

Discrimination Stops Here: How Education Affects Gender Political Equality Across Democratic Nations

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ABSTRACT: Globally, among democratic and non-democratic countries, women are subjected to discrimination in all spheres of life. In fact, women comprise two thirds of the world's illiterate and 21% of the world's National Parliaments calling into question the credibility of democracies as pillars of equality and justice. This reality motivates the central question of this essay: Do the dimensions of education affect gender political equality across democratic nations? Education teaches women invaluable skills such as critical thinking, multi-tasking, and research that allow women from all different backgrounds the ability to think independently. As a result, women can voice their opinions confidently and participate in government more consistently. I hypothesize that education, in terms of access, attainment, equal educational content, and pro-gender equality curricula directly affect gender equality in politics. As I develop my argument, I consider the complexities of education: while the majority of the literature focuses on women's access to education and completion rates, I also consider how having equal educational content and curriculums that introduce gender equality affect the outcomes of increased political representation in government. I test these hypotheses quantitatively, on a data set across 54 democratic countries observed from year 2000 to year 2010. The findings revealed that access, attainment, and pro-gender equality curricula have a positive and significant effect on gender political equality, while the equal educational content measurements did not support the hypothesis. Thus, in order to answer the equal educational content hypothesis, further research needs to be conducted to better address its effect on gender political equality. In addition to a conclusive answer to the research question, this paper contributes solutions to promote a more consistent and fair educational system across the world that ensures both gender and political equality.

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I. Introduction

“Where women are more educated and empowered, economies are more productive and strong. Where women are fully represented, societies are more peaceful and stable” (UNSC 2013). This quotation from U.N.’s Secretary General Ban Ki-Moon illustrates the importance and influence education can have toward women’s equality, and toward making societies prosperous. Education is a key source of empowerment for women as it provides them with the tools necessary to become a global resource (USNC 2013). Therefore, if the assertion that investing in girls and women’s education is the catalyst for equality and democracy, can the dimensions of education lead to more parity in representation of women in politics?

This essay seeks to answer the question: “do the dimensions of education effect gender political equality across democratic nations?” Currently, women are restrained by social misconceptions of their roles, and are excluded from fair treatment in the public and private spheres as well as the academic and political spheres. Women are ill-represented in the political arena illustrating the serious gender gaps that persist. The essay explores the links between education and the profound discrepancies in representation in government; building on insights from existing literature and introducing a new data set, this paper tests four hypotheses regarding the effects of access, attainment, equal educational content, and pro-gender equality curriculums on gender political equality.

The concepts of both gender equality and political equality are important because they are both serious topics of conversation in the political and academic sphere, on the domestic and global level. Gender and political inequality among democratic nation-states are issues that demand the greatest attention as they impede on the very principle of citizenship, which is the foundation of democracy (Verba 2001). As CNN reporter Paula Geroni CNN illustrates, “there is no democracy without freedom,” and there is no freedom without *gender* political equality (2015). As a result, when democracies allow discrimination of any kind against its citizens based on any of their unique characteristics, it challenges the credibility of a democracy. Subsequently, when democracies, like the United States, who have political gender gaps of 60% (80% male) in government, these are states where the decision-making is undertaken without equal representation of half of its citizenry. According to scholar Carolyn Kissane (2012), “when women’s voices are left out, it is unlikely that women’s needs [or thoughts] will be met.” Thus,

with smaller numbers of women in politics, women have less “lobbying power,” and it affects their power in government, thus they cannot address the issues that affect women, which hinders gender equality (Beiping 2009).

Furthermore, as Harvard University scholar Sidney Verba explains, “Equal activity is crucial for equal consideration since political activity is the means by which citizens [in a democracy] inform governing elites of their needs and preferences and induce them to be responsive (2001). Therefore, the topic of gender political equality becomes even more important when democracy is the goal, thus it is invaluable that government “...provide a balance that more accurately reflects the composition of society [which] is needed in order to strengthen democracy and promote its proper functioning” (UN Fourth World Conference 1995). On the other hand, while women are still underrepresented in almost all national parliaments, gender equality and gender political equality are not of interests to scholars alone. Political discourse and policy resources, both within the U.S. and globally, are oriented toward promoting equality.

Domestically, President, Barack Obama has discussed the importance in becoming a nation with better representation of women in politics. President Obama stated that “When women succeed, nations are safer, more secure, and more prosperous” (White House Press Secretary 2013). To illustrate President Barack Obama’s dedication to raising women’s representation and participation, he has approved many initiatives including: “Increasing Women’s Roles in Conflict Prevention and Security Decision-making initiative and the U.S. National Action Plan,¹” and “Expanding Education Opportunities and Promoting Leadership for Women and Girls initiative, and Leading New Global Efforts to Advance Gender Equality and Strengthening Multilateral Organizations initiative,² and finally Equal Futures Partnership

¹ This initiative is NAP on Women, Peace, and Security to support women’s voices and perspectives war-torn countries. DOS, USAID, and the CDC “remove gender-based barriers to service and fully integrate women into all occupational specialties” (White House Press Secretary 2013).

² In the effort of “promoting leadership of women and girls,” and the increase their political participation. The US State Department alongside USAID “...launched the Women in Public Service Project in 2011” as well as funded the project with over \$30 million in the effort to support women’s leadership (Ibid).

(White House Press Secretary 2013).³⁴⁵

In addition to sponsoring various educational programs for girls and women for the advancement of women in society, the US has also created groups like the US National Committee for UN Women in 1983 (also to help support the mission of UN Women after UNIFEM) (USNC 2013). Furthermore, the US has continued to fund and partner with UNESCO, UNICEF, UNFPA, and their missions, trying to combat gender discrimination and poverty with programs such as Global Partnership for Girls' and Women's Education, The United Nations Girls' Education Initiative (UNGEI), the Education for All Goals (Barton 2011).

Also, the United States expanded their partnerships with multilateral partners, non-traditional partners, and NGOs to get more funding to programs in order to eradicate the problems impeding women's education (UNESCO 2012). For example, the United States has partnered with NGO "Room to Read," and given \$145,000 for a case study of 1000 girls to go to school, but also to learn the reasons these girls had for dropping out of school (UNESCO 2012). If we can truly understand one of the struggles girls face, we can find solutions to alleviate their suffering in order to tackle the next problem.

Globally, the international community has paid more attention to raising awareness about gender gaps and inequalities that continue to impede women's advancement in society. In fact, in the last decade, the United Nations' programs on education for girls have made significant progress in closing the gender disparities in education. This changed focus was demonstrated at the turn of the century when 189 nations and 23 international organizations combined their forces and pledged eight goals to achieve by 2015. Of the eight, three were focused specifically on improving the lives of women in these underdeveloped nations. The first goal was "eradicating extreme poverty and hunger," followed by "achiev[ing] universal primary education," then "promote gender equality and empower women" (UNDP 2013). Since the 2000 Millennium Goals were developed there has been remarkable progress in closing gender gaps for at least primary education. In fact, the number of children without access to any education

³ This is a new network of countries making national commitments to expand women's political participation and economic opportunity (Ibid).

⁴ "The NAP charts a roadmap for how the United States will ensure that women's perspectives and considerations of gender are woven into peace processes, conflict prevention, post conflict reconstruction, the protection of civilians, and humanitarian assistance" (ibid).

⁵ President Obama has worked to "Expanding Economic Opportunity for Women; Launching a Comprehensive Strategy to Prevent and Respond to Gender-Based Violence; Combating Trafficking in Persons; Promoting the Health of Women and Families (ibid).

decreased from 108 million children in the beginning of the decade to 61 million in 2012 (Ki-Moon 2012, UNESCO 2012). Also, since then, there has been an increase of two-thirds more children enrolled in school (Barton 2011).

By meeting these goals, the world, for both women and men, have become profoundly more aware of the valuable role women play in affecting the structure and economic growth of a society. The more these girls and women develop educational skills, the more nations across the world will transition into safer, more economically sound democratic nations (Barton 2011; UNFDP 2014).

Furthermore, it is also important to mention the work of outside organizations that have also made headway within the last decade about raising awareness of gender gaps, and the challenges they bring to individuals affected by the inequalities. These would include the World Economic Forum and their annual report, *The Global Gender Gap Report*. These reports, which first came out in 2006, ranks nations across the globe every year based upon three primary criteria "...economic, political, education and health" (World Economic Forum 2013). Through all this, we can clearly observe how the connections being made because raising awareness on the inequalities between women and men brings people together to combat the status quo.

Considering that sizable resources are invested in promoting gender equality and gender political equality through education, as described above, from the U.S. and the U.N., it demonstrates how much has been invested in education and gender equality.

The current literature on gender equality in education is vast, and the arguments that education is pivotal to gender equality is also discussed in multiple circles from academia to heads of states to large international organizations. Different entities and scholars focus on different dimensions regarding the effects of all the dimensions of education on gender equality. While this leads to a very rich debate, it has also results in a lack of consensus in how and why education effects gender equality (e.g. completion rates, school enrollment, literacy rates etc...).

Firstly, the paper will provide a more extensive understanding of the dimensions of education. Second, this paper explores how each of these dimensions of education, including access, attainment, equal educational content, and pro-gender equality curricula, actually help reduce gender inequality or help promote political representation. Third, building on the existing literature that connects education and gender equality, this paper focuses on gender political equality, which is a less explored dimension of gender equality.

Gender equality in politics has been called by many names in the literature, and there is no consistency in its definition. Thus, to fill this gap, this paper will coin and define gender political equality by bridging definitions of gender equality and political equality, both of which are relatively well developed in political science literature. Fourth, this paper compiles a new data set that measures for the various dimensions of education and gender political equality for established democracies.

The arguments in this paper lead to four predictions: access, attainment, equal educational content, and pro-gender equality curricula have a positive effect on gender political equality. The findings from this data set illustrate the hypotheses for access, attainment, and pro-gender equality curricula are strongly supported by the data, while the hypothesis for equal educational content received mixed support.

The paper is organized as follows: Section II is an overview of the current literature regarding the research question, including a conceptual definition for the dependent variable. Then, based on the literature and conceptual definition provided in the previous section, Section III presents the arguments and hypotheses for each of the explanatory variables. Section IV covers the research design used this study, including the central tendencies for the dependent, independent, and control variables. Section V contributes the findings for each of the measurements. Finally, Section VI provides concluding remarks for this paper, as well as advice aimed at improving future research, and potential policy recommendations that, if implemented, could result in a more consistent and fair educational system across the world that ensures both gender and political equality.

II. Literature Synthesis

Much of the literature that concentrates on education and women's rights addresses gender equality broadly, and while the concepts of gender equality are relatively constant in the literature, there are variations in their definitions. Most importantly, the majority of the definitions are not explicit regarding gender political equality or women's participation in politics. This literature review will first discuss existing arguments on the relationship between education and gender equality. Second, the analysis of the literature will also address the effects of education on political participation. Third, it will emphasize the gaps in the literature, and conclude with a conceptual definition for gender political equality.

Education on Gender Equality

Scholars Ajasa and Salako (2015), Maber (2014), Kissane (2012), and Wallace, Haerpfer and Abbott (2009) discuss access, attainment, equal content, and pro-gender equality curricula as valuable to getting women the skills they need to transform social norms that hinder gender and gender political equality.

Ajasa and Salako (2015) conducted two questionnaires one looking at “education gender equality” and the other “gender empowerment;” the questionnaires were sent out to 300 “educated women” across Oyo, Nigeria. While the study looks at access and attainment, it briefly discusses the importance of also having pro-gender equality curricula in order for there to be social inclusion of women and men in society. The problem with this study is it only tests two dimensions of education, and is vague in regards to the level of attainment.

Maber’s (2014) study is a qualitative study that discusses Myanmar’s educational system. Maber explains access, equal educational content, and pro-gender equality curricula need to be implemented in Myanmar’s educational system in order for gender equality to be achieved, and prepare women for leadership positions.

Kissane’s (2012) is also a qualitative that explores access and pro-gender equality curricula as the important dimensions of education needed to allow women in Afghanistan to fight against the patriarchal system, and lead the country toward democracy.

Finally, Wallace, Haerpfer, and Abbott’s (2009) is a qualitative study that examines the Rwanda’s World Values Survey conducted in 2007 in order to determine whether age, gender, or level of educational attainment causes people to change their views of gender equality and gender political equality. This study concluded that women, despite level of educational attainment, believed in gender equality and gender political equality; the study also concluded that youth and level of educational attainment played a large role in changing men’s attitudes toward gender equality and gender political equality.

Overall, while all of the literature does not discuss every dimension in one study (quantitatively or qualitatively), there is a consensus among them that without at least one of these dimensions gender equality is not achieved. They determine that these are the dimensions that contribute to a positive social change and growing belief in equality.

However, while these scholars and international organizations such as the United Nations believe that within these dimensions of education lie the secret to gender equality, there is still

debate by some scholars. A cross-section study by Okonkwo (2011) concluded his research explaining that despite the United Nations educational programs, gender equality was not achieved. However, while Okonkwo's research contradicted the arguments made above that access and attainment (at tertiary level) do change men's attitudes toward gender equality. While this study does conclude with findings that do not support the traditional hypothesis, this is a great case that failed to acknowledge whether or not the educational content was the same or whether or not the curricula in Nigeria introduce gender equality.

Education on political participation

Another strand of the literature explores the effects of education on political participation, however, this relationship is highly debated (Persson 2014). In fact, the literature has three theories that determine education is either a cause or a proxy for political participation.

The first theory is “**Absolute education model**,” (Verba, Schlozman and Brady 1995; Jackson 1995; Hillygus 2005; Lewis-Beck et al 2008), which is a theory that the United Nations and some of the scholars discussed earlier would predominantly agree with. In this model, the theory is three-fold: the first part is explained by Verba, Schlozman, and Brady (1995) determining that education (in general) is directly involved in getting people (in general) to participate in politics because it “develops the skills that are relevant to politics” (Persson 2014). The second part of the theory is discussed by Lewis-beck et al (2008), explaining that “formal education” (in general) is important because this is what allows students (in general) to develop “an interest in politics, [and] a greater concern with elections” (Persson 2014). The third part is addressed by scholar Jackson (1995) who explains education leads to the belief that one person can affect political change (Persson 2014). The theory behind the absolute education model is the higher the educational attainment the more an individual is likely to participate in politics. Consequently, the level of educational attainment in the environment of an individual will not have an effect on his or her participation in politics, but rather the attainment of each individual that directly determines their political behavior.

On the other side of the debate, there are two theories that discuss education as a *proxy* rather than a *cause* for political participation, these theories are the “**pre-adult socialization model**” (Jennings and Niemi 1974; Langton and Jennings 1968; Kam and Palmer 2008), and the “**Relative education model**” (Persson 2011; Persson 2015). The pre-adult socialization model is

the theory where education only works as a proxy for other individual factors; it is argued that these invisible factors are equally important if not more important factors in determining political behavior than education (in general). Studies by Langton and Jennings (1968), Jennings and Niemi (1974), and Kam and Palmer (2008) explain that the effects of education on political participation are mistaken, rather what causes political behavior is caused by individual “factors such as family socio-economic status, [or] the political socialization in the home environment and...cognitive ability” (Persson 2014). However, even the pre-adult socialization model is debated as some scholars argue the actual factors that contribute to political participation are “intelligence (Luskin 1990), genetic factors (Ford, Funk and Hibbing 2005), or personality... (Mondak and Halperin 2008)” (Persson 2014).

The relative education model is the theory, which states the effects of education on political participation are a proxy for social status (Persson 2014). This view, Persson explains the Nie, Junn and Stehlik-Barry (1996) study discusses high social status is what leads to political participation, and “high social status is defined as having a central social network position in society” (Persson 2014). The difference between this model and the absolute education model, is this theory explains that the level of educational attainment within his or her environment will determine the individual’s social status, and subsequently his or her social networks. The networks that individuals are exposed to is based on their social status, which is relative to the level of educational attainment of the environment, but it is not absolute. Meaning, the level of educational attainment of a particular environment will defer from place to place. Therefore, the individual’s political participation is dependent on the social networks that individuals are exposed to from high social status; and the social status of an individual is not dependent on education. Therefore, as explained by Persson (2011, 2014), an individual’s participation in politics is not dependent on one’s level of education, rather political participation is dependent on high social status and social networks, and entrance into high social status is relative to the level of educational attainment of a person’s environment.

Critique of the literature

However, while the literature on education, voter turnout, political behavior etc... is vast, it fails to look at the effects of the specific dimension of this paper (access, attainment, equal-content, and pro-gender equality curricula) on gender political equality.

Furthermore, another gap in the literature is an international database that looks at precisely the percentage of male to female voter turnout in comparison to the population, or even the number of women that run for office or participate in elections. While there is literature and data regarding the representation of women in politics, there is a great gap in the literature regarding the participation of women in politics.

Therefore, based on the review of the literature and its major gaps, we can recognize that education is a complex variable and highly debated independent variable. Also, we can determine that the literature fails to focus the effects of access or attainment, equal educational content, and pro-gender equality curricula on gender political equality.

Finishing the review of the literature focusing on the research question, the next section will discuss briefly the terms used in this paper as well as provide a conceptual definition for the term gender political equality.

Conceptual definition: Gender Political Equality

As we have examined the literature regarding education's effect on gender equality, and the literature regarding political participation, in order to understand how to achieve gender political equality, it is important to first discuss the meanings of "gender equality" and "gender political equality."

According to scholars Grown, Gupta, and Khan (2003) who built on the definitions of the United Nations Human Development Report, which looks at "capabilities in term so education, health, and nutrition" while "the World Bank defines gender equality in terms of equality under the law, equality of opportunity....and equality of voice [meaning] the ability to influence and contribute to the development process." While there is some distinction in these definitions, Grown, Gupta, and Khan conceptualized the term, and gender political equality in their study includes three key elements, "capabilities [meaning] education, health, and nutrition, access to resources and opportunities, and [finally] agency or the ability to influence and contribute to outcomes."

Furthermore, as described by Harvard University professor Sidney Verba (2001), political equality refers to "the rights given to individuals in a society to utilize their voice and agency" in order to "...become citizens in the truest sense of the word;" because being a citizen is about the freedom to participate in government and politics via it be voting, running for office, or

the “freedom to speak out, assemble and associate” (Ki-Moon 2012; Barton 2011). Verba explains, political equality also refers to “...the extent to which citizens have an equal voice over governmental decisions.” One of the guiding and basic frameworks of a democracy is the idea that all citizens are equal regardless of any differences amongst one another.

While the literature explains political equality as an overarching term to explain equality among people regardless of race, sex, ethnicity etc...for the purpose of this paper, and for future research, I have conceptualized the term “gender political equality” to refer to political equality among gender. Terms the literature uses such as “women in parliament” (Wallace, Haerpfer and Abbott 2009), “women in politics” (Norris 2010), or even “gender equality in politics” (Moita 2012) are the types of terms that all refer to the idea of gender political equality. Therefore, as the literature mixes and matches these terms, this research is contributing a more consistent and concise term to the literature.

Building upon previous research from Dahl and Lindblom (1953) the conceptualized definition for gender political equality is: *The ability and opportunity for both women and men to have access to and “control over governmental decisions so that the preferences of no one citizen are weighed more heavily than the preferences of any other citizen” (Boatright 1999).*⁶ Therefore, based on this conceptualized definition, we can recognize that gender political equality encompasses parity in both political participation and representation of women and men in government.

Overall, this research is important as it is contributing a new approach to answering the question: what impact does education have and what influences political participation? This paper is in fact building on previous research by utilizing the dimensions of education that are so valuable to gender equality to target their effect on women’s representation and participation in government. This paper is also adding to the literature by conceptualizing the term and definition for *gender political equality*.

The next section provides a detailed explanation for each of the arguments that determine all four of the hypotheses.

⁶ My conceptual definition applies to Dahl and Lindblom’s definitions but adds a gender dimension to it. Dahl and Lindblom’s definition is “Control over governmental decisions is shared so that the preferences of no one citizen are weighted more heavily than the preferences of any other one citizen” (1953:41).

III. Arguments and Hypotheses

This paper seeks to determine if the dimensions of education, including (equal) access, attainment, equal educational content, and pro-gender equality curricula have a positive effect on gender political equality across these 54 democratic nations. The literature has made it very clear that education as an independent variable(s) determining its relationship with gender equality or even political participation is a complex relationship, and a relationship with much debate.

The reality of the issue is while there are democracies, even well-established democracies, that demonstrate gender equality in education, meaning equal access, balanced attainment, equal educational content, and introduces pro-gender equality curricula, parity in government is still not yet achieved, meaning while opportunity is equal outcome is not. In fact, in the United States women comprise 19.4% in the House of Representatives and 20% in the Senate, and overall women comprise two thirds of the world's illiterate and 21.9% of the world's national parliaments (Inter-Parliamentary Union 2014).

As former Secretary of State Hillary Clinton explains “...any democracy that does not include half its population—its women—is a contradiction in terms” because without the active participation and representation of women at all levels of decision-making, needs and voices of women will be overlooked (USAID 2014; Kissane 2012). This research is building on the literature that has demonstrated certain dimensions of education have some effect at equality, and I am using this research to answer an unapproached question, “Do the dimensions of education (access, attainment, equal-content, and pro-gender equality curricula) effect gender political equality across democratic nations?”

H1: Access to education has a positive effect on gender political equality

Based on the literature, we can determine that education is a complex independent variable. However, if the literature is correct and education has any form of influence, minor or major, on the dependent variable, then initial access to education is going to be indispensable. This is because education at the primary level enables women to develop the initial skills necessary to read, write, speak, and think critically, these are the skills established once women have access to education; it enables girls and boys to even begin participating in the society.

Additionally, the Wallace, Haerper, and Abbott (2009) study, which explored age, gender, and level of educational attainment as variables that helped explain one's views toward

gender equality, and gender political equality in Rwanda. However, the study concluded that men were the only ones for which education, and especially tertiary education, played a role in changing their attitudes from intolerant to accepting of gender equality and gender political equality (the study uses the term women in politics). While on the other hand, for the men who were not educated, they did not believe in gender equality or women in politics. As a result, this study is an interesting example of perhaps the importance of initial access to education as at least a small factor in changing men's attitudes.

H2: Completion of education has a positive effect on gender political equality

As briefly explained, the Wallace, Haerper, and Abbott (2009) study concluded that men's level of educational attainment, especially at the tertiary level, helped change their attitudes. This is a great example of the importance of not only access to education, but also educational attainment toward affecting gender political equality in a society.

Also, Scholar Sunshine Hillygus (2005) also explains that educational attainment is important at the tertiary level because those graduating with degrees from Social Science, Business, and Law were more likely to participate in politics later in life. Subsequently, in order to reach a college graduation, attainment must be met at the primary and secondary levels, then the attainment at the tertiary level allows even more development of the necessary skills and knowledge relevant to politics, but more so because tertiary attainment denotes credibility.

H3: Equal content between boys and girls has a positive effect on gender political equality

A study conducted by Elizabeth Maber (2014) explains how the gender-based inequalities in Myanmar's educational system have prevented young women from attending in certain universities or participating in politics because of "the lack of standardization across higher education institutions." The lack of standardization contributed to girls learning differently than boys, which resulted in inequality in skills. As a result, universities began developing difficult entrance exams and quotas, which began hindering women even further from accessing and completing university-level course work. This is an excellent example of the necessity of having an equal educational system in order to eliminate the possibility of inequality in access or attainment, and reduce the possibility of gender-based careers. The content of the education cannot be different depending on sex because the consequence of inequality in content

will contribute to inequality in educational skills, which solidify regressive gender norms, and lack of equal opportunity in the workforce or politics.

H4: Pro-gender equality curricula have a positive effect on gender political equality

The study conducted by Okonkwo (2011), which was discussed earlier, was a cross-sectional survey study (using multi-stage sampling) evaluating females and males at different levels of education in Enugu, Nigeria between the ages of 14- 61; the study looked at students enrolled in National Grammar School, Queens College, Enugu State University of Science and Technology and various other professional (attending Enugu State). The study concluded that the individuals' level of education had less of an impact than gender on views toward gender equality; more so, females were more likely to advocate for gender equality than men regardless of level of education, while men were not accepting of gender equality, despite level of educational attainment.

Okonkwo explains the results of his study by using the Bussey and Bandura (1994) study, which “noted that children learn both feminine and masculine patterns of behavior by observing people around them.” Additionally, Okonkwo also discusses the cognitive theory study by Bern (1981), which “asserted that young children acquire schemata or ideas about what actions and traits are linked to gender [or gender norms] [through observation],” which people continue to uphold in thought, feelings and actions from childhood into adulthood. Overall, Okonkwo explains that male students did not change their minds on gender equality regardless of level of education because men in Nigeria continue to believe in the “gender-role socialization” in Nigerian culture (Okonkwo 2013).

However, what the study fails to explain is whether or not the educational content was the same, or whether or not the educational curricula introduced gender-equality at the primary, secondary, or tertiary levels. While the Bussey and Bandura (1994) and the Bern (1981) study both explain how gender and gender roles are learned from one's environment, they fail to test how behavior can also be learned from the environment at school, and whether or not teachers are taking the time to teach leadership exercises/ pro-gender equality curricula. Pro-gender equality curricula refer to academic teachings based on a “feminist leadership model” or as scholar Srilatha Batliala (2011) explains curriculums that introduce “social justice, inclusion, and the realization of rights, rather than to reproduce structures that reinforce subordination or that

reinforce gender” (Maber 2014). Binh, Geneva, Noi and Son (2011) explain in their report “Teacher Training Modules that address gender issues and promote gender equality,” that teachers also play a role in either continuing social norms or breaking them. For this reason, the report explains it is important for education to introduce gender equality curriculums as well as practices within the everyday lives of students.

Overall, curriculums that introduce elements of debate and gender equality contribute to changing women and especially men’s views of gender equality and gender political equality. The more the perspective changes, the more society can accept that women can be leaders alongside men. The more women are seen as capable leaders, the more women will be encouraged and empowered to participate, and be represented in government, thus gender political equality may be achieved (Maber 2014; Binh, Geneva, Noi and Son 2011).

Therefore, as I develop my arguments, I consider the complexities of education, understanding that while the majority of the literature focuses on women’s access to education and completion rates, I also consider how the content and messages of a student’s education affect outcomes of women’s representation in the political sphere.

Section IV is dedicated to explaining the design chosen to test these arguments and hypotheses in order to determine an answer to the question, “do the dimensions of education effect gender political equality across democratic nations?” Furthermore, the next section also discusses each of the dependent, independent, and control variables utilizing univariate statistics to illustrate their central tendencies.

IV. Research Design

I conducted a panel study with country-year as the unit of analysis. The democracies in this study were selected based on the Freedom House database that lists all of the established democracies in the world from 1989 to 2015. Freedom House assigns “freedom scores” to each country every year, however, I included only the countries that were democratic for 26 years. As a result, my sample covers 54 countries over the last 26 years. I only I decided to specifically look at democratic nations because democracy implies citizenship, and I want to learn better ways for these democracies to actually implement the principles they stand by. The sample examines 54 countries over only 10 years, from 2000 to 2010 because of data availability. The number of observations for this sample depended on each model specification, ranging from 269

observations to 483 observations. Data for this project was collected primarily from several WorldBank databased, including the World, Gender, and Education Statistics Databases, and once from UNESCO's Institute for Statistics. I used linear regression as my method of study to determine whether or not the data supported my hypotheses.

Before discussing my findings, I will describe each of my variables and the corresponding measurements. I used univariate statistics in order to explain the value of each of the measurements for the dependent and independent variables, and control variables.

Dependent Variable

This paper only has one dependent variable: **gender political equality**. As explained earlier, because of the gap in the literature regarding women's participation in politics (including voting and running for office), there is only one measure for the dependent variable: % of women in national legislatures coming from the WorldBank's Gender Statistics database. The data for this measure is providing the total percentage of seats women hold in the national legislatures of this 54 country study. As illustrated by Table 1, the variable ranges from 00% to 47.30% with a mean of 18.16%. Country examples for these values include: the lowest value of 00% from Vanuatu in 2000 to a highest value of 47.30% from Sweden in 2006. Average countries include United Kingdom in 2004 and France in 2009.

Main Explanatory Variables

The first dimension of the independent variable is **access**. There are three measures for access: female school enrollment in primary, secondary, and tertiary education (%). These data for all three measures come from the WorldBank's Education Statistics database. These data are examining the percentage of females in the population who are of primary, secondary, or tertiary school-age in comparison to the percentage of females enrolled. For this reason, the number of girls enrolled in these levels may exceed 100% because there are more girls enrolled within these levels who are outside of the minimum or maximum age-bracket. As demonstrated in Table 2, for the female school enrollment in primary education, the variable ranges from 51.50% to 124.7% with a mean of 103.83%. Country examples for these values include: the lowest value of 51.50% from Papua New Guinea in 2006 to a highest value of 124.7% from Vanuatu in 2003. Average countries include Spain in 2003, and Switzerland in 2003. As shown in Table 2, for the

female school enrollment in secondary education, the variable ranges from 34.10% to 170.50% with a mean of 97.55%. Country examples for these values include: the lowest value of 34.10% from Vanuatu in 2001 and highest value from Sweden in 2005. Average countries include Cyprus in 2004 and Australia in 2007. As seen in Table 2, for the female school enrollment in tertiary education, the variable ranges from 3.50% to 109.10% with a mean of 57.01%. Country examples for these values include: lowest value of 3.50% from Vanuatu in 2002 and a highest value from the U.S. in 2010. Average countries include Uruguay in 2004, and Netherlands in 2002.

Furthermore, the second dimension of the independent variable is: **attainment**. There is only one measure of attainment, which is the measuring the percentage of all female graduates, regardless of degree, at the tertiary level. These data are coming from UNESCO's Institute for Statistics. As displayed by Table 3, for the measure of attainment, the variable ranges from 36.21% to 74.26% with a mean of 57.17%. Country examples for these values include: the lowest value of 36.21% from Vanuatu in 2003 and a highest value from Barbados in 2007. Average countries include Ireland in 2002 and Spain in 2002.

The third dimension of the independent variable is: **equal educational content**. For the purpose of this paper, the third dimension, equal educational content, is looking at the educational content that is taught to boys and girls. The hypothesis is determining that if the educational content taught to boys is the same as the educational content taught to girls, this promote gender political equality. There are three proxy measures for equal educational content. These three measures look at the percentage of share of female graduates in the fields of engineering, education, and science at the tertiary level. These data come from the WorldBank's Education Statistics database. Unfortunately, there are no quantifiable ways of measuring the educational content taught to either females or males in any given country because there is insufficient nuanced data on education. Furthermore, there may be some data available for specific countries, but there is very little data that allows for systematic cross-country comparisons.

Therefore, for the purpose of this paper, the three measures of equal content are proxy variables that can perhaps help explain whether or not countries have parity. If there is not parity in degree-seeking fields perhaps there is a weakness in the educational content of these countries. As shown in Table 4, for the equal educational content measure, the variable of female

engineering graduates ranges from 00% to 60.60% with a mean of 24.34%. Country examples for these values include: the lowest value of 00% from Samoa in 2000 to a highest value of 60.60% from the Bahamas in 2010. Average countries include Norway in 2007 and Belgium in 2008. As illustrated in Table 4, for the equal educational content measure, the variable of female education graduates ranges from 43.30% to 93% with a mean of 76.50%. Country examples for these values include: the lowest value of 43.30% from Turkey in 2000 to a highest value of 93% from Cyprus in 2002. As seen in Table 4, for the equal educational content measure, the variable of female science graduates ranges from 19.30% to 75% with a mean of 39.86%. Country examples for these values include: the lowest value of 19.30% from Switzerland in 2003 and the highest values of 75% from Guatemala in 2007. Average countries include New Zealand in 2010 and Spain in 2002.

The fourth and final dimension of the independent variable is: **pro-gender equality curricula**. Pro-gender equality dimension looks at the content of educational curriculums, and determining whether or not there is a distinction between curricula that introduces gender-equality, and activities involving debate versus curricula that does not introduce these topics. There is one measure for this dimension which looks at the female share of graduates in social science, business and law degrees. These data come from the WorldBank's Education Statistics database. While this is again only a proxy variable, this measure is supported by scholar Hillygus (2005) whose study explains that graduates from these fields are more likely to participate in politics. Hillygus' study demonstrates support for the absolute education model because in this study he explains that education is developing the interest and skills relevant to politics, however, this study is focusing on not only the level of education, but these particular fields of study. As demonstrated in Table 5, the variable ranges from 31.50% to 75.90% with a mean of 55.87%. Country examples for these values include: the lowest value of 31.50% from Samoa in 2000 and 75.9% from Barbados in 2010.

Control Variables

Lastly, the control variables used for each model were included in this research because they have the potential to affect gender political equality because more developed countries allow for more opportunities for women to participation in the economy. For instance, growing economies create more jobs, thus competition between women and men is less dissipated this is

because development tends to create jobs that allow for more inclusion of women and men together. The control variables in this study measure level of development (GDP per capita (US \$)), economic potential (Growth (% of GDP)), and industrialization (Manufacturing, value added (% of GDP) and Services etc., value added (% of GDP) (WorldBank 2015). The variable Services, etc., value added (% of GDP) looks at certain service professions that add value to total GDP such as “hotels, restaurants, transport, education, healthcare, and real estate services” (WorldBank 2015).

As shown in Table 10, for control variable **GDP per capita**, the variable ranges from \$457.30 to \$112,481.20 with a mean of \$20,471.5. However, since the data is skewed, the best measure of central tendency is to use the median; the median is \$13,517.95. Country examples for these values include: the lowest value of \$437.30 from India in 2000 and highest value of \$112,481.20 from Luxemburg in 2008. Median countries include New Zealand in 2001 with \$13,736.

As seen in Table 10, for control variable **GDP growth**, the variable ranges from -10.90% of GDP to 14.40 % of GDP with a mean of 2.71 % of GDP. However, since the data is skewed, the best measure of central tendency is to use the median; the median is 2.80. Country examples for these values include: the lowest value of -10.90 from Argentina in 2002 and highest value of 14.40% of GDP from Trinidad and Tobago in 2003. Median countries include the United States in 2003 and Canada in 2002.

As illustrated in Table 10, for control variable **manufacturing**, the variable ranges from .90 % of GDP to 30.70 % of GDP with a mean of 13.51 % of GDP. However, since the data is skewed, the best measure of central tendency is to use the median; the median is 14.1 % of GDP. Country examples for these values include: the lowest value of .90 from Tuvalu in 2001 (and again in 2005) and highest value of 30.70 from South Korea in 2010. Median countries include Uruguay in 2000 and Portugal in 2007 both with 14.1 % of GDP.

As demonstrated in Table 10, for control variable **services**, the variable ranges from 22.80 % of GDP to 86.90% of GDP with a mean of 66.86% of GDOP coming from the services sector. However, since the data is skewed, the best measure of central tendency is to use the median; the median is 68.45 % of GDP. Country examples for these values include: the lowest value of 22.80 from Papua New Guinea in 2000 and the highest value of 86.90 from Luxemburg

in 2010. Median countries include Australia in 2008 with a mean of 68.4 and Spain in 2008 with a mean of 68.5 % of GDP.

The last variable tests the combination of **manufacturing and services** variables together, this is the “industrialization” variable. The variable ranges from 29.90 % of GDP to 94.30% of GDP with a mean of 80.36 % of GDP. However, since the data is skewed, the best measure of central tendency is to use the median; the median is 82.60 % of GDP. Country examples include: lowest values of 29.90 from Papua New Guinea in 2002 to 94.30 from Argentina in 2000 and Ireland in 2010. Average median countries include Saint Vincent and the Grenadines in 2003 with a mean of 80.30 and Turkey in 2004 with a mean of 80.40.

Section V discusses what the effects of each of the independent variables on the dependent variables. Then, this section also addresses the effects of each of the control variables on the dependent variable.

V. Findings

As demonstrated in Table 6, the results for each measure of access, enrollment in primary, secondary, and tertiary education, are statistically significant, in the predicted direction, and robust throughout the models. Table 6 illustrates that as enrollment in primary education increases by 1 percentage point, the percentage of seats in government occupied by women increases by .12 (Model 1a); as enrollment in secondary education increases by 1 percentage point, the percentage of seats in government occupied by women increases by .24 (Model 2a); and as enrollment in tertiary education increases by 1 percentage point, the percentage of seats in government occupied by women increases by .23 (Model 3a). These results indicate there is a positive and significant relationship between educational access and gender political equality. Subsequently, the findings for the access measurements strongly supports the hypothesis.

As seen in Table 7, the results for attainment are statistically significant, in the predicted direction, and robust throughout the model. Table 7 demonstrates that as completion of tertiary education increases by 1 percentage point, the percentage of seats in government occupied by women increases by .69 (Model 4a). These results indicate that women’s level of educational attainment has a positive and significant effect on gender political equality. Therefore, the results for the measure of attainment strongly supports the hypothesis.

As shown in Table 8, the results for equal educational content are statistically significant, in the predicted direction, and mixed throughout the models. Table 8 shows that as women's share of engineering graduates' increases by 1 percentage point, the percentage of seats in government occupied by women increases by .40 (Model 5a). Table 8 explains the share of science graduates' is not statistically significant thus the effect is null (Model 6a). Lastly, Table 8 shows as the share of education graduates increases by 1 percentage point, the percentage of seats in government occupied by women increases by .45 (Model 7a). These results indicate women's attainment of engineering degrees and education degrees have a positive and significant effect on gender political equality, while female graduates in science fields have no significant effect. The findings on the female share of education graduates. Overall, the findings for the equal content measurement did not support the hypothesis.

Lastly, as illustrated in Table 9, the results for the one measure of pro-gender equality curricula are statistically significant, in the predicted direction, and robust throughout the model. Table 9 shows as the share of social science, business, and law graduates' increases by 1 percentage point, the percentage of seats in government occupied by women increases by .45 (Model 8a). These results explain that the female graduates in social science, business, and law have a positive and significant effect on gender political equality. Consequently, the results for the proxy measure of gender-equality curricula strongly supports the hypothesis.

Overall, the findings for the main explanatory variables illustrate there is a fundamental importance of having access and completion of education for girls and women to be more represented in government. Furthermore, based upon these findings, while certain tertiary fields of study are gender-specific in many countries in this study, the results for this measure demonstrate the importance of women's completion of certain fields of study for more representation in government.

Overall, the findings for the control variables indicate GDP/capita has a significant and positive effect on gender political equality across all models. GDP growth has no significant effect on gender political equality in any of the models; and finally industrialization proved to be a complicated variable. When combining services and manufacturing the results show no consistent effect across all the models. However, when separating services and manufacturing: services has a consistently significant and negative effect on the dependent variable. Additionally, while occasionally, manufacturing has a positive and significant effect, the effect is

not robust across all models. Therefore, level of industrialization is not necessary related, but level of economic development does play a role on gender political equality.

The next section provides an overview of the arguments and the empirical findings, a short explanation for the findings including possible changes in the research design for future research. Then, based on the findings and advice for research is a list of policy recommendations.

VI. Conclusion

This study sought to answer the question “do the dimensions of education effect gender political equality across democratic nations?” The results for this study indicate that access and attainment (especially tertiary education) have more of a correlation than equal educational content. It should be noted that the variables used for the measurement of the equal content hypothesis need to be revised in order to have a definitive answer regarding the effect of equal educational content on gender political equality. Also, it is important to explain that the measures for the third hypothesis combined applied sciences (engineering) and theoretic sciences (calculus, chemistry etc...). Therefore, the mixed support for the hypothesis could be explained because applied science degrees allow for more equality in the field versus theoretic sciences are predominantly within academia, which for some countries are still a male-dominated circle. Furthermore, the findings support the fourth hypothesis, which stated that curriculums that introduce equality and debate contribute to more parity in government.

Additionally, based upon the literature and the findings for this paper, we learn that these dimensions of education play a crucial role on women’s advancement in politics. As a result, programs need to be in place across the world for access to education and equal-opportunity for *enrollment* in education for girls at all levels. Furthermore, since the findings indicated that attainment was also important, the creation of programs need to be in place to ensure completion of education, especially at the tertiary level. Policy recommendations for these programs is discussed following the advice for future research.

Future research

As we consider improvements that could be made for future research, we need to first examine how to fill the gaps in this research. Therefore, in the future, collecting data on women’s political participation (i.e. share of women in voter turnout, share of women running for elections/leading campaigns etc...). Collecting this type of data will be important to

determine if these dimensions of education contribute to women's political participation *and* women's political representation in government, thus developing enough evidence to fully answer the question, "do the dimensions of education effect gender political equality across democratic nations?"

Moreover, a study by Cooray (2012) indicated that on average a country's length of suffrage contributed to better development of gender equality in education. As a result, perhaps future research of this question could include a variable measuring length of suffrage to determine if this is a factor in achieving parity in participation and representation of women in politics/government.

Additionally, since this research question is investigating data that is subjective, there is a need for the creation of a survey to learn of men's attitudes toward gender political equality (i.e. women running for office and holding political office etc...). This survey would be important as well to include individual factors that often cannot be learned without questionnaires. Since the literature discusses other individual factors as determinants for political participation it would be important to include factors such as socio-economic, or status versus level of educational attainment as other variables in this survey. By including all or some of these variables, future research of this question could explain if these variables are equally, if not more important, for parity in representation and participation.

Policy Recommendations

As discussed earlier, the arguments for access and attainment demonstrated strong support, therefore there need to be mechanisms in place across the United States and the world that not only ensure equal access but attainment as well. For example, in January during the State of the Union address, President Obama proposed a plan to allow community college tuition to be free, which would definitely encourage more students to continue their education and training, and help ensure a better future in the workforce (Calvert 2015).

In addition to President Obama's plan for free community college, it is also important for the U.S. to create opportunities that would encourage for parity in specific fields by implementing more scholarships or quotas for minority sexes in gender-specific fields. Meaning, quotas or scholarships for men seeking degrees in education (especially within the primary and secondary levels), or quotas and scholarships for women seeking degrees in engineering, social

sciences, business, and law. In fact, countries like Nordic countries (i.e. Iceland, Finland, Norway, and Sweden) have illustrated the great impact quotas have had on gender political equality. In fact, the Nordic countries “...have closed over 80% of the gender gap and serve as models...on gender equality” (Covert 2013). These nations demonstrate global leadership in gender political equality and toward the power of democracies with parity in representation.

Furthermore, since the findings illustrate that certain fields such as social sciences, business and law are important for women’s representation in government, perhaps the curricula introduced in these degrees can be discussed further at lower levels of education in order to mainstream the knowledge and interest that is developed at the tertiary level.

Appendix

Table 1. Dependent Variable: Gender Political Equality

Measure: % of women in national legislatures (WorldBank)

Variable	Mean	Median	Standard Deviation	Minimum	Maximum	Observation (N)
Women seats	18.16	14.70	11.52	.00	47.30	577

Table 2. Explanatory variable 1: access to education

Measure (1-3): school enrollment in primary, secondary, and tertiary education female (%) (WorldBank)

Variables	Mean	Median	Standard Deviation	Minimum	Maximum	Observation (N)
Enrollment primary	103.83	102.75	8.74	51.50	124.7	544
Enrollment secondary	97.55	98.40	21.22	34.10	170.50	515
Enrollment tertiary	57.01	61.40	27.64	3.50	109.10	393

Table 3. Explanatory variable 2: Educational attainment

Measure: Percentage of graduates from tertiary education who are female (%) (UNESCO Institute for Statistics)

Variables	Mean	Median	Standard Deviation	Minimum	Maximum	Observation (N)
% of graduates who are female	57.17	57.99	6.12	36.21	74.26	309

Table 4. Explanatory variable 3: Equal educational content

Measure (1-3): share of graduates in engineering, education, and science (% tertiary)
(WorldBank)

Variables	Mean	Median	Standard Deviation	Minimum	Maximum	Observation (N)
Engineering female grads	24.34	24.10	7.88	00	60.60	291
Education female grads	76.50	77.4	7.25	43.30	93.00	291
Science female grads	39.86	40	9.14	19.30	75	292

Table 5. Explanatory variable 4: pro-gender equality curricula

Measure: Female share of graduates in Social Science, Business and Law (% tertiary)
(WorldBank)

Variables	Mean	Median	Standard Deviation	Minimum	Maximum	Observation (N)
Social science female grads	55.87	56.30	7.65	31.50	75.90	293

Table 6. Effects of equal access to education on gender political equality

Explanatory Variables (IV)	Model 1 (a)	Model 1 (b)	Model 2 (a)	Model 2 (b)	Model 3 (a)	Model 3 (b)
Enrollment in primary	.120	.133				
	(.052)**	(.028)**				
Enrollment in secondary			.224	.242		
			(.000)***	(.000)***		
Enrollment in tertiary					.223	.215
					(.000)***	(.000)***
Industrialization variable	-.023		-.220		-.265	
	(.657)		(.000)***		(.000)***	
Services		-.132		-.386		-.335
		(.016)		(.000)		(.000)
Manufacturing		.236		.058		-.120
		(.001)***		(.432)		(.174)
GDP per capita	.000	.000	.000	.000	.000	.000
	(.000)***	(.000)***	(.000)***	(.000)***	(.000)***	(.000)***
GDP growth	.069	-.045	.104	-.041	-.022	-.100
	(.611)	(.734)	(.422)	(.743)	(.881)	(.494)
Observations (N)	483	483	460	460	359	359
R-squared	.286	.320	.397	.445	.495	.502

Notes:

- Dependent variable is the percentage of seats in government occupied by women
- Models (a) illustrate the industrialization variable (combining the variables manufacturing and services); Models (b) illustrate the values when the two variables were separated.
- Models were estimated using linear regression; p-values are listed in parentheses under each coefficient
- ***p<.01; **p<.05; *p<.1

Table 7. Effects of women's educational attainment on gender political equality

Explanatory Variable (IV)	Model 4 (a)	Model 4 (b)
All tertiary female grads	.695	.731
	(.000)***	(.000)***
Industrialization	.056	
	(.370)	
Services		-.103
		(.140)
Manufacturing		.452
		(.000)***
GDP per capital	.000	.000
	(.000)***	(.000)***
GDP Growth	.190	.021
	(.299)	(.907)
Observations (N)	279	279
R-squared	.419	.458

Notes:

- Dependent variable is the percentage of seats in government occupied by women
- Models (a) illustrate the industrialization variable (combining the variables manufacturing and services); Models (b) illustrate the values when the two variables were separated.
- Models were estimated using linear regression; p-values are listed in parentheses under each coefficient
- ***p<.01; **p<.05; *p<.1

Table 8. Effects of equal content on gender political equality

Explanatory Variable (IV)	Model 5 (a)	Model 5(b)	Model 6 (a)	Model 6 (b)	Model 7 (a)	Model 7 (b)
Share of Engineering grads	.401	.425				
	(.000)***	(.000)***				
Share of Science grads			-.024	-.023		
			(.755)	(.758)		
Share of education					.454	.483
					(.000)***	(.000)***
Industrialization	-.906		-.194		-.258	
	(.321)		(.051)**		(.007)***	
Services		-.172		-.235		-.345
		(.108)*		(.034)**		(.001)***
Manufacturing		.073		-.110		-.096
		(.604)		(.438)		(.468)
GDP per capital	.000	.000	.000	.000	.000	.000
	(.000)***	(.000)***	(.000)***	(.000)***	(.000)***	(.000)***
GDP Growth	-.022	-.102	-.058	-.100	-.073	-.157
	(.919)	(.650)	(.800)	(.034)**	(.734)	(.477)
Observations (N)	268	268	269	269	268	268
R-squared	.310	.317	.251	.253	.335	.343

Notes:

- Dependent variable is the percentage of seats in government occupied by women
- Models (a) include the industrialization variable (combining the variables manufacturing and services); Models (b) illustrate the values when the two variables were separated.
- Models were estimated using linear regression; p-values are listed in parentheses under each coefficient
- ***p<.01; **p<.05; *p<.1

Table 9. Effect of pro-gender equality curricula gender political equality

Explanatory Variable (IV)	Model 9 (a)	Model 9 (b)
Share of Social Science/Business/Law graduates	.452	.506
	(.000)***	(.000)***
Industrialization	-.133	
	(.156)*	
Services		-.243
		(.019)**
Manufacturing		.115
		(.398)
GDP per capital	.000	.000
	(.000)***	(.000)***
GDP Growth	-.067	-.189
	(.758)	(.390)
Observations (N)	270	270
R-squared	.331	.346

Notes:

- Dependent variable is the percentage of seats in government occupied by women
- Models (a) include the industrialization variable (combining the variables manufacturing and services); Models (b) illustrate the values when the two variables were separated.
- Models were estimated using linear regression; p-values are listed in parentheses under each coefficient
- ***p<.01; **p<.05; *p<.1

Table 10. Univariate statistics for control variables

Variables	Mean	Median	Standard Deviation	Minimum	Maximum	(N)Observations
GDP/capita(\$US)	20,471.5	13,517.95	20001.7	457.30	112,481.20	594
Growth (% GDP)	2.71	2.80	3.42	-10.90	14.40	589
Industrialization	80.36	82.60	10.41	29.90	94.30	545
Manufacturing value added (% GDP)	13.51	14.1	6.44	.90	30.70	545
Services value added (% GDP)	66.86	68.45	9.62	22.80	86.90	556

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