WOMEN AND SOCIAL CAPITAL:

THEORY, REPRESENTATION, CRITICAL MASS, AND QUOTA SYSTEMS

by

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The members of the committee appointed to examine the thesis of
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Thesis Abstract—Idaho State University (2016)

Critical mass implies that the size of a minority is crucial for representation. As of

June 1, 2015, 45 of 190 nations each had enough women in parliament to reach a

critical mass of 30%, and substantive representation, in theory, is now taking

place. By asking the question: "What influences perceptions of social capital?"

this thesis examines how the presence of critical mass and quota systems may

effect perceptions of social capital for females living in nations with gender quota

systems. Utilizing Logistic Regression Analysis, the data show that females living

in nations with gender quotas have lower perceptions of social capital. These

results are mimicked through micro-level analysis of Latin America in a Most

Similar Systems study of Brazil and Mexico.

Introduction

As of June 1, 2015, 45 of 190 nations each had enough women in parliament to reach a critical mass of 30% (Inter-Parliamentary Union 2015, Dahlerup 1988.) Critical mass, as identified by Dahlerup (1988, p. 275), "implies that the size of the minority is crucial." The 30% can be considered a critical mass because, as Dahlerup (1988, p. 275) notes, for "women in politics a fundamental change may happen long before they reach 50 (or maybe 60) percent of the seats." With less than one quarter of nations reaching critical mass, this suggests that three quarters of the nations are not descriptively representing women adequately.

One way by which nations can legally, and parties can voluntarily, aim to ensure that women reach a critical minority is by using a quotas system (Childs and Krook 2009, Dahlerup 2005, Huang 2015, Tan 2015). Quota systems can be constitutionally mandated, legislated, or implemented voluntarily to ensure nations or parties have adequate minority representation in parliament (Dahlerup 2005).

Most existing literature aims to understand if critical mass and quotas for women can influence gender policy through substantive representation; substantive representation occurs when elected officials make marked policy changes for their constituents (Chaney 1979, Pitkin 1967, Sykes 1993; see also Alexander 2012, Bratton and Ray 2002, Celis 2009, Celis 2012, Celis and Childs

2008, Celis et al. 2008, Childs 2002, Childs and Krook 2009, Dodson 2006, Htun

and Weldon 2010, Jalalzai and dos Santos 2015, Jones 2014, Kittilson 2010,

Mackay 2008, McAllister and Studlar 2002, Miguel 2008). This study recognizes

the recent strides made by women in gaining seats in parliaments globally, and

seeks to understand whether critical mass, quota systems, and substantive

representation go beyond policy and change the lives of women in terms of their

expressed social capital. Existing literature also suggests strong correlations

between income and social capital, health and social capital, and overall

socioeconomic status and social capital (Baheiraei et al. 2016, Harpham et al.

2002, Knack and Keefer 1997, Salehi et al. 2014, and Xu et al. 2016.)

Overarching research questions addressed by this study are, first, What

increases perceptions of social capital?, and second, Does the effect of the

perception on social capital at the macro-level demonstrate consistency at the

micro-level?

Following the line of thought in recent literature, this study will build the

literature of how substantive representation makes a difference for women in the

form of social capital. Both macro-level analysis and micro-level case studies are

imperative in analyzing the variables that influence social capital.

Through reliance on both existing measures of social capital and the use of

the newest wave of the World Values Survey, this study attempts to shed light on

the factors that increase perceptions of social capital. Additionally, as a means to add depth to the global analysis, this research will then look specifically at two case studies, Brazil and Mexico. These case studies will help add details to the discussion of social capital and women. Thus, the overarching research questions addressed by this study are, first, What increases perceptions of social capital for women?, followed by, Does the effect of the perception on social capital at the macro-level demonstrate consistency at the micro-level?

These two research questions will be used to explore how quotas, and critical mass, effect social capital for women, by examining the macro level through international trends on data, and then the micro-level by examining two Latin American case studies. In order to answer these important questions, I will first discuss the relevant literature on the topic including theories of representation. Second, I will introduce the data and methodological approaches to analyzing the data. Then I will discuss the results of the analysis and will compare the case studies with the macro-level analysis. Finally, I will discuss the implications of the results by making comparative policy recommendations as well as recommendations for future studies.

Literature Review

A plethora of research examines critical mass, quotas, and representation, as separate themes, but few scholars have yet to call into question the interconnectedness of these items in relation to social capital for women. Therefore, my research seeks to build on the current research to further understand how the presence of women in parliament effect the perceptions of the women in their nations as a whole.

Critical Mass

As a pioneer of the field in defining and understanding the importance of critical mass, Dahlerup (1988) identifies several challenges women face when in a minority positions. These include high visibility, acting as a token, stereotypes of gender, authority, and actions by the majority that may encourage women to leave or dissuade women from taking part. Dahlerup (1988) builds upon the work of Kanter (1977), who initially identified critical mass and the significance of tokenism for women, and who initially, though vaguely, identified that an increase in women in leadership roles results in a gradual change within an organization. Dahlerup (1988) clarifies this and proposes that the minority (in this case women) needs to reach a certain size, a critical mass, in order to begin to tip the scales of influence. Through study of Scandinavian politics, Dahlerup suggests a minimum percentage of seats occupied to reach critical mass, 30%.

Childs and Krook (2009) pushed this work further, suggesting that critical actors and substantive representation, rather than critical mass, are more crucial for understanding how gender policies are affected by the women who take part. This work not only builds upon the predecessors, Kanter (1977) and Dahlerup (1988), but also shows that all of these scholars identify shifts that occur with an increase in women in an organization: (1) minority members have the ability to form coalitions (Kanter 1977); (2) societal attitudes can be effected by critical actions and actors (Dahlerup 1988); (3) critical actors are more motivated and more likely to initiate gender policy (Childs and Krook 2009).

Quotas

Quotas, which are used to increase a disadvantaged group's role in politics, especially in democracies, have been found to be effective for minorities of many forms (Folke, Freidenvall, and Rickne 2015). In more than 40 nations across the world, quotas for ethnic, language, or religious minorities exist (Bird 2014, Folke, Freidenvall, and Rickne 2015, Krook and O'Brien 2010, Tan 2014). Thus is it not surprising that one way in which women are ensured seats in Parliament is through quotas.

Dahlerup (2005) identifies that quotas are often used as a "fast-track" for nations with severe underrepresentation of minorities, especially women. This is observed in, for example, Argentina, Jordan, Afghanistan, and Rwanda. Despite

wide use, quotas have mixed results for both descriptive and substantive

representation. Especially in regards to the issue of critical mass versus critical

actors, quotas pose an interesting obstacle in substantive representation.

Quotas are most often established legally in constitutions or via legislation

as (1) candidate quotas or (2) reserved seats, or (3) voluntarily by political parties,

most commonly observed with center-left-leaning parties (Dahlerup 2005).

Although the explicit end goal of quotas is usually not to reach critical mass, this

is often the indirect result.

Representation

Pitkin (1967) was one of the first scholars to break apart the idea of representation

into four primary dimensions: formalistic, symbolic, descriptive, and substantive.

For the purposes of this study, I will focus on substantive and descriptive forms

of representation. As Jalalzai and dos Santos (2015) explain, substantive

representation in gender and politics occurs when the constituents elected act in

a way to promote gender policies. The challenges in measuring substantive

representation, including identifying the framework of women's interests and

understanding what constitutes a gender policy, is explored in a plethora of

scholarly debate (Celis 2009; Celis et al. 2008; Childs and Krook 2009; Htun and

Weldon 2010; Jalalzai and dos Santos 2015; Pikin 1967; Schwindt-Bayer 2010). On

the other hand, descriptive representation is the ability for a constituent to

represent the whole. Thus, for women, descriptive representation results when a single woman, or a small group of women, holds a position to represent women as a whole.

Dahlerup (2005) reminds us, a sole focus on descriptive representation, when utilizing quotas, can result in further discrimination against women via grouping of women into a single social category. Thus, to find true representation, a country must utilize substantive representation. For the purposes of this study, representation functions as the means for understanding how women in positions of national leadership may influence perceptions of social capital.

Social Capital

Social capital is an abstract concept with multiple definitions and applications. One of the earliest definitions of social capital, as developed by Pierre Bourdieu (1985), explains it as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition" (Bourdieu 1985, p. 248). Coleman (1988) building upon Bourdieu and other theories, refined the definition as "a variety of entities with two elements in common: They all consist of some aspect of social structures, and they facilitate certain action of actors— whether persons or corporate actors—within the structure" (Coleman 1988, p.

S98). Portes (1998) synthesized the work of Bourdieu, Coleman, along with theorists such as Durkheim, suggesting that social capital is an intangible form of capital, and that a tangible measure of social capital may be nearly impossible. Despite the abstractness of this concept, scholars largely agree that social capital can be identified through trust, confidence in institutions, participation in associations, and civic-morality (Bourdieu 1985, Coleman 1988, Portes 1998, Putnam 1995; see also Koçer).

Putnam's (1995) analysis of the state of the United States builds on these early scholars as he discusses the factors that led to a decline in social capital for U.S. citizens. To pinpoint the origins of declines of trust in others, confidence in institutions, participation in associations, and civic-morality, he uncovers several factors in particular that are unique for the United States. Changes to citizens' permanent residences primarily due to shifts in the economy and job market, and technological advancements resulting in new forms of leisure are identified as problematic as they break communities from their traditional forms of communication and engagement. Furthermore, Putnam (1995) identifies that an increase of women in the workforce has decreased civic engagement, and thus decreased social capital for women. On the macro-level, this fills a gap in the study of gender quotas and social capital in considering the differences between

societal gender norms and government type for nations both similar and different than the United States.

Through analysis comparing the workforce in Indonesia and social network hierarchies, Silvey and Elmhirst (2003) find similar results to Putnam (1995), and Chant's (1996) study of Mexico and the Philippines. "While *gender roles* may well be subject to some changes, particularly in respect to women taking on activities traditionally designated as male, *gender relations* seem to be characterized by considerable continuity" (Chant 1996, p. 317). This observation, in congruence with the previously discussed research on quotas, critical mass, and representation, provides a foundation for predicting the outside influences on perceptions of social capital. Overall, this suggests that an increase of women in parliament, possibly as a result of quotas, is a positive influence on the perception of social capital. Furthermore, it appears as though Chant (1996) and Silvey and Elmhirst (2003) would be in agreement, in that it is the changing of the relations of women, rather than the mobilization of women into new roles, that is a key factor in increasing the perception of social capital. Before proceeding into the methods, I now turn to the theoretical framework of public opinion and social capital by which the research questions and hypotheses are based upon.

Theory and Research Questions

Scholars have built a strong theoretical foundation surrounding the aspects of social capital, especially in considering trust in government as a factor of social capital. Early scholars, such as Arthur Miller (1974), define trust in government as "the belief that the government is operating according to one's normative expectations of how government should function" (Miller 1974b, p. 989). More recently, the definition of trust in government has been refined to, "a pragmatic running tally of how people think the government is doing at a given point in time" (Hetherington 2005, p. 9). Furthermore, cynicism, or lack of trust in government, has been defined by Miller as "the belief that the government is not functioning in accordance with individual expectations of efficiency, honesty, competence and equity" (Miller et al. 1979, p. 67). These definitions give way to the notion that trust involves an evaluation of government performance. Factors contributing to how individuals evaluate government performance may include the state of the economy, policymaking decisions, and the political environment (Clawson and Oxley 2013). Interestingly, data from the American National Election Studies reveals that demographic characteristics are not strongly related to trust in government (Clawson and Oxley 2013).

Participation and membership in chapter-based civic associations, as a factor of social capital, are key in perceptions of trust in government. Putnam

(1995) studied this extensively and revealed that membership declines are

associated with decreased social capital. Public opinion is often generated and

perpetuated through social interactions, and this research suggests that a

decrease in chapter-based civic associations may lead to cynicism (Putnam 1995,

see also Clawson and Oxley 2013). Beyond membership in chapter-based civic

associations, the decline of social capital, especially in the United States, has also

been attributed to changes in career opportunities, especially for women, as well

as the movement of individuals to suburban areas. These factors directly effect

social interactions, and further link public opinion and group think with trust in

government and social capital (Putnam 1995, see also Chant 1996, Clawson and

Oxley 2013, and Silvey and Elmhirst 2003).

Internationally, globalization also contributes to decline in social capital.

In building upon the work of Putnam, Steger explains,

> …societies become more and more dominated by unbridled market forces
>
> that damage people's social relations and discourage civic engagement. In
>
> a world organized around the notion of individual liberty understood
>
> primarily as unrestrained economic entrepreneurship, traditional
>
> communal values of cooperation, solidarity, and civic participation are
>
> trumped by competitive market norms. (Steger 2002, p. 267-268)

Social capital suffers at the hand of international economics, connections built by corporations, media conglomerates, and international trade bodies.

Taking all of these things into consideration, I now return to the first research question presented: what increases perceptions of social capital for women? The literature reveals that representation is an important factor in understanding the effect of women holding position in parliament, and suggests that a critical mass of 30% women is necessary to allow substantive representation to take hold. In building on the literature, this study provides a way for substantive representation to be measured via quantitative analysis of social capital. More extensive investigation at the micro-level will be observed through the case studies looking at social capital within two countries within Latin America, Brazil and Mexico.

Latin America

Extensive studies have been conducted on Latin America as a whole, especially in regards to democracy and representation. From Geddes (1991) who demonstrated that democratization is a lengthy process in Latin America, to Lagos Cruz-Coke (2008) who adds that those who are older, more educated, and men, are most likely to support democracy, as well as uncovering an important finding that elected officials' actions can influence public opinion for democracy, the previous country level research fortifies international macro-level analysis

that reveal similar findings on democracy and representation. Furthermore, while Luna and Zechmesiter (2005) uncover a correlation between political instability and both socioeconomic factors and underrepresentation of lower classes, Booth and Richard (2015) conclude that increased education among women and lowered birth rates may be two of the most important factors for the increase in women in politics throughout Latin America.

Research Questions and Hypotheses

Using existing literature, I derive both country-level indicators as well as individual-level indicators as variables to help answer the stated research questions. At the macro-level I ask: what increases perceptions of social capital for women? To specify at the micro-level, the more focused research question becomes: does the effect of the perception on social capital at the macro-level demonstrate consistency at the micro-level?

The country-level indicators include gender quotas, percentage of women in parliament, economy, and level of democracy. In accordance with the literature on quotas and critical mass effecting substantive representation, and in bridging the gap between substantive representation and social capital, as primary country-level indicators I hypothesize:

H_1: The presence of gender quotas and/or a higher percentage of women in parliament increases social capital.

For the secondary country-level indicators of economy and level of democracy, the literature on globalization suggests that both increases in GDP and levels of democracy decrease social capital, thus:

H_2: As GDP and/or level of democracy increase, social capital decreases.

The individual-level indicators include gender, females living in nations with gender quotas, age, political participation, head of household, membership in civic-based associations, security, social class, citizenship, education, town size of residence, literacy, children, and marital status. The previous literature on public opinion, especially that of Putnam (1995), suggests that women, younger individuals, heads of household, high levels of education, living in the suburbs, literacy, and increased family size, are characteristic of low levels of social capital. This leads to the hypothesis:

H_3: Females, young individuals, heads of household, those attaining high levels of education, living in suburban areas, literacy, and/or increased family size function as indications of low social capital.

Alternatively, women living in nations with gender quotas, political participation, members of civic-based associations, feeling secure in ones' surroundings, high social class, citizenship, and marriage are indicators of high levels of social capital.

H$_4$: Women living in nations with gender quotas, political participation,

membership in civic-based association, feeling secure in ones'

surroundings, high social class, citizenship, and/or marriage are

indications of high social capital.

Methods

This research seeks to better understand which country-level and individual-level indicators increase perceptions of social capital for women. In order to better understand the question being posed at the macro-level, a variety of existing data was collected and analyzed.

Social Capital

Due to the abstract nature of the concept, there exists no widely accepted method of measuring social capital. While Knack and Keefer (1997) use the World Value Survey to find data representative of 29 market economies by the development of an index from several survey questions, Fukuyama (2001) argues that the concept of social capital may best be observed through radiuses of trust. Furthermore, Fukuyama (2001) criticizes the General Social Survey and World Value Survey (WVS) for the formatting of the survey questions. Despite these challenges, the most complete quantitative data for the macro-level analysis exist solely in the WVS. Koçer (N.d.) helps to remedy the challenges through extensive statistical analysis of the available measures for social capital, and determines that a measure of trust is the best proxy.

Thus, in order to assess social capital for women, a proxy for trust was used from the WVS. Developed in the early 1980s, the WVS is a survey administered by social scientists in order to better understand individuals' values

and how their values impact social and political life. Wave 6 of the WVS was conducted between 2010-2014, covered 57 countries, and had over 85,000 responses, however, due to a limitation in the questions asked across nations, only 40 countries with 53,897 responses could be used for this research (World Values Survey Wave 6 2010-2014). A full description of the variables causing the country N to be reduced to 40 can be found in Appendix A. As Koçer's (N.d.) statistical analysis explains, the best measure for social capital was to use the following question on trust as a proxy for social capital[1]: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" The answer options were coded as dichotomous, with "Most people can be trusted," coded as 1, and "Need to be very careful," coded as 0.

Country-Level Indicators

Country-level indicators, including gender quotas, the percentage of women in parliament, economy, and level of democracy, as indicated by the literature, are key in considering what influences perceptions of social capital for women.

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[1] Developing an index for social capital that works for every country, as explained by Koçer (N.d.), is an impossible task with the WVS Data. Social capital is situational, and as such, factors such as socioeconomic development of a nation effect survey responses. Therefore, Koçer (N.d.) suggests using trust as a proxy for social capital for macro-level analysis. Micro-level analysis, with regions of similar socioeconomic development, may make use of a social capital index to include other factors.

Gender Quotas. As detailed in the literature, quotas are developed and enforced in a variety of ways. For the purposes of this study, gender quotas were coded as a dichotomous variable where a 1 represents any form of constitutional or legislated quota, and 0 represents any form of voluntary quota, or the lack of any quota. The data for this variable were collected from the *Global Database of Quotas for Women* (International IDEA et al. 2015) and the values were as assessed on March 1, 2016.

Percentage of Women in Parliament. The data for this variable were collected from the Inter-Parliamentary Union (2015) and the values were as assessed on the first of January 2015. Data for the lower or single house were used for each country. The percentage of women in parliament was used as a way to better understand the effect of the number of women in parliament and their effect on social capital.

Economy. Gross Domestic Product (GDP) data were used as a measure of economic well being, and were collected from the World Bank. In order to standardize the variable, GDP were measured per capita in U.S. dollars (World Bank 2015a).

Level of Democracy. Data on "Freedom in the World 2016" were collected from Freedom House (2016) as a proxy for the level of democracy. The aggregate score

was measured on a scale from 0 to 100 where 0 is equal to worst, or least free, and 100 is equal to best, or most free (Freedom House 2016).

Individual-Level Indicators

In addition to the country-level indicators, individual-level indicators also shape perceptions of public opinion and trust of others as a measure of social capital. Thus, the individual-level indicators included gender, females living in nations with gender quotas, age, political participation, head of household, membership in civic-based associations, security, social class, citizenship, education, town size of residence, literacy, children, and marital status.

Gender. Gender was recorded for each participant of the WVS (2010-2014) as a dichotomous variable, where female was coded as 1 and male as 2. Due to the counterintuitive nature of this variable, I recoded the data so that females are coded as 1 and males as 0.

Females Living in Nations with Quotas. By multiplying the dichotomous variables of quota and gender, this intersection provides the variable of females living in nations with constitutional or legislated quotas.

Age. Collected from the WVS (2010-2014), age was recorded in years.

Political Participation. Political participation data were collected from the WVS (2010-2014). The question asks of the individual "When [local/national] level elections take place, do you vote always, usually or never?," and was coded as 1

for always, 2 for usually, and 3 for never. For ease of interpretation, the data were

recoded as 2 for always, 1 for usually, and 0 for never. Both data for the local and

national level elections were used as control variables.

Head of Household. As an indication of an individual's occupation or lack

thereof, the data collected from the WVS (2010-2014) asks "Are you the chief

wage earner in your household?" The responses are coded as 1 for yes and 2 for

no; data were recoded as 1 for yes and 0 for no.

Membership in Civic-Based Associations. Church attendance was used as a

proxy for membership in civic-based associations as this is the most complete

membership data from the WVS (2010-2014). The WVS (2010-2014) poses the

question "Apart from weddings and funerals, about how often do you attend

religious services these days?" The data were coded by the WVS (2010-2014) on a

scale from 1 to 7 where 1 indicated more than once a week and 7 indicated never

or practically never. For ease of interpretation, the data were recoded on a scale

from 0 to 6, where 0 indicates never or practically never, 1 indicates less often, 2

indicates once a year, 3 indicates only on special holy days, 4 indicates once a

month, 5 indicates once a week, and 6 indicates more than once a week.

Security. The WVS (2010-2014) asks its respondents the question "Could you tell

me how secure do you feel these days in your neighborhood?" The responses

were coded on a scale from 1 to 4 where 1 indicated very secure and 4 indicated

not at all secure, thus, the data were recoded on a scale from 0 to 3 where 0

indicates not at all secure, 1 indicates not very secure, 2 indicates quite secure,

and 3 indicates very secure.

Social Class. As a further measure of an individual's economic standing, data

were collected from the WVS (2010-2014) on social class. The question asked

"People sometimes describe themselves as belonging to the working class, the

middle class, or the upper or lower class. Would you describe yourself as

belonging to the: upper class, coded as 4, upper middle class coded as 3, lower

middle class coded as 2, working class coded as 1, or lower class coded as 0. Data

were initially coded on a counterintuitive scale from 1-5, and were recoded for

ease of interpretation.

Citizenship. The question that indicates this measure from the WVS (2010-2014)

states "Are you a citizen of this country?" Respondents who are citizens were

coded as 1, and those who are not citizens were coded as 2. Non-citizens were

recoded as 0.

Education. In measuring education, the WVS (2010-2014) provides data for the

highest level of attained education through the question "What is the highest

educational level that you have attained?" Coded on a scale from 1 to 9, 1

indicates no formal education, 2 indicates incomplete primary school, 3 indicates

complete primary school, 4 indicates incomplete secondary school, 5 indicates

complete secondary school, 6 indicates incomplete secondary education, 7

indicates complete secondary education, 8 indicates some university-level

education without a degree, and 9 indicates university-level education with a

degree.

Town Size of Residence. To measure this variable, data from the WVS (2010-2014)

on town size of the respondent's residence were recorded using an ordinal

measurement, where a town of 500,000 or more residents was coded as 8,

100,000-500,000 residents was coded as 7, 50,000-100,000 was coded as 6,

20,000-50,000 was recorded as 5, 10,000-20,000 was recorded as 4, 5,000-10,000

was recorded as 3, 2,000-5,000 was recorded as 2, and towns of less than 2,000

were recorded as 1.

Literacy. The WVS (2010-2014) asks the interviewer to indicate if the respondent

was literate coded as 1, or illiterate coded as 2; data were for illiterate were

recoded as 0. Children. As collected from the WVS (2010-2014), the interviewers

asked respondents "Have you had any children?" Respondents with 0 to 7

children were recorded with their exact number of children, and those with 8 or

more were all coded as 8.

Marital Status. The WVS (2010-2014) asks respondents "Are you currently:

married, living together as married, divorced, separated, widowed, or single."

For the purposes of this study, the data was coded dichotomously with married coded as 1 and the other responses as 0.

Sample Size

Wave 6 of the WVS (2010-2014) accounted for 57 countries and exactly 90,350 respondents. Due to missing data, the actual sample size for this study was 53,897 over 40 countries. Although a larger sample size would produce better results, this would require conducting the survey in the exact same manner for every nation and should be considered for future papers. For the purposes of the paper, the generalizability of this sample to the population is noted as a limitation.

Analyzing the Data

The dichotomous nature of the dependent variable of trust as a proxy for social capital required the variables and hypotheses to be tested using a logistic regression. Furthermore, in order to account for the interaction term between gender quotas and females, two separate models were developed. The first model included every variable with the exception of the interaction term, and was thus named the "reduced model," while the second model reruns the first with the sole addition of the interaction term, and was therefore named the "full model." A full description of the variables and coding can be found in Appendix B.

Results

The results for both models can be found in Table 1. Turning first to the reduced

model, the country-level indicators including women in parliament, GDP, and

freedom in the world yielded statistically significant results. While women in

parliament and freedom in the world confirmed their respective hypotheses, the

results for GDP require rejection of the predicted hypothesis. Unexpectedly,

quotas had no statistically significant impact on perceptions of trust. In

examining the individual-level indicators, every variable yielded statistically

significant results with the exception of citizenship. In the cases of gender, age,

voting in local elections, security, social class, literacy, children, and marital

status, the hypotheses are confirmed. Surprisingly, several of the variables are

rejected in light of their coefficient and statistical significance, including voting in

national elections, head of household, education, and town size of residence. This

may be due to regime type in correlation with the level of democracy as the

theoretical framework for these hypotheses were based largely on western

literature and analysis of democracy. Further micro-analysis in case studies

should explore if these results vary based on regime type.

By observing the full model in Table 1, the results are quite similar. For the

country-level indicators, women in parliament, GDP, and freedom in the world

remain statistically significant in the same manner, and for the individual-level

Table 1: Influences on Perceptions of Social Capital

Independent Variables	Reduced Model		Full Model	
	Coefficient	Probability	Coefficient	Probability
Country-Level Indicators				
Women in Parliament	.008 (.029)	.000	.069 (.037)	.062
GDP	.00004 (.000001)	.000	.00004 (.	.000
Freedom in the World	-.010 (.0004)	.000	-.010 (.0004)	.000
Gender Quota	.008 (.0009)	.782	.010 (.0009)	.000
Individual-Level				
Gender	-.044 (.023)	.057	.019 (.033)	.549
Gender x Quota	-	-	-.118 (.043)	.006
Age	.006 (.0008)	.000	.006 (.0008)	.000
Vote in Local Election	.112 (.022)	.000	.112 (.022)	.000
Vote in National	-.169 (.022)	.000	-.169 (.022)	.000
Chief Wage Earner	.072 (.024)	.003	.071 (.024)	.003
Church Attendance	-.068 (.005)	.000	-.069 (.005)	.000
Neighborhood Security	.079 (.013)	.000	.079 (.013)	.000
Social Class	.085 (.011)	.000	.086 (.011)	.000
Citizenship	-.035 (.092)	.697	-.035 (.092)	.698
Education	.044 (.005)	.000	.044 (.005)	.000
Town Size of Residence	-.033 (.004)	.000	-.033 (.004)	.000
Literacy	-.399 (.049)	.000	-.400 (.049)	.000
Children	-.059 (.007)	.000	-.058 (.007)	.000
Marital Status	.210 (.024)	.000	.211 (.024)	.000
Constant	-1.347 (.119)	.000	-1.377 (.119)	.000
N	53,897		53,897	
Chi^2	4,216.37	.000	4,221.33	.000
Pseudo R^2	.076		.070	
Log pseudolikelihood	-27,001.592		-26,997.811	

Notes: Robust standard errors are in parenthesis. Results were calculated using Logistic Regression. The dependent variable is a dichotomous measure as coded from the following question from the World Values Survey (2015): "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" The response "Most people can be trusted," is coded as 1, and "Need to be very careful," is coded as 0.

indicators, all of the variables remain similar in both coefficient direction and probability, allowing the same acceptance and rejection of hypotheses as in the reduced model. Most surprising, the addition of the interaction term for females living in nations with gender quotas resulted in a statistically significant measure in the direction opposite than hypothesized. This means that females in nations with gender quotas are less likely to perceive trust in others, and therefore are less likely to perceive themselves as having social capital, rejecting the hypothesis.

In addition to the country-level and individual-level indicators for both models, it is important to note that the constant for both models remains statistically significant. Consistent with other research using large and diverse sample sizes, this measure suggests missing independent variables, however, it is understood that these may be difficult to pinpoint with accuracy on the sample size as a whole. Thus, an in-depth case study, as conducted in the micro-analysis of this paper, may remedy this discrepancy.

Discussion

The analyses for the macro-level data revealed both expected and counterintuitive results. Intuitively, for the country-level indicators, both increased levels of women in parliament and increased freedom in the world resulted in confirmed hypotheses to reveal that an increased level of women in parliament results in increased perceptions of trust, and an increase in freedom in the world scores results in decreased perceptions of trust. Counterintuitively, GDP revealed statistical significance, but in the direction opposite that hypothesized, and gender quotas were found to be insignificant in the reduced model. For GDP, these results may suggest that Putnam (1995) is accurate in underestimating the role of globalization in politics, as addressed by Steger (2002). Steger (2002) suggests that the globalization process and its influence on economics decreases social capital, however, the data reveals the opposite effect.

The initial result for gender quotas in the reduced model is surprising. However, the full model reveals that a more detailed force may be at play. In the full model, the interaction term between gender and gender quotas yields strong correlation between females living in nations with gender quotas and perceived social capital. Again, this result is counterintuitive. The hypothesis predicted that females living in nations with gender quotas would have elevated levels of perceived trust in others, but the negative coefficient requires the rejection of the

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hypothesis. Three primary explanations may exist for this nuance. First, the nuance may lie in the effect of gender quotas on the number of women in parliament. For both models, the measure for women in parliament remains statistically significant in a positive direction, meaning that an increase in the number of women in parliament results in an increase in perceived social capital. Therefore, gender quota policies may be failing to substantively increase the number of women in parliament, and may be missing the mark for substantive representation and critical mass. Second, as Dahlerup (2005) previously suggested, the use of quotas and sole focus on descriptive representation can result in discrimination against women for their grouping of women into a single social category. Previous scholarly debates find challenges in measuring substantive representation (Celis 2009, Celis et al. 2008, Childs and Krook 2009, Htun and Weldon 2010, Jalalzai and dos Santos 2015, Pitkin 1967, Schwindt-Bayer 2010). That said, the correlation found with this interaction term in the full model suggests that perceptions of social capital may act as a proxy for substantive representation, as it falls in line with the previous literature and supports Dahlerup's (2005) explanations of quotas and descriptive representation. Future research should account for critical mass to further support this finding. Lastly, and building upon the first possible explanation, as Miller (1974a) suggests, cynicism may rise for individuals whose policy

preferences go against policy decisions. Although these models do not account directly for policy decisions, future work may look at policy decisions to observe this effect.

Finally, in consideration of the additional individual-level variables, the theoretical reasons for the variance in hypotheses confirmation and rejection needs to be explored further. Public opinion theory seems to be somewhat in error, and further theory on comparative politics, and especially the effect of regime type on perceptions of social capital, needs to be taken into account for future research.

Overall, this work reveals three key findings. First, perceptions of social capital, and more specifically perceptions of trust, may be a breakthrough in measuring substantive representation. Second, in building on Dahlerup's (2005) theory of the damaging effects of focusing on gender quotas and descriptive substantive representation, reaching critical mass via means other than gender quotas may prove to be more effective in increasing perceptions of social capital for women as descriptive representation turns into substantive representation. Third, reaching critical mass is more important than constitutional or legislated gender quotas for increasing perceptions of social capital for women.

These overarching ideas are valuable, and lead to the second main research question for this work: does the effect of the perception on social capital

at the macro-level demonstrate consistency at the micro-level? This paper now turns to two Latin American case studies to answer this question. These case studies will allow for an in-depth examination, a micro-level analysis of the variables discussed above.

Latin American Case Studies

A micro-level analysis allows this study to observe the macro-level results

through case study application and to better understand the influences of

perceptions of social capital. The case studies chosen were in Latin America

where, when the situation of women in politics was assessed on the first of

January 2015, seven of the 21 Latin American nations[2] reached critical mass for

women in parliament. That is to say, for these seven nations, women held at least

30% of the seats in parliament (Inter-Parliamentary Union and UN Women 2015).

Furthermore, as of the first of March 2016, 15 of the 21 Latin American nations

have constitutional or legislated gender quotas for parliament[3] (International

IDEA et al. 2015).

Two cases within Latin America, Mexico and Brazil, are used to analyze

women in politics, substantive representation, and the observation of these

effects on social capital, as well as to explore the key findings discussed above

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[2] For the purposes of this study, "Latin America" includes all nations in North, Central, and South America including: Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, French Guiana, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay, and Venezuela.

[3] A discrepancy is noted in the date of data collection between the percentage of women in parliament, with most recent data available on January 1, 2015, and the presence of constitutional or legislated quotas, with the most recent data available on March 1, 2016. This is due to availability in the data, and future research should seek to remedy this discrepancy.

concerning what increased perceptions of social capital for women. More specifically, the case studies of Mexico and Brazil examine: (1) if females living in nations with gender quotas are less likely to perceive themselves as having social capital, thus, perceptions of social capital are a good proxy for substantive representation, (2) if reaching critical mass via means other than gender quotas may allow for an increase in perceptions of social capital, and (3) if reaching critical mass is more important than constitutional or legislated gender quotas for increasing perceptions of social capital for women.

Given the limitations in available data from the WVS (2010-2014), the options for Latin American case study included Brazil, Chile, Colombia, Mexico, Peru, and Uruguay. In closer observation of the available statistics, especially the percentage of women in parliament, the presence of a quota system, and the demographics of those surveyed, it was determined that Brazil and Mexico are the best cases for a Most Similar System case study design[4]. Both Brazil and Mexico have constitutional or legislated quota systems, they have similar GDP, their freedom in the world scores are within 16 points and higher than the world average, and in observation of the demographics, the differences between the

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[4] As explained by Peters (1998), Most Similar and Most Different Systems allow comparative politics to uncover the variables responsible for possible correlation. More specifically, a Most Similar Systems, such as the one used in this study, compares cases with the highest number of equal variables to allow for isolation of the factors thought to be responsible for differences between cases.

two nations is minimal for most. Although the descriptive statistics reveal some variables are more diverse than ideal for a Most Similar System, these cases are the most similar out of limited options. Thus, these limitations are taken into consideration through this study. The one variable with substantial difference between the two nations, and thus which needs closer observation, is that Brazil fails to meet critical mass while Mexico succeeds[5] (Inter-Parliamentary Union and UN Women 2015, International IDEA et al. 2015). The set up of these case studies allows for a deeper investigation into the first question to ask the secondary research question as follows: Does the effect of the perception on social capital at the macro-level demonstrate consistency at the micro-level?

While continuing to build upon the previous literature and concepts of critical mass, quotas, representation, and social capital, micro-level part of this study draws upon the literature of the Latin American, presented earlier, to delve into the second research question. This work will add to the discussion by adding a micro-level analysis of the perception of social capital for women. Following the analysis, the final section of the paper will draw back together the macro-level and micro-level analysis to finish piecing the puzzle together.

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[5] Although it would be more ideal to conduct a comparative case study on one Latin American nation that reaches critical mass with gender quotas and one that reaches critical mass without constitutional or legisled gender quotas, such a case of the second form does not exist with the current data set. Future iterations of this paper will take this into account and seek to replicate the survey data in additional nations until such a case study can be developed.

Overview of Brazil and Mexico

In 1997, Brazil wrote a gender quota into law. The law requires each party list for the elections to the Chamber of Deputies, created due to the proportional representation system, to contain a minimum 30% and a maximum 70% of candidates of each gender. Alternatively, Article 41 of Mexico's Federal Constitution as amended on February 10, 2014, requires the development of gender quotas for political parties. Election law in Mexico for the Federal Chamber of Deputies, whose members are elected via proportional representation, requires that the political party lists have at least 40% of the same gender. Although the laws for Brazil and Mexico seem similar on the surface, an important distinction is found in the legal sanctions for non-compliance. Both require that the political parties adjust their lists, however Brazil will simply remove the overrepresented individuals while the Mexican Federal Electoral Institute will reject the list. The result is that many Brazilian political parties succeed in avoiding the law while Mexican political parties are forced to comply if they have any chance at gaining seats in the Federal Chamber of Deputies (Cabrales Lucio 2014, International IDEA et al. 2015). In observing the effects of the gender quotas, only Mexico reaches critical mass with 38.0% women in parliament, while Brazil remains significantly below critical mass with only 9.0% women in parliament (Inter-Parliamentary Union 2015).

In further review of the influencing factors taken into consideration through the macro-level analysis, Brazil has an aggregate freedom score of 81 while Mexico lags a bit behind at 65 (Freedom House 2016). In contrast to that slight difference, a strong similarity exists in that Brazil has a GDP per capita of $11,384.6, and Mexico sits extremely close at $10,230.2 (World Bank 2015a). Within the secondary control variables, the survey respondents for both nations, demographics were nearly equal as 60.47% respondents were female in Brazil and 49.79% were female in Mexico, and the average age for Brazil was 42.942 while in Mexico it was 37.567 (WVS 2010-2014). Some discrepancies existed in survey demographics between the nations, most notably the distribution of social class and level of educational attainment (WVS 2010-2014).

Analysis of Case Studies: Brazil and Mexico

Due to the differences between Brazil and Mexico, and in line with the previous suggestion that reaching critical mass for women in parliament results in higher levels of perceived social capital, I pose the following hypothesis:

H_{1a}: Individuals in Mexico are more likely to perceive trust in others than individuals in Brazil.

Furthermore, to build upon the work of Chant (1996) and Putnam (1995), both indicate that social capital may differ for men and women. In the western literature, Putnam (1995) suggests that women entering the workforce decreases

their social capital, while in Latin America Chant (1996) further concludes that gender plays a significant role in perceptions of legitimacy and social networking. Similarly, Booth and Richard (2015) conclude that increased education among women and lowered birth rates may be two of the most important factors for the increase in women in politics throughout Latin America, and these factors may effect substantive representation, and in turn social capital for women. Thus, for this case study of Brazil and Mexico where Brazil fails to reach critical mass, I hypothesize:

> H_{1b}: Females in Mexico are more likely to perceive trust in others than females in Brazil.

> H_{1c}: Males in Mexico are more likely to perceive trust in others than males in Brazil.

The methods for analyzing this case study varies only slightly from that of the macro-level analysis. The variable for social capital was expanded to include a cross tabulation for gender, and the control variables were coded in the same way as in the macro-level analysis but each response was recorded separately. In addition to these descriptive statistics, differences between the two nations were recorded to understand discrepancies of the Most Similar System. Additional information about the coding of these variables can be found in Appendix B.

Analyzing the Data

Using a quantitative approach, these case studies were evaluated using a Most

Similar Systems. The Most Similar Systems allows the factors thought

responsible for case discrepancy to be isolated and studied in greater detail.

Brazil and Mexico, differing in the primary variables only by the lack of Brazil

reaching critical mass, provided a unique opportunity for observing the effect of

critical mass on social capital in three ways: overall, for females, and for males.

Results

The descriptive statistics for the case studies, world averages, and the differences

between Brazil and Mexico can be found in Table 2. In observation of social

capital, the descriptive statistics for Brazil in Mexico show reason to believe that

the macro-level analysis is consistent with the micro-level, and the hypotheses

are confirmed:

H_{1a}: Individuals in Mexico are more likely to perceive trust in others than

individuals in Brazil.

H_{1b}: Females in Mexico are more likely to perceive trust in others than

females in Brazil.

H_{1c}: Males in Mexico are more likely to perceive trust in others than males

in Brazil.

Table 2: Descriptive Statistics of Brazil and Mexico

Variable	World	Brazil	Mexico	Difference (Brazil-Mexico)
Dependent Variable				
Social Captial				
Most people can be trusted.	23.29% (12,550)	6.62% (79)	12.38% (238)	-5.76%
Most people can be trusted; female	22.73% (6,338 of 27,872)	4.29% (31 of 722)	10.34% (99 of 957)	-6.05%
Most people can be trusted; male	23.86% (6,212 of 26,025)	10.16% (48 of 472)	14.40% (139 of 965)	-4.24%
Primary Control Variables				
Gender Quota				
Legislated Quota	52.5% (21 of 40)	Yes	Yes	None
Women in Parliament				
Percent	19.47%	9.0%	38.0%	-29.0%
GDP				
Per Capita in US$	$11,704.3	$11,384.6	$10,230.2	$1,154.4
Freedom in the World				
Scale 0-100; 0=Not Free at All	54.85	81	65	16
Secondary Control Variables				
Gender				
Female (Survey)	51.71% (27,872)	60.47% (722)	49.79% (957)	10.68%
Female (Population)		50.8% (103,763,984 of 204,259,812)	50.3% (61,233,615 of 121,736,809)	.5%

Age

Average (Survey)	41.520	42.942	37.567	5.375
Median (Population)		31.1	27.6	3.5

Vote in Local Election

Always	58.33% (31,437)	86.77% (1,036)	65.09% (1,251)	21.68%
Usually	23.98% (12,924)	7.96% (95)	21.28% (409)	-13.32%
Never	17.69% (9,536)	5.28% (63)	13.63% (262)	-8.35%

Vote in National Election

Always	60.33% (32,515)	86.10% (1,028)	67.48% (1,297)	18.62%
Usually	22.45% (12,102)	7.54% (90)	18.57% (357)	-11.03%
Never	17.22% (9,280)	6.37% (76)	13.94% (268)	-7.57%

Chief Wage Earner

I am the chief wage earner for my household.	44.32% (23,888)	38.94% (465)	32.62% (627)	6.32%

Church Attendance

More than Once a Week	16.66% (8,981)	24.12% (288)	12.80% (246)	11.32%
Once a Week	20.02% (10,792)	27.72% (331)	33.35% (641)	-5.63%
Once a Month	10.46% (5,639)	14.57% (174)	15.87% (305)	-1.30%
Only on Special Holy Days	16.17% (8,715)	3.94% (47)	11.55% (222)	-7.61%
Once a Year	5.03% (2,711)	3.60% (43)	5.25% (101)	-1.65%
Less Often	9.58% (5,163)	18.32% (219)	7.70% (148)	10.62%
Never, Practically Never	22.07% (11,896)	7.71% (92)	13.48% (259)	-5.77%

Neighborhood Security

Very Secure	35.49% (19,126)	21.52% (257)	30.12% (579)	-8.60%
Quite Secure	45.12% (24,316)	40.62% (485)	36.32% (698)	4.30%
Not Very Secure	15.07% (8,120)	23.79% (284)	23.88% (459)	-.09%
Not at all Secure	4.33% (2,335)	14.07% (168)	9.68% (186)	4.39%

Social Class

Upper Class	2.38% (1,283)	.50% (6)	1.20% (23)	-.70%
Upper Middle Class	20.52% (11,058)	2.76% (33)	20.55% (395)	-17.79%
Lower Middle Class	34.31% (18,490)	38.11% (455)	40.69% (782)	-2.58
Working Class	28.82% (15,532)	33.25% (397)	20.66% (397)	12.59%
Lower Class	13.98% (7,534)	25.38% (303)	16.91% (325)	8.47%

Citizenship

Yes, I am a citizen of this country.	98.71% (53,897)	99.66% (1,190)	99.32% (1,909)	.34%

Level of Education

University-Level Education, with degree	15.89% (8,566)	11.56% (138)	13.06% (251)	-1.50%
Some University-Level Education, without degree	7.18% (3,868)	6.87% (82)	5.52% (106)	1.35%
Complete Secondary School; University-Preparatory Type	16.92% (9,119)	26.80% (320)	14.93% (287)	11.87%
Incomplete Secondary School; University-Preparatory Type	8.48% (4,573)	9.05% (108)	8.06% (155)	.99%
Complete Secondary School; Technical/Vocational Type	20.77% (11,197)	2.26% (27)	23.73% (456)	-21.47%
Incomplete Secondary School; Technical/Vocational Type	7.88% (4,246)	.67% (8)	4.99% (96)	-4.32%
Complete Primary School	10.80% (5,821)	11.64% (139)	14.98% (288)	-3.34%
Incomplete Primary School	6.51% (3,509)	30.40% (363)	11.19% (215)	19.21%

No Formal Education	5.56% (2,998)	.75% (9)	3.54% (68)	-2.79%
Town Size				
500,000 and more	14.48% (7,805)	38.02% (454)	18.57% (357)	19.45%
100,000-500,000	15.58% (8,397)	19.43% (232)	7.44% (143)	11.99%
50,000-100,000	8.40% (4,527)	10.97% (131)	6.76% (130)	4.21
20,000-50,000	11.49% (6,192)	10.72% (128)	13.32% (256)	-2.60%
10,000-20,000	9.45% (5,095)	9.97% (119)	11.91% (229)	-1.94%
5,000-10,000	9.21% (4,964)	3.43% (41)	14.46% (278)	-11.03
2,000-5,000	12.41% (6,691)	5.36% (64)	14.67% (282)	-9.31%
Under 2,000	18.97% (10,226)	2.09% (25)	12.85% (247)	-10.76%
Literacy				
Literate	92.94% (50,092)	99.41% (1,187)	93.91% (1,805)	5.50%
Number of Children				
Average	1.901	1.957	2.259	-.302
Marital Status				
Married	56.83% (30,631)	40.70% (486)	45.89% (882)	-5.19%
N	53,897	1,194	1,922	-728

Overall, Brazil, despite having legislated quotas, fails to reach critical mass, and has overall lower perceptions of trust than Mexico.

Turning next to the primary control variables in review of the descriptive statistics, it is evident that Brazil is far below the critical mass level of 30%, and

far below the world average of 19.47%. GDP as a measure of economy reveals that both Brazil and Mexico differ only slightly, and are quite near the world average. Lastly, the measure of freedom in the world demonstrates that the nations differ by only 16 points.

It is important to note that, although these findings are very interesting, they cannot be identified as statistically significant. Future research should explore statistical significance for these models.

Discussion

The Most Similar Systems case studies of Brazil and Mexico, reveal that the trends at the micro-level do indeed mimic the macro-level. The results are both unexpected and expected. Previous work explains the concepts of representation, critical mass, and quotas would suggest, in line with the key findings in the macro-level analysis, a result opposite the observed.

In consideration of all of the literature, the macro-analysis, and in light of the data from this micro-level analysis, the three hypotheses of this micro-level analysis fortify the primary contributions as first uncovered through the macro-level analysis: reaching critical mass is more important than constitutional or legislated quotas for increasing perceptions of social capital for women. The analysis revealed that in examining Brazil and Mexico, reaching critical mass is a key factor amongst the primary control variables for increasing perceptions of

social capital. Furthermore, the cross tabulation between perceptions of social capital and gender for both Brazil and Mexico support the macro-level analysis that women in nations with gender quotas have less perceived trust in others than men. Although this remains counterintuitive to the literature, it further supports the other theoretical contributions developed in the macro-analysis: (1) females living in nations with gender quotas are less likely to perceive themselves as having social capital, thus, perceptions of social capital are a good proxy for substantive representation, and (2) reaching critical mass via means other than gender quotas may allow for an increase in perceptions of social capital.

This micro-level analysis could be improved upon by running regression models to determine statistical significance, and by examining further case studies to further explain the contributions developed in the macro-analysis. For the first contribution, females living in nations with gender quotas are less likely to perceive themselves as having social capital, thus perceptions of social capital are a good proxy for substantive representation. For the second contribution, cases in which a nation reaches critical mass without a constitutional or legislated gender quota would provide further insight into the idea that reaching critical mass via means other than gender quotas may allow for an increase in perceptions of social capital. In either case, the data uncovered in this micro-level

analysis have begun to uncover a deeper understanding of the impact of

representation, critical mass, quotas, and social capital.

Final Discussion and Conclusion

Through macro-level and micro-level analysis, the research in this paper helps to fill the gaps in the literature covering representation, quotas, critical mass, and social capital. Beginning with the first research question, "What increases perceptions of social capital for women?" this work addressed ideas about representation, critical mass, quotas and social capital in a general perspective. Despite the depth of what this research question aimed to cover, the statistically significant results in the model revealed many influences of perceptions of social capital. By answering the first research question, this quantitative analysis uncovered three key findings that should be explored in future research: (1) females living in nations with gender quotas are less likely to perceive themselves as having social capital, thus, perceptions of social capital are a good proxy for substantive representation, (2) reaching critical mass via means other than gender quotas may allow for an increase in perceptions of social capital, and (3) reaching critical mass is more important than constitutional or legislated gender quotas for increasing perceptions of social capital for women.

Micro-level analysis via case studies on Brazil and Mexico allowed the research question to be narrowed and the three key findings from the macro-analysis to be further confirmed. Brazil, a nation who failed to reach critical mass had lower levels of social capital for both men and women than Mexico, a nation

who reaches critical mass. This supports the first and third key findings that perceptions of social capital are a good proxy for measuring substantive representation and that reaching critical mass is more important than enacting gender quotas for increasing social capital.

In addition to these three key findings, perhaps one of the most curious statistically significant findings is the negative coefficient for the intersection of gender and quota in the full model of the macro-level analysis. As hypothesized, women living in nations with gender quotas would experience increased perceptions of social capital, but the negative coefficient forced the rejection of this hypothesis. This may be because gender quotas force women into the legislative branch to fulfill a number, rather than based on a merit system. This may have the effect of decreasing social capital for the women under these systems. Furthermore, this may explain why reaching critical mass is more important, especially for countries without quota systems, as the seats are based on merit and the quality of women candidates. Future research should explore the differences between nations who reach critical mass with and without quota systems.

As with all research, the shortcomings in this paper cannot be denied. Two shortcomings are noteworthy. First, the relatively few nations represented in the macro-level analysis, combined with the statistically significant constant,

point directly to omitted variable bias. Unfortunately, survey data is difficult to come by on an international scale. For future work, I plan to increase the number of countries included in the quantitative analysis. Second, case studies add detail to an analysis. Although this work brought to light many issues about Brazil and Mexico that pertain to the research questions, additional and nuanced case studies would further add to understanding what increases perception of social capital for women, at least in these countries.

Despite these shortcomings, this work has successfully identified three developments that add insight to the research questions, What increases perceptions of social capital for women?, and second, Does the effect of the perception on social capital at the macro-level demonstrate consistency at the micro-level? These three developments include: (1) females living in nations with gender quotas are less likely to perceive themselves as having social capital, thus, perceptions of social capital are a good proxy for substantive representation, (2) reaching critical mass via means other than gender quotas may allow for an increase in perceptions of social capital, and (3) reaching critical mass is more important than constitutional or legislated gender quotas for increasing perceptions of social capital for women.

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Appendix A: Missing Variables

Variable Name	Countries without Variable Data
Social Capital	
Women in Parliament	Egypt, Hong Kong, Palestine, Taiwan
Gross Domestic Product (GDP)	Hong Kong, Palestine, Taiwan
Freedom in the World	Palestine
Gender Quota	
Gender	
Females in Nations with Gender Quotas	
Age	
Vote in Local Election	Ecuador, Qatar, Singapore
Vote in National Election	Ecuador
Head of Household	Spain
Church Attendance	Kuwait, Morocco, Qatar
Neighborhood Security	
Social Class	
Citizenship	Hong Kong, Japan, Kuwait, Palestine, Singapore, Spain
Education	
Town Size of Residence	Egypt, Hong Kong, Japan, Morocco, Pakistan, Palestine, Qatar, Singapore, South Korea, Spain, Trinidad and Tobago, Turkey, United States
Literacy	Argentina, Australia, New Zealand, Qatar, Singapore, Slovenia, Trinidad and Tobago, United States
Children	Hong Kong
Marital Status	
Nations with Full Data (N=40)	Algeria, Armenia, Azerbaijan, Bahrain, Belarus, Brazil, Chile, China, Colombia, Cyprus, Estonia, Georgia, Germany, Ghana, India, Iraq, Jordan, Kazakhstan, Kyrgyzstan, Lebanon, Libya, Malaysia, Mexico, Netherlands, Nigeria, Peru, Philippines, Poland, Romania, Russia, Rwanda, South Africa, Sweden, Thailand, Tunisia, Ukraine, Uruguay, Uzbekistan, Yemen, Zimbabwe

Appendix B: Variable Code Book

Variable Name	Source	Description & Coding
Social Capital	World Values Survey Wave 6 (2010-2014)	"Generally speaking, would you say that people can be trusted or that you need to be very careful in dealing with people?" 0=Most people can be trusted. 1=Need to be very careful.
Women in Parliament	Inter-Parliamentary Union (2015)	Percentage of Women in Parliamentary Positions as of January 1, 2014
Gross Domestic Product (GDP)	World Bank (2015a)	GDP per Capita in U.S. Dollars in 2013
Freedom in the World	Freedom House (2016)	Scale from 0-100 0=Worst; Not Free at All 100=Best; Complete Freedom
Gender Quota	International IDEA et al. (2015)	1=Constitutional or Legislated Quota 0=Voluntary or No Quota Value as Assessed on March 1, 2016.
Gender	World Values Survey Wave 6 (2010-2014)	1=Female 0=Male
Gender (Population)	World Bank (2015b)	Percent
Females in Nations with Gender Quotas	See Above	Gender Quota x Gender
Age	World Values Survey Wave 6 (2010-2014)	In Years
Age (Population)	Central Intelligence Agency (2015a) Central Intelligence Agency (2015b)	In Years
Vote in Local Election	World Values Survey Wave 6 (2010-2014)	"When local level elections take place, do you vote always, usually or never?" 2=Always 1=Usually 0=Never

Vote in National Election	World Values Survey Wave 6 (2010-2014)	"When national level elections take place, do you vote always, usually or never?" 2=Always 1=Usually 0=Never
Head of Household	World Values Survey Wave 6 (2010-2014)	"Are you the chief wage earner in your household?" 1=Yes 0=No
Church Attendance	World Values Survey Wave 6 (2010-2014)	"Apart from weddings and funerals, about how often do you attend religious services these days?" 6=More than Once a Week 5=Once a Week 4=Once a Month 3=Only on Special Holy Days 2=Once a Year 1=Less Often 0=Never, Practically Never
Neighborhood Security	World Values Survey Wave 6 (2010-2014)	"Could you tell me how secure do you feel these days in your neighborhood?" 3=Very Secure 2=Quite Secure 1=Not Very Secure 0=Not at all Secure
Social Class	World Values Survey Wave 6 (2010-2014)	"People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the:" 4=Upper Class 3=Upper Middle Class 2=Lower Middle Class 1=Working Class 0=Lower Class
Citizenship	World Values Survey Wave 6 (2010-2014)	"Are you a citizen of this country?" 1=Yes, I am a citizen of this country. 0=No, I am not a citizen of this country.

Education	World Values Survey Wave 6 (2010-2014)	"What is the highest educational level that you have attained?" 9=University-Level Education, with degree 8=Some University-Level Education, without degree 7=Complete Secondary; University-Preparatory Type 6=Incomplete Secondary; University-Preparatory Type 5=Complete Secondary School; Technical/Vocational Type 4=Incomplete Secondary School; Technical/Vocational Type 3=Complete Primary School 2=Incomplete Primary School 1=No Formal Education
Town Size of Residence	World Values Survey Wave 6 (2010-2014)	8=500,000 and more 7=100,000-500,000 6=50,000-100,000 5=20,000-50,000 4=10,000-20,000 3=5,000-10,000 2=2,000-5,000 1=Under 2,000
Literacy	World Values Survey Wave 6 (2010-2014)	Was the respondent literate or illiterate? 1=Literate 0=Illiterate
Children	World Values Survey Wave 6 (2010-2014)	"Have you had any children?" 8=Eight or More Children 7=Seven Children 6=Six Children 5=Five Children 4=Four Children 3=Three Children 2=Two Children 1=One Child 0=No Children
Marital Status	World Values Survey Wave 6 (2010-2014)	"Are you currently:" 1=Married 0=Living together as Married, Divorced, Separated, Widowed, Single