoundly women are empowered politically throughout society.

The independent variable (WPE) used in the analysis is retrieved from the V-dem timeseries dataset and isolated for the years 2009 and 2014. The index is created by disaggregating WPEI and then aggregating *the Political Participation Index* and *the Civil Society Index*. The index Political Participation and that of Civil Society Participation are aggregated by adding the two and then dividing them by two to find the combined mean of each observation.

The *Women's Civil Liberties Index* is excluded in the conceptualization of women's political empowerment (WPE) in this thesis as it extends that of women's active political participation, to measuring the choices available for women. Women's freedom of- domestic movement and- forced labour, women's property rights and access to justice is thus excluded from the original Women's Political Empowerment Index (Sundström 2017). The theory presented in this thesis is that the political participation of women in society through formal- and informal WPE will influence the socio-economic barriers of a state, especially through increased agency under lower levels of corruption, for this purpose the Civil Liberties Index is not relevant, even if including important indicators of women's political power in a state.

WPE then consists of five indicators 1) the number of female chamber legislators, 2) how power is distributed by gender in legislatures, 3) women´s freedom of discussion, 4) participation in CSOs and 5) representation in the ranks of journalists. These indicators cover participation and influence which are the aspects that are hypothesized to effect socio-economic barriers under different levels of corruption, as it is not simply descriptive, but provides a fuller picture of the presence of female agents throughout society. However, it is important to note that this is a quite broad conceptualization of WPE and the following analysis will not be sufficient in understanding which aspects of WPE has the greatest importance for socio-economic outputs, rather arguing that it is the combined effect that will have the largest effect.

Both sub-indexes were ranged from 0 to 1 with 1 being the highest value, no rescaling was therefore necessary. The new WPE index thus continues to range from 0 to 1 with 1 representing a society with high participation of women in both formal and informal politics.

4.2.3. Moderating variable: Perceptions of corruption

Corruption is hard to both define and trace consisting of informal transactions of power. Still, there are several ways to measure corruption (Kaufmann et al. 2007) and in this thesis the

Bayesian Corruption Index (BCI) will be applied to test the moderating effect on WPE and socio-economic barriers. BCI measures perceived corruption within a state based on surveys of inhabitants, companies, non-governmental organizations (NGOs) and officials working in "governmental and supra-governmental organizations". This measurement is chosen as it includes data from both within formal and informal institutions corresponding to the way in which formal and informal are defined in relation to WPE in this thesis.

BCI ranges from 0 to 100, where 100 represents higher levels of perceived corruption. In order to fit WPE and socio-economic barriers BCI has been normalized so that the index ranges from 0 to 1 with 1 being a state with low levels of corruption. Meaning that high observations of corruption coupled with high observations of WPE is expected to have a greater effect on lowering socio-economic barriers, than that of low observations of corruption coupled with high observations of WPE.

4.2.3. Control Variables

Socio-economic barriers measure how profoundly the economic situation in a state act as a barrier to its citizens, which might be influenced by several societal aspects. In order to avoid spurious results and omitted variable bias, several control variables are included to improve the robustness of the model. These variables are held at a constant to isolate the effect that WPE has on socio-economic barriers and get a more accurate model of the relationship.

All control variables, except *percentage of Protestants,* have been retrieved from time-series datasets, where the years 2009 and 2014 have been isolated by dropping all other variables and then merged into a single dataset using the country-codes.

Democracy

Democratic structures, or the lack of them, are argued to influence most state-structures and is frequently used as a control variable in political science (Dahlum et al. 2021, Mechkova 2022). Higher levels of democracy are generally agreed upon to contribute to beneficial development influencing most aspects of society positively, amongst them women's position in society and welfare. Jayasuriya and Burke (2013) found that formal WPE had little effect globally before the third wave of democratization, suggesting that democratic structures are a prerequisite for WPE to have the wanted effect on the economy. However, in Dahlum et al. (2021) Sweden and Rwanda are lifted as the two best-performing countries in terms of parliamentary representation of women, but on different sides of democracy spectrums, suggesting that democracy is not a necessity for high levels of formal WPE. Moreover,

democratic countries are argued to be beneficial for inclusive economic growth (Doucouliagos and Ulubaşoğlu 2008, Gerring et al, 2005). Based on these arguments, it is important to control for democratization.

Democracy will be measured by the Liberal Democracy Index derived from the V-dem time-series dataset. The index ranges from 0 to1, where 1 equal that "the ideal of liberal democracy is achieved".

Gross Domestic Product

GDP is used as a control variable as it reflects a state's level of economic development which is relevant in regards to lowering socio-economic barriers. Additionally, increased presence of women in parliament is argued to contribute to economic growth. The variable for GDP is retrieved from the QoG time-series dataset and measured using purchase power parity rates to convert GDP into constant 2017 international dollars. The GDP variable did not follow normal distribution for either 2009 and 2014 and is thus log transformed in addition to being normalized so that it turns from 0 to 1.

Property rights

The lack of formal property rights has been argued to be one of the main reasons for continued poverty (de Soto 2000), but also important for the continuation of marginalization of women (Meinzen-Dick et al 2009). Doepke et al. (2012) further argue that property rights for women is positively correlated with more investments in both physical and human capital, which is connected to economic growth and lowered socio-economic barriers. Property rights will thus be controlled for through the Property Right Protection Index which measures the perception of the security of property rights and is retrieved from the QoG time-series dataset. The index originally ranged from 0 to 100 and has been normalized so that it runs from 0 to 1, with 1 representing high levels of property rights security.

Trade openness

Trade openness will be included as an operationalization of globalization, as increased integration into the world economy is argued to influence norms of gender equality positively and thereby empowering women. Moreover, a dominant discourse within global institutions such as the World Bank is that trade openness contributes to economic growth and thereby eventually reducing poverty and inequality (Haynes 2008). Others oppose the neoliberal discourse arguing that increased trade openness will contribute to more inequality and

poverty depending on the level of "development" of the state (Chang 2008, Reinert 2008), thereby expecting a positive relationship with socio-economic barriers.

Trade openness will be measured through the trade freedom score, which is based on the trade-weighted average tariff rate in a state and non-tariff barrier. The data is retrieved from the QoG time-series dataset. It has been recoded so that it runs from 0 to 1 where 1 represents the maximum degree of trade freedom.

Technological Change (Broadband)

Dopke and Tertilt (2019) argue that empowering women has the largest effect on economic development when the demand of human capital is high due to women contributing more to human capital-intensive industries. They have previously (2012: 341) argued that technological change, used as an indicator of human capital-intensive industry, increases women's empowerment as men are more prone to support women's rights when there is a larger return to education due to the expected economic growth stemming from it. Moreover, due to the established link and close correlation with economic growth, Dahlum et al (2021) use technological change as a proxy of economic growth. As human capital-intensive countries and technological change is argued to influence both women's role and economic development, it is expected to contribute to the variance made in socio-economic barriers and thus controlled for using data for the number of fixed broadband subscriptions per 100 people.

Broadband is highly right skewed, with a lot of low values located left of the mean. When normalized to run from 0 to 1, 37 countries in 2009 and in 28 countries in 2014 had a value below 0.01, indicating that less than 1 person out of 100 had access to broadband (see Appendix). Whilst countries such as South Korea has 0.740 and 0.795. In order to achieve a more normal distribution fit to use in an OLS regression the variable is thus log transformed for both 2009 and 2014, with high values representing higher levels of access to broadband. The data is retrieved from the QoG time-series dataset.

Percentage protestants

The percentage of protestants in a state is included as a proxy for culture. Awoa (2022) controls for Islam as Islamic traditions are argued to have negative effects on WPE. Nevertheless, the percentage of protestants is chosen instead as it is argued that countries dominated by Protestantism have traditions that are more conducive for gender equality, with research showing that states with high percentages of protestants have more women in formal

politics (Inglehart et al. 2002). The percentage of protestants in a state will be used as a historical variable from 1970/80, as it is the traditions stemming from a protestant society, more than the actual percentage today, that is argued to influence WPE, but also the structure of the economy.

Percentage of protestants has been merged from the QoG cross sectional dataset from 1980, but due to the lack of data from QoG, some observations are gathered and added manually from the World Christian Encyclopedia from 1970 stated in Tusalem (2009). The added observations[2] are from 1970, providing the same historical nuance as the original 1980 variables.

The variable is normalized to fit the range of the dependent and main explanatory variable so that it ranges between 0 and 1, with 1 being the highest value. The variable is not normally distributed, but as the sample drops from 108 to 89 when logged and does not greatly impact the output of the regression it is kept as it is.

5. Method and results

5.1. Research method

The hypotheses will be tested through a cross-sectional large N-study, using a multivariate OLS regression model with interactive specifications. The method is chosen to be able to test the effect of WPE on socio-economic barriers moderated by levels of corruption, where WPE and corruption are multiplied to create a new independent variable (Gerring and Christenson 2017). This is done to observe whether the strength of the relationship between WPE and socio-economic barriers changes under different levels of perceived corruption.

Multivariate regression models with interactive specifications are often used to test if a relationship is contingent on the presence of another independent variable (Gerring and Christenson 2017), however, in this study it is expected that the interaction term between WPE and corruption creates a *moderating*- rather than contingent effect. But before the interaction terms is added to the model, OLS regressions will be run for both samples to explore how the relationships behaves without the moderating effect of corruption.

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[2] Countries from 1970 (World Christian Encyclopedia 2001) Armenia, Azerbaijan, Belarus, Bosnia and Hercegovina, Czechia, Estonia, Ethiopia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Namibia, Russia, Serbia, Slovakia, Slovenia, Tajikistan, Uzbekistan.

5.2. Validity and characteristics of the data

When performing an OLS regression, certain assumptions about the nature of the data are made through the Best Linear Unbiased Estimator (BLUE). These assumptions include linearity, normal distribution of residuals, multicollinearity, and homoscedasticity. Additionally, extreme outliers will be controlled for. The validity of the full model depends on the presence of these assumptions, and it is thus important to run necessary tests before the models are interpreted. Due to the use of relatively broad explanatory variables connected to issues of state capacity, such as WPE, corruption and democracy, there was an expected risk for issues of multicollinearity, but no correlation-issues were detected through diagnostics and robustness-tests for the full models (see Appendix). No violations of the BLUE assumptions were detected, but some extreme observations were detected (see Appendix).

Models will be run both with the original 2009 (103) and 2014 (108) samples in addition to samples excluding the influential observations identified (see Appendix for diagnostics and justification for exclusion), acknowledging that this might have implications on the results in terms of external validity. The 2009 sample will decrease to 100 and the 2014 to 103.

Country-samples, diagnostics, and robustness tests with explanations, in addition to descriptives of all variables can be found in the Appendix.

5.3. Preliminary support

This section will describe the results from the bivariate models from both 2009 and 2014, to check for preliminary support for the hypotheses and a negative relationship between WPE and socio-economic barriers. As expected, a negative correlation is established for both samples with a 99 % confidence level. Interpreting this data, without controlling for any variables that might make the relationship spurious, the null hypothesis of no relationship between WPE and socio-economic barriers can be rejected. Moreover, corruption will be added to the model to establish the correlation to socio-economic barriers when WPE is controlled for before the interaction term is added to check for preliminary support of a moderating effect.

Table 5.2.1. WPE, Corruption and Socio-Economic Barriers with interaction term (2009-sample)

Socio-Economic Barriers 2019	Model (1)	Model (2)	Model (3)
WPE 2009	-0.465***	-0.476***	-0.607
	(0.11)	(0.12)	(0.43)
Corruption 2009		-0.931***	-1.094*
		(0.15)	(0.54)
Interaction term WPE and corruption 2014			0.238
			(0.75)
Constant	0.975***	1.431***	1.522***
	(0.08)	(0.12)	(0.31)
R-Square	0.132	0.333	0.334
Adjusted r-square	0.129	0.312	0.314
Number of observations	111	103	103

*Note: *** p < 0.01, ** p < 0.05, *p < 0.1. Standard Errors in parentheses.*

Table 5.2.1. indicate that, at a 99 % confidence level, a one unit increase of WPE in 2009 is expected to correlate with a decrease of socio-economic barriers by 0.465 in 2019. The null hypothesis of no relationship between WPE and socio-economic barriers can thus be rejected at a 99 % confidence level. The r-square suggests that 13,2% of the variance made in socio-economic barriers can be accounted for by changes in WPE. A one unit increase of WPE in 2009 is expected to lower socio-economic barriers in 2019 with 0.465 points at a 99 % confidence level, which is a quite substantial decrease given that the mean of socio-economic barriers is 0.603.

Model 2 shows a strong negative relationship between corruption in 2009 and socio-economic barriers in 2029, indicating that there might be a moderating effect of corruption. The adjusted r-square almost doubles from explaining 12,9% in the bivariate model and 31,2 % when corruption is included. However, despite strong correlations at 99 confidence levels in both Model 1 and Model 2, the interaction term of WPE and corruption lacks significance, giving no preliminary support to (H2) and (H3) of corruption's moderating effect on the relationship between WPE and socio-economic barriers.

Table 5.2.2. WPE, Corruption and Socio-Economic Barriers with interaction term (2014-sample)

Socio-economic Barriers 2019	Model (1)	Model (2)	Model (3)
WPE 2014	-0.562***	-0.505***	-0.753*
	(0.12)	(0.09)	(0.31)
Corruption 2014		-1.031***	-1.349***
		(0.12)	(0.40)
Interaction term, WPE and corruption 2014			0.473
			(0.57)
Constant	1.058***	1.534***	1.700***
	(0.09)	(0.09)	(0.22)
R-square	0.151	0.450	0.453
Adjusted r-Square	0.145	0.442	0.441
Number of observations	134	134	134

*Note: *** p < 0.01, ** p < 0.05, *p < 0.1. Standard Errors in parentheses.*

The characteristics of the 2014 model are similar to that of the 2009 model with a negative correlation and a high coefficient. A one unit increase of WPE in 2014 is expected to correlate with a decrease of socio-economic barriers in 2019 by 0.562 points with a confidence level of 99%. Compared to the bivariate regression of 2009, the coefficient is marginally larger, and the adjusted r-square increases, with the 2014 model suggesting that WPE accounts for 15,1% of the changes made in socio-economic barriers, whilst the 2009 model accounts for 13,2 %.

Moreover, similarly to the 2009 sample, Model 2 gives strong evidence to a negative relationship between corruption in 2014 and socio-economic barriers in 2019. There is a substantial increase of adjusted r-square and a slight decrease in WPE's coefficient when corruption is introduced. When WPE is held constant the model suggests that, at a 99 % confidence level, a one unit increase of corruption, meaning a decrease in de facto perception of corruption, in 2014 would correlate with a decrease of 1.031 in socio-economic barriers. This is an unrealistic strong correlation and decrease given that the maximum value for socio-economic barriers is 1, suggesting that the model is omitted variable biased.

However, Model 3 is most noteworthy in relation to the hypotheses, as the interaction term lacks statistical significance, showing no preliminary support for the theory that levels of corruption matter for the effect WPE in 2014 has on socio-economic barriers in 2019.

Preliminary results

The bivariate 2009 and 2014 models both reject the null hypothesis of no relationship between WPE and socio-economic barriers and support the hypothesis (H1) of a negative correlation between WPE and socio-economic barriers at a 99 % confidence level. Hence the necessary assumption of linearity between WPE and socio-economic barriers is confirmed giving preliminary support to the theory of an effect of WPE on socio-economic barriers for both samples. However, despite a strong correlation of corruption and socio-economic barriers, no support was given to the hypotheses of levels of corruption moderating the relationship between WPE in socio-economic barriers for any of the samples. Still, the interaction term will be added to the full models including all variables and with the necessary robustness-tests, but it is expected that the (H2) and (H3) will both be rejected.

5.4. Interpretation of multivariate regressions

Having established linearity and preliminary support for the first hypothesis, this section will interpret the results of the multivariate regression-models, testing the *(H1): Higher levels of Women's Political Empowerment has a negative correlation with socio-economic barriers* for both the 2009 and the 2014 sample. In order to interpret the effect of the different explanatory variables, 8 models will be presented for each sample introducing one new explanatory variable at the time. Firstly, an interpretation of the regressions-models starting with the original 2009 sample and the 2009 sample excluding influential observation will be given before moving on to the 2014 models. Thereafter, a comparison of the 2009 (Table B) and 2014 (Table D) models excluding influential observations will be given. And lastly, the lack of significant results of the interaction term will be accounted for.

The r-square indicates how much of the variance made in socio-economic barriers in 2019 can be explained by the model, by adjusting the r-squares the risk that the observed improvements of the models "goodness of fit" is simply due to an increased number of explanatory variables is avoided (Kellstedt and Whitten 2018). Hence, the adjusted r-square is added to all models in order to make sufficient comparison between the different models and samples by reflecting on how much of the variance made in socio-economic barriers can be explained by the different models

This section will account for the regression outputs and interpret all coefficients with a significance level above 90 %, whilst how the results relate to previous research will be discussed in the discussion.

5.4.1. Multivariate regression 2009-sample

Goodness of fit 2009 model

An increase of the adjusted r-square throughout the model suggest that the explanatory variables included from 2009 are relevant for explaining the variance made in socio-economic barriers in 2019. The adjusted r-square increases throughout all models with the exception of the introduction of protestants where there is a small decrease. An increased adjusted r-square indicates that all variables introduced contribute to explaining the variance made in socio-economic barriers ten years later, again with the exception of protestants.

Interpreting the adjusted r-square, the security of property rights in 2009 does not seem to matter much for the variance made in socio-economic barriers in 2009, whilst perceived corruption, the state´s GDP and the number of people with access to broadband in 2009 seems to account for relatively large parts of the variance in socio-economic barriers in 2019. The largest increase in adjusted r-square is when corruption is introduced to the model (0.257 increase), followed by the introduction of ln broadband (0.15 increase) and thirdly ln GDP (0.145 increase). With this data-sample, the full model, Model 8, can explain 77,1 % of the variance made in socio-economic barriers in 2019.

Multivariate OLS-regression 2009

Whilst property rights and protestants never have a significant effect on socio-economic barriers, WPE, corruption, democracy, ln GDP, trade openness and ln broadband all enter the model with statistically significant coefficients of 99 %, but in the full model ln broadband is the only variable significant at any level. An account for how the model changes with the introduction of new explanatory variables will be presented one model at the time.

Table A. The effect on Socio-Economic Barriers (2019)

Socio-Economic Barriers 2019	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
Women´s Political Empowerment 2009	-0.395***	-0.476***	-0.154	-0.167	-0.155	-0.155	-0.009	-0.011
	(0.14)	(0.12)	(0.15)	(0.13)	(0.12)	(0.12)	(0.10)	(0.10)
Corruption 2009		-0.931***	-0.814***	-0.766***	-0.684***	-0.505**	-0.211	-0.213
		(0.15)	(0.15)	(0.13)	(0.12)	(0.20)	(0.16)	(0.17)
Democracy 2009			-0.353***	-0.318***	-0.214**	-0.189**	-0.103	-0.097
			(0.10)	(0.09)	(0.09)	(0.09)	(0.07)	(0.08)
GDP ln 2009				-1.680***	-1.592***	-1.514***	-0.299	-0.304
				(0.30)	(0.28)	(0.28)	(0.27)	(0.27)
Trade Openness 2009					-0.596***	-0.560***	-0.093	-0.094
					(0.14)	(0.14)	(0.13)	(0.13)
Property Rights 2009						-0.757	0.589	-0.576
						(0.70)	(0.55)	(0.56)
Broadband ln 2009							-0.060***	-0.061***
							(0.01)	(0.01)
Protestants 1970/80								-0.030
								(0.11)
Constant	0.895***	1.431***	1.266***	2.634***	2.954***	3.394***	1.329***	1.322***
	(0.11)	(0.12)	(0.13)	(0.27)	(0.26)	(0.48)	(0.46)	(0.47)
R-Square	0.073	0.333	0.403	0.549	0.622	0.626	0.771	0.771
Adjusted R-Square	0.064	0.320	0.385	0.530	0.602	0.603	0.754	0.752
Number of observations	103	103	103	103	103	103	103	103

Note: *** $p < 0.01$, ** $p < 0.05$, *$p < 0.1$. Standard Errors in parentheses.

When corruption is introduced to the model and held constant, the effect of WPE in 2009 on socio-economic barriers in 2019 increases. And at a 99 % confidence level a one unit increase in WPE in 2009 is expected to correlate with a decrease of 0.476 points in socio-economic barriers in 2019. Corruption enters the regression with a confidence level of 99 % and a coefficient of -0.931, suggesting that when corruption increases with one unit in 2009, meaning that de facto perceived corruption *decreases*, the socio-economic barriers in a state decrease by 0.931 points holding WPE constant. With socio-economic barriers having 1 as its highest value, this is an unrealistic decrease, suggesting that there is an omitted variable bias

in the model. Several control variables are thus added, and all contribute to a decrease of corruption's coefficient.

In Model 3, democracy is introduced with a statistically significant coefficient at a 99 % confidence level. Holding WPE and corruption constant, a one unit increase on the liberal democracy index in 2009 is expected to correlate with a decrease of socio-economic barriers in 2019 with 0.353 points. WPE loose significance, whilst corruption stays significant at a 99% confidence level with a slightly lowered coefficient. When ln GDP is introduced in Model 4, corruption and democracy stay at the same confidence level, but experience some decrease in the effect they have on socio-economic barriers in 2019 holding all other variables constant. The great increase in adjusted r-square indicates that the level of GDP in 2009 is important in explaining the variation in socio-economic barriers in 2019. Still, the coefficient of ln GDP is relatively small, suggesting that a 1 % increase in GDP in 2009 would correlate with a 0.017 decrease of socio-economic barriers in 2019 all other variables held constant.

Trade openness is introduced in Model 5 indicating that a one unit decrease in the openness of free trade in 2009 will correlate with a decrease of 0.596 in socio-economic barriers in 2019 holding all other variables constant with a confidence level of 99 %. The impact of corruption continues to decrease but stays at a confidence level of 99 % expecting a decrease in socio-economic barriers of 0.684 points when de facto perceived corruption decreases with one unit, all other variables held constant. The confidence level of democracy decreases to 95 %.

In Model 6, with the introduction of property rights, all confidence levels stay the same except for corruption that decreases to a 95 % confidence level. The model shows no significant impact of the security of property rights in 2009 on socio-economic barriers in 2019 and the adjusted r-square improves minimally, still the coefficients of corruption, democracy, ln GDP and trade openness all experience a small decrease. Model 6 is the last model were the effect of ln GDP and trade openness are significant. Holding all other variables constant, the regression output of Model 6 suggests that a 1 % increase in GDP in 2009 would correlate with lower socio-economic barriers in 2019 by 0.002 points holding all other variables constant, whilst a one unit increase in trade openness in 2009 is expected to correlate with a 0.560 decrease of socio-economic barriers in 2019, both with a confidence level of 99 %.

When ln broadband is introduced in Model 7 the significance of all other variables disappear, whilst a 1 % increase in the number of people with access to broadband within a state in 2009 is expected to correlate with a -0.001 decrease of socio-economic barriers in 2019 with a confidence level of 99 %, holding all other variables constant. Introducing the percentage of protestants from 1970/80 in Model 8, ln Broadband continues to be the only explanatory variable with a statistically significant effect on socio-economic barriers in 2019.

Table B. Multivariate OLS-regression 2009 excluding outliers CooksD>0.05)

Socio-Economic Barriers 2019

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
Women´s Political Empowerment 2009	-0.371**	-0.491***	-0.204	-0.242	-0.244**	-0.243**	-0.101	-0.103
	(0.15)	(0.12)	(0.15)	(0.13)	(0.12)	(0.12)	(0.09)	(0.09)
Corruption 2009		-0.963***	-0.855***	-0.818***	-0.742***	-0.580***	-0.315**	-0.318*
		(0.15)	(0.14)	(0.12)	(0.11)	(0.20)	(0.16)	(0.16)
Democracy 2009			-0.312***	-0.279***	-0.175**	-0.155*	-0.067	-0.055
			(0.10)	(0.09)	(0.08)	(0.09)	(0.07)	(0.07)
GDP ln 2009				-1.732***	-1.654***	-1.589***	-0.387	-0.404
				(0.29)	(0.26)	(0.27)	(0.26)	(0.26)
Trade 2009					-0.591***	-0.558***	-0.117	-0.119
					(0.13)	(0.14)	(0.12)	(0.12)
Property Rights 2009						-0.682	-0.408	-0.389
						(0.68)	(0.52)	(0.53)
Broadband ln 2009							-0.059***	-0.060***
							(0.01)	(0.01)
Protestants 1970/80								-0.067
								(0.11)
Constant	0.881***	1.463***	1.311***	2.747***	3.085***	3.484***	1.387**	1.386**
	(0.11)	(0.13)	(0.13)	(0.26)	(0.25)	(0.47)	(0.45)	(0.45)
R-Square	0.062	0.353	0.409	0.572	0.647	0.651	0.795	0.796
Adjusted R-square	0.053	0.334	0.391	0.554	0.623	0.629	0.778	0.778
Number of observations	100	100	100	100	100	100	100	100

Note: *** $p < 0.01$, ** $p < 0.05$, *$p < 0.1$. Standard errors in parentheses.

Excluding the Congo, Czechia and South Africa- identified as extreme influential observations (see the Appendix), the model does not change dramatically, but it looks more robust than the original model. Standard errors are somewhat smaller, the r-square increases, and democracy lose some significance in Model 6 whilst WPE turns significant at a 95 % confidence level in both Model 5 and 6, suggesting that holding all other variables constant a one unit increase of WPE in 2009 is expected to correlate with a decrease of 0.243 in socio-economic barriers in 2019.

Corruption also experiences increased significance in the models excluding influential observations, and in Model 7 with the inclusion of ln broadband a one unit increase in the perception of corruption in 2014 is expected to correlate with a 0.315 decrease of socio-economic barriers in 2019 with a 95 % confidence level all other variables held constant. The confidence level of the expected effect of ln broadband on socio-economic barriers stays at 99% and the coefficients increases minimally with a 0.001 increase. Model 8, including all explanatory variables, is expected to explain 79.6 % of the variance made in socio-economic barriers, increasing with 0.026 from the model including the Congo, Czechia, and South Africa in the sample.

Both 2009 samples fail to support the hypothesis of a negative correlation between WPE and socio-economic barriers all other variables held constant.

5.4.2. Multivariate regression 2014-sample

Goodness of fit 2014 model

Similar to the 2009 models, the adjusted r-square increases through all 2014 models with the exception of protestants. The introduction of protestants weakens the model minimally, with the adjusted r-square decreasing from explaining 74.7 % of the variance made in socio-economic barriers in Model 7 to explaining 74,5% of the variance in Model 8, suggesting that a tradition of Protestantism does not affect the socio-economic barriers in a state. This might be affected by the fact that several protestant countries expected to have low socio-economic barriers, such as the Scandinavian countries, are not included in the sample.

Furthermore, interpreting the changes in adjusted r-square the security of property rights in 2014 does not seem to be of great importance to the variance made in socio-economic barriers in 2019 with an increase of 0.01, whilst the greatest increase comes with the introduction of corruption (0.287 increase), ln GDP (0.157 increase) and ln broadband (0.125 increase). With this data-sample from 2014, the full model, Model 8, can explain 76,4 % of the variance made in socio-economic barriers in 2019.

Multivariate OLS-regression 2014

WPE, corruption, democracy, ln GDP, trade openness and ln broadband all enter the regression with a 99 % confidence level, but only trade openness and ln broadband stays significant at a 99 % when all other variables are included and held constant. The coefficients with a confidence level of 95% and above will be interpreted whilst, property rights and protestants will not be interpreted as they never exceed a confidence level of or above 95 %.

Table C. The effect on Socio-Economic Barriers (2014)

Socio-Economic Barriers 2019

	Model (1)	Model (2)	Model(3)	Model(4)	Model(5)	Model(6)	Model(7)	Model (8)
Women´s Political Empowerment 2014	-0.419***	-0.489***	-0.239*	-0.243*	-0.110	-0.127	-0.005	-0.006
	(0.14)	(0.12)	(0.15)	(0.13)	(0.12)	(0.12)	(0.10)	(0.10)
Corruption 2014		-0.992***	-0.895***	-0.814***	-0.621***	-0.396*	-0.133	-0.135
		(0.14)	(0.14)	(0.13)	(0.12)	(0.21)	(0.17)	(0.18)
Democracy 2014			-0.275***	-0.260***	-0.191**	-0.159*	-0.110*	-0.106
			(0.10)	(0.09)	(0.08)	(0.09)	(0.07)	(0.07)
GDP ln 2014				-1.747***	-1.552***	-1.444***	-0.629**	-0.631**
				(0.29)	(0.27)	(0.28)	(0.25)	(0.26)
Trade Openness 2014					-0.712***	-0.660***	-0.375***	-0.369***
					(0.15)	(0.16)	(0.13)	(0.14)
Property Rights 2014						-1.030	-1.063*	-1.051
						(0.78)	(0.64)	(0.64)
Broadband ln 2014							-0.052***	-0.053***
							(0.01)	(0.01)
Protestants 1970/80								-0.034
								(0.12)
Constant	0.935***	1.496***	1.359***	2.768***	2.964***	3.583***	2.284***	2.270***
	(0.11)	(0.12)	(0.13)	(0.26)	(0.24)	(0.53)	(0.47)	(0.47)
R-square	0.074	0.364	0.404	0.560	0.637	0.643	0.764	0.764
Adjusted R-square	0.065	0.352	0.386	0.543	0.612	0.622	0.747	0.745
Number of observations	108	108	108	108	108	108	108	108

Note: *** p < 0.01, ** p < 0.05, *p < 0.1. Standard Errors in parentheses.

Controlling for corruption in Model 2 WPE stays significant at a 99 % confidence level with a coefficient of -0.489, confirming the hypothesized negative correlation between WPE and socio-economic barriers. The regression output of Model 2 suggests that, at a 99 % confidence level, a one unit increase of WPE in 2014 will correlate with a decrease of 0.489 in socio-economic barriers in 2019 holding corruption constant, whilst corruption in 2014 has

an illogical large effect on socio-economic barriers in 2019 similar to in the 2009 model. Still, the large increase in adjusted r-square when corruption is introduced and the significance level of 99 % indicate that there is a strong correlation between levels of corruption and socio-economic barriers, but that the relationship in influenced by other aspects.

In Model 3 WPE loose significance, whilst corruption stays at 99 % confidence level with a slight decrease of coefficient, and democracy enters the model suggesting that, with a 99 % confidence level, a one unit increase on the liberal democracy index in 2014 correlate with a decrease in socio-economic barriers in 2019 of 0.275 holding WPE and corruption constant. Introducing ln GDP in Model 4 results in a substantial increase in the adjusted r-square, with a significant negative correlation of corruption, democracy and ln GDP in 2014 on socio-economic barriers in 2019 holding all other variables constant.

When trade openness is introduced in Model 5, the effect of democracy in 2014 on socio-economic barriers in 2019 decrease to a confidence level of 95 % suggesting that a one unit increase on the liberal democracy index in 2014 correlates with a decrease of 0.191 in socio-economic barriers all other variables held constant. Corruption stays significant at a 99 % confidence level up until Model 5 where the results propose that a one unit increase in the perception of corruption in 2014 would correlate with a decrease of 0.621 in socio-economic barriers in 2019 all other variables held constant. The coefficient has then decreased with about a third from 0.992 in Model 2. Furthermore, holding WPE, corruption, democracy, and ln GDP constant, a one unit increase in the openness of trade in a state in 2014 is expected to correlate with 0.712 lower socio-economic barriers in 2019 with a confidence level of 99 %. Again, this is an illogical large decrease suggesting that the model is omitted variable biased.

In Model 6 it is suggested that, with a confidence level of 99%, a one unit increase in trade openness in 2014 would decrease socio-economic barriers with 0.660 in 2019 holding all other variables constant. Given that the mean of socio-economic barriers for this sample is 0.618 the substantial decrease still does not make logical sense, however, interpreting the adjusted r-square, the inclusion of trade openness has only a minimal impact on explaining the variance make in socio-economic barriers in 2019, increasing from explaining 61,2% to explaining 62,2 % of the variance made in socio-economic barriers. Ln GDP stays significant at 99%, indicating that a 1% increase of GDP in 2014 would decrease socio-economic

barriers in 2019 with 0.014 points all other variables held constant. Democracy and corruption loose significance and introducing ln broadband in Model 7 decreases the confidence level of the effect of ln GDP to 95 % and increases the goodness of fit of the model with the adjusted r-square increases from 64,3 % to 76,4 %.

In the full model, Model 8, the effect of ln GDP in 2014 on socio-economic barriers in 2019 is statistically significant at 95 %, whilst the effect of trade openness and ln broadband in 2014 is statistically significant at 99 %. Holding all other variables constant, the data from this sample displays that a 1 % increase of GDP in 2014 correlates with a 0.006 decrease of socio-economic barriers in 2019, and that a one unit increase in the trade openness of a state in 2014 correlates with a 0.369 decrease in socio-economic barriers, whilst increasing the number of people with access to broadband with 1 % is expected to correlate with a 0.001 decrease in socio-economic barriers in 2019 all other variables held constant.

Interpreting Table D, where outliers are excluded, the interpreted confidence level will be decreased to 90 % in order to discuss the effect of WPE on socio-economic barriers.

Table D. Multivariate OLS-regression 2014 excluding outliers (>0.05):

Socio-Economic Barriers 2019

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
Women´s Political Empowerment 2014	-0.449***	-0.557***	-0.363**	-0.379***	-0.250**	-0.263**	-0.165*	-0.167*
	(0.15)	(0.12)	(0.16)	(0.13)	(0.13)	(0.13)	(0.10)	(0.10)
Corruption 2014		-0.995***	-0.922***	-0.849***	-0.674***	-0.484**	-0.194	-0.197
		(0.14)	(0.14)	(0.12)	(0.12)	(0.21)	(0.16)	(0.16)
Democracy 2014			-0.204*	-0.195**	-0.139*	-0.116	-0.057	-0.045
			(0.10)	(0.09)	(0.08)	(0.08)	(0.06)	(0.07)
GDP ln 2014				-1.759***	-1.588***	-1.506***	-0.591**	-0.602**
				(0.27)	(0.25)	(0.26)	(0.23)	(0.23)
Trade Openness 2014					-0.651***	-0.608***	-0.306**	-0.289**
					(0.15)	(0.15)	(0.12)	(0.12)
Property Rights 2014						-0.869	-1.031*	-1.019*
						(0.77)	(0.59)	(0.59)
Broadband ln 2014							-0.058***	-0.060***
							(0.01)	(0.01)
Protestants 1970/80								-0.087
								(0.11)
Constant	0.964***	1.558***	1.446***	2.882***	3.064***	3.594***	2.291***	2.276***
	(0.12)	(0.13)	(0.14)	(0.25)	(0.23)	(0.53)	(0.43)	(0.43)
R-Square	0.080	0.394	0.416	0.588	0.659	0.663	0.804	0.805
Adjusted R-square	0.070	0.381	0.399	0.571	0.641	0.642	0.789	0.788
Number of observations	103	103	103	103	103	103	103	103

Note: *** p < 0.01, ** p < 0.05, *p < 0.1. Standard Errors in parentheses.

Excluding the five influential observations, the Congo, the Democratic Republic of Congo, Czechia, Kuwait and South Africa, the regression outputs improve slightly in terms of standard errors and r-squares. The adjusted r-square increases with 0.043 from the original model to the model excluding influential observations. The full model, excluding the Congo, the Democratic Republic of Congo, Czechia, Kuwait and South Africa from the regression, can explain 80,5 % of the variance made in socio-economic barriers in 2019, suggesting a better fit than the original model.

The most interesting change when excluding outliers is that the (H1) of a negative correlation between higher levels of WPE and socio-economic barriers can be accepted throughout all models at a 90 % confidence level. Whilst WPE loose significance in Model 3 with the original sample, the effect of WPE, holding all other variables constant, is statistically significant throughout all models with the sample excluding influential observations with a confidence level of 99 % in Model 1, 2 and 4, at 95 % in Model 3, 5 and 6, and 90 % in Model 7 and 8.Suggesting that, holding all explanatory variables constant a one unit increase in WPE in 2014 correlate with a lowering of socio-economic barriers in 2019 of 0.167.

The coefficient of corruption also increases, showing that, at a confidence level of 95 %, a one unit decrease of the perception of corruption in 2014 is expected to correlate with a decrease of 0.484 in socio-economic barriers in 2019 holding all other variables constant. However, significance is lost when ln broadband is introduced in Model 7. Democracy loses all significance in Model 6, whilst it in the original model had a confidence level of 90 % with the introduction of property rights but lost it with ln broadband. The effect of trade openness decreases to a 95 % confidence level with the introduction of ln broadband, with a slight decrease in coefficients, suggesting that a one unit increase of trade openness in 2014 would encompass a 0.289 decrease of socio-economic barriers in 2019 all other variables held constant.

The effect of ln GDP is similar in both models when it comes to coefficients and confidence level. Property rights turns significant at a 90 % confidence level with the introduction of ln broadband, and stays significant at this level throughout, suggesting that when all other variables are held constant, a one unit increase in the security of property rights in 2014 is expected to correlate with a decrease of socio-economic barriers with 1.019 in 2019. With socio-economic barriers ranging from 0 to 1 this is not a logical decrease, the questioning of these results can be supported by the relative large standard error of 0.59 and the fact that the adjusted r-square experience only a minimal increase of 0.001. These results will thus not be discussed further in the thesis. Ln broadband experience a slight increase in coefficient of 0.007 in the full model.

5.5. Comparing 2009 and 2014 Model

Comparing the results from 2009 and 2014, the data lagged with five years is proven a better fit to support the hypothesis (H1) of a negative correlation between WPE and socio-economic barriers than the 2009-model with a ten-year lag. In the 2009 models there is no evidence suggesting a correlation between WPE and socio-economic barriers when corruption, democracy, GDP, trade openness, property rights, broadband and protestants are all controlled for and held constant. Lagging the variables with five years instead, however, Table D with the exclusion of outliers, show support of (H1) with a 90 % confidence level. Moreover, the adjusted r-squares are somewhat higher throughout all models from 2014 relative to those of 2009, suggesting that the 2014 data is better fitted to explain the variance made in socio-economic barriers in 2019 than the 2009 model.

The regression outputs suggest a better fit of the models excluding extreme influential observations for both 2009 and 2014, with smaller standard errors and a larger r-square without dramatically reducing the number of observations or change in coefficient. Even if excluding outliers might have implications on the results, the nature of the excluded countries in addition to the aforementioned arguments of a better fitted models, the comparison will thus go on with Table B and Table D.

Interpreting the models excluding outliers state structures seem to matter more in 2009, whilst variables more directly connected to economic outputs seem to matter more in 2014. Reading the output of Table B only corruption (90 % confidence level) and ln broadband (99 % confidence level) have any significant impact on the levels of socio-economic barriers ten years later when all other explanatory variables are held constant. In 2014 on the other hand, the effect of ln GDP (95 % confidence level), trade openness (95 % confidence level), ln broadband (99 % confidence level) and property rights (90 % confidence level) in 2014 all have statistically significant negative correlations with socio-economic barriers in 2019. seem to have an impact on socio-economic barriers five years later in 2019.

The differences in outputs from the 2009 and 2014 samples will be further discussed in the discussion, emphasizing on how WPE seems to be less slow-moving than expected and the different nature of the statistically significant explanatory variables in the full models.

5.6. Moderating effect of corruption

Based on the literature review and theoretical framework the expectation was that the effect of WPE on socio-economic barriers would differ in states with high corruption versus states with lower levels of corruption. However, as expected from the preliminary analysis, the coefficient for the interaction term of WPE and corruption is not statistically significant in any of the full regression-models with or without influential observations included, (H2) and (H3) are thus rejected as the statistical analysis of this paper fails to provide evidence of any statistically significant moderating effect of corruption. Reflections on the lack of significant moderation will be given in the discussion

6. Discussion

Whilst the literature review presents convincing results supporting the theory that high levels of WPE in a state should correlate with lower levels of socio-economic barriers years later, and that the negative correlation should be greater in states with low levels of corruption due to women´s increased agency, the statistical analysis of this thesis mostly fails to provide any support for this despite the fact that the research design applied does pass the assumptions of linear regressions and the four hurdles of OLS regressions, thereby suggesting that the regression outputs are reliable. How the hurdles are passed will be briefly accounted for before a discussion of the results based on the literature review will be given.

The first hurdle of a credible mechanism between WPE and socio-economic barriers find support in the literature review, both amongst global institutions such as the United Nations (UN) and the World Bank, and within the field of political science with emphasis on women´s conducive policy preferences. The second hurdle of reversed causality is harder to surpass as there is research suggesting that lower socio-economic barriers would encompass an increase of WPE. By lagging the explanatory variables, reversed causality is tried to control for with the best of this thesis' ability, but more sophisticated techniques are beyond the scope of this thesis and left for future research. The third hurdle of covariation is passed through interpretation of diagnostics of linearity and the hope is that the fourth hurdle of a spurious association between WPE and socio-economic barriers is passed as conceptualizations of all possible confounding variables found in the extensive literature review on the subject are controlled for.

Having passed the four hurdles of OLS regressions the discussion will start with a reflection on why only the 2014 model gives more support to the theory. Thereafter, the importance of

technological change, and how the variables more directly connected to strictly economic outputs seems to be more important for socio-economic barriers in 2019 in the 2014 sample relative to the 2009 sample, where corruption has a greater effect will be discussed. Lastly, the lack of a significant interaction term between WPE and corruption throughout will be reflected upon with emphasis on other possible moderating effects. A more critical reflection on the limitations of this thesis and avenues for future research will be given in the conclusion.

6.1. Women's Political Empowerment (2014) and lowered socio-economic barriers

The regression model from 2014 excluding outliers gives evidence to the hypothesis (H1) that there is a negative correlation between WPE in 2014 and socio-economic barriers in 2019. With a confidence level of 90 %, holding all other variables constant a one unit increase in WPE in 2014 is expected to lower socio-economic barriers with 0.167 in 2019. Hypothetically this would suggest that an increase from 0.3 to 0.4 of WPE in Egypt 2014 should decrease socio-economic barriers from 0.77 to 0.61 five years later in 2014.

The fact that we observe a significant effect of WPE on socio-economic barriers when lagged 5 years and not 10 corresponds to Dahlum et al.'s (2012) results where the five-year lag had a higher coefficient of WPE's effect on technological change than the ten-year lag (Dahlum et al. 2021:26). However, their model was more robust with all laggings being statistically significant giving a stronger argument for the correlation of WPE (including the civil liberties index) and technological change than that of formal- and informal WPE and socio-economic barriers.

Still, at a 90 % confidence level the 2014 model excluding outliers offers evidence consistent with the theory that empowering women in formal and informal political spheres likely lowers socio-economic barriers. Hence it is suggested that increased presence of women in formal politics and informal political spheres such as CSOs and the media do matter for lowering socio-economic barriers in a state after five years, and that it matters more than levels of corruption and democracy which are not statistically significant in either 2014 models. With the exception of trade openness, WPE has the largest expected effect on lowering socio-economic barriers when a 90 % confidence level is applied, supporting the findings of former studies that have combined formal and informal WPE, such as Besnier

(2020) and Naveed and Wang's (2021) who have established a positive correlation between higher levels of WPEI and child health and a negative correlation with inequality.

However, it should be noted that the robustness of the negative correlation between WPE and socio-economic barriers is rather weak as it is only viable in one out of the four full models and with the exclusion of the Congo, the Democratic Republic of Congo, Kuwait, South-Africa and Czechia. Hence, this thesis only provides an indication that increased WPE should matter for variance made in socio-economic barriers five years later, but that it seems as if other aspects matter more for the lowering of socio-economic barriers. This will be revisited in the conclusion.

6.2. Technological change as an important explanation of the variance in socio-economic barriers.

Technological change, proxied by the number of people with access to broadband, seems to matter a lot for explaining the variance made in socio-economic barriers both five and ten years later. Ln broadband is the only variable that is statistically significant throughout all four full models and amongst the top three largest contributors to increasing the adjusted r-square in all models. The outputs suggests that, despite the low coefficient, the number of people with access to broadband in a state, both in 2009 and 2014, is important for explaining the variance made in socio-economic barriers in 2019.

Interpreting the coefficient of ln broadband in the 2009 model it is expected that, all other variables held constant, a 1 % increase in the number of people out of 100 that has access to broadband in 2009 would correlate with a decrease of 0.001 in socio-economic barriers in 2019 with a 99 % confidence level. The coefficient stays minuscule in all models, however, as there are several countries both in the 2009 and the 2014 samples (see Table 9. and 10. in Appendix) where less than 1 person out of 100 has access to broadband, and with technological change being a fast-developing area (Doepke et al. 2012) great increases over short time are not illogical to expect.

Moreover, there are great variance between the lowest and highest observation and a 100 % increase in the number of people out of 100 with access to broadband is not unlikely. Hypothetically, in a state such as Burundi where less than 1 out of 100 has access to broadband and the socio-economic barriers are at the maximum level (1.0) a 100 % increase

in the number of people with access to broadband in a state would be expected to correlate with a decrease to 0.9 of socio-economic barriers to with a confidence level of 99 % holding all other variables constant. This holds for both the 2009 and the 2014 model.

Furthermore, the importance of technological change is emphasized by Doepke et al. (2012) in relation to amplifying effects of WPE due to women's benefits stemming from, and contribution to, human capital-intensive economies. They argue that because women are 1) more appreciated in human-capital intensive industries and 2) that investing in women is seen to benefit the human capital of their children, women's agency should increase as a result of more intensive human-capital economies. The study of Dopke et al. (2012) and the findings of this thesis could thus be used to argue that future research could apply technological change as a moderating variable of WPE and socio-economic barriers. However, the results presented are more in line with Dahlum et al.'s (2021) theory that technological change matters for economic growth.

Dahlum et al. (2021) proxy economic growth with technological change, strongly emphasizing the importance of technological change on economic growth. With the effect of ln GDP in the 2014 model, and that of ln broadband on socio-economic barriers in 2019 being statistically significant for both 2014 samples, the results of this thesis suggest that economic growth seems to matter a lot for lowering socio-economic barriers. Hence, the outputs of this regression model provide a strong indication that developing towards human-capital intensive industries through technological change matter for socio-economic barriers, but it is important to note that access to broadband is a narrow proxy for technological change, and more research is necessary to make a sufficient argument for this.

6.3. Factors explaining the variance in socio-economic barriers

Corruption, trade openness, WPE, ln GDP and ln broadband all have significant effects in the full models in one or more of the samples. However, the variables most closely connected to economic structures, ln GDP and trade openness, proved significant in both 2014 models, whilst corruption, more closely connected to state capacity was significant in the 2009 model. This section will discuss these results in relation to the literature review.

The regression outputs from the models with variables lagged five years support the neoliberal discourse that policies advocating for free trade and absolute economic growth do matter for how profoundly poverty and inequality act as barriers to the citizens in a state

(Haynes 2008). In both 2014 models the effect of ln GDP and trade openness stays significant at a 95 % confidence level throughout, even with the inclusion of ln broadband, indicating that economic structures matter more in lowering socio-economic barriers than state structures with democracy losing significance in Model 6 and corruption in Model 7, whilst a history of Protestantism never seems to matter. Still, albeit weak results, corruption had the most robust relationship with socio-economic barriers out of the more state-centered variables despite the lack of moderating effect.

6.4. No moderating effect of corruption

Due to the disproportionate obstacles corruption create for women this thesis theorized that the level of corruption in a state should have a moderating effect on the relationship between WPE and socio-economic barriers. However, no evidence to support either of the hypotheses (H2) and (H3) is found which is contrary to the findings of Mechkova (2022) and Nistotskaya and Stensöta (2018) and go against the literature showing how women´s agency as political actors are hurt by rampant corruption (Hossain and Musembi 2015, SIDA 2015, Stockemer et al. 2021, Sundström and Wängnerud 2016, Wängnerud 2012).

Combining formal-, informal and civil liberties WPE through the Women´s Political Empowerment Index (WPEI) Mechkova (2022) finds robust evidence for a tendency of greater effect of WPEI on technological change and lowering child mortality under low levels of corruption. The fact that Mechkova (2022) included civil liberties in the index with significant results of a moderating effect of corruption might indicate that civil liberties is crucial for the interaction term between WPE and corruption, revealing a weakness of the theory presented in this thesis, however, Nistotskaya and Stensöta (2018) find a similar pattern only studying the effect of formal WPE, where rampant corruption turns the correlation of formal WPE and the societal issues it is expected to increase negative.

The results of this thesis fail to provide evidence of similar mechanisms moderating the relationship between WPE and socio-economic barriers in any direction, and thus weakens support for the theory that rampant corruption 1) Reinforces structures of marginalization, 2) creating exclusive male networks and 3) further marginalizes women through sexual exploitation and extortion. And, in so doing, hampers the ability of women to positively impact society through formal and informal political empowerment.

6.5. Other possible moderating effects

The lack of statistically significant findings suggest that in relation to socio-economic barriers, the effect of WPE is not dependent on a context of low corruption. This might be due to the weak, or in most cases lacking, correlation between WPE and socio-economic barriers, but it could also be that the effect is dependent on other contexts. Based on the literature review and the regression outputs of the multivariate models, the following paragraph will reflect on other possible moderating effect or contexts where WPE might matter more for socio-economic barriers.

Jayasuriya and Burke (2013) propose that the level of democracy might be an important contextual setting for formal WPE to have a significant effect on economic growth, suggesting that a certain level of democracy is necessary for WPE to have a negative correlation with socio-economic barriers. Moreover, technological change and human capital-intensive industries are lifted by Doepke et al. (2012) as a context in which women benefit more due to their dependency and contribution to human capital-intensive sectors. Reviewing the argument of Doepke et al. (2012) in light of the great importance of ln broadband throughout all models it could be hypothesized that a proxy for the presence of human-capital intensive industries, such as the number of people with access to broadband, might moderate the effect that WPE has on socio-economic barriers due to the benefits women gain from a large human capital sector.

7. Conclusion

Despite a plausible theory and research method no evidence is given to the theory that the level of corruption in a state moderates the relationship between WPE and socio-economic barriers. Moreover, when controlling for corruption, democracy, GDP, trade openness, property right, broadband and protestants (H1) of a negative correlation between WPE in 2009 and/or 2014 and socio-economic barriers in 2019 is rejected in three out of four samples. Due to only being statistically significant at a 90 % confidence level with the 2014 sample excluding outliers the external validity is questioned, providing weak evidence to the theory. Contrary to providing evidence suggesting that empowering women politically will lower socio-economic barriers, the contribution of this thesis is rather that other aspects seem to matter more for socio-economic barriers than WPE and that the relationship is not moderated by corruption.

Revisiting the research question "How do levels of corruption moderate the negative correlation between Women's Political Empowerment and Socio-Economic Barriers?" it becomes apparent that this thesis fails to provide a sufficient answer due to the lack of significance of the interaction term between WPE and Corruption. Rather, the answer to the research question would be that corruption does not seem to have any moderating effect on the correlation between WPE and socio-economic barriers. Nevertheless, the thesis does contribute to answering the overarching research question of "Under what contexts will empowering women politically have the largest effect on lowering socio-economic barriers?" by showing that with this data and method corruption does not seem to be a context where the effect of WPE in amplified or depressed.

The 2014 model without outliers is best fitted to account for the changes made in socio-economic barriers, explaining 80,5 % of the variance made in socio-economic barriers in 2019, with WPE, ln GDP, trade openness and ln broadband having significant effects holding all other variables constant. Moreover, variables more directly connected to economic structures seem to matter more in the 2014 models than in the 2009 models, where corruption and ln broadband are the only variables with significant effects holding all other variables constant. This might indicate that economic processes are less slow-moving than other processes.

This thesis expected that WPE would lower socio-economic barriers through women's consequential spendings relative to men, increased human capital and policy preferences increasing the public goods and services sector. Inconsistently to this expectation, variables more directly related to economic outputs proved to have larger effect than the variables more closely connected to issues of state-capacity, with corruption being significant only in the 2009 sample excluding outliers, where a one unit increase of less perceived corruption is expected to lower socio-economic barriers with 0.318 points at a 90 % confidence level all other variables held constant. Nevertheless, tariff-rates and non-tariff barriers, high levels of GDP and technological change proxied by the number of people with access to broadband seems to matter more for lowering socio-economic barriers than the variables more connected to state-structures.

The approach of this thesis ignores a lot of viable noise appearing due to the relatively broad conceptualization of the dependent variable. The aim was to contribute to the current literature by theorizing that due to the established effect of WPE on poverty reduction,

inequality, health, and technological change, there should be a combined effect resulting in benefits for all inhabitants of a state by reducing the socio-economic barriers. The expectation was that, despite the complexities of tracing the mechanisms that reduce socio-economic barriers, there should be a strong correlation to WPE due to the findings identified in the literature review 1) empowering women should contribute to economic growth and subsequent poverty reduction, 2) empowering women as politicians or in formal political decision-making roles should contribute to sustained economic growth and reduction of inequalities due to responsible spending and increased public goods and services, 3) empowering women politically as individuals should contribute to poverty reduction through pressures on policy-makers and increased information on issues connected to poverty reduction.

Reflecting on the lack of significant results of the models presented in this paper, three main avenues for future research contributing to the field are proposed 1) disaggregating the WPE variable to compare and investigate if there are differences of moderating effect in regards to formal- versus informal WPE, 2) disaggregating and concretizing the socio-economic barriers variable to study which aspects of socio-economic barriers can be explained by changes in WPE, and 3) applying broadband or another proxy for technological change as a moderating variable.

Whilst several of the studies discussed in this thesis did not find evidence to suggest that there should be a difference in the effect of formal versus informal WPE (Besnier 2020, Dahlum et al. 2021, Mechkova 2022), Naveed and Wang (2021) found evidence to suggest that formal WPE matters more than the aggregated effect of WPEI on reducing inequality. Due to the similar nature of inequality and socio-economic it would be interesting to test the individuals relationships of formal- and informal WPE on socio-economic barriers moderated by levels of corruption to examine whether there is a difference between how profoundly corruption act as an obstacle to women's agency depending on the kind of participation.

Moreover, due to the lack of significant effect of WPE on socio-economic barriers in most models, despite previous studies suggesting that increased WPE should matter, disaggregating the socio-economic barriers index in order to observe whether some aspects hold significance in regard to WPE is an interesting field forward. Lastly, broadband poses as an interesting moderating variable if the contextual aspects are of most interest. The relative low coefficient coupled with great importance for the variance made in socio-economic

barriers, both with a five- and ten-year lag, further suggest that having a certain level of technological development might be a beneficial context for different issues, such as WPE, to have an effect on lowering socio-economic barriers.

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9. Appendix:

Table 1. Descriptive statistics 2009 sample

Variable:	Mean:	Standard Deviation	Highest observation	Lowest observation
Socio-Economic Barriers 2019 (seb_19)	.603	.241	1 (Burkina Faso…[3])	0 (Slovenia, Czechia)
Women´s Political Empowerment 2009 (wpe_09)	.739	.165	.962 (Bulgaria)	.285 (the Congo)
Corruption 2009 (bci_09)	.512	.133	.974 (Singapore)	.300 (Equatorial Guinea)
Democracy 2009 (libdem_09)	.374	.236	.858 (Costa Rica)	.035 (Uzbekistan)
GDP logged 2009 (gdp_2009)	.830	.055	.986 (China)	.716 (Timor-Leste)
Trade Openess 2009 (trade_09)	.811	.120	1 (Singapore)	.447 (Bangladesh, Bhutan)
Property Rights 2009 (prp_09)	.838	.042	.991 (Singapore)	.754 (Zimbabwe)
Broadband 2009 (broad_09)	.103	.149	.741 (the Republic of Korea)	.000 (Burundi)
Broadband logged 2009 (broad_09_l)	-4.053	2.570	-0.300 (the Republic of Korea)	-10.064 (Burundi)
Protestants 1970/80 (prot_09)	.073	.117	.597 (Papua New Guinea)	0 (Morocco…[4])

Number of observations: 103

Table 2. Descriptive statistics 2014 sample

Variable:	Mean:	Standard Deviation	Highest observation	Lowest observation
Socio-Economic Barriers 2019 (seb_19)	.618	.246	1 (Burkina Faso…[5])	0 (Slovenia, Czechia)
Women´s Political Empowerment 2014 (wpe_14)	.757	.159	.959 (Slovenia)	.301 (Egypt)
Corruption 2014 (bci_14)	.511	.134	.947 (Singapore)	.275 (Guinea-Bissau)
Democracy 2014 (libdem_14)	.368	.231	.858 (Costa Rica)	0.039 (Uzbekistan)
GDP logged 2014 (gdp_2014)	.832	.056	.996 (China)	.714 (Guinea-Bissau)
Trade Openess 2014 (trade_14)	.819	.115	1 (Singapore)	.46 (Iran)
Property Rights 2014 (prp_14)	.840	.034	.990 (Singapore)	.768 (Zimbabwe)

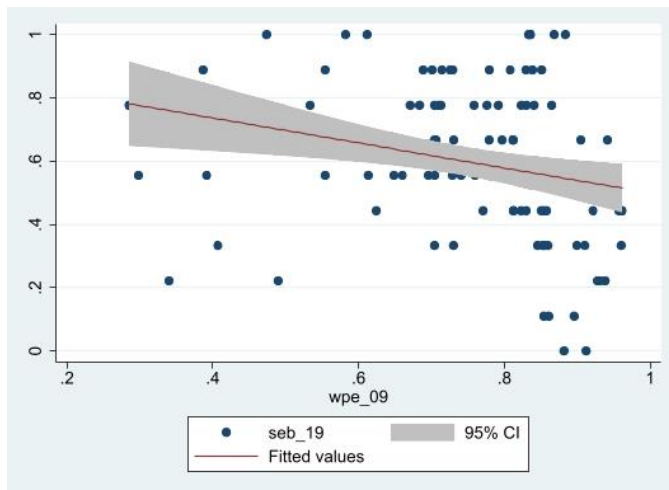[3] Burkina Faso, Burundi, Chad, Niger, Ethiopia, Liberia, Mozambique,

[4] Morocco, China, Albania, Armenia, Mauritania, Niger, Nepal, Bhutan, Azerbaijan, Algeria, Turkey, Mongolia, Iran, Tunisia

[5] (Burkina Faso, Burundi, Chad, Niger, Ethiopia, Liberia, Mozambique, Guinea, the Democratic Republic of the Congo, Guinea-Bissau)

Broadband 2014 (broad_14)	.158	.189	.795 (the Republic of Korea)	.000 (the Democratic Republic of the Congo)
Broadband logged 2014 (broad_14_l)	-3.268	2.327	-0.229 (the Republic of Korea)	-11.161 (the Democratic Republic of the Congo)
Protestants 1970/80 (prot_14)	.073	.117	.597 (Papua New Guinea)	0 (Morocco…[6])

Number of observations: 108

Graph 1. Scatterplot WPE and socio-economic barriers 2009 sample

Graph 2. Scatterplot WPE and socio-economic barriers 2014 sample

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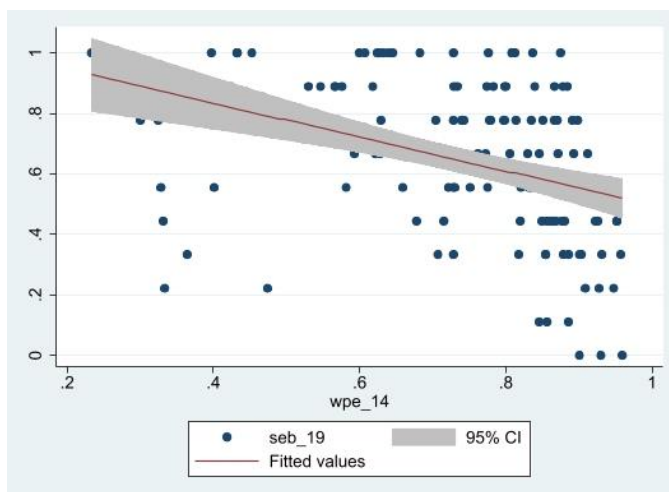
[6] Morocco, China, Armenia, Mauritania, Niger, Nepal, Bhutan, Azerbaijan, Algeria, Turkey, Mongolia, Iran, Tunisia, Albania

Multivariate regression diagnostics:

Testing Multicollinearity

Moreover, multicollinearity has been controlled for through Pearsons R- and VIF-tests. A correlation coefficient of 1 or -1 indicating a perfectly aligned relationship a score above 0,8 is considered to be suspicious (Gerring and Christenson 2017). Values above 0.8 was found between independent variables in both samples, with Property Rights and Corruption having a correlation coefficient of 0.804 in the 2009 sample, and Property Rights and Corruption a score of 0.882 in the 2014 sample. However, as none go above 0.9 and there are no issues of multicollinearity identified in the Variance Inflation Factor (VIF) test with a mean VIF score of 2.37 in both the 2009 and the 2014 model, the models will continue with the chosen variables.

Table 3. Correlation table 2009 sample

Variables	(SEB)	(WPE)	(BCI)	(libdem)	(GDP)	(Trade)	(PRP)	(Broad)	(Prot)
Socio-economic barriers 2019	1.000								
Women´s Political Empowerment	-0.271	1.000							
	(0.006)								
Corruption	-0.477	-0.107	1.000						
	(0.000)	(0.281)							
Democracy	-0.464	0.618	0.118	1.000					
	(0.000)	(0.000)	(0.236)						
GDP l	-0.447	0.025	0.081	0.083	1.000				
	(0.000)	(0.806)	(0.416)	(0.406)					
Trade	-0.515	0.225	0.196	0.383	0.109	1.000			
	(0.000)	(0.022)	(0.047)	(0.000)	(0.271)				
Property rights	-0.604	0.065	0.804	0.333	0.225	0.366	1.000		
	(0.000)	(0.517)	(0.000)	(0.001)	(0.022)	(0.000)			
Broadband l	-0.853	0.304	0.392	0.446	0.516	0.559	0.529	1.000	
	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
Protestants	0.168	0.068	-0.067	0.193	-0.233	-0.098	-0.020	-0.262	1.000
	(0.090)	(0.495)	(0.499)	(0.051)	(0.018)	(0.326)	(0.842)	(0.007)	

Table 4. Correlation table 2014 sample

Variables	(SEB)	(WPE)	(BCI)	Libdem	(GDP)	(Trade)	(PRP)	(Broad)	(PROT)
Socio-economic Barriers	1.000								
WPE 2014	-0.389	1.000							
	(0.000)								
Corruption 2014	-0.573	0.290	1.000						
	(0.000)	(0.000)							
Democracy 2014	-0.482	0.682	0.531	1.000					
	(0.000)	(0.000)	(0.000)						
GDP 2014	-0.452	0.157	0.120	0.189	1.000				
	(0.000)	(0.046)	(0.112)	(0.016)					
Trade 2014	-0.544	0.420	0.441	0.508	0.358	1.000			
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)				
Property Rights 2014	-0.663	0.385	0.882	0.650	0.325	0.517	1.000		
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)			
Broadband l 2014	-0.786	0.476	0.549	0.557	0.287	0.533	0.613	1.000	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
Protestants 1970/80	0.153	0.202	0.327	0.352	-0.156	0.161	0.337	0.039	1.000
	(0.092)	(0.011)	(0.000)	(0.000)	(0.051)	(0.044)	(0.000)	(0.063)	

Table 5. VIF-test 2009 sample

Variable		VIF	1/VIF

Property Rights 2009	|	3.87	0.258189
Corruption 2009	|	3.42	0.292810
Broadband l 2009	|	3.09	0.324058
Democracy 2009	|	2.23	0.449075
Women's Political Empowerment 2009	|	1.78	0.561042
Trade 2009	|	1.66	0.603368
GDP l 2009	|	1.63	0.614263
Protestants 2009	|	1.25	0.796964

Mean VIF	|	2.37	

Table 6. VIF-test 2014 sample

Variable		VIF	1/VIF
Property Rights 2014	|	4.51	0.221844
Corruption 2014	|	3.84	0.260635
Broadband l 2014	|	2.37	0.421114
Democracy l 2014	|	2.01	0.496654
Women's Political Empowerment	|	1.84	0.543650
Trade 2014	|	1.71	0.584819
GDP l 2014	|	1.42	0.701826
Protestants 2014	|	1.28	0.779469
Mean VIF	|	2.37	

Testing for normal distribution of residuals

An assumption of an OLS regression is that residuals follow a normal distribution with a mean of zero and that the independent variables do not measure the same thing as this might make the results spurious (Kellsted and Whitten 2018). Normal distribution of all independent variables is controlled for, but due to the loss of observations some variables are kept as they are despite showing signs of violating the assumption of normal distribution. More important is the assumption of normal distribution of residuals in the regression models (Kellsted and Whitten 2018). Several tests have been run to check for and confirm normal distribution by predicting the residuals for both the 2009 and the 2014 model, through histograms, the quantile function of the normal distribution and the Kernel density estimation.
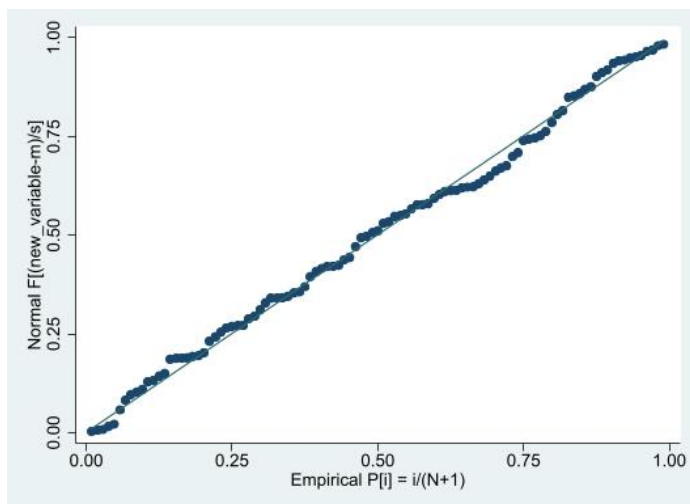
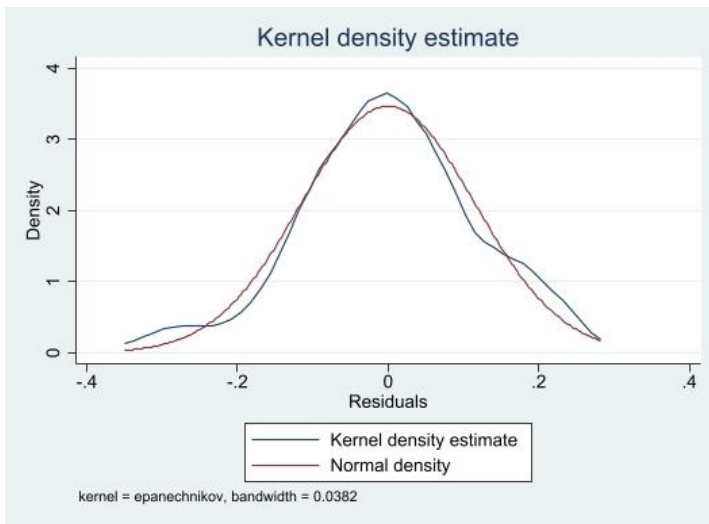**Graph 3. Histogram residuals 2009-sample**
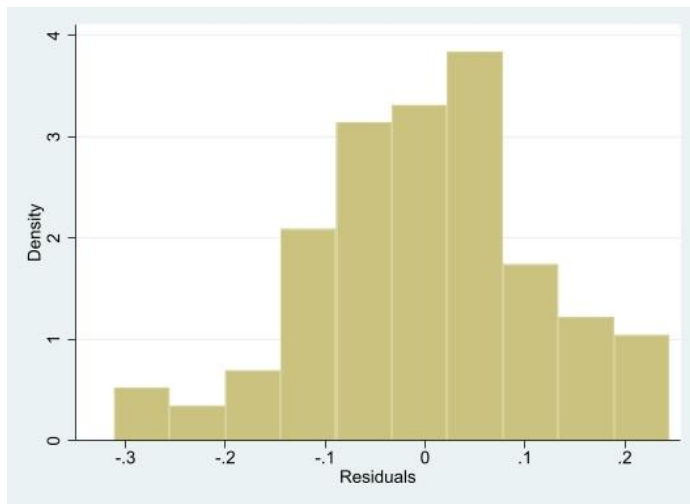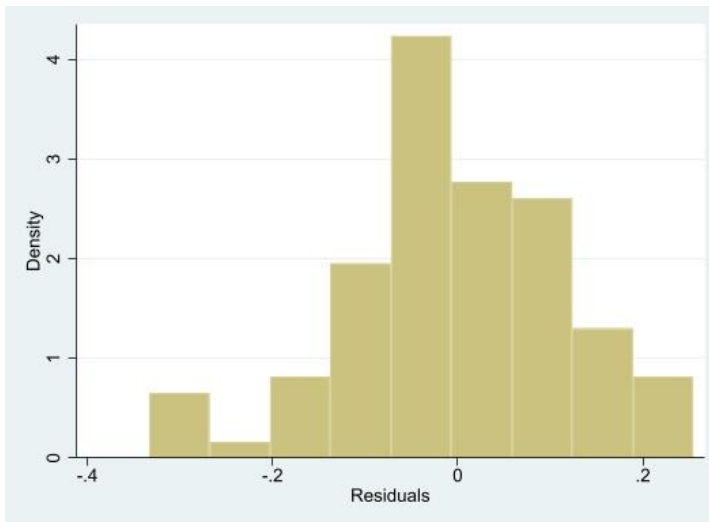

Graph 4. Qnorm residuals 2009-sample
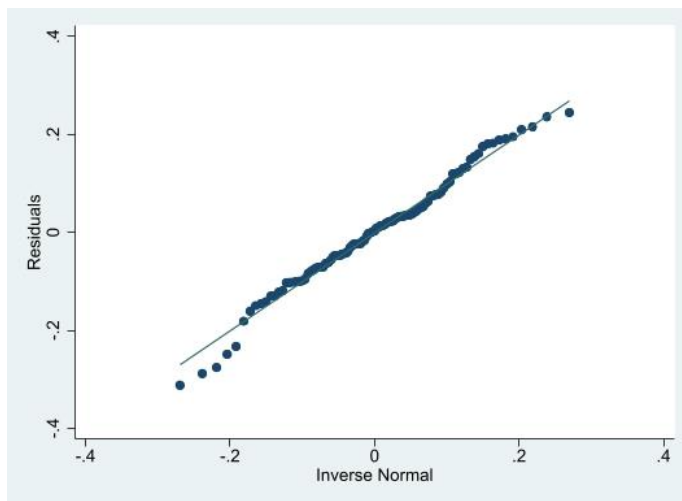
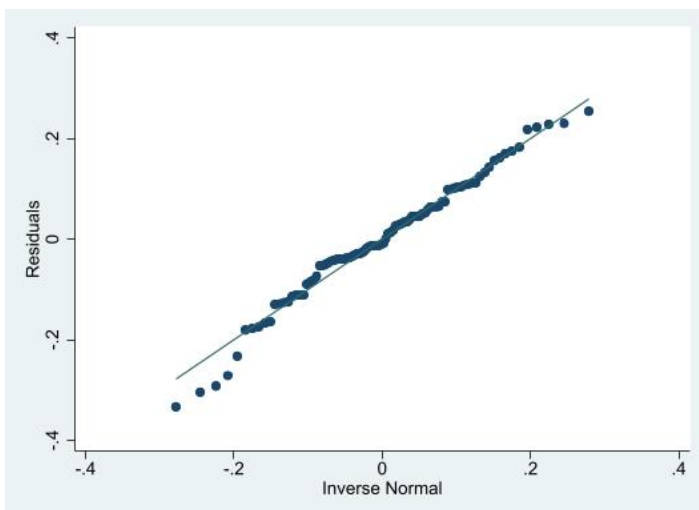**Graph 5. Pnorm residuals 2009-sample**

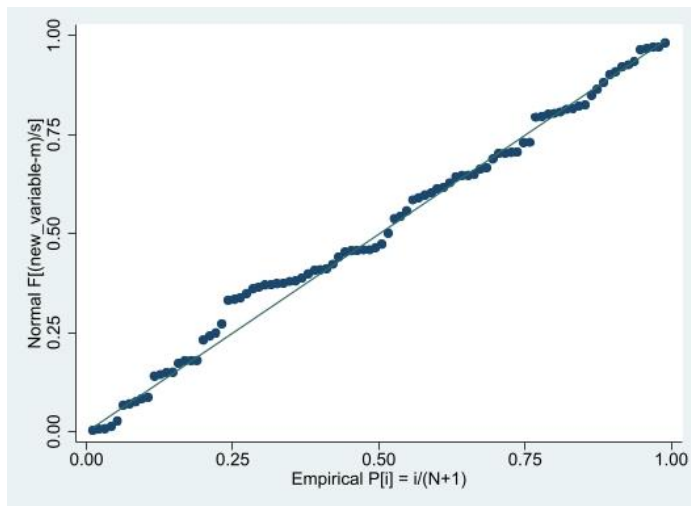**Graph 6. Kernel Density-test 2009 sample**

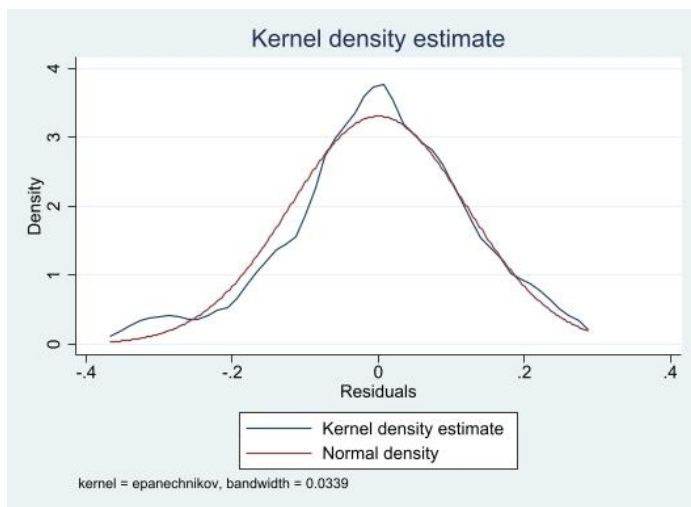**Graph 7. Histogram residuals 2014-sample**

Graph 8. Qnorm residuals 2014-sample

Graph 9. Pnorm residuals 2014-sample

Graph 10. Kernel Density test 2014 sample

Heteroskedasticity-tests:

In order for an OLS regression to be sufficient in interpreting the data there needs to be a presence of homoskedasticity meaning constant and/or similar error variance (Kellsted and Whitten 2018). Both 2009 and 2014 models show signs of heteroskedasticity, meaning that when the residuals of the independent variables are plotted against the fitted values of socio-economic barriers there is an unevenness in the variance, suggesting that the coefficients might be less precise, and that p-values can be smaller than what they should be (Kellsted and Whitten 2018). Due to the suspicion of violation of the assumption of constant variance a Breusch-Pagan test is tested on the full models and specific independent variables. All tests fail to reject the null hypothesis of constant variance and both models thus continue with the original regressions assuming homoskedasticity.

Graph 11. Rvf-plot 2009 sample
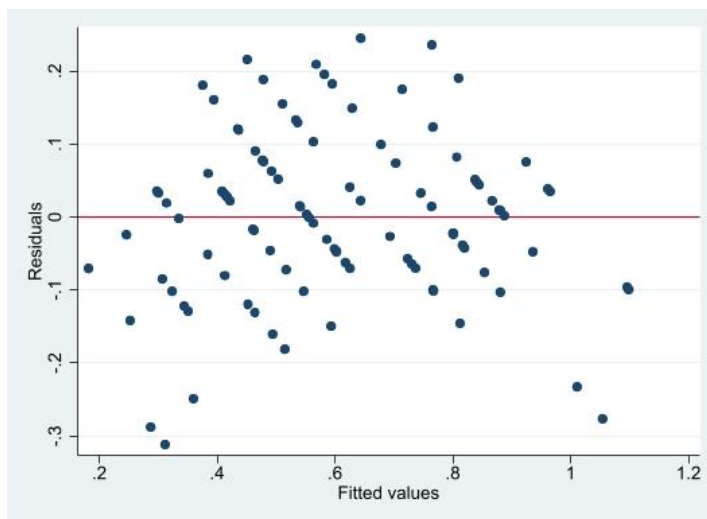
Graph 12. Rvf-plot 2014 sample

Figure 1. Breusch-Pagan all independent variables 2009 sample

```
Breusch–Pagan/Cook–Weisberg test for heteroskedasticity
Assumption: i.i.d. error terms
Variables: All independent variables

H0: Constant variance

F(8, 94) =    1.79
Prob > F = 0.0887
```

Figure 2. Breusch-Pagan test fitted values of socio-economic barriers 2009 sample

```
Breusch–Pagan/Cook–Weisberg test for heteroskedasticity
Assumption: Normal error terms
Variable: Fitted values of seb_19

H0: Constant variance


    chi2(1) =   0.72
Prob > chi2 = 0.3968
```

Figure 3. Breusch-Pagan test logged Broadband 2009 sample

```
Breusch–Pagan/Cook–Weisberg test for heteroskedasticity
Assumption: i.i.d. error terms
Variable: broad_09_l

H0: Constant variance

F(1, 101) =   0.52
 Prob > F = 0.4706
```
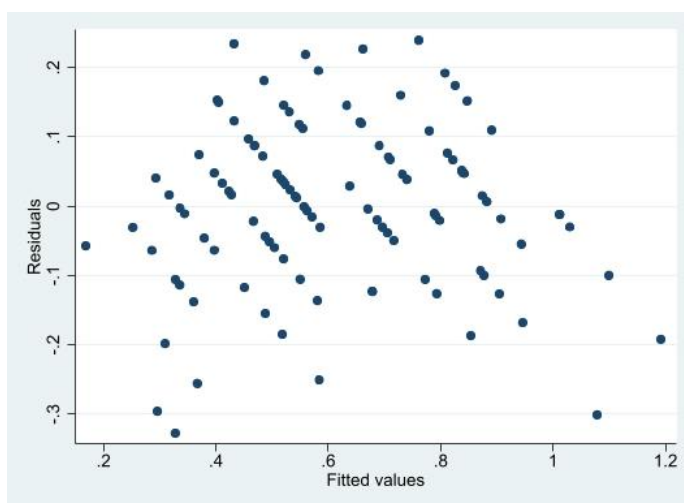
Figure 4. Breusch-Pagan all independent variables 2014 sample

```
Breusch–Pagan/Cook–Weisberg test for heteroskedasticity
Assumption: i.i.d. error terms
Variables: All independent variables

H0: Constant variance

F(8, 85) =   1.31
Prob > F = 0.2501
```

Figure 5. Breusch-Pagan test fitted values of socio-economic barriers 2014 sample

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Breusch–Pagan/Cook–Weisberg test for heteroskedasticity
Assumption: Normal error terms
Variable: Fitted values of seb_19

H0: Constant variance


    chi2(1) =   0.37
Prob > chi2 = 0.5421
```

Figure 6. Breusch-Pagan test logged Broadband 2014 sample

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Breusch–Pagan/Cook–Weisberg test for heteroskedasticity
Assumption: i.i.d. error terms
Variable: broad_14_l

H0: Constant variance

F(1, 92) =   0.06
Prob > F = 0.8118
```

Testing for outliers

Cook's Distance is measured to observe which observations have "unnatural" large influence on the output of the models due to extreme observations. A standard way to identify outliers is to calculate the Cooks D and then find the observations with a Cook's value above 4 divided by the number of observations, these are considered to be outliers. However, outliers should not be excluded from models without precautionary measures (Kellstedt and Whitten 2018).

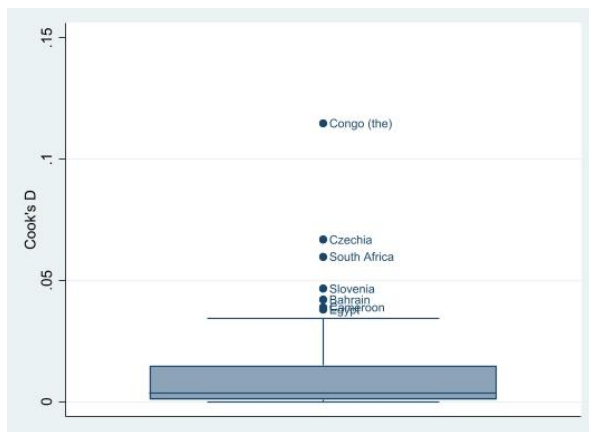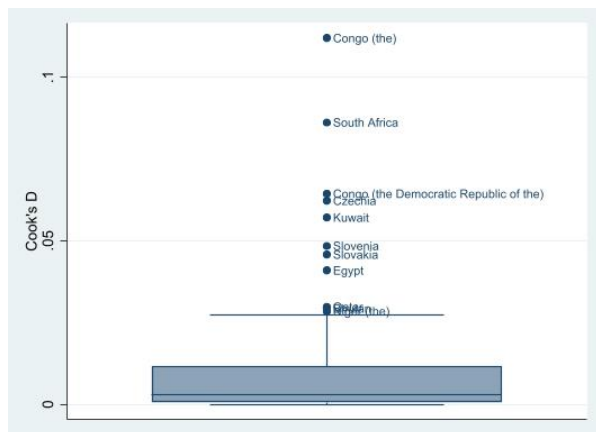**Figure 5.5.1. Outliers 2009-Model**   **Figure 5.5.2. Outliers 2014 Model**

The boxplots above are made using the threshold of 4/N, however, observing the results there is great difference in how far away the observations move from what is considered within "normality". Hence, a threshold of 0.005 instead of the calculated 0.037, is chosen to not make unnecessary interference to the data-sample.

The Congo, Czechia and South Africa are excluded in both samples, and in the 2014 sample, the Democratic Republic of Congo as well as Kuwait also disappear. The Congo and the Democratic Republic of Congo are war-ridden countries (Köning et al. 2017), Chechia and South Africa are more problematic to exclude as, whilst Kuwait is an expected outlier in 2014 due to its small size and high revenues from the oil industry, and the aftermath of the Arab Spring (Colombo 2012).

Figure 7. Influential observations (cooks_variable>0.05) 2009 sample

Country
The Congo
Czechia
South Africa

Figure 8. Influential observations (cooks_variable>4/103) 2009 sample

Country
Bahrain
Cameroon
The Congo
Czechia
Slovenia
South Africa

Figure 9. Influential observations (cooks_variable>0.05) 2014 sample

Country
The Congo
The Democratic Republic of Congo
Czechia
Kuwait
South Africa

Figure 10. Influential observations (cooks_variable>4/108) 2014 sample

Country
The Democratic Republic of Congo
The Congo
Czechia
Egypt
Kuwait
Slovakia
Slovenia
South Africa

Table 7. Country-sample 2009

Albania	Burundi	El Salvador	Jordan	Mauritius	Papua New Guinea	Tajikistan
Algeria	Cambodia	Equatorial Guinea	Kazakhstan	Mexico	Paraguay	Thailand
Angola	Cameroon	Estonia	Kenya	Moldova	Peru	Timor-Leste
Argentina	Chad	Ethiopia	Korea	Mongolia	Philippines	Togo
Armenia	Chile	Gabon	Kuwait	Morocco	Poland	Trinidad and Tobago
Azerbaijan	China	Gambia	Kyrgyzstan	Mozambique	Qatar	Tunisia
Bahrain	Colombia	Ghana	Laos	Mongolia	Romania	Turkey
Belarus	The Congo	Guatemala	Latvia	Morocco	Russia	Uganda
Benin	Costa Rica	Hungary	Lebanon	Mozambique	Rwanda	United Arab Emirates
Bhutan	Czechia	India	Lesotho	Nepal	Senegal	Uruguay
Bolivia	Cote d´Ivoire	Indonesia	Liberia	Nicaragua	Serbia	Uzbekistan
Bosnia and Herzegovina	Djibouti	Iran	Lithuania	Niger	Singapore	Vietnam
Botswana	The Dominican Republic	Jamaica	Madagascar	Nigeria	Slovakia	Zambia
Brazil	Ecuador		Malawi	Oman	Slovenia	Zimbabwe
Bulgaria	Egypt		Malaysia	Pakistan	South Africa	
Burkina Faso			Mauritania	Panama	Sri Lanka	

Table 8. Country-sample 2014

Albania	Burundi	El Salvador	Jordan	Mauritius	Papua New Guinea	Tajikistan
Algeria	Cambodia	Equatorial Guinea	Kazakhstan	Mexico	Paraguay	Thailand
Angola	Cameroon	Estonia	Kenya	Moldova	Peru	Timor-Leste
Argentina	Chad	Ethiopia	Korea	Mongolia	Philippines	Togo
Armenia	Chile	Gabon	Kuwait	Morocco	Poland	Trinidad and Tobago
Azerbaijan	China	Gambia	Kyrgyzstan	Mozambique	Qatar	Tunisia
Bahrain	Colombia	Ghana	Laos	Mongolia	Romania	Turkey
Belarus	The democratic republic of Congo	Guatemala	Latvia	Morocco	Russia	Uganda
Benin	The Congo	Guinea	Lebanon	Mozambique	Rwanda	United Arab Emirates
Bhutan	Costa Rica	Guinea-Bissau	Lesotho	Nepal	Senegal	Uruguay
Bolivia	Czechia	Honduras	Liberia	Nicaragua	Serbia	Uzbekistan
Bosnia and Herzegovina	Cote d´Ivoire	Hungary	Lithuania	Niger	Singapore	Vietnam
Botswana	Djibouti	India	Madagascar	Nigeria	Slovakia	Zambia
Brazil	The Dominican Republic	Indonesia	Malawi	Oman	Slovenia	Zimbabwe
Bulgaria	Ecuador	Iran	Malaysia	Pakistan	South Africa	
Burkina Faso	Egypt	Jamaica	Mauritania	Panama	Sri Lanka	

Table 9. Country-list of countries with Broadband<0.01 2009 sample

Country:
Angola
Bangladesh
Benin
Burkina Faso
Burundi
Cambodia
Cameroon
Chad
The Congo
Côte d´Ivoire
Equatorial Guinea
Ethiopia
Gabon
Gambia
Ghana
Kenya
Kyrgyzstan
Laos
Lesotho
Liberia
Madagascar
Malawi
Mauritania
Mozambique
Nepal
Niger
Nigeria
Pakistan
Papua New Guinea
Rwanda

Tajikistan
Timor-Leste
Togo
Uganda
Zambia
Uzbekistan
Zambia
Zimbabwe

Table 10. Country-list of countries with Broadband<0.01 2014 sample

Country:
Angola
Benin
Burkina Faso
Burundi
Cambodia
Cameroon
Chad
The Congo
Equatorial Guinea
Gambia
Ghana
Kenya
Laos
Lesotho
Liberia
Madagascar
Malawi
Mauritania
Mozambique
the Niger
Papua New Guinea
Rwanda
Tajikistan
Timor-Leste
Togo
Uganda
Zambia