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Gender Differences in Political Knowledge: The Case of Mexico

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Gender Differences in Political Knowledge: The Case of Mexico

Yazmín Argentina García Trejo, PhD

University of Connecticut, 2015

This dissertation explores why research finds that women know less about politics when compared to men (Delli Carpini and Keeter 1996; Verba, Schlozman and Brady 1997). This gender gap puts women at a disadvantage in terms of their in political participation and representation. These dynamics are important in a democracy like Mexico where channels of representation for women are still evolving. By applying a gendered theoretical framework to the study of the acquisition of political information, this dissertation explores how three factors (incubator, structural, and agency mechanisms) transform our understanding of why people seek political knowledge and how their opportunities to access political information are enhanced or curtailed by a variety of factors. Through fieldwork (surveys of high school students in two Mexican states) and an analysis of more than twenty years of public opinion data, the results show that contrary to surveys of Mexican adults, which consistently find a gender gap in political knowledge, there is no such gap among adolescents. Therefore, the evidence supports an “incubator mechanism,” which exists when individuals are exposed to political information through similar means inside the boundaries of an institution. The existence of the gender gap in political knowledge among adults, but not among adolescents, suggests that when people leave the "incubator" the structural and agency mechanisms are the primary cause for the development of the gender gap in political knowledge. This occurs because gender differences in socialization and opportunities provide advantages for men to continue learning about politics after their formal education ends, while women's traditional roles in the home and family leave them at a disadvantage in this regard.

Gender Differences in Political Knowledge: The Case of Mexico

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2015

APPROVAL PAGE

Doctor of Philosophy Dissertation

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Chapter 1. Gender Differences in Political Knowledge

The Problem of Study

In public opinion surveys, men are more likely than women to be able to identify basic facts about politics and government.¹ This disparity is known as the “gender gap” in political knowledge, and it is consistently found in the scholarly literature about advanced democracies (Delli Carpini and Keeter 1993, 1996; Dolan 2011; Dow 2009; Frazer and Macdonald 2003; Kenski 2000, 2006; Kenski and Jamieson 2000; Ondercin, Garand, and Crapanzano 2011; Stolle and Gidengil 2010; Verba, Burns, and Schlozman 1997). Scholarship identifies exposure to information, socioeconomic resources, and motivation as three factors that contribute to differences in political knowledge across groups. Yet there is currently no theoretical framework that incorporates individual and contextual factors through a gendered lens to explain variations in political knowledge, particularly between men and women. This project studies the puzzle of the gender gap in political knowledge and proposes a framework for understanding this gap by incorporating a contextual perspective, in addition to the well-known socioeconomic and socialization perspectives.

Although there have been advances in women’s political participation such as voting (Inglehart and Norris 2003), a gender gap in political knowledge has implications for other forms of political participation. People who have low levels of political knowledge are less likely to engage in forms of political participation like contacting representatives and other public officials. Lower political knowledge may also serve as a barrier to pursuing political office. Thus

¹ Political knowledge in this dissertation refers to knowledge of factual information about politics that can have a verifiable correct or incorrect answer (e.g. asking about the name of a state governor has either a correct or an incorrect response) (Delli Carpini and Keeter 1996, 10; Galston 2001; Rapeli 2013; Zaller 1992).

women, because of their lower levels of political knowledge, may be at a disadvantage in political representation compared to men (Kenski and Jamieson 2000; Ondercin and Jones-White 2011).

The pervasiveness of the gap in political knowledge raises two questions: Why does the gender gap in political knowledge exist and prevail? What are the origins of gendered differences in political knowledge? I argue that integrating a critical perspective from the gender and politics literature within the behavioral model helps approach these questions in two ways: by showing how the position of women in society is shaped by differences in socioeconomic resources, and by illuminating a socialization process that affects women's ability to seek political information and places them at a disadvantage in exposure to information about general politics.

My approach in this dissertation consists of three theoretical mechanisms (structural, agency, and incubator) that incorporate individual socioeconomic characteristics, motivations, and contextual factors related to the gender gap in political knowledge. The combined explanatory power of these mechanisms improves on models that are purely behavioral (and focus primarily on the individual) or purely social (and focus primarily on the sociological factors involved in learning political information). I argue that in order to understand the effect of socioeconomic status and the motivation to learn about politics that the behavioral literature proposes, one should also take into account the historic economic disparities and family responsibilities identified in the gender and politics scholarship, which also influence women's opportunities to obtain political information. In my theoretical framework, the incubator mechanism explains the gender gap and its origins by contextualizing the supply of information about politics. I will place a particular emphasis on the school context. Schools represent a community in which students should receive

equal exposure to information and be subject to similar learning expectations. Together, these school-based factors should help decrease gender differences in political knowledge.

“Incubator” Exposure Mechanism

An incubator mechanism exists when exposure to information about politics is provided to individuals through a similar input (e.g. classes, discussions, similar patterns of media usage, etc.) inside the boundaries of an institution or organization (e.g. home, school, or workplace). I argue that the incubator mechanism acts as a “haven” that insulates women from external factors such as home responsibilities or socioeconomic inequalities that might otherwise limit their exposure to information about politics. I expect to find that men and women who experience an incubator mechanism are exposed to similar political information, thus narrowing the gender gap. Similar exposure to information and facts about politics should lead to a similar distribution of political knowledge. A study of context is important for the literature because most of the research on the gender gap in political knowledge focuses on the adult population. Fewer studies examine the influence of context on this gap before adulthood (the exception is Wolak and McDevitt 2011). An examination of the role of context through the incubator effect should shed light on the influence that a similar supply of information has on the size of the gender gap in political knowledge. Education reduces the gender gap in political knowledge and a closer examination of the school context should provide an explanation for *how* and *why* gender differences vary and persist.

The influence of the school context on political knowledge has inspired a significant amount of academic inquiry because educational attainment shows a consistent positive relationship with political knowledge. Researchers are eager to explore what element of educational attainment influences political knowledge. The examination of the link between education and political

knowledge broadened when Langton and Jennings (1968) found that civic education did not influence political engagement. This led to the generation of a scholarly debate about the importance of education and political knowledge (Niemi and Junn 1998). My analysis of recent national public opinion surveys in Mexico finds that the gender gap in political knowledge is pronounced in the adult population. To see if this gap was replicated among young people, I conducted an original survey of over 1,925 high school students in 14 schools in two cities in Mexico during 2010 and 2011. I found no evidence of this gender gap among the adolescent population.² I argue that I have identified an “incubator mechanism” that is taking place in the school context in Mexico.

Students are part of a captive audience that receives the same input of information in classes and discussions about politics. The school also insulates students from external factors that could otherwise compromise their access to information. In the case of adolescent girls, being required to attend school for six hours a day literally shields them from doing household work during that time, thus freeing them up to learn about politics. Therefore the distribution of political information is similar by gender. However, this school-related incubator mechanism that people experienced does not remain in effect at all times. In Mexico there are gender differences in political knowledge among the adult population, yet girls and boys in high school in two cities in Mexico are equally knowledgeable about politics. These contradictory findings raise the question: Why are there gender differences in political knowledge among adults, but not among teenagers? When individuals are no longer under the influence of an incubator mechanism, then

² Approved IRB # H10-197

it is necessary to take into account another effect that happens when women join the labor market. This is linked to the structural mechanism that I will describe in the next section.

Structural Mechanism

A major explanation for group differences in the behavioral literature suggests that access to information depends upon socioeconomic status (Delli Carpini and Keeter 1996). This means that people with fewer socioeconomic resources have less access to information. Men and women, similarly, have different levels of resources to invest in political information (Dow 2009; Frazer and Macdonald 2003; Kenski 2000; Ondercin, Garand, and Crapanzano 2011; Stolle and Gidengil 2010; Verba, Burns, and Schlozman 1997). International reports and structural explanations acknowledge that gendered variations in political information are due to differences in socioeconomic status (Burns 2002, 2007; Tong 2003; Verba, Burns, and Schlozman 1997; Verba, Schlozman, and Brady 1995). Women have lower wages than men, work in more informal sectors, and are more likely to spend their income on family, health, and household related costs for their children's and their own welfare (Bekhouche et al. 2013; Benería 2003; Ñopo 2012; UNDP 2013). According to the United Nations' Millennium Development Goals report, women's participation in the labor force has improved over the years but women still experience unequal payment and barriers to access non-traditional occupations like managerial positions (UNDP 2013, 2014).

As a result of these differences in socioeconomic resources, women often experience a “double burden” of responsibility when they work outside the home and maintain their household duties. The consequence of this double burden is that women have less free time to invest in learning about politics and are less likely to discuss political events that are not a priority (Inglehart and Norris 2003; Iversen and Rosenbluth 2006; Verba, Burns, and Schlozman 1997). When

controlling for socioeconomic differences, the gender gap in political knowledge persists (Dow 2009; Frazer and Macdonald 2003; Kenski 2000). Structural disadvantages, therefore, constrain women's political knowledge, preventing them from continuing to acquire information about political events or facts. This explanation however, does not fully explain the gender gap in political knowledge.

In the empirical section of this dissertation, I demonstrate that structural factors provide the main advantage for men's political knowledge. Men tend to have greater political knowledge because of their higher income, but they also benefit from the traditional structures of domestic life. For example, being married positively impacts men's political knowledge but not women's political knowledge, suggesting the existence of a subsidizing effect in which men benefit from women's household work. Married women tend to have more responsibilities at home, preventing them from continuing to access political information. Married men are significantly more likely to have higher levels of political knowledge than unmarried men. Marital status, meanwhile, has no effect on a woman's political knowledge. This suggests that while material resources matter, disparities in household responsibilities are also worthy of attention, since women seem to subsidize men's political knowledge. Thus, I argue that the gender gap in political knowledge exists, in part, as an outcome produced by women's unequal access to information.

Agency Mechanism

Even when people have limited (or abundant) resources to access to information, it is important to consider how variation in personal motivation affects willingness to learn about politics.

Women and men have agency and are able to choose whether they want to become informed about politics in general or to become knowledgeable about certain issues. People decide what they want to learn about politics. This agency mechanism is linked to the more general

motivational factor that the behavioral literature offers as a second explanation for the unequal distribution of political knowledge among social groups. In the behavioral model, motivations include interest in politics, media usage and, more recently, the study of emotions that may activate people's interest to learn about politics (Delli Carpini and Keeter 1996; Marcus, Neuman, MacKuen and Crigler 2007). The agency mechanism works from the demand side of political knowledge acquisition because people actively seek information and decide what they want to learn about politics.

When exploring an agency mechanism and motivations in general, one needs to consider the evidence from the gender and politics literature showing that women are socialized to see themselves as being outside the political realm (Lawless and Fox 2010). Various socialization processes assign women the responsibilities of the home and tacitly preclude them from being politically active (Inglehart and Norris 2003; Krook and Norris 2014). For example, women are typically more interested in local and neighborhood politics, and focus on educational and welfare policies (Gutmann 2002; Stolle and Gidengil 2010), sometimes to the exclusion of general politics (Dolan 2011). In addition to this, the presence of women in elected office should send a motivational message for women's political engagement in general (Burns, Schlozman, and Verba 2009; Sanbonmatsu 2003). The argument is that women in elected office serve as role models for other women and have a positive impact on their political engagement (Zetterberg 2009).

In this study, the representation of elected women in leadership positions at the local level has a moderate but positive association with political knowledge. Women's representation at the local level may offer an opportunity to explore how female political representation affects women's political engagement. In a review of a 219-question dataset about political knowledge I find that

the gender gap in political knowledge shrinks—and some cases closes—with regard to some knowledge-based questions about education, social policy, and human rights. This echoes the argument that women tend to be interested in particular topics that are not necessarily considered to be “political” in nature (Dolan 2011; Stolle and Gidengil 2010). My finding reinforces the research that positions women as “specialists” in the political topics of their interest. As a result, there are areas in which one should expect that women and men would have convergent knowledge related to politics, but there will also be topics in which men will diverge due to interest (or lack thereof) in certain political arenas.

The Gender Gap in Political Knowledge in the Case of Mexico

Most research on the gender gap in political knowledge concentrates on advanced democracies, but there is evidence that like other established democracies, there is a gender gap in political knowledge in Mexico (García Trejo 2009, 2013). This pattern has not been studied in depth in this country.³ For instance, an analysis of political knowledge questions asked in Mexico between 1989 and 2010 shows that over this 21-year time period, women in Mexico were less likely to respond to facts about politics and how institutions work. The gap between men and women’s levels of knowledge was sometimes as wide as 26 percentage points⁴.

In pursuing the study of the gender gap in political knowledge, I focus specifically on the case of Mexico. This is a topic that, in the context of Mexico, remains virtually unexplored.⁵ There is

³ See the work of Fraile (2014) for the study of gender differences in political knowledge in Spain; and Tong (2003) for the case of China.

⁴ Calculations from the author based on 219 items collected from 1989-2010 at the Roper Center for Public Opinion Research, The Comparative Studies of Electoral Systems, *Banco de Información para la Investigación Aplicada en Ciencias Sociales (BIIACS)* México and <http://latinousa.org/2015/03/20/1512-a-latino-history-of-hip-hop-part-i/> Surveys of México, las Américas y el Mundo. The author collected the items and built a dataset to analyze the patterns of political knowledge. Chapter 3 includes a more detail discussion about the items collected.

⁵ To my knowledge studies focusing on the gender gap and political culture using public opinion surveys include Moreno (2005) and Tarrés Barraza (2006) and a survey conducted among children (Segovia 1975).

broader interest in the study of Mexican political knowledge in general; early comparative public opinion research scholars found low levels of political knowledge in Mexico (Almond and Verba 1963). But this research mostly concentrates on the impact of political knowledge in terms of electoral behavior and political culture (Lawson and McCann 2005; McCann and Lawson 2006; Moreno 1999), rather than seeking to understand gendered differences in political knowledge.

One of the purposes of case studies is to test theories (Van Evera 1997; Gerring 2009). As Van Evera explains, "case studies can supply quite decisive evidence for or against political theories" (1997, 54). In this dissertation, Mexico serves as the case study that will test the theoretical framework of structural, agency, and incubator mechanisms with regard to the existence of the gender gap in political knowledge. George and Bennett (2004, 75) explain that the primary purpose of theory testing cases is to explore in-depth causal mechanisms "that can lead to the outcome of interest and determine under which these patterns occur." Using this approach, one can identify conditions or factors in which an outcome is most-likely or least-likely to happen (George and Bennett 2004, 75).

Mexico is presented as a most-likely case study in terms of gender gaps in political knowledge. Mexico has succeeded in closing gender gaps in education; today, women vote at a higher rate than men (Hevia Rocha and Cruz Guerrero 2012). Despite these advancements, however, Mexico still has large structural gender disparities, which permeate women's everyday lives. For instance, in 2012, the Latin American Public Opinion Project (AmericasBarometer) finds that in Mexico, women have lower incomes (Romero and Páras 2013, 19) and levels of educational attainment than men (Romero and Páras 2013, 16). In Mexico there is also a traditional perception of women's social roles. For example, even when women take a more active role in

the community, women with two children are still less likely to participate in politics at the local level compared to men with similar characteristics (Romero and Páras 2013, 64).

In terms of political representation, women are over half of the total population in Mexico, but this does not mean that they are equally represented in government. Gender quota laws at the federal and state levels have prompted an uptick in the number of women in elected office (Baldez 2004, 2007; Barrera Bassols and Massolo 2003; Bruhn 2003; Rodríguez 2012). However in Mexico, the women's political representation varies greatly between the federal, state, and local levels. There are 31 states and one Federal District. Each state obeys the Constitution of Mexico but has autonomy to pass legislation through a local legislature and municipal councils where men and women run for elected office. Only six women have been elected as state governors since 1979; in the federal Congress, more women occupy seats. Meanwhile, about seven percent of the 2,456 municipalities have female presidents (INEGI 2013c). Since the presence of women in elected office should activate women's political knowledge, the low numbers of women at the municipality level in Mexico may have an impact on women's motivation to learn about politics.

The conflation of all these factors suggests that as in other countries (where women have better socioeconomic situation), there should be a gender gap in political knowledge in Mexico. Given the social disadvantages that Mexican women face, it is even more likely that a political knowledge gap will exist. This makes Mexico a most-likely case study. By testing the theoretical framework of structural, situational, and incubator mechanisms in a most-likely case, we have the potential to apply the framework in other democracies, positioning this theory as one that can translate to other countries.

Contributions to the Study of the Gender Gap in Political Knowledge

The dissertation makes a unique contribution to the political science literature by exploring the persistence and roots of the gender gap in distribution of political knowledge. The mechanisms revealed in the project and the case study method of inquiry help to bridge the literatures of political behavior and the study of the gender divides in political engagement. Few studies focus on the existence of the gender gap in political knowledge outside well-established democracies; my project thus contributes to this research agenda by initiating a conversation about patterns in developing democracies. This study also contributes to comparative politics agendas that tend to focus the study of gender on political representation by focusing on one of the pillars of political engagement—political knowledge—and how low levels of political information put women at a disadvantage in any democracy. This dissertation also addresses broader public policy debates, while offering a novel application of the incubator mechanism in order to test how the context of information supply may help decrease gender differences in political knowledge, especially when women and girls are expected to access and learn similar information about politics. At the public policy level this can be used to develop policies that help overcome the socioeconomic and agency barriers that people with low levels of information may encounter when trying to access information about how the government and its representatives work for them. Another major contribution of this dissertation is the study of the origins of the gender gap in political knowledge and the influence of the incubator mechanism within school contexts in two cities in Mexico.

Among the application of the theoretical framework and concepts used in this dissertation I anticipate that the structural, agency, and incubator mechanisms could be used in order to explain how other groups with unequal access to political knowledge may be similarly influenced; thus,

my work bridges political behavior, minority politics, and the study of gender, age and race gaps (Bobo and Gilliam 1990; Jennings 1996; Nicholson, Pantoja, and Segura 2006; Tate 2003). Finally, I see my dissertation contributing to the understanding of political engagement in general and its implication for women's political participation and representation, in particular. This project addresses three audiences: 1) scholars of political behavior; 2) scholars of gender studies; and 3) a broader audience of policy makers interested in access to information and its impact on both men and women's interest in government and representation. In particular, I argue the incubator mechanism provides an opportunity to understand what happens when women and girls are expected to learn the same information as men and boys. The lack of these opportunities diminish clearly outside the school context when women are less able to incorporate the process of learning about politics into their priorities because of the structural and motivational mechanisms that limit the effects of the context of information.

Data and Methodology

This study uses a research design based on Mexico as a case study for understanding gender differences in political knowledge. Using large N analysis in combination with field research analysis, I seek to (1) examine patterns of gender differences in political knowledge attached to the incubator, structural and agency mechanisms; (2) test the explanatory power of the aforementioned mechanisms; (3) examine and test structural and agency mechanisms using both the national surveys that are available in Mexico as well as a unique survey that I created and conducted for this dissertation because to my knowledge there is not a survey available that focuses on the gender gap in political knowledge before adulthood in Mexico.

Investigating the incubator mechanism required moving beyond national surveys and focusing children's levels of knowledge while they were still in school. I conducted an original survey of

1,925 students in public high schools in Mexico City and Hermosillo, Sonora (IRB #H10-197). I developed two different versions of the questionnaire based on open-ended and pre-coded response categories including “don’t know” as a response category because previous studies have shown that the size of the gender gap in political knowledge varies with differences in question formats (Dolan 2011; Stolle and Gidengil 2010). My survey was designed to capture this potential source of variation because it can influence on the size of the gender gap in political knowledge; it is thus important to control for these effects.

To study the consistency of the gender gap in political knowledge in Mexico among adults across topics and time, I analyzed 219 questions about political knowledge asked between 1989 and 2010. The questions were collected from various surveys archived in the Roper Center for Public Opinion Research, available at the *Banco de Información para la Investigación Aplicada en Ciencias Sociales* (BIIACS), the Latin American Public Opinion Project (LAPOP), *México, las Américas y el Mundo* and the Comparative Study of Electoral Systems (CSES). The questions on political knowledge form a dataset that enables us to examine survey questions by topic and identify frequently asked questions across years and level of difficulty. These questions aim to show the consistency of gender differences in political knowledge in Mexico across topics and time in order to provide robust evidence of gender disparities in political knowledge.

I use the CSES data (1997-2006) as a pooled dataset, which is particularly useful to explore specific structural features and agency variables. Since the CSES data have variables identifying the municipality in Mexico, I am able to match individual data with aggregate data related to the female representation at the state and municipal levels, migration, and rural contexts. In my statistical analysis, I used ordinal logistic regression (among other forms of statistical analysis) to explore the data.

Plan of the Dissertation

The dissertation is divided in six chapters. Chapter 1 provides an overview of the statement of the problem, the theoretical mechanisms (structural, agency, and incubator) to explain why gender gap in political knowledge exists, its variation, and its origins. This chapter also includes a section explaining the case of Mexico in relation to the gender gap in political knowledge and the project's methodology. Chapter 2 presents the literature review and explains further the theoretical framework based on the structural, agency, and incubator mechanisms that help to explain gender differences in political knowledge by placing a special emphasis to the context in which people learn about politics. According to these mechanisms, demand of information about politics is not solely a product of individual decision based on the availability of resources and motivations as explained through the political behavior literature. Instead, the gender gap is a reflection of social expectations and structural limitations that are beyond individual women's control. When women experience similar exposure to information to learn about politics, a "haven" is formed that levels women's exposure to information and provides them with the opportunity to catch up with men's political knowledge (i.e. the incubator mechanism), despite the existence of individual level mechanisms (i.e. the structural and agency mechanisms). When women are expected to absorb the same information about politics, they are insulated from the structural and agency mechanisms that may increase the gender gap in political knowledge.

Chapters 3 through 5 empirically test this theory. Chapter 3 provides evidence of the consistency of Mexico's political knowledge gap. Once the gender gap in political knowledge is established through the analysis of public opinion data, I progress in Chapter 4 to test the structural, agency and incubator mechanisms among adult population. In Chapter 5, I test the theoretical mechanisms among young people in fourteen high schools in two cities in Mexico (Hermosillo,

Sonora and Mexico City). Here, I emphasize the school context in students' acquisition of information. In Chapter 6, I present the project's conclusions.

Chapter 2. Structural, Agency, and Incubator Mechanisms: A Theoretical Framework for the Study of Gender Differences in Political Knowledge

This chapter consists of two main sections. The first section is a review of the extant literature on political knowledge. The discussion begins with a revision of the extant theories by explaining why political knowledge differs in society. These theories come from a political behavior approach for studying political knowledge (demand and supply of information) and from the gender and politics literature which examines gender gaps in political engagement as a function of socialization, structural and situational conditions.

The second section of this chapter explains the theoretical framework of the dissertation. I posit that the gender gap in political knowledge can be explained by three mechanisms: structural, agency and incubator. The structural and agency mechanisms are rooted in the extant behavioral literature that emphasizes the importance of individual characteristics and the information environment as sources of political knowledge. The innovation proposed in my theory is the incubator mechanism. This incubator mechanism builds on the gender and politics literature by criticizing behavioral approaches to political knowledge, which often understate the forces of socialization that limit women's political participation. Thus, in my theory, the incubator mechanism provides a means for leveling the playing field between men and women. When men and women are in a similar information environment and have similar opportunities—and responsibilities—to learn about politics, gender differences in political knowledge should at least shrink or at best disappear. In other words, men and women should have similar levels of political knowledge when they have similar opportunities to learn.

Why Do Women Know Less About Politics Compared To Men? Existing Approaches

Demand for information approaches

In a demand-side theoretical framework, the focus is on the individual who decides to make a personal investment by learning about politics. In this way, political knowledge becomes a matter of individual characteristics and decisions. Demand-side theories concentrate on how much a person seeks to access political information based on their available resources and willingness to learn. Individual characteristics such as income and civic duty should, in this model, explain which information about politics is sought and how much access to information about politics an individual attains. In this framework, political knowledge varies because people differ in their socioeconomic resources, abilities, and motivations when it comes to political information (Delli Carpini and Keeter 1996; Luskin 1990). These theories can also emphasize individual behavioral traits, like incentives and emotions, which motivate people to learn about politics (Marcus, Neuman, MacKuen and Crigler. 2007; Prior and Lupia 2008).

Luskin (1990) explains that people need to have certain capabilities such as intelligence and motivation to learn about politics; because there are variations in these individual characteristics, the distribution of political knowledge is uneven. Under this model, ability means that a person needs cognitive skills (e.g. intelligence) to absorb and accumulate information about politics. At the same time, this person should also have an interest or motivation to put his or her skills to use by organizing and assimilating type of information (Luskin 1990, 331; 336). Abilities and motivations to learn about politics are necessary because, Luskin argues (1990) the process of learning about politics is complex. Many people, according to him, do not possess cognitive tools to become politically sophisticated. The lack of significance of sex and race as variables

capturing historical social barriers to acquiring political information led Luskin (1990, 337) to assume these social disadvantages may not be as prevalent today as they were in the past.

In Delli Carpini and Keeter's (1996) model on American political knowledge, however, gender is included as a salient factor. Delli Carpini and Keeter (1996) explore individuals' opportunities to learn about politics, which are not necessarily equally distributed. Their model assumes that political knowledge is dependent on an individual's distribution of motivation, opportunities, and abilities. This model discusses what people should know about politics, how political knowledge is socially distributed, and how low levels of political knowledge affect a democratic society. This model is also referred to as the "traditional model" (Delli Carpini 2009) because it was one of the earliest models to specifically examine the distribution of political knowledge in society.

In this traditional model, "opportunities" refers to the chances people have to learn about politics based on the availability of information, a person's knowledge base about a topic, and the use of communications technology to acquire information. Opportunities to become informed about politics depend on educational background, monetary resources, workplace networks, and the access to mass media (Delli Carpini and Keeter 1996, 110). "Motivations" indicate the decision to actively seek information about politics and the subsequent investment of time in political knowledge acquisition (Delli Carpini and Keeter, 1996, 114). Motivation also includes the feeling of civic duty that is part of the decision to becoming informed about politics (Delli Carpini and Keeter 1996, 114).⁶ The last part of Delli Carpini and Keeter's model refers to

⁶ A more recent behavioral perspective incorporates the relationship between motivation and political information, including—for example—the role of monetary incentives, (Prior and Lupia 2008) which heightens political knowledge. There is also research on the "gender stereotype threat" (McGlone, Aronson, and Kobrynowicz 2006). This occurs when an individual has advance knowledge about a gender gap in political knowledge, which can affect women's motivation to learn or respond to questions about politics. The role of emotions such as anxiety can also influence the distribution of political knowledge (Marcus, Neuman, MacKuen, Crigler. 2007; Valentino, Hutchings, Banks, Davis 2008).

“ability,” which is the capacity to acquire and retain political information. This ability may be cognitive (such as intelligence) or a matter of skills (like reading and writing) that facilitate the acquisition of political information.

The traditional model was also the first to explore the influence of gender on the availability of resources, opportunities, and motivational factors that ultimately explain the distribution of political knowledge. Given the theoretical influence of gender on the distribution of political knowledge and the evidence of a gender gap in political knowledge, Delli Carpini and Keeter (1996) welcomed a conversation with the gender and politics literature by stating that:

[M]ost theories regarding gender differences in political orientations are rooted in structural and situational explanations: females know less about politics than males because of differences in how the sexes are socialized and because of the difference opportunities afforded them to engage in the political world (Delli Carpini and Keeter 1996, 204).

The traditional model, then, emphasized the effect of gender on individuals’ opportunities and motivations, which in turn creates gender differences in political knowledge. While highlighting the importance of gender in explaining political knowledge, Delli Carpini and Keeter (1996) encouraged other scholars in the field of gender and politics to continue to explore why despite advancements in democracy, education, and political participation, women are still at a disadvantage when it comes to political information. There has been much theoretical investigation of the gender gap in political knowledge; however, before adding to this narrative, I will argue for the importance of information supply, using the political behavioral perspective⁷.

⁷ Before discussing information supply in more detail in the next section, it is important to note that another extant explanation for the distribution of political knowledge in society comes from the rational choice perspective. Rational choice perspectives argue that since becoming informed about politics is a costly process that requires time and resources, an unequal distribution of political knowledge should not be a problem because individuals make decisions with limited resources (e.g. in voting) and instead rely on heuristics or shortcuts of information when deciding to become informed about politics (Downs 1957; Popkin 1994). This means that when people vote they use information shortcuts (heuristics) to make political decision, as if they were fully informed, so low levels of political knowledge are not relevant for their decisions. According to this rational choice view, rational collective decisions

Supply of Information Approaches

Supply-side theories focus on the flow and structure of information. People receive their information from the media but also through institutions. The contexts in which people learn about politics can thus constrain their acquisition of political knowledge. The emphasis in a supply-side theory is on understanding the environment in which exposure to information influences an individual's learning process about politics. This view on the supply of information goes beyond the individual choice to become informed about politics and instead can focus on the institutions that are important for understanding the distribution of information among the population. In particular, a supply-side perspective will consider the role of the news media, elite agenda setting, and other social and political institutions such as the educational system and the electoral system (Berggren 2001; Boudreau and Lupia 2011; Gordon and Segura 1997; Jerit 2009; Jerit, Barabas, and Bolsen 2006; Niemi and Junn 1998). Exposure to information environments can foster the wide distribution of political information; for example, competitive elections may produce a more knowledgeable citizenry (Grönlund and Milner 2006) because political parties aim to present their platforms as clearly as possible and disseminate this information to as many people as possible, so the majority of citizens learn about competing political platforms. As Jerit (2009, 444) argues, the context of information “gives meaning to what otherwise might seem like disconnected events and helps people understand why issues and problems deserve their attention.” Thus, the importance of political knowledge resides also in

also should overcome low levels of political information in society (Page and Shapiro 1992). Since the rational choice perspective is a matter of cost-benefit analysis, there is not to my knowledge an extant focus on gender gaps in political knowledge as part of these rational choice explanations. There have been few attempts to start a conversation between feminist and rational choice approaches (Driscoll and Krook 2012). If the gender gap in political knowledge were to have a focus on gender and rational choice theory, the gap may be explained by understanding what are the relative costs for men and women in becoming politically informed, what maximizes the returns of being informed about politics and whether men and women differ in their benefits when learning about certain topics related to their interests (e.g. politics vs. social policy).

how the supply of political information flows through a specific context or institutional arrangement.

Another aspect associated with the context of exposure to political information is media usage. Through media, people can learn about politics if they watch programs with political content (Grönlund 2007; Jerit, Barabas, and Bolsen 2006; Norris 2012; Tichenor, Donohue and Olien 1970) or they may absorb political information by incidental contact through television programs, soft-news, and the Internet (e.g. Xenos and Moy 2007). In studies that focus on media usage and its relationship to political knowledge, researchers have found a link between increased media usage and higher levels of political knowledge (Conway, Wyckoff, Feldbaum, and Ahern 1981; Vreese and Boomgaarden 2006). The importance of the study of media in gender differences in political knowledge lies in the role of supply of information that men and women are in contact with (television, radio, newspaper, internet, etc.). Since media usage that exposes people to political information can vary among individuals, levels of political knowledge may be impacted given a person's intended or unintended access to media.

A theory that places specific emphasis on the role of context in the distribution of political information is Niemi's and Junn's (1998) exposure-selection model. The context of information in this model refers to the availability of information about politics in institutions like schools and the household. For example, respondents are asked about the availability of information at home by measuring how many books are owned. In the school context, availability of information depends on the number of courses and exposure to civic education. In this theory, political learning occurs when individuals are both exposed to information about politics and have individual motivations that cause them to seek out information about politics. As Niemi and Junn (1998, 531) explain, the acquisition of political knowledge follows a two step process:

“First be exposed to relevant political information and then select that information for retention...both exposure and selection are necessary conditions for political knowledge, neither is sufficient alone.” In this way, people should have a supply of information that provides them with the opportunity to learn about politics (Niemi and Junn 1998), but they also need to be motivated to absorb the information to which they were exposed. For example, exposure to information through classes within the context of school will increase political knowledge, and this exposure to information will benefit the students if they also like learning about the government. Thus exposure to information is related to motivation for learning about political topics. The supply of information improves as a condition of individual motivations when selecting what to learn about politics.

In the exposure-selection model, gender serves as a way to understand how despite similar exposure to information, boys and girls have different “tastes” when learning about politics. For example, boys prefer classes related to government and civics, whereas girls prefer classes related to the humanities (Niemi and Junn 1998, 59). Although the exposure-selection model uncovers socialization differences in how girls and boys approach political learning, the model demonstrates that gender differences in political knowledge exist, to a smaller extent, before adulthood (Niemi and Junn 1998, 109). The exposure-selection model can be applied to the study of the distribution of political behavior before adulthood and places special emphasis on the supply of information at school and at home. There is not, however, a specific focus on the importance of the context of information when adolescents become adults; or in gender differences in political knowledge during adulthood; or the ways that gender influences opportunities and exposure to political information. In this dissertation, I develop the incubator mechanism to stress the importance of exposure of information in widening or decreasing the

gender gap in political knowledge. The incubator mechanism, through education and the school context, can offer insights into when both girls and boys can experience a leveled field in exposure to information. It is, however, still in tension with question of what interests children enough to motivate them to learn about political information.

Another supply-side perspective concentrates on the exposure to information through institutional characteristics. Electoral and political systems should influence the political sophistication of an individual (e.g. national competitiveness, electoral system, and number of parties). Gordon and Segura (1997, 533) agree that “certain institutional contexts can serve to increase the amount of ‘free’ information” available to people. For instance, exposure to political information should be more structured and available in a system where few political parties are competing because there is an assumption that campaign issues will be clearer and people can therefore learn more easily what each political party or candidate stands for. Later, Berggren (2001) reinterpreted Gordon’s and Segura’s perspectives by conditioning individual behavior to their socioeconomic status. In other words, Berggren (2001) proposes that besides adding the effect of contextual variables to individual behavior it is also important to understand how “[t]he individual levels SES variables...are reconceived as indicators of underlying resources that affect ability and willingness to pay the high cost of sophistication” (Berggren 2001, 535). This framework has also influenced comparative politics since Grönlund and Milner (2006) included the importance of the electoral system (proportional representation vs. majoritarian) and the Gini index to explore the distribution of political knowledge across countries. Even after controlling for institutional factors (such as proportional and majoritarian systems), individual factors (such as education, age, gender, marital status, children at home), and variables related to voting (preference, party identification and the importance of voting), they find a gender gap in political

knowledge. They also find that being married benefits levels of political knowledge, but this effect is “offset by having small children” (Grönlund and Milner 2006, 393)⁸.

In general, the evidence about the importance of the supply of information highlights the importance of the context of exposure to information as a mechanism that influences individuals' decisions to become informed about politics. The link between the context of information and social expectations to learn about politics will be addressed in the next section. The next section includes the gender and politics scholarship that provides socialization, structural and situational theories to understand why inequality in political knowledge persists given differences in how women experience their socioeconomic status and their motivation to learn and become exposed to political information.

Gender and Politics Approaches

Socialization

How can society's expectations influence gender differences in political engagement? (Bennett and Bennett 1989; Sapiro 2004; Sapiro and Shames 2010; Verba, Burns, and Schlozman 1997).

A socialization approach tells us about the formation of political attitudes before and during

⁸ Although not specifically addressing the importance of gender in accessing political information, the importance of the context of the supply of information is also included in Neuman's theory of three publics (1986) and Althaus' theory of "issue publics" (2003). This theory explains that despite the presence of a large public with low political knowledge (paradox of mass politics), democracy still works because of the presence of elites in charge of influencing the informational context. Neuman's theory divides the population into apolitical, mass public, and the elite public categories. The paradox of mass politics is solved because the elite group formed by politicians, journalists and other political elites who set the public agenda and the issues that will be discussed, and mobilize the mass public's support in order to get policy support. Under this framework, the existence of elite groups appealing to the masses through issues and creating a media environment with issues determined by this elite group will compensate for the rest of the population's lack of information about politics. The theory of "issue publics" arises as a response to Neuman's elite theory on the information environment that assumes citizens are ignorant about politics. For the "issue publics" perspective (Althaus 2003), the mass public is not necessarily condemned to having low levels of political information because they can take advantage of the supply of information to specialize in learning about certain topics (become specialists) instead of having "general" information about politics (Hutchings and Piston 2011).

adulthood. According to this approach, differences between men and women's perceptions of politics are the result of childhood learning dynamics based on information about gender specific roles in society (Orum, Cohen, Grasmuck and Orum 1974, 198). As Krook and Norris (2014, 5) explain, socialization permeates men's and women's responsibilities and assigns men to be responsible for the public arena in which politics belongs, whereas women are socially assigned to the private sphere, which covers family and household activities. Women are then perceived as belonging to the "domestic" space, a safe place where they should concentrate their action (Craske 1999; Lawless and Fox 2010; Pateman 1988; Sapiro 1983). The perception that women are not part of the political sphere is reinforced by the underrepresentation of women in elected offices (Lawless and Fox 2010; Morgan and Buice 2013) because women still have few models to follow in the political arena, especially in key leadership management positions. If women had more presence in leadership positions this could have the potential of serving as a role-model to motivate other women to engage in political activities (Campbell and Wolbrecht 2006; Wolbrecht and Campbell 2007). The process of socialization can also account for life-cycle effect and contextual changes in adulthood (for example, how marital status, migration, and working outside the home may change and stabilize political attitudes and political identities in societies) (Hooghe 2004; Sears and Brown 2013). As people age, they also face different roles and responsibilities that may influence how they perceive and learn about politics.

The socialization process also exists when one considers stereotypes related to politics and women. For example, there is the stereotype that "a man must make the political decisions" (Orum, Cohen, Grasmuck and Orum 1974, 198), that politically passive women do not actively participate in political campaigns or run for office (Welch 1977, 712), or the belief that "politics

is a man's game" (Verba, Burns, and Schlozman 1997, 1064). Socialization processes influenced by gender stereotypes also explain the ways that women approach politics.

Given the size and persistence of the gender gap in political knowledge, researchers "suggest the gender gap may be rooted in political socialization" (Mondak and Anderson 2004, 495–6).

Socialization should lead women to form specific interests in learning about politics on topics related to education, family, and health (Dolan 2011; Gidengil, Giles, and Thomas 2008; Gidengil, O'Neill, and Young 2010a; Ondercin and Jones-White 2011; Stolle and Gidengil 2010), in their preferences for learning about politics in non-conflictive environments (Wolak and McDevitt 2011), or from having a dislike of classes related to government (Niemi and Junn 1998). This research studies the gender gap as if women had a different "perspective" on the way they approach politics and gravitate to learn about politics only when they see clear interests at stake (Conover 1988).

The literature has also the role of female political representatives in motivating women to learn about politics. Some salient findings are in Verba, Burns and Schlozman's work (1997, 1064), where they find that the gender gap in political knowledge decreases when women are asked if they know who Margaret Thatcher was. In other words, when women know there are salient women political leaders, they also may become more interested in knowing more about politics, as they are reminded about women who are entering a predominantly men's world.

Sanbonmatsu's work studies the link between the presence of women in leadership positions and political knowledge (2003). Sanbonmatsu shows that people who know the actual number of women in elected office express greater support for increasing the number of women in elected office.

The influence of socialization theories on social expectations and life-cycle effects on determining *what* and *how* women should engage in politics is also present in the study of the gender gap in political knowledge and social capital (Gidengil, Goodyear-Grant, Nevitte, Blais 2005). Putnam's (1995) work on social capital maintains that "social capital allows political information to spread" (Gidengil, Goodyear-Grant, Nevitte, Blais 2005, 242). Yet, after analyzing the participation of women in voluntary information, Gidengil, Goodyear-Grant, Nevitte, Blais (2005) find that Putnam's (1995) claim does not explain the gender gap in political knowledge because it does not take into account the influence of the social and civic context that segregates the participation of women and men in associations. The study finds, instead, that men have better social networks and exposure to a diversity of sources from which to learn about politics in comparison to women's social networks which are not as diverse as the ones men usually access (Gidengil, Goodyear-Grant, Nevitte, Blais 2005, 264). Thus, an increase in social capital does not necessarily spread information equally for men and women because social capital itself is also gendered.

Given the importance of socialization and the study of the gender gap in political knowledge, there has been a recent interest in the study of the origins of gender differences in political knowledge among adolescents. Wolak and McDevitt (2011) find that there is a gender gap in political knowledge among high school students, and that boys and girls develop different "approaches" toward political learning. They explain that girls prefer a consensus environment⁹ when learning about politics, whereas boys prefer to learn about politics in environments of

⁹ According to Wolak and McDevitt's (2011) work, the consensus environment refers to the findings that girls learn more about politics through talking with their parents and if they live in a county where there are not partisan divisions. In contrast, a conflict environment highlights how boys' political knowledge increases through political debates and when they live in counties that have greater electoral competition.

conflict and discussion. Moreover, Wolak and McDevitt (2011) show that rich information contexts such as political campaigns shrink the gender gap before adulthood. A similar pattern is also found among adults during advanced stages of political campaigns and in places where information about candidates and political parties is more likely to be found (Ondercin, Garand, and Crapanzano 2011)¹⁰. As part of the study of socialization among adults and adolescents, there is also evidence about how the societal role of women and girls (as people in charge of household duties) also influences their socioeconomic status and social roles. Hence the societal structures and the contexts of political learning play a key role in affecting women's political knowledge.

Structural and Situational

Structural explanations indicate that, despite economic advancements benefiting women, women are still not actively engaged in politics (Huddy and Cassese 2011; Sapiro and Shames 2010; Tong 2003). Structural and situational theories are intertwined because both put a special emphasis on the responsibilities that women assume in societies, as well as their socioeconomic status differences, and how these effect women's ability to become fully engaged in politics (Burns, Schlozman, and Verba 2009; Verba, Burns, and Schlozman 1997; Verba, Schlozman, and Brady 1995). Gender gaps in political engagement according to these perspectives are rooted in disparities in socioeconomic status that place women at a disadvantage. Women for example have disadvantages in their socioeconomic resources because they are more likely to participate in informal occupations and part-time activities and therefore acquire less wealth (Ñopo 2012). This disparity in wealth should prevent women from engaging with more information from

¹⁰ For the effects of information in presidential campaigns see Bartels (1996).

which they can learn or participate in their priorities, even when they participate in greater numbers in the workforce.

The situational perspective explains that family responsibilities (e.g. child care responsibilities and household chores) and the fact that women do not see politics as part of their priorities suppress women's abilities to participate fully and learn about politics (Burns, Schlozman, and Verba 2009). Constrained resources leave women investing their resources in activities related to family and education and with fewer resources to spend in their potential political life (Frias 2008). The evidence suggests that resources such as income help to increase women's political knowledge but do not explain the gender gap in political knowledge. Even when they have similar levels of income as men, women lag behind men in political knowledge (Gidengil, Goodyear-Grant, Neviite, Blais 2005; Huddy and Cassese 2011; Kenski 2000; Verba, Burns, and Schlozman 1997). For example, Ondercin, Garand and Crapanzano (2011) find that high levels of income increase the level of political knowledge among women and men but do not close the gap. Interestingly, marital status has a positive effect on men's political knowledge but a negative effect on women's political knowledge (Ondercin, Garand, and Crapanzano 2011, 736). This points to the burden of responsibilities that women have at home, which also constrain their access to political information.

The study of gender socialization and the structural and situational barriers that women experience incorporates the individual perspective but also takes into account how society and institutional contexts constrain women's and girls' behavior when learning about politics. The gender and politics literature presents evidence of how socialization processes have long-term effects on women's views of politics, the disparities in the resources, and the burdens of responsibilities women face when prioritizing *how* and *what* to learn from politics. Both the

political behavior and gender and politics literatures offer opportunities to enhance research explorations of the gender gap in political knowledge; I build on these opportunities in my own theoretical framework.

Theorizing the Structural-Agency-Incubator Model

The political behavior literature studying the effect of individual characteristics on demand for information highlighted first the gender gap in political knowledge (Delli Carpini and Keeter 1996). Another strand of the political behavior literature focuses on how the supply of information, namely institutions and the information environment, constrain individuals' opportunities to learn political information and how political learning happens within specific contexts (Delli Carpini 2009, 42). Finally, the gender and politics literature provides a framework that addresses the effects of long-term socialization and structural and situational factors on women's political knowledge (e.g. Sapiro and Shames 2010).

The gender and politics literature often critiques the behavioral model for its lack of a theoretical framework that includes the role of women in a society, which includes differences in socioeconomic resources. This socialization process influences their ability to seek political information and places them at a disadvantage in exposure to information. Moreover, this dissertation develops a framework to incorporate the study of the roots of the gender gap in political knowledge. Scholarship has focused on the gender gap among adult population but there no one has made a connection between how structural and agency barriers also influence men and women before adulthood. A theory that helps to explain variations of the gender gap in political knowledge before adulthood is key to advance gender political equality in any democracy. In linking the political behavior literature with the scholarship on gender and

politics, I seek to develop a framework that integrates theorists from political behavior with the gender and political literature. Below, I will explain each aspect of my theoretical framework.

Structural Mechanism

The traditional behavioral model rests on the assumption that the better a person's socioeconomic situation, the greater her opportunities to be exposed to political information. Socioeconomic status increases opportunities to access to communication technologies as well as (potentially) availability of time to invest in learning about politics (Luskin 1990). Nowadays, women have drastically advanced their opportunities to enter and participate in the workforce. However, women still experience unequal socioeconomic resources that may influence actions beyond their voting and affect their overall level of political engagement. For the structural mechanism, I argue that in order to understand the effect of socioeconomic status that the behavioral literature proposes, one should also take into account the historical economic disparities and family responsibilities that are still influencing women's opportunities to obtain political information.

The structural mechanism connects with opportunities to learn about political information. The assignment of responsibilities of women at home combined with less stability in the workforce places political information at the bottom of women's priorities. When women face structural inequalities, women have a greater burden-sharing in the household, where women do the disproportionate share of caregiving and other unremunerated household labor (Verba, Burns, and Schlozman 1997). Even after women have accessed the workforce and achieved education at equal rates as men, women still experience a gender gap in political knowledge (Kenski 2000; Ondercin, Garand, and Crapanzano 2011). The combination of socioeconomic status and family responsibilities should be taken into account as part of the structural mechanism influencing the

way women take advantage of opportunities to learn about politics. This structural mechanism indicates that women do not access political information at the same rate as men do because even when they have similar socioeconomic resources (e.g. income), women face pay gaps, have less access to secure jobs, and are more likely to work on the informal sector (Ñopo 2012). In turn, the available resources women may have are directed to priorities related to their socioeconomic status, leaving political information outside of that list of priorities. Political knowledge is sometimes considered to be “the currency of citizenship” (Delli Carpini 1996, 8), but when one incorporates the perspective of the structural inequalities from the gender and politics literature, it indicates that women are experiencing unequal opportunities to access this type of currency.

Agency Mechanism

Another factor at play when accessing political information is the motivation people have to learn about politics; this also differs for men and women. The structural mechanism influences women's opportunities to learn about politics by limiting the availability of resources to invest in politics, whereas agency is at the heart of the access¹¹ that women have to political information. An agency mechanism considers that women can actively seek and demand information. Agency can exist even when people do not have the resources to facilitate learning about politics. However, the active desire to learn about politics is limited by socialization expectations toward women's diminished role in politics. Women can have a potentially active motivation to learn about politics, but this competes, for example, with women's lack of representation in politics. If women are not actively participating in salient positions in elected office, this sends an indirect message to women that they are not part of this political arena. The agency mechanism seeks to

¹¹ Access and exposure to information are concepts difficult to distinguish, but in the case of my explanation, exposure to information refers to the relative passivity of just being "exposed" to information versus a person "actively" seeking information, which is at the core of the agency mechanism.

account for the role of socialization in the way women approach politics as well as the role of women in leadership positions who can activate women's political knowledge.

A lack of representation of women in elected office should reinforce the belief that women are not part of the political realm. Women are not equally represented in political institutions, like Congress, which are traditionally male-dominated. Scholars argue that the presence of women as representatives can send empowerment, motivational, and role-modeling messages that improve women's political knowledge and general political engagement. For example, Verba, Burns, and Schlozman (1997) found that living in a place with a female-elected politician has a significant impact on women's political information and on knowledge of public officials' names.

Women's potentially active role in learning about politics is negatively influenced by a socialization process that leads women away from political engagement, which affects their active choice to learn about politics. The greater agency effect should lead to less access to political information in general. There is an influence of social roles in the agency of women that instills in them feelings of apathy about politics. This ultimately, should widen the gender gap in political knowledge. As Stolle and Gidengil (2010) explain, women's lack of knowledge about certain topics in politics does not necessarily reflect the motivation women have to learn about these topics (Stolle and Gidengil 2010). Women tend to be less interested in politics because, when they are younger, they are socialized to view politics as a complex concept, a source of conflict that is generally not considered part of their "sphere of action" (Wolak and McDevitt 2010). This sphere of action argument rests on the assumption that women are motivated to learn about topics that are not necessarily considered as "political," such as education, and social programs. (Dolan 2011; Stolle and Gidengil 2010). That is, that there are specific issues that women feel more interested in learning about and are more knowledgeable about. The influence

of the agency also indicates that women's knowledge surpasses men's in some topics.

Methodological evidence also reinforces this argument when findings reveal that women are more likely to answer that they “don't know” or refuse to respond political knowledge questions when compared to men (Mondak and Anderson 2004).

In sum, the agency mechanism exists when women show motivation to actively seek information about politics, but the lack of representation in the political arena and the assumed socialization that women and girls do not belong in the political sphere decreases women's opportunities to get interested in learning about politics. The study of the motivations that women have when learning about politics should include aspects of female representation and a counterargument of what is “general politics” in the context of the study of women's political knowledge. There is an important aspect to studying the gender gap in political knowledge and defining what it means to belong to the political sphere through the topics asked in political knowledge questions and the presence of female leaders who also represent role models for them.

Incubator Mechanism

The exposure of information includes the context in which a person learns about politics. There is evidence that people are exposed to political information in various contexts. People learn about politics in their homes (McIntosh, and Youniss 2007), at school (Niemi and Junn 1998), and through the media environment (Jerit, Barabas, and Bolsen 2006).

The critique that the gender and politics literature has of the behavioral model rests on the latter's lack of theorizing about how the role of gender in a society places women at a disadvantage even in exposure to information. Women have differences in their socioeconomic resources and

differences in the way socialization influences their agency. This affects their opportunities to learn about politics.

In the incubator mechanism, a similar supply of information should help neutralize women's disadvantages that are inherited by structural and agency mechanisms. One should expect to find an incubator mechanism when both men and women have similar opportunities to access to information about politics and are expected to acquire similar knowledge. The structural and agency barriers still exist, but their effect is not as powerful as it is outside this incubator mechanism.

Women start at different points with their levels of political information in comparison to men. Women in the incubator mechanism are experiencing a leveled field where they are also expected to learn about similar topics as men do and to learn as much and have similar exposure to information. The incubator mechanism should help specifically women and should help to reduce or close the gender gap in political knowledge. Similar exposure to information benefits women, since they are directly exposed to the political information instead of bringing their own unequal resources and individualized agency to access information. I argue that the incubator mechanism should work for women because, if we were to put men under the incubator mechanism, this should only compound the advantage they already have in political knowledge over women.

In order to illustrate the incubator mechanism, let us assume that people live in a traditional society where men work outside the home and women stay at home raising children. In this case, men should have higher levels of political knowledge, since their information environment is wider: they go out and work and experience more time outside the home, where they can be

exposed to more information through interactions with peers at work. In this context, women's political knowledge should be lower than men's because their sources and exposure of information are more limited. The time that girls spend in school helps to free them from household responsibilities that they may be in charge of at home. School becomes a haven for girls. Being exposed to information at school for few hours a day, in a context that supplies similar information, can help close the gender gap in political knowledge. At school, people are expected to learn the same concepts and lessons regardless of gender. Boys and girls have to prepare in similar ways for exams; they have the same teachers and similar expectations of performance. An environment like this should lead to little or no differences in political knowledge, since girls can catch up with boys' advantages when they receive exactly the same information at the same time, from the same sources.

These two contexts should lead to different gender gaps. On the one hand, women with limited exposure to information should know less than men who have more sources and chances to learn about politics. Men in this hypothetical society have more resources because they earn money working outside the home. This disparity of earnings means that men have also the ability to acquire information by buying newspapers and magazines and the ability to complement that information with discussions with peers at work or in the street. Another form of gender gap can emerge by considering women who work outside home but also recognize differences in quality of life compared to men's and gendered professional networks that add barriers to improve their socioeconomic status.

The second context is more egalitarian. Students' work is to learn, and they dedicate eight hours, five days a week to this task that insulates girls, specifically, from responsibilities at home. The people providing them with information are the same, the sources of information (books) are the

same, and the lesson plans are the same. Girls are then in a leveled field in schools, where structural or agency differences are not as pronounced as outside the school contexts and where they perform similarly to men in their political knowledge. This second example shows what the incubator mechanism can do. This example also illustrates that when girls experience a more egalitarian context of information, they have similar levels of information independent of the structural and agency characteristics that put them at a disadvantage in their political knowledge.

Outside the incubator mechanism, the force of structural and agency mechanisms should predominate and the gender gap in political knowledge should consistently appear. The incubator mechanism has a neutralizing effect but disappears as women age and transition towards more responsibilities and roles related to their life cycle. When the incubator mechanism is not at work, then life-cycle events resulting, for example, from marriage, immigration, and entering the workforce should have a greater impact on socialization processes that can alter people's political engagement and political learning in particular (Sears and Brown 2013).

The incubator mechanism helps reduce the gender gap, but this does not mean that with the incubator effect, socioeconomic status and/or socialization processes disappear. People still may not want to pay attention to or be interested in learning about politics; yet, when the incubator mechanism is at work, this should provide similar chances for women to learn about politics as a way to neutralize the structural and agency mechanisms that predominantly exist outside of such contexts. Without the incubator mechanism, people have to rely on their own resources and motivations to become knowledgeable about politics, and the gender gap in political knowledge thus appears.

Summary of Hypotheses

In the next chapters, I will test a series of hypotheses regarding the gender gap in political knowledge. I expect to find that women know less about politics than men. This gap should be the result of structural disadvantages and differences in agency. Economic disparities between men and women and differences in household responsibilities generate structural disadvantages. The agency differences should be the result of socialization processes that impact women's motivation to learn about politics. The role of the incubator mechanism should serve as a way to neutralize structural and agency mechanisms and level the playing field between men and women through a similar supply of information.

Conclusions

In this chapter, I discussed theories explaining the distribution of political knowledge and I presented the theoretical framework for structural, agency, and incubator mechanisms to learn about politics. In the next chapter, I will present consistent evidence of the gender gap in political knowledge in Mexico and patterns of such gender gap across potential topics. Then, in the fourth chapter, I will present the individual and contextual factors explaining political knowledge among adults by drawing on three questions about politics which are among the most frequently asked questions on political knowledge in Mexico (name of the governor, chambers in Congress, and length of a representative's term). In the fifth chapter, I study the origins of the gender gap in political knowledge in two cities in Mexico. Finally, the sixth chapter concludes my research with a discussion of my overall findings.

Chapter 3. The Consistency of the Gender Gap in Political Knowledge in Mexico

How consistent is the gender gap in political knowledge in Mexico? How the gap varies across topics? Literature indicates that the gender gap in political knowledge varies across topics as it tends to decrease with topics related to education, health, family and social programs (Dolan 2011; Stolle and Gidengil 2010). These findings suggest that gender roles influence knowledge on particular topics that women should be motivated or “expected” to learn about. In this chapter I expect to see that the gender gap varies in function of the topic of the question and that there should be topics in which men and women will converge in their knowledge such as general topics that everybody answer correctly. There should also be topics in which men appear further apart due to the interest in certain topics that women may not experience in the same way. Subjects related to education, family and social policy are considered "gender-related" and in this chapter I find a similar effect in the gender gap in Mexico. Regarding time variations, there are few studies that focus on the size of the gender gap in political knowledge over time (Lizotte and Sidman 2009).

This chapter is divided in three sections. The first section shows a summary of political knowledge questions asked from 1989-2010 split by gender. The second section shows the gender gap in political knowledge across questions varying by topics. These topics include foreign affairs, campaigns and elections, government and national affairs, and issues specifically related to education, female leaders, human rights and social programs that are traditional associated with topics of importance to women. Finally, the third section identifies the three most frequently asked for knowledge questions over time and shows how the gender gap in political knowledge has evolved over time. The three questions are: the name of the state’s governor, stating the number of chambers in Congress, and stating the length of a representative’s term.

These same three political questions will be the basis of the political knowledge index used in Chapter 4 to study the structural, agency and potential incubator effects that explain gender differences in the adult population in Mexico.

The data for this analysis includes 219 questions of political knowledge asked from 1989-2010. The questions were collected from various surveys archived in the Roper Center for Public Opinion Research, available at the *Banco de Información para la Investigación Aplicada en Ciencias Sociales (BIIACS)*, the Latin American Public Opinion Project (LAPOP), *México, las Américas y el Mundo* and the Comparative Study of Electoral Systems (CSES). In this case, the analysis focuses on each question collected for this dataset and the percentage of correct responses for men and women.

The analysis of the political knowledge questions shows that the gender gap exists but varies depending on the question topic and the degree of difficulty of the questions. The analysis also shows that the gender gap in political knowledge has decreased over time in some questions. However, the gender gap in political knowledge remains, when accounting for the degree of difficulty of the questions. The gender gap in political knowledge shrinks when the overall correct rate is extremely low or extremely high. In other words, there is no gender gap when few people know the answer or when most people know the answer. This suggests that the degree of difficulty of the questions (high, medium or low) influences the size of the gender gap in political knowledge.

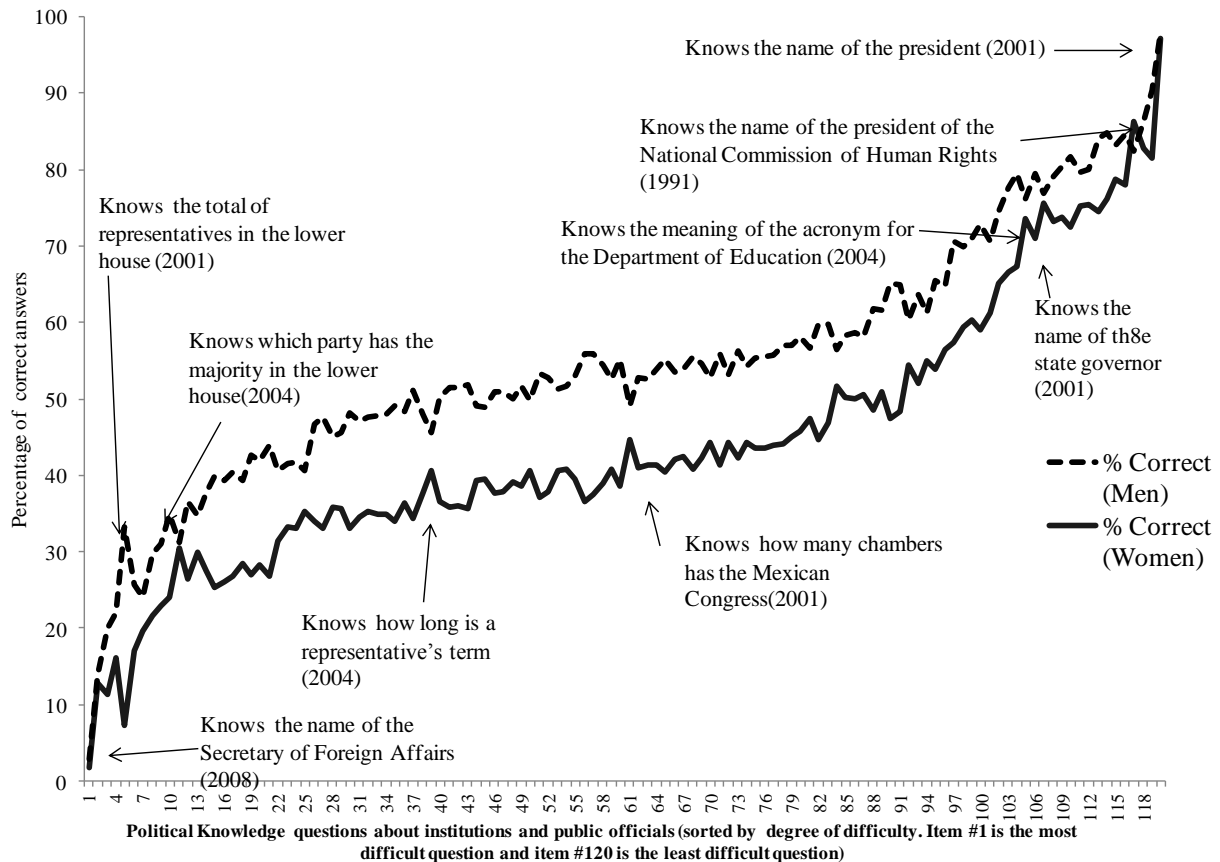
The Consistency of the Gender Gap in Political Knowledge in Mexico

Figure 3.1 shows the percentage of correct responses among men and women to 120¹² political knowledge questions. The questions cover several subjects such as foreign affairs, policy, knowledge of political institutions, and names of public officials. The correct responses are sorted by degree of difficulty. This means that questions with the lowest and highest levels of correct responses are located at the extremes of Figure 3.1. Thus, the upper right corner of Figure 3.1 has questions with high percentages of correct responses and the bottom left corner has questions that few respondents answered correctly. An example of a question with a high percentage of correct responses is asking the respondents to identify the name of the president by showing his photograph (For the effect of visual images on political knowledge questions see Prior 2014).

About 98 percent of men and 97 percent of women identified correctly the president. At the other extreme, only about 2 percent of men and women were able to correctly identify the secretary of foreign affairs in Mexico. Sorting the questions by level of difficulty provides the opportunity to show that the gender gap shrinks at the extremes because either few know the response or most people answer correctly.

¹² For simplicity purposes I show only the distribution of 120 items related directly with the government and public figures affairs. The total number of items collected by the author is 219 items related to political knowledge from 1989 to 2010.

Figure 3.1. Gender Differences in Political Knowledge in Mexico. Percentage of Correct Responses for Men and Women (1989-2010).



Source: Roper Center for Public Opinion Research, Banco de Información Aplicada en Ciencias Sociales (BIIACS-CIDE), AmericasBarometer and Mexico, las Américas y el Mundo. National household samples except for the 1989-1994 surveys which were conducted on six major cities. Data are weighted when available.

The shrinking of the gender gap in political knowledge at the extremes of the degree of difficulty highlights the importance of the consistency of the gender gap in the middle section of Figure 3.1. For example, in 2004, about 41 percent of women correctly identified that the Mexican Congress consists of the Senate and a House of Representatives. In contrast 55 percent of men answered this question correctly, a gender gap of almost 15 points.

The widest gender gap in this dataset is of 26 percentage points and corresponds to a question about the number of representatives in Congress. Only 33 percent of men know the correct answer (500 representatives). However, even fewer women, seven percent, answered this question correctly. Figure 3.1 also suggest that the gender gap varies across topics. For instance, the gender gap reverses in an item from 1991 asking the name of the chair of the national human rights commission. This item has a high level of correct responses for women: Approximately 83 percent of men answer this question correctly compared to 86 percent of women. In order to examine closer the variation of questions by topics the next section shows the gender gap in political knowledge across topics.

Gender Gap in Political Knowledge across Topics

Scholars have hypothesized that the gender gap should vary across topics, specifically when women are asked questions closer to their interest in education, public policy, family, etc., and gender differences should remain in general topics of political knowledge (e.g. government and functioning of institutions) (Dolan 2011; Stolle and Gidengil 2010). For the case of Mexico, I expect to show the consistency of the gender gap in political knowledge across topics and to test whether there are changes in the questions related to gender related issues. The classification used here resembles previous works identifying general subjects of political knowledge related to foreign affairs, elections and institutions (Delli Carpini and Keeter 1996; Niemi and Junn 1998). Many of the collected questions appear two or more times within a single year. When this was the case, I took the most recent question asked within each year for the analysis. The following figures do not include repeated questions. This approach favors variability on the topics covered by the political knowledge questions rather than the frequency of when they were asked.

Foreign Affairs

Figure 3.2 shows the foreign affairs category which includes a total of fifteen questions related to questions about the secretary of foreign affairs, wars, international organizations, foreign policies, trade agreements and diplomacy activities (For specific wording of the questions see Appendix 1). Low levels of political knowledge on foreign affairs in Mexico have been reported before but not on the discussion of the gender gap in political knowledge (e.g. González González, Schiavon, Crow and Maldonado 2011, 47). Questions about foreign affairs knowledge have the lowest percentage of correct responses compared to knowledge about campaigns and elections and government and national issues. Only three of the questions have a percentage of correct response above 50 percent and none of these questions reach a percentage above 81 percent of correct responses. These questions refer to knowing what the meaning of the UN acronym (60 percent), the name of the U.S. president (70 percent) and countries that the Mexican president traveled to (81 percent).

The gender gap ranges from 5 percentage points (the date when president signs the North American Free Trade Agreement) to 18 percentage points (the name of the European Union currency). The widest gender gap is in the question about knowing the currency of the European Union. About 54 percent of men know the name of the currency, whereas 35.9 percent of women respond correctly to this question. In the question about knowing the date of when the president signed the North American Free Trade Agreement (NAFTA), about one third of men (36 percent) and women (31 percent) know the correct answer.

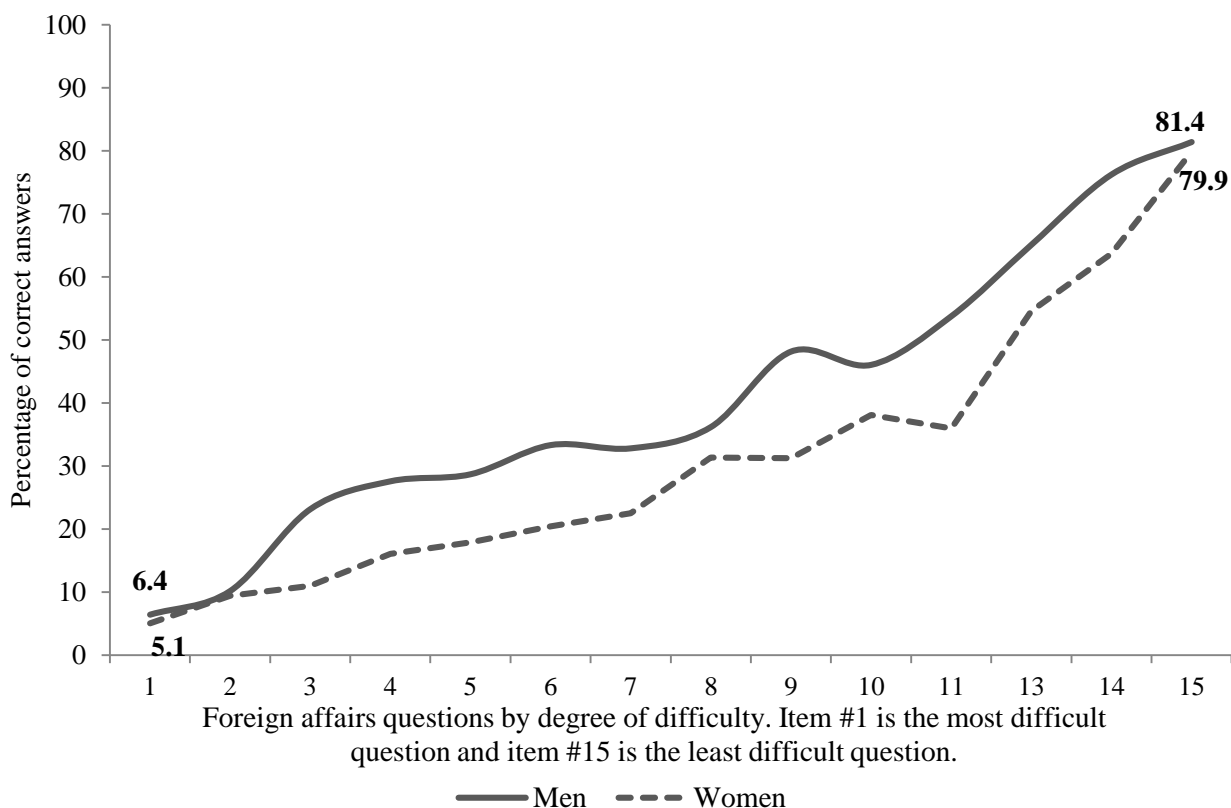
There is no gender gap in knowing if the Gulf War finished as few people know the correct answer (10 percent for men and 9 percent for women). There are also two other questions with

no gender gap in political knowledge: whether a person know the name of the foreign affairs secretary (6 percent of men and 5 percent of women) and if a person knows what country visited the president in his last trip (81 percent of men and 80 percent of women).

The shrinking of the gender gap in political knowledge at the extremes of the degree of difficulty highlights that not all gaps are created equal and the importance of the consistency of the gender gap in the middle section of Figure 3.2. For instance, about 54 percent of men know the name of the currency in the European Union compared to 36 percent of women (18 percent points of difference in 2010). A question where the gender gap in political knowledge decreases is in the question about the name of the president of the U.S. Approximately 76 percent of men know the name compared to 64 percent of women who know the name of the U.S. president.

Regarding knowledge about acronyms, the United Nations (UN) receives the highest level of response for men (65) and women (55). The acronym with the lowest level of correct responses is the Monetary Fund International with 23 percent of men and 11 percent of women knowing the meaning of the IMF's acronym.

Figure 3.2. Gender Differences in Political Knowledge in Mexico in Foreign Affairs Questions. Percentage of Correct Responses for Men and Women.

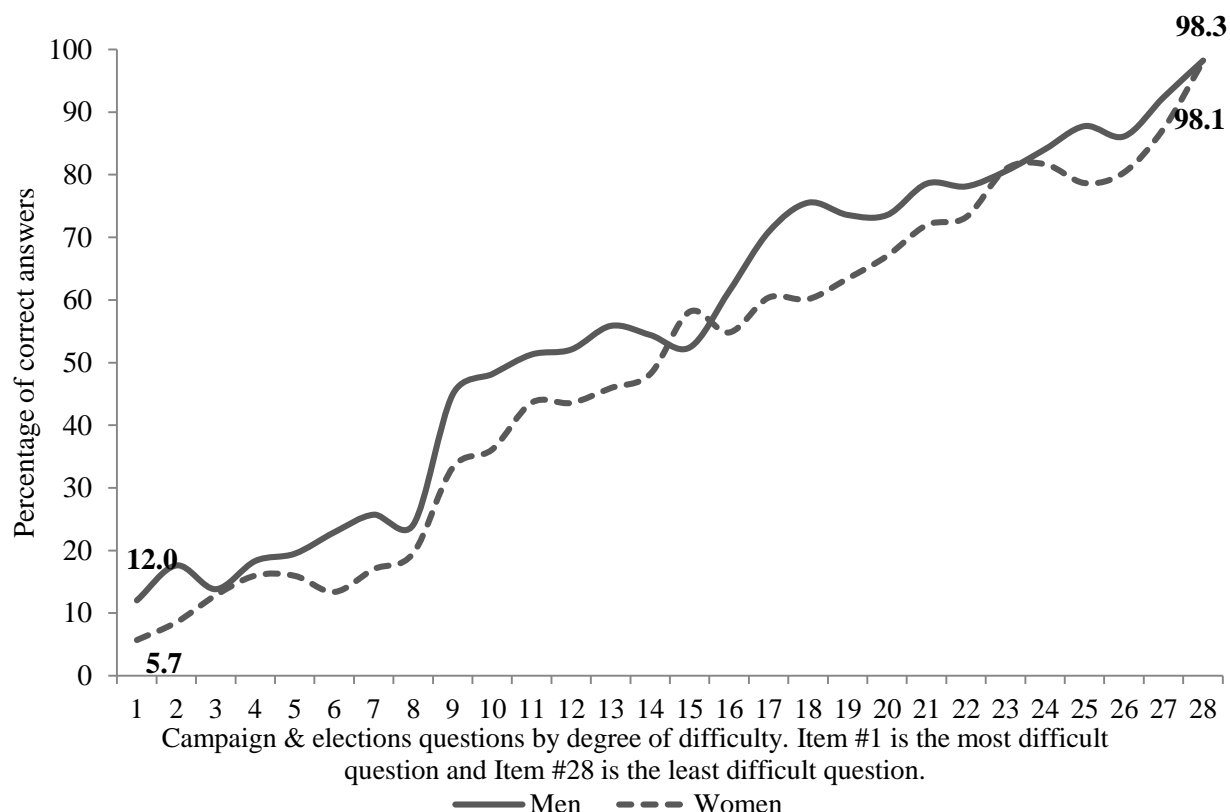


Source: Roper Center for Public Opinion Research, Banco de Información Aplicada en Ciencias Sociales (BIIACS-CIDE), AmericasBarometer and Mexico, las Américas y el Mundo. National household samples except for the 1989-1994 surveys which were conducted on six major cities. Data are weighted when available.

Campaigns and Elections

The campaigns and elections category in Figure 3.3 shows higher percentages of correct responses compared to the foreign affairs subject. Figure 3.3 has a total of twenty eight questions without repetition. This category includes questions about name recognition of electoral candidates and politicians, awareness of political campaign advertisements and political parties. As with the previous charts, Figure 3.3 is sorted by level of difficulty and shows that the gender gap in political knowledge fluctuates greatly.

Figure 3.3 Gender Differences in Political Knowledge in Mexico in Campaigns and Elections Questions. Percentage of Correct Responses for Men and Women



Source: Roper Center for Public Opinion Research, Banco de Información Aplicada en Ciencias Sociales (BIIACS-CIDE), AmericasBarometer and Mexico, las Américas y el Mundo. National household samples except for the 1989-1994 surveys which were conducted on six major cities. Data are weighted when available.

The smallest gender gap is of 2 points and corresponds to a question about the date for the lower chamber's elections. Almost 84 percent of men know the answer compared to 82 percent of women. The question with the largest gender gap (15 percent points) corresponds to the question about identifying a campaign advertisement of the incumbent party in 2000, the *Partido Revolucionario Institucional* (PRI). Approximately eight men out of 10 (76 percent) match correctly the campaign ad with the political party/candidate, whereas, only six of every ten women (60 percent) of the women identify the soundbite with the political party correctly.

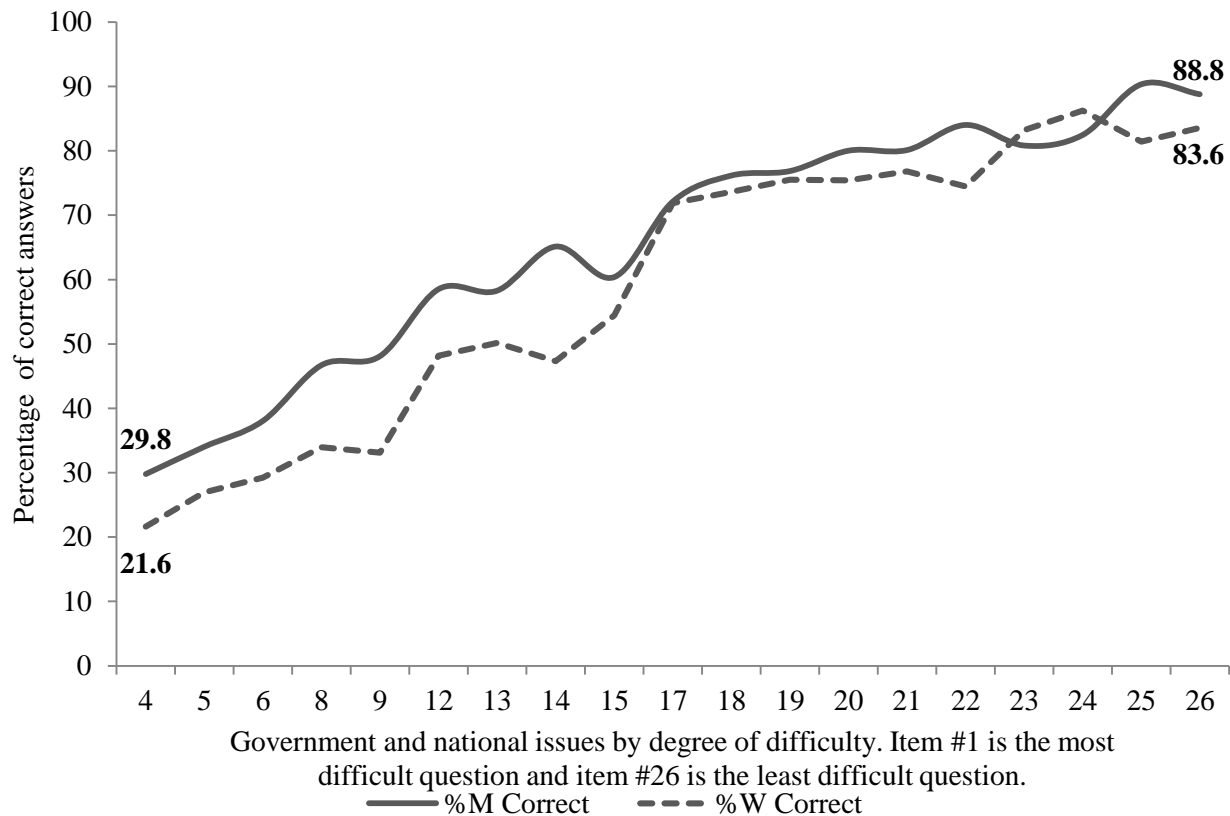
There are three questions with no gender gap in the campaigns and elections category that are also questions that everybody is more likely to answer correctly. For instance, in 2001 almost 98 percent of men and women linked correctly the name of the president with his picture. During the presidential campaigns of 2000, approximately eight of every 10 people (81 percent) matched correctly the political campaign of the incumbent party related to reforms in public education. On the opposite side, there are the questions with no gender gap in political knowledge but low levels of correct response. About 13 percent of men and women could identify correctly the secretary of social development, Josefina Vázquez Mota in 2000.

The campaigns and elections questions in general receive higher levels of correct responses and contrary to the foreign affairs questions, the gender gap closes among questions that most of the people answer correctly. The questions with no gender gap and high number of correct responses are related to salient public figures such as the Mexican president and to a question of a political campaign related to public education. Although the campaigns and elections questions vary on finding the gender gap in political knowledge, the issue of difficult in combination with the content of the question matter to interpret that the gender gap in political knowledge.

Government and National Issues

There are twenty-six items related to institutions, national policies/programs, political and government leaders (that are not related to electoral candidates), and salient national news. Figure 3.4, shows that the gender gap in government and national issues remains stable in the questions below 60 percent of correct responses and fluctuates among people who have high percentage of correct responses.

Figure 3.4. Gender Differences in Political Knowledge in Mexico in Government and National Issues Questions. Percentage of Correct Responses for Men and Women.



Source: Roper Center for Public Opinion Research, Banco de Información Aplicada en Ciencias Sociales (BIIACS-CIDE), AmericasBarometer and Mexico, las Américas y el Mundo. National household samples except for the 1989-1994 surveys which were conducted on six major cities. Data are weighted when available.

The question with the lowest level of correct responses is a question from 2003 about knowing what political party has the majority of seats in the House of Representatives (more than 250 seats). About 30 percent of men know that none of the political parties won 250 seats in the lower chamber. In contrast, almost 22 percent of women knew the correct response. In the opposite extreme of Figure 3.4 is the question about the date of an event for the most prominent social program in the 1990's, the National Solidarity Program which was the major program of

the time targeting poor people. About 89 percent of men knew when the event related to the program was happening compared to 84 percent of women (based on a sample of 6 cities).

There are two questions where the gender gap closes. Approximately seven out of ten men and seven out of ten women know the date of the state of the Union (72 percent of men and women, respectively). Another question where the gender gap closes is when people know the name of the institution that protects human rights in Mexico. With a sample of 6 cities, almost eight of every ten people answered that the *Comision Nacional de los Derechos Humanos* protected the human rights of citizens (77 and 76 of men and women respectively).

Other questions where the gender gap remains below 5 percentage points of difference is on knowing the acronym of the secretary of education in 2004 (76.2 percent for men and 73.6 percent for women) and the name of the governor in 2009 (80 percent for men and 75.4 percent for women). The gender gap reverses on the question about the name of the president of the human rights commission in 1991 (82.5 for men and 86.3 for women) and in knowing the name of the major social program in Mexico (80.8 percent for men and 83.2 percent for women).

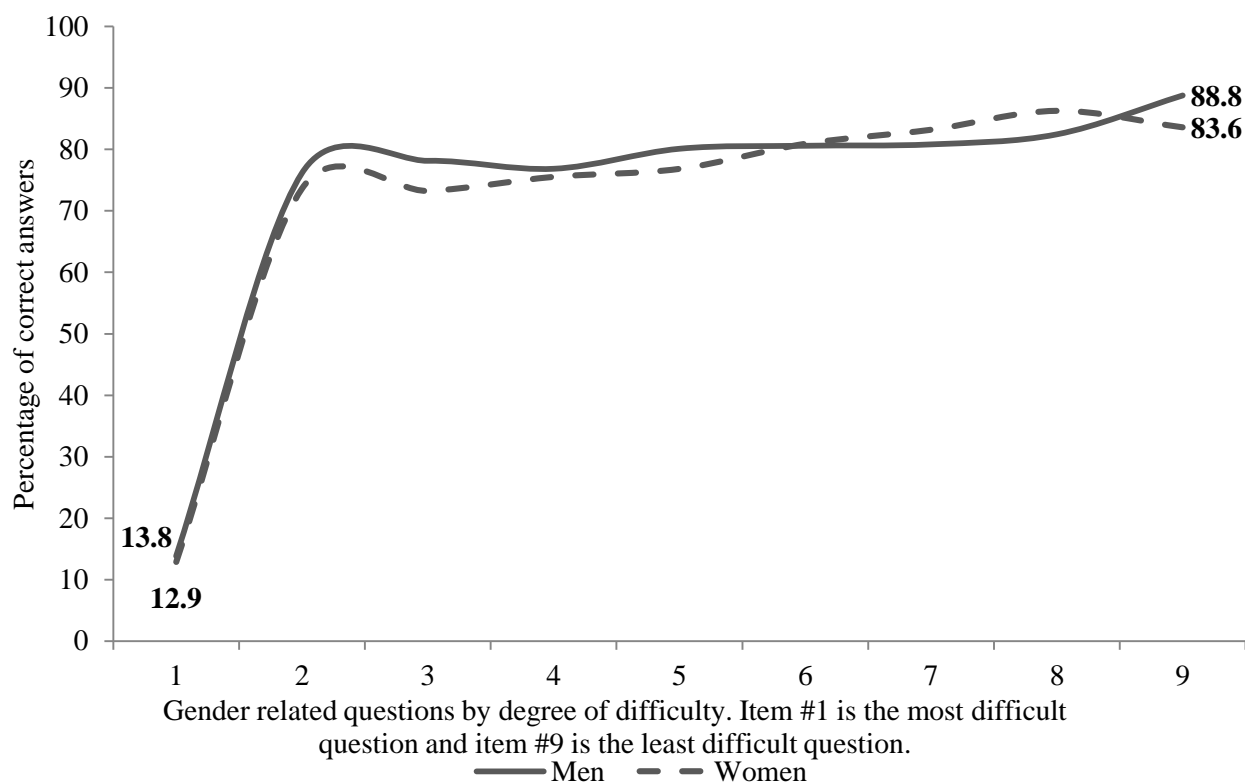
Women are more likely to know the name of the head of the Human Rights Commission and the name of the major social welfare program in Mexico. On questions on government and national issues the widest gender gaps remain in questions that no one answers correctly such as the party with the majority of seats in the House of Representatives, the inflation percentage, knowledge about the government's branches, and who can reform the Constitution.

Gender-Related Issues

Research highlights the importance of adding specific topics of interest when measuring women's political knowledge (Dolan 2011; Pietryka and MacIntosh 2013; Stolle and Gidengil 2010). Although the conversation has focused on adding questions related to social programs (Smiley 1999; Stolle and Gidengil 2010), there is also evidence that women remain interested in topics about education, health and family (e.g. Thomas 1994). Moreover, there is also a positive association between women's political knowledge and questions about female leaders (Verba, Schlozman, and Brady 1995).

The argument is that the inclusion of these topics can reduce the gender gap in political knowledge and improve the measurement of political knowledge. For Figure 3.5 I identify nine questions related to human rights, education, social programs and female leadership. Figure 3.5 shows that the gender gap closes in the lowest level of correct responses. Approximately one person of every ten could match the name of Josefina Vázquez Mota with her picture (14 and 13 percent for men and women respectively). In 2001 she was the head of the secretary of social development which is the institution in charge of social policy programs in the country. The gender gap in the opposite extreme of Figure 3.5. remains although moderate in size. About nine of every ten men (89 percent) know that the political party that offers English classes and computers in public schools in its political campaign is the PRI, whereas almost eight of every ten women know also the correct answer (84 percent).

Figure 3.5. Gender Differences in Political Knowledge in Mexico in Gender-Related Questions. Percentage of Correct Responses for Men and Women.



Source: Roper Center for Public Opinion Research, Banco de Información Aplicada en Ciencias Sociales (BIIACS-CIDE), AmericasBarometer and Mexico, las Américas y el Mundo. National household samples except for the 1989-1994 surveys which were conducted on six major cities. Data are weighted when available.

As identified in the previous section, the questions with high percentage of correct responses are related to the human rights and the name of the major social program in Mexico. About 9 of every 10 women know the name of the president of the *Comisión Nacional de Derechos Humanos* (National Commission of Human Rights), whereas 82.5 percent of men know the correct answer. Regarding the name of the major social program in Mexico, 83.2 percent of women know the name of the program versus 80.8 percent of men who know the correct answer. The largest gender gap is about 5 points of difference, and it refers to the question about the date of an event of the major social program in Mexico. Almost 89 percent of men know the date of

when the event of the social program is happening and 84 percent of women answer correctly to the question.

In sum, the gender gap in political knowledge questions related to gender issues is more likely to close but still one can observe that the fluctuation of the gender gap varies depending on the level of difficulty of the questions. For example, the fact that there is not gender gap in the extremes may also depend of whether everybody knows the correct answer or nobody knows the correct response. The questions related to government arrangements and policies have high levels of correct responses. Interestingly, when most of the people know the correct answer, the gender gap in political knowledge decreases. Finally, the questions related to campaign and elections tend to have higher levels of correct responses and the gender gap varies greatly depending on the salience of the topic. In general, people are less likely to be informed about foreign affairs topics unless these questions ask about prominent public figures.

Gender Gap in Political Knowledge by Year

Based on the frequency of questions asked in the 219 items collected for this analyses, there are three questions frequently asked: The name of the governor (35 items), what are the chambers of the Congress (46 questions) and how long is the term of a legislator (16 questions). About 44 percent of the total of political knowledge questions is repeated questions over time related to these topics. Given the repetition of these questions, it is possible to track how their patterns of correct response have changed over time. Specially, these data are an attempt to track the gender gap in political knowledge across time. When one question appears more than two or more times within a year, I calculated the average of the repeated question and reported the average for the corresponding year.

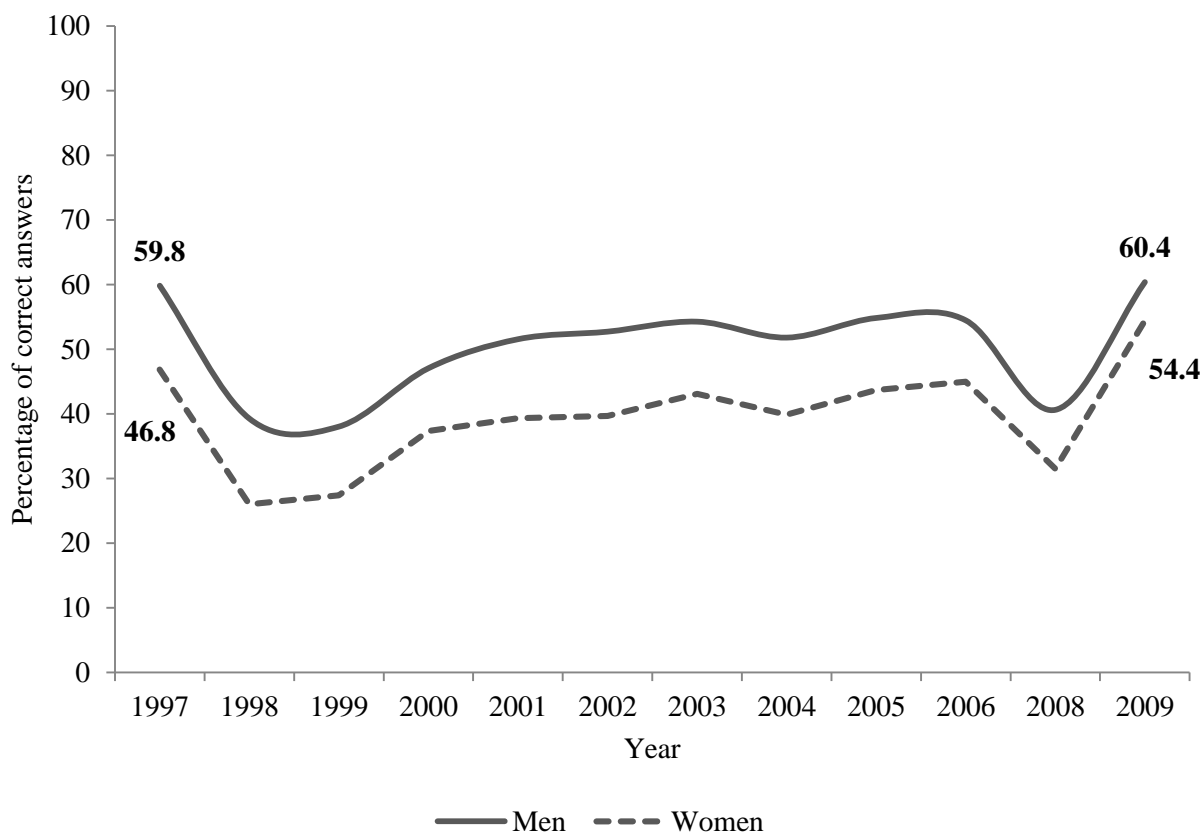
Representatives' Term Length

The question of how long is a representative's term (3 years) has been asked from 1997-2009.

There are 46 questions asked over this period of time. Figure 3.6 shows the correct responses by gender. The number of correct responses for men ranges from 39 percent to 60 percent. For women the percent of correct responses ranges from 26 percent to 54 percent. Women have a larger spread in their number of correct responses than men have. The years that register a peak on the gender gap in political knowledge were non-electoral years for the legislature such as 2001, 2002 and 2004.

The gender gap started in 1997 with 13 points of difference, and by 2009, it is having 6 percent of difference. The size of the gender gap did not register drastic changes between 2001 and 2005. The gender gap remained about 11 points of difference to 13 points of difference. The gender gap from 1997 to 2009 decreased in more than 50 percent. Although the gain is for women, when calculating the average of the correct questions from 1997 to 2009, men had an average of 50 percent of answering this question correctly versus 39 percent for women. The maximum percentage of correct responses for this period of time is of 60 percent for men and 54 percent for women in 2009. The minimum value of the percentage of correct responses is 38 percent for men in 1999 and 26 for women in 1998.

Figure 3.6. Gender Differences in Political Knowledge in Mexico in Questions Asking the Length of a Representative's Term. Percentage of Correct Responses for Men and Women.



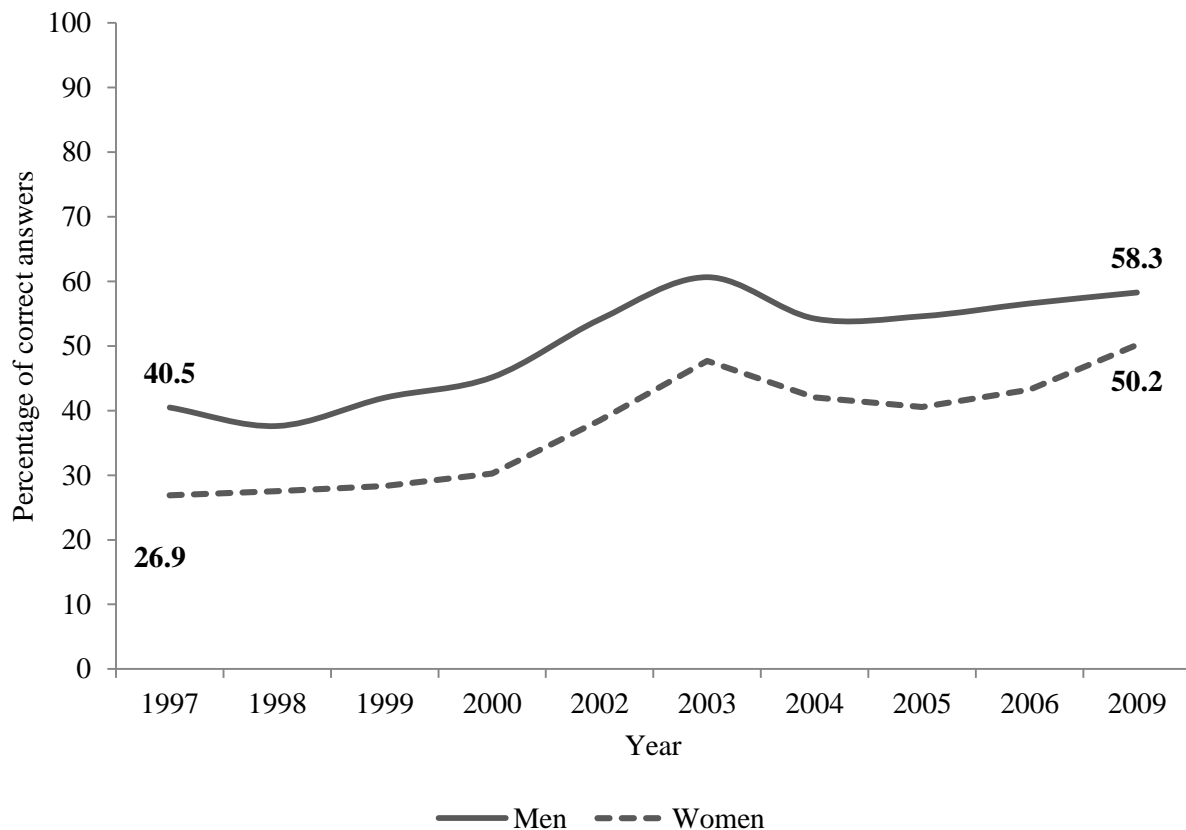
Source: Roper Center for Public Opinion Research, Banco de Información Aplicada en Ciencias Sociales (BIIACS-CIDE), AmericasBarometer and Mexico, las Américas y el Mundo. National household samples except for the 1989-1994 surveys which were conducted on six major cities. Data are weighted when available.

Which are the Chambers in the Congress?

Compared to knowing the length of a representative's term, men and women are slightly less likely to know what the chambers in Congress are. Figure 3.7 shows that the gender gap remains, but it has been decreasing over time. On average, men have 50 correct responses compared to women who on average respond 38 responses correctly. The percentage of correct responses for men ranges from 38 percent to 58 percent. For women the percentage of correct responses ranges from 28 percent to 50 percent of correct responses.

Women have twice as many as correct responses from 1998 to 2009. The years with the widest gender gap happened in 2002 (16 percent) during a non-electoral year. The gender gap has been decreasing over time in the question about the number of chambers in Congress. This reduction of the gender gap is not as dramatic as with the question about the length of the term of a representative but still shows that the gains in political knowledge are mainly for women.

Figure 3.7. Gender Differences in Political Knowledge in Mexico in Questions Asking which are the Chambers of the Congress. Percentage of Correct Responses for Men and Women.



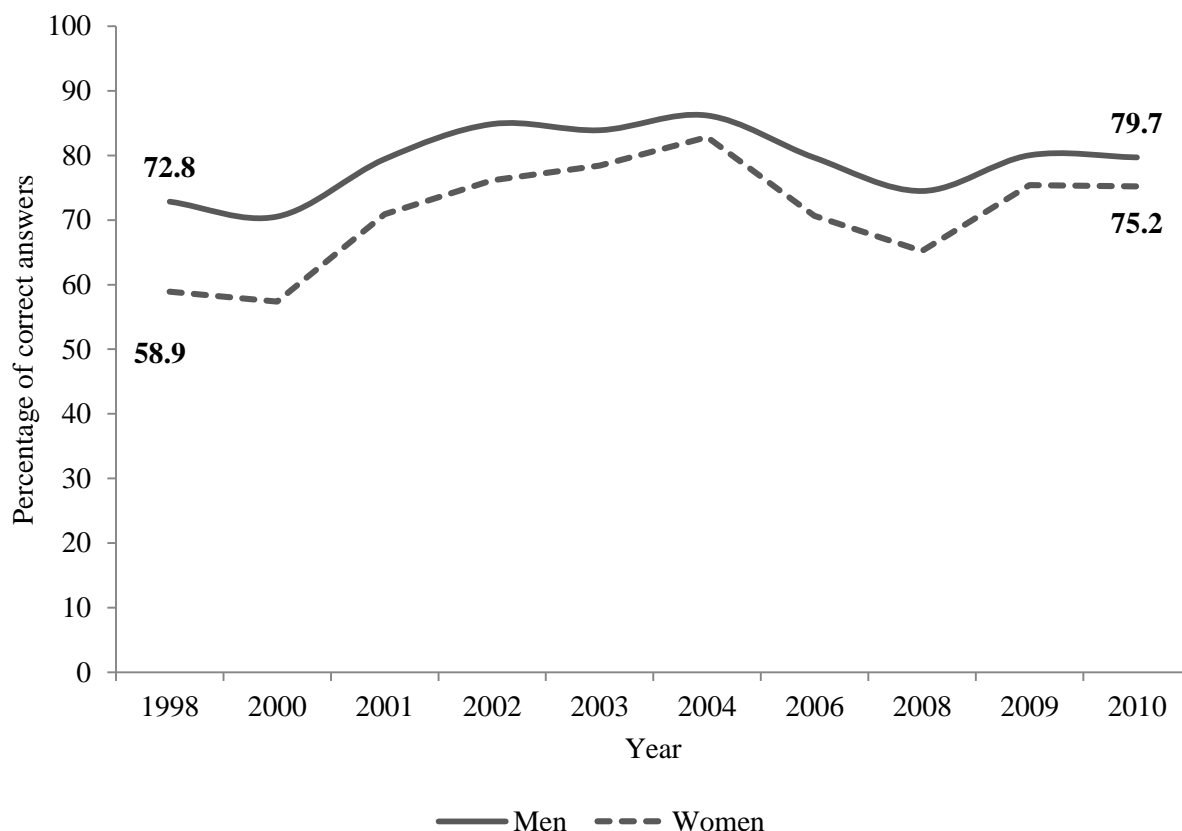
Source: Roper Center for Public Opinion Research, Banco de Información Aplicada en Ciencias Sociales (BIIACS-CIDE), AmericasBarometer and Mexico, las Américas y el Mundo. National household samples except for the 1989-1994 surveys which were conducted on six major cities. Data are weighted when available.

Name of the Governor

The question about the name of the governor shows improvements regarding the gains of women's political knowledge. This is the question where the decrease of the gender gap is almost closing. The gender gap starts in 14 percent of difference in 2000 and by 2004 the gender gap is only of 5 points of difference.

Compared to the questions about the representative's term and the number of chambers in Congress, the question about the governor name has higher levels of correct response. For example, Figure 3.8 shows that by 2000, 57.4 percent of women knew the name of the governor compared to 71 percent of men who knew the correct answer. The question about the governor name has the highest number of correct responses. However, by 2010, women increased their percentage of correct responses to 75 percent which is almost 16 points of difference from 1998. Compared with the previous two questions about the chambers in Congress and the length of a representative's term, this also is the question with the highest average of correct responses for men (79 percent) and women (75 percent).

Figure 3.8. Gender Differences in Political Knowledge in Mexico in Questions Asking the Governor's Name. Percentage of Correct Responses for Men and Women.



Source: Roper Center for Public Opinion Research, Banco de Información Aplicada en Ciencias Sociales (BIIACS-CIDE), AmericasBarometer and Mexico, las Américas y el Mundo. National household samples except for the 1989-1994 surveys which were conducted on six major cities. Data are weighted when available.

Conclusion

The gender gap in Mexico is consistent across topics and, in some topics, it has closed over time.

Besides, the work of Delli Carpini and Keeter's (1996), the evidence presented here shows extensively the gender gap in political knowledge across topics within a country that allow exploration of different question classifications. Foreign affairs have the lowest levels of correct responses for both men and women, and the gender gap exists across topics. On the questions related to political campaigns and elections, the gender gap exists but shrinks in salient issues

such as the name of prominent candidates or political parties, which is indicative of the importance of exposure to information during political campaigns in closing the gender gap in political knowledge. The supply of information is important to reduce gender differences in political knowledge. Ondercin, Garand and Crapanzano (2011) found that during electoral campaigns, when information is widely available, women increase their levels of political knowledge and the gender gaps decrease. The findings in Mexico suggest a similar pattern and also relate to the importance of the existence of the incubator effect because in a political campaign both men and women have similar opportunities of exposure to information that neutralize temporarily the structural and potential agency effects that women experience when learning about politics.

Another finding from this chapter indicates that not all the gender gaps are created equal. As in a test, there can be very difficult or easy questions in political knowledge that add further understanding to the variation of the size of the gender gap. The level of difficulty shows the usefulness of comparing the size of the gender gap in questions with high, medium or low levels of correct responses. Through degree of difficulty of questions (percentage of correct responses) it is possible to discern that the size of the gender gap in political knowledge is not only a function of the question topic but also like in a test, on the degree of difficulty of the question. A wide gender gap in political knowledge in a question that nobody can answer correctly is not equally comparable to a sizeable gender gap in which more than 80 percent of the population responded correctly to the question. . When we talk about “balancing” the topics of questions that we ask on political knowledge surveys, there is also a dimension of complexity of the question. If we fail to take into account this dimension, one can have questions with no gender gaps in political knowledge but that everybody or no one answers correctly.

When comparing three items over time (representative's length term, name of the governor and number of chambers in Congress) the main finding is that women's political knowledge has received substantial gains over time in all of the items. The gender gap remains, and it increases in non-electoral years but women's knowledge has improved in these three items. Although there are variations by year but this is just an approximation because this data comes from different sources and a longitudinal analysis will be necessary.

This chapter shows that the gender gap in political knowledge has important fluctuations across topics and time but in overall remains consistent with the results of the literature which points to variations on the decrease of gender differences on topics related to social policy, education, etc. Yet, it is still pending to understand what is causing that the gender gap and what is helping to shrink the gender gap? Is education helping women to catch up in their knowledge about politics? Are other gaps emerging in other types of questions that are not captured by this dataset? The aim of the next chapters is to test what structural, agency and incubator contextual factors may be explaining the gender gap in political knowledge in Mexico.

Chapter 4. Explaining Gender Differences in Political Knowledge among Adults in Mexico.

In this chapter I explore whether the three theoretical effects (structural, agency and incubator) outlined in the theoretical chapter (Chapter 2) explain the gender gap in political knowledge in Mexico. The first hypothesis predicts that there is a gender gap in political knowledge in which women have lower levels of political knowledge than men. Related to this hypothesis is the prediction that structural factors and agency influence positively political knowledge. However, the impact of these effects should affect men and women differently, and should be more helpful to men. My second hypothesis focuses on the incubator effect. I argue that, when the incubator effect exists, it creates a haven from structural and agency effects. In a context where the supply of information is similar for men and women, the gender gap in political knowledge should shrink or disappear.

The main findings of this chapter are that structural effects are pervasive for women in Mexico and that it has a great influence on the opportunities they have to learn about politics. Although part of these structural differences is related to income, one of the most important structural advantages of men is marriage. Being married has a positive effect on men's political knowledge that does not exist among married women. These findings point toward the existence of the structural effect but also suggest that women's responsibilities at home may be subsidizing men's knowledge at the expense of their own knowledge.

Regarding the incubator effect, I find that education helps reduce the gender gap but not sufficiently enough to close it. However, when I isolate the younger cohorts with high levels of educational attainment, the gender gap disappears. This suggests among people who have been recently exposed to similar information contexts there is no gender gap in political knowledge.

Data and Variables

The Comparative Studies of Electoral Systems (CSES) is a comparative politics project that conducts public opinion surveys around the world. The study has three modules and began conducting surveys in 1996. In the case of Mexico, the surveys have been conducted every three years from 1997 to 2006. The main advantage of using the CSES surveys for studying political knowledge is that it uses the same core questions to measure political knowledge every year. This study includes four years of CSES data (1997, 2000, 2003, and 2006). These data have been pooled into a larger dataset. The data from the CSES will be used to measure political knowledge, the dependent variable. The CSES dataset also includes several of the individual indicators that explain the gender gap in political knowledge. The overall sample size for the combined dataset is 7,381 cases.

Another set of variables come from different sources available in public government databases. These data are used to measure the political context in which individuals live. The contextual data measures the size of women's representation at the state and municipal levels, whether the location where the respondent lives is rural or urban, and the levels of migration at the municipal level. The CSES data includes geographic identifiers for states and municipalities. These data allow for integration with the aggregate contextual data.

I will start describing the variables to be used in the analyses. For illustrative purposes, Table 4.1 includes summary statistics for all the variables mentioned here

Dependent Variable

Political Knowledge

The dependent variable, political knowledge, is an additive index based on three questions. These questions measure respondents' knowledge of factual political information. The three questions are: (1) Which are the chambers of the Mexican Congress; (2) How long is the term of a representative; (3) What is the name of the governor of your state (See Appendix 4 for additional coding information). Each answer was coded as one (1) if the response was correct. Questions responded incorrectly or the respondent refused to answer or said that he/she did not know the answer as coded as zero (0)¹³. The index was generated by adding the responses to all three questions and ranges from zero (no correct answers) to three (responded correctly to all three questions). The Cronbach alpha is a reliability measure that indicates how the items in the scale fit together. In this index the Cronbach alpha is 0.56, showing a moderate fit, but below the generally accepted score of 0.7.

The distribution of the scores show that 18 percent of all respondents answered none of the questions correctly, 28 percent answered correctly one question, 26 percent correctly answered two questions, and 28 percent had a perfect score of three correct responses.

Independent Variables

¹³. Although not shown in the analyses, given the importance of the Don't know answer I conducted the analyses without this option and the results show that the gender gap remains. See (Lizotte and Sidman 2009; Luskin and Bullock 2011; Mondak and Anderson 2004) for a discussion about the usage of "don't know" answers as incorrect answers. Results are available per request. In 1997, the question about number of chambers in the Congress did not have Don't know/Refusals available.

The independent variables consist of a combination of individual level social, economic, and demographic indicators and an array of contextual aggregate indicators. The main independent variable is the respondents' sex which allows comparing the political knowledge for men and women and determining the existence and size of the gender gap in political knowledge.

The variables measuring the structural factors that affect a person's political knowledge are income, employment, age, and marital status. The agency effect is measured with parental education and the representation of elected women in the state legislature and local municipalities. Finally, the incubator effect is measured using the respondents' level of education. Other variables are used for control purposes including, rural/urban, percent of the town's population who migrated to the United States, race, and the years when the surveys were conducted¹⁴.

Sex

The sex variable is binary and indicates if the respondent is a woman. As such women are coded as one (1) while men are coded as zero (0). According to the literature (e.g. Delli Carpini and Keeter 2005; Kenski and Jamieson 2000) there are significant differences in political knowledge by gender. I expect that being a woman will be negatively associated with political knowledge.

Structural variables

The structural variables consist of several indicators known to affect people's political knowledge. The term structural refers to the socioeconomic characteristics of persons and their place in society. These characteristics indicate the resources that a person has, which in turn

¹⁴ Interest in politics or media consumption are not available for the pooled CSES dataset used in the model. Chapter 6 includes variables related to these concepts.

affect their exposure to political information and the opportunities for acquiring such information (Fraile 2014; Frazer and Macdonald 2003; Ondercin, Garand, and Crapanzano 2011).

Income

Income is measured using a family income variable. Respondents stated the monthly aggregated income for all members in the household in increments of “minimum wages.” The variable ranges from one (1) which indicates 0-1 minimum wages (\$678 MXN) to seven (7), or 30 or more minimum wages (\$20,341 MXN). The categories were constant in 1997 years for the rest of the years. I used the continuous variable to match the categories from 1997. Although this variable is not capturing individual income (for a critique see Tong 2003), it is still used as a proxy of income for women's respondents and will approximate an understanding of the level of resources that women may have to access political information. The median income a person received in the survey is of 3-5 minimum wages. Seventeen percent of men report having 3-5 minimum wages in their household, whereas 18 percent of women report having such category of income.

Age

In the CSES datasets age is an ordinal variable with a 4-point categorical scale that goes from 1 (18-25 years old), 2 (26-40 years), 3 (41-60 years), and 4 (61 years and older). This operationalization of age limits the ability of manipulating the variable and the interpretation of the results. The variable still allows understanding how aging affects political knowledge. Another option is to use three dummies for the age category which I tested on the models alternatively and are available per request. Men and women in the sample are on average 26-40 years old.

Marital Status

Marital status measures the relationship status of respondents. In this case marital status includes persons who report being married or who are in common-law marriages and civil unions.

Married is coded as 1 and 0 indicates that the person is not married, in a civil union, or common-law marriage. In the sample, 66 percent of men and 65 percent of women are married.

The relationship between marital status and political knowledge is still inconclusive. When Verba, Burns and Schlozman (1997, 1060–1061) studied political knowledge, they found that being married had a positive effect on political information. Dow (2008) explains that a positive effect of marriage may be linked to more opportunities for discussions about politics and access to political knowledge within home. However, marriage in the literature has also a negative relationship with political knowledge. (Ondercin, Garand, and Crapanzano 2011, 736) find “that marriage has a positive influence on men’s political knowledge, but a negative influence on women’s political knowledge.” Although marriage can also represent access to diverse social networks and therefore greater political knowledge for a couple, this effect was not found among women (Gidengil, Goodyear-Grant, Nevitte and Blais 2005, 252).

I agree with Ondercin, Garand, and Crapanzano (2011) that marriage increases family responsibilities for women differently than it affects men. As Barquet and Ossess (2005, 15) have previously found, being married increases the responsibilities of women in the private sphere of the home and prevents their incorporation into the public sphere of politics. Moreover, women in Mexico still hold traditional views regarding marriage and motherhood. For example, Piscopo (2011, 103) explains an ambivalence on Mexican women's public opinion because while they support the importance of education and leadership positions for women, at the same time,

they strongly accept the gender roles of women in motherhood and homemaking activities. I expect to find a negative association for married women and political knowledge.

Employment Status

Employment indicates if a respondent has a job at the time of the interview. The variable is binary with 1 indicating the person is currently employed and a 0 if the person is not employed. Being employed is of importance for political knowledge because it exposes women and men to diverse sources of information, the potential of discussion about politics, etc. (Gidengil, Goodyear-Grant, Nevitte and Blais 2005). The dataset does not include information indicating a respondent's type of occupation. I expect to find that employed women are more likely to answer correctly questions about political facts. Almost 76 of the men interviewed are employed and about one third of the women in the surveys are employed (29 percent). This is a significant difference since women are not having the similar chance of exposure to information at the workplace as men may have.

Agency Variables

According to the traditional behavioral model motivation is an important factor explaining political knowledge. People have diverse interests and motivations to learn about politics (Delli Carpini and Keeter 1996). The agency effect exists when people are motivated to learn about political facts. Women are socialized into thinking that the political arena as something complex and conflictive and tend to reject or ignore political events for this reason (Wolak and McDevitt 2011).

The presence of women in elected offices should send a motivational message for women's political engagement in general (Burns, Schlozman, and Verba 2009; Sanbonmatsu 2003). The argument is that women in elected office serve as role models for other women and have a positive impact on political engagement (Zetterberg 2009). I expect to find that the presence of women in elected office motivates women to become more interested in politics and have a positive association with women's political knowledge.

Parental education

Parental education in this chapter ranges from no formal education (1) to complete college or more (9). Verba, Schlozman and Brady (1995, 419) show that parental education represents "the transmission of social class" which positions children with better opportunities to have higher levels of education, higher opportunities for jobs and broader affiliation with a variety of organizations (Verba, Schlozman, and Brady 1995, 458). Parental education, thus, increasingly influences and sets an individual's path to civic participation (Verba, Schlozman, and Brady 1995, 419).

High levels of parental education should lead to greater motivation to learn for men and women. Higher parental levels of education should lead to higher levels of political knowledge (Wang, Gabay, and Shah 2012; Wolak and McDevitt 2011). About one third of men and women (27 percent) in the dataset responded that their parents had incomplete elementary school.

Female representation

For the representation of women at the municipal level, I use two variables that come from public information about municipalities collected by the Mexican government. These data are the

Instituto Nacional para el Federalismo y el Desarrollo Municipal (INAFED) and the Sistema Nacional de Información Municipal (SNIM).

The first variable measures the presence of women as municipal presidents (an equivalent of mayor or town executive). This is a binary variable where 1 denotes that the town had a woman serving as municipal president during the period covered by the CSES surveys.¹⁵

The second variable measures the presence of women in the state legislatures. Overall, women accounted for 16 percent of all state legislature seats in the period covered by the CSES surveys.

I measure the presence of women in the state legislature using the average presence of women in the legislature between the years of 1997 to 2006.

Incubator variables

The incubator effect insulates women from the structural disparities that negatively affect their political knowledge. The working assumption here is that all should have learn similar information about politics at the same "local." Being in an informational context where men and women acquire the same information should close the gender gap in political knowledge. The incubator effect is measured using educational attainment because it represents that men and women have the experience of exposure of information through a context of classes, discussions, etc. Other ways in which people may acquire similar information is for example in participating in similar groups or associations (Gidengil, Goodyear-Grant, Nevitte and Blais 2005) and through electoral campaigns (Ondercin, Garand, and Crapanzano 2011).

¹⁵ Only 6 towns had two women as municipal presidents in the time period covered by the CSES, not towns had three or four women.

Education

Education is a variable that is known for its positive association with women's political engagement (Verba, Schlozman, and Brady 1995). In the study of political knowledge this is not the exception. Higher levels of education lead to higher scores in political knowledge for both men and women (Delli Carpini and Keeter 1996; Kenski 2000; Stolle and Gidengil 2010; Verba, Burns, and Schlozman 1997). However, even after controlling for education, the gender disparities in political knowledge remain because women still have structural disadvantages and lower levels of motivation.

Education is measured using the respondents' self-reported educational attainment. This is a continuous variable with nine values that range from no formal education (1) to completed college or more (9). The inclusion of education in the statistical analyses will allow exploring how its impact on political knowledge varies for men and women. The median of education among the people interviewed is of secondary (or junior high school) completed. Approximately 17 percent of men and 19 percent of women completed this level of education. This indicates that a gender gap in educational attainment is closed at least at the high school level.

Control variables

Rural

In Mexico in rural areas men and women are more likely to work in unremunerated work. Women are more likely to adopt traditional gender roles in rural areas by focusing on household activities (INEGI 2013c, 16;120). The sample includes 18 percent of rural municipalities. About 19 percent of men and 17 percent of the women in the survey live in rural municipalities.

I hypothesize that there is a negative relationship between living in a rural community and political knowledge. Both men and women should have lower levels of political knowledge when living in a rural context. Living in an urban context should increase the knowledge for both men and women.

Migration

The migration variable is an index available at the municipal level that takes into account households receiving remittances, members of the household who migrated to the United States and are currently there, members of the household who migrated to the United States and return to Mexico Consejo Nacional de Población (CONAPO 2010) . In the migration index (in Spanish Índice de Intensidad Migratoria) from Mexico to the United States 0 represents a very low level of migration and 4 a high level of migration at the municipal level. Almost 80 percent of the respondents live in municipalities with low or very low levels of migration to the U.S.

The patterns of migration in Mexico have also a gender-related pattern since men make the decision to migrate and leave women and children behind in Mexico. Men continue as important source of income and decision-making from abroad (Donato, Hiskey, Durand and Massey 2010). In Mexico, research suggests that wives who are left behind face a strong influence from the community and their husbands' family to keep the gender relations similar to before the husbands migrated (Danielson and Eisenstadt 2009; Mummertt 1986). Yet, there are also alternative explanations that women's political engagement increases when spouses migrate and women have to take over the leadership of their families. (Szas 1989, 182) The study of the effect of migration on individuals left behind is still evolving (Halpern-Manners 2011). Given that Mexico has high levels of migration to the United States, it is important to test the effect of this

level of migration on political knowledge of men and women. High levels of migration may motivate women to be more knowledgeable about politics and more in charge of political decisions. I hypothesize that women living in municipalities with a high rate of migration to the United States will be more knowledgeable about politics and the gender gap in political knowledge will decrease.

Ethnic Self-identification

Mestizo is the largest groups from all the surveys and is the baseline category for ethnicity. The other two categories are White and Indigenous. People who identified with an indigenous background within the context of Mexico is linked to experiencing language discrimination barriers and disadvantaged socioeconomic status (see Parker, Rubalcava and Teruel 2005; Villareal 2014). Thus, this control variable will serve to control for the effect of ethnic self-identification on the opportunities to access information about politics.

Table 4.1. Frequencies of the Independent Variables, by Sex.

Individual level variables	Total	Men	Women	χ^2
Income (median)	3.0	3.0	3.0	
	%	%	%	
1=0-678 (0-1 min. wages)	12.6	11.4	13.6	***
2=679-2034 (1-3 min. wages)	30.9	27.4	34.2	***
3= 2035-3390 (3-5 min. wages)	17.3	16.6	18.0	***
4= 3391-4746 (5-7 min. wages)	12.2	13.0	11.4	***
5= 4747-6780 (7-10 min. wages)	11.2	12.5	10.0	***
6= 6781-20340 (10-30 min. wages)	13.9	16.7	11.3	***
7=20341 - more (30 or more min. wages)	1.9	2.5	1.4	***
Education (median)	5.0	5.0	4.0	
	%	%	%	
1= None	5.9	5.2	6.5	***
2= Incomplete primary	16.8	15.4	18.1	***
3= Primary completed	18.6	17.0	20.1	***
4= Incomplete secondary	7.0	7.2	6.8	***
5= Secondary completed	17.7	16.7	18.6	***
6= Incomplete post secondary	7.1	8.5	5.8	***
7= Complete post secondary	12.6	12.7	12.6	***
8= Incomplete university	6.6	7.7	5.6	***
9= Complete University and more	7.8	9.6	6.1	***
Married	%	%	%	
1= Yes	65.3	65.7	65.0	
Employed	%	%	%	
1= Yes	51.2	76.2	28.8	***
Age (median)	1	2	2	
	%	%	%	
1= 18-25	22.2	21.9	22.4	***
2=26-40	38.4	37.2	39.5	***
3=41-60	28.8	28.3	29.3	***
4= 61 or more	10.6	12.6	8.8	***
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001				

Source: CSES 1997-2000-2003-2006- Mexico.

Table 4.1. Frequencies of the Independent Variables, by Sex (cont.).

Individual level variables	Total	Men	Women	χ^2
Parental education (median)	1	2	2	
	%	%	%	
1= None	25.8	25.1	26.4	*
2= Incomplete primary	26.8	26.7	26.9	*
3= Primary completed	23.4	22.6	24.2	*
4= Incomplete secondary	3.0	3.2	2.8	*
5= Secondary completed	7.6	7.5	7.7	*
6= Incomplete post secondary	1.5	1.7	1.3	*
7= Complete post secondary	4.7	4.7	4.8	*
8= Incomplete university	1.7	2.0	1.5	*
9= Complete University and more	5.5	6.5	4.6	*
Ethnic Self-identification (Indigenous)				
	%	%	%	
1= Yes	17.7	18.6	17.0	°
1997	27.6	25.8	29.1	***
2000	23.9	25.3	22.7	
2003	27.0	26.4	27.5	
2006	21.6	22.5	20.7	°
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001				

Source: CSES 1997-2000-2003-2006- Mexico.

Table 4.1 Frequencies of the Independent Variables by Sex (cont.).

Contextual level variables	Total	Men	Women	χ^2
Municipal president (women)	%	%	%	
1= The presence of a female municipal president	7.5	7.4	7.6	
State legislature (average women)^a	16.0	16.0	16.1	
Migration (median)	1.0	2.0	1.0	
1=Very low	50.1	49.9	50.4	
2=Low	30.3	30.4	30.2	
3=Moderate (<i>Medio</i>)	12.1	12.1	12.0	
4=High	6.1	6.0	6.2	
5=Very high	1.4	1.7	1.2	
Rural	%	%	%	
1=Rural	18.2	19.4	17.2	
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001				

Source: Sistema de Información Municipal (SNIM) & Consejo Nacional de Población.

^aIndependent t-test.

Analysis and Findings

In this section I present the results of the analyses. The first set of analyses presents a discussion of the political knowledge questions and the political knowledge index by sex. The questions with the lowest and widest gender gaps will be described here as well as the most combination of questions most frequently answered correctly by men and women. A second set of analysis shows how the structural and agency effects influence the gender gap in political knowledge. I present the results showing separate regressions. Another regression only includes variables associated with the agency effects and incubator effects. I used educational attainment as a proxy to show the incubator effect. Finally, one regression includes the combined results of all the effects.

Another set of analysis shows an approach to understanding the incubator effect. My theory predicts that the incubator effect should shrink the gender gap in political knowledge when women and men acquire information in a similar context. The approach used in this chapter tests whether or not men and women with similar levels of education have similar levels of political knowledge when they are part of the same age cohort as well. For instance, the youngest cohort of men and women with similar educational attainment may have decreased their gender gap in political knowledge in comparison to the oldest cohort of people who is far removed from the educational setting. It should be noted that the existence of the incubator effect does not necessarily imply that the levels of political knowledge will increase among those in the incubator. The incubator means that the differences that normally exist between men and women should decrease or disappear because the incubator neutralizes the power of the structural and agency effects. Thus, the incubator effect should benefit women in their political knowledge *vis-à-vis* men.

The first step is to show whether men and women vary in the way they answer questions about political facts. Table 4.2 shows the percentage of people who answer correctly each question in the political knowledge index and the percentage of men and women who respond correctly to each of these questions. As expected, there is a significant gender gap in political knowledge in all the questions ($p < 0.001$). The data also show patterns previously identified in the literature on variation of responses by topic and the degree of difficulty of the question (Delli Carpini and Keeter 1996; Pietryka and MacIntosh 2013).

Table 4.2. Percentage of Respondents who Answered each Political Knowledge Item Correctly, by Sex.

Political knowledge question	Total Correct (%)	Men	Women	Gap (M-W)
Chambers of Mexico's Congress	45.0	52.7	38.1	14.6
Name of the governor	66.9	74.0	60.5	13.5
Legislators' term	51.3	57.0	46.1	10.9

Source: CSES 1997-2000-2003-2006- Mexico.

Numbers may not sum to a 100 because of rounding.

The percentage of people who give correct answers varies by question and so does the gender gap. The item with the highest percentage of correct responses is the name of the state's governor, answered correctly by two-thirds of respondents (67 percent). This question has the second-largest gender gap (14 percent), since only 61 percent of women answered it correctly compared with nearly three quarters (74 percent) of men. This 13.5 percentage point gap compares to the gender gap in the question with the least percentage of correct answers. Only 45 percent of all respondents (53 percent of men and 48 percent of women), answered correctly the question asking how many chambers comprise Mexico's Congress for a 15 percentage point gender gap. The smallest gender gap exists in the questions with the second-highest percentage of correct answers. More than half of all respondents (51 percent) correctly said the length of a

member's term in the House of Representatives. In this case 46.1 percent of women answered the question compared to 57 percent of men for a gender gap of 11 percentage points.

Scholars have long debated the importance of asking questions related to issues that are of interest to women to accurately capture their political knowledge (Dolan 2011; Stolle and Gidengil 2010). While Table 4.2 shows that women are more knowledgeable about the name of their governor, which supports the idea of women being more interested in local politics (Stolle and Gidengil 2010), there are gender gaps in all the questions used in this index

As shown in the previous chapter, scholars have taken into account the type of political knowledge integral to the gender gap in political knowledge in order to think critically about how we explain gender disparities (Dolan 2011; Pietryka and MacIntosh 2013; Stolle and Gidengil 2010). Recently, Pietryka and McIntosh (2013) analyzed political knowledge questions according to topic and level of difficulty. They find significant differences across groups, with women and those with lower levels of education at a disadvantage, something consistent with other studies about the gender gap (Dolan 2011; Stolle and Gidengil 2010). Table 1 suggests that the degree of difficulty may affect political knowledge scores yet there are still significant gender gaps for all questions regardless of difficulty.

The items in Table 4.2 are used for the construction of the political knowledge index. Table 4.3 shows the distribution of the political knowledge index. This index was created combining the three political knowledge questions and ranges from 0 to 3. There are gender gaps at all levels, but noticeably the gaps widen at the extremes. Twenty-three percent of women answered none of the questions correctly compared to 12.7 percent of men. In this case the category of zero

includes incorrect and don't know responses. Even if we remove the "don't know" and "refusals" the gender gap remains (See Appendix 10 page 167).

At the other extreme, among those who answered all 3 questions correctly, there is also a gender gap in which men (34.3 percent) are significantly more likely than women (21.5 percent) to be at the highest level of political knowledge.

Table 4.3. Distribution of Political Knowledge Index, by Sex.

Number of correct answers	All (%)	Men	Women	Gap (M-W)
0 correct answers	18.2	12.7	23.1	-10.4
1 correct answer	28.1	25.3	30.6	-5.3
2 correct answers	26.2	27.8	24.8	3
3 correct answers	27.5	34.3	21.5	12.7
Total	100	100	100	-

Differences are statistically significance at $p < 0.001$.

Source: CSES 1997-2000-2003-2006- Mexico.

Numbers may not add up to a 100 because of rounding.

The mean number of correct responses for the entire sample equals two. In a further analysis in Table 4.4 I show the two questions frequently answered correctly. Among people answering correctly two political knowledge questions the gender gap decreases to 3 percentage points. There are some interesting patterns among men and women who answered two questions correctly. The most common combination of correct answers is accurately mentioning the name of the governor and stating the length of a representative's term. Seventy-five percent of women and 71 percent of men had this combination of correct answers when they had two correct answers in the index. Women are also more likely than men to answer correctly a combination of the chambers of Congress and the length of a representative's term (13 percent vs. 9 percent). There is no gender gap among those answering correctly the combination of questions about the

chambers of Congress and the name of the governor as 16 percent of both men and women answered this combination (Table 4.4).

Table 4.4. Distribution of Response Combinations among Respondents who Answered Two Questions Correctly, by Sex.

Combination of two political knowledge questions	Total (%)	Men	Women	Gap (M-W)
Knows the chambers of Mexico's Congress & the name of the governor	15.6	15.7	15.5	0.2
Knows the chambers of Mexico's Congress & the length of a house representative's term	11.1	9.1	13.4	-4.4
Knows the name of the governor & the length of a house representative's term	73.4	75.3	71.1	4.2

Source: CSES 1997-2000-2003-2006- Mexico.

Numbers may not add up to a 100 because of rounding.

The analysis will proceed as follows. I show that the gender gap exists using a bivariate model that regresses the gender variable (if the respondent is a woman) against the political knowledge index, the dependent variable. Table 4.5 shows the results of a bivariate ordinal logistic regression analysis, where as expected, sex (being a woman) is negatively associated with political knowledge ($p < 0.001$). The negative association is present before and after adding the control variables. The gender gap decreases when the control variables are added to the model as shown by the change in the coefficient of the sex variable from $-.658$ to $-.521$ ¹⁶ (See Table 4.6 page 81).

¹⁶ An alternative approach to show the existence of the gender gap in political knowledge is through a Oaxaca-Blinder decomposition (Dow 2009; Oaxaca 1973). This technique is commonly use in economics to study the gender pay gap (See Gunewardena et al. 2008). Basically, the analysis allows simulating what would happen with gender differences if women were to have the individual characteristics that men have (endowments) and how the change of women's coefficients to men's coefficients modifies the gender gap. Although not shown here I run a regression with the Oaxaca Decomposition and the gender gap in political knowledge remains (results available if

Next, I incorporate the individual variables measuring the structural effect (income, married, employed and age), and then incorporate only those related to the agency (parental education, female municipal presidents and legislators) and incubator effects (educational attainment). The gender gap exists when the variable measuring gender is negatively associated with political knowledge in all the models in Table 4.6.

Table 4.5. Ordinal Regression Model 1: Political Knowledge Controlling for Sex.

Variables	[1] Bivariate	
	Coeff.	(SE)
Female	-0.658 ***	(0.046)
Income		
Married		
Employed		
Age		
Parental education		
Female municipal pres.		
State legislature (women)		
Education		
Migration		
Rural		
Indigenous		
2000		
2003		
2006		
Cut1	-1.885	(0.067)
Cut2	-0.499	(0.055)
Cut3	0.645	(0.063)
Number of Observations	7380	
LR χ^2	208.23 ***	
Pseudo R2	0.012	
Robust standard errors in parentheses		
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001		

Source: CSES 1997-2000-2003-2006- Mexico.

requested). Since the dependent variable is ordinal, the traditional Oaxaca decomposition can have limitations for the model but even with these limitations it is shown that the gender gap exists in this analysis.

Table 4.6. Ordinal Regression Models 2-4: Political Knowledge Controlling for Structural, Agency, Incubator, and Combined Effects.

Variables	[1] Structural level		[2] Agency level		[3] Incubator level		[4] Full	
	Coeff.	(SE)	Coeff.	(SE)			Coeff.	(SE)
Female	-0.572 ***	(0.049)	-0.672 ***	(0.046)	-0.621 ***	(0.045)	-0.521 ***	(0.051)
Income	0.272 ***	(0.024)					0.109 ***	(0.023)
Married	-0.028	(0.054)					0.085	(0.053)
Employed	0.075	(0.055)					0.054	(0.057)
Age	0.042	(0.027)					0.316 ***	(0.034)
Parental education			0.178 ***	(0.016)			0.056 ***	(0.016)
Female municipal pres.			0.133	(0.149)			0.127	(0.160)
State legislature (women)			-0.003	(0.006)			-0.008	(0.006)
Education					0.292 ***	(0.014)	0.291 ***	(0.018)
Migration	-0.055	(0.046)	0.017	(0.043)	0.024	(0.044)	0.000	(0.048)
Rural	-0.394 ***	(0.118)	-0.630 ***	(0.115)	-0.429 ***	(0.111)	-0.284 *	(0.122)
Indigenous	-0.523 ***	(0.067)	-0.513 ***	(0.067)	-0.407 ***	(0.061)	-0.342 ***	(0.069)
2000	-0.244 **	(0.115)	0.033	(0.101)	-0.037	(0.109)	-0.140	(0.114)
2003	0.167	(0.114)	0.424 ***	(0.111)	0.463 ***	(0.110)	0.363 **	(0.115)
2006	0.444 ***	(0.123)	0.688 ***	(0.122)	0.702 ***	(0.120)	0.663 ***	(0.136)
Cut1	-1.185	0.143	-1.454	(0.139)	-0.561	(0.126)	0.558	(0.198)
Cut2	0.308	0.139	0.029	(0.135)	1.005	(0.113)	2.142	(0.195)
Cut3	1.578	0.149	1.269	(0.139)	2.324	(0.120)	3.500	(0.206)
Number of Observations	6203		6600		7367		5600	
LR χ^2	603.9 ***		745.1 ***		1062.4		1010.4 ***	
Pseudo R2	0.055		0.053		0.0807 ***		0.0914	
Robust standard errors in parentheses								
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001								

Source: CSES 1997-2000-2003-2006- Mexico.

Several variables measuring the structural effect are positively associated with political knowledge (Table 4.6, Model 1), although of these, only income is statistically significant ($p < 0.001$). Age and employment status are positively associated with political knowledge but not significant. Marital status is negatively associated with political knowledge but not significant. One should remember that these models are not separating the effects for men and women so the effect of marital status and the other structural variables may still change when separating the effects by gender that will be part of the next step of the analysis.

The variable measuring the agency effect at the individual level, parental education, is positively associated with political knowledge ($p < 0.001$). The aggregate variables controlling for role model effects on agency (female representation at the state and municipal levels) are not significant¹⁷ (Table 4.6, Model 1). Education measures the incubator effect (Table 4.6, Model 3) and its relationship with political knowledge is positive and significant ($p < 0.001$).

Table 4.6. also shows the results for the full model (model 4). Among the structural variables income remains positively associated with political knowledge ($p < 0.001$), while age is also positive and the relationship is significant ($p < 0.001$)¹⁸. Marriage is not significant but its relationship with political knowledge is now positive, a change from its relationship in the model that only included the structural variables. Employment is positive but not significant.

¹⁷ I alternatively use a multilevel approach or hierarchical model to separate the effects of the aggregate level data on the individual level data. The results of the analysis hold and Appendix 2 and Appendix 3 show the results of the analysis.

¹⁸ In alternative analyses I used the age variable as a dummy and I found that the youngest cohort (18-24) have low levels of political knowledge. As people age, they have improvements in their levels of political knowledge, especially they reached a peak when they are in the 26-40 years old category. However, the political knowledge starts to decline among the eldest, specifically in the category of 61 or more years old. Thus, even with limitations of this age variable, the curvilinear effect suggested in the literature (Jennings 1996) remains for the study of Mexico as the extremes categories of age have the lowest levels of political knowledge.

Parental education is the only significant variable measuring the agency effect ($p < 0.001$). The variables measuring role models for women are once again not significant. Education, which measures the incubator effect, remains positively associated with political knowledge ($p < 0.001$). Finally, the control variables show that living in a rural area and being from an indigenous background are both negatively associated with political knowledge.

Besides the negative impact of gender on political knowledge, the structural characteristics of age and income, along with the educational attainment that is part of the incubator effect have the strongest influence on explaining the political knowledge. Structural and incubator effects are in tension when people acquire political knowledge.

To understand the effects of the independent variables in political knowledge, it is necessary to convert the coefficients into probabilities. These probabilities are based on an individual for whom the values of the variables have been fixed. To understand the effects, each binary variable will be fixed to its mode. Income, age, educational attainment, parental education, the percentage of women in the legislature, and migration will be fixed at their means. In their work Lawless and Fox (2010) and Fox and Lawless (2014) also used the modes to set the baseline individual for their binary variables.

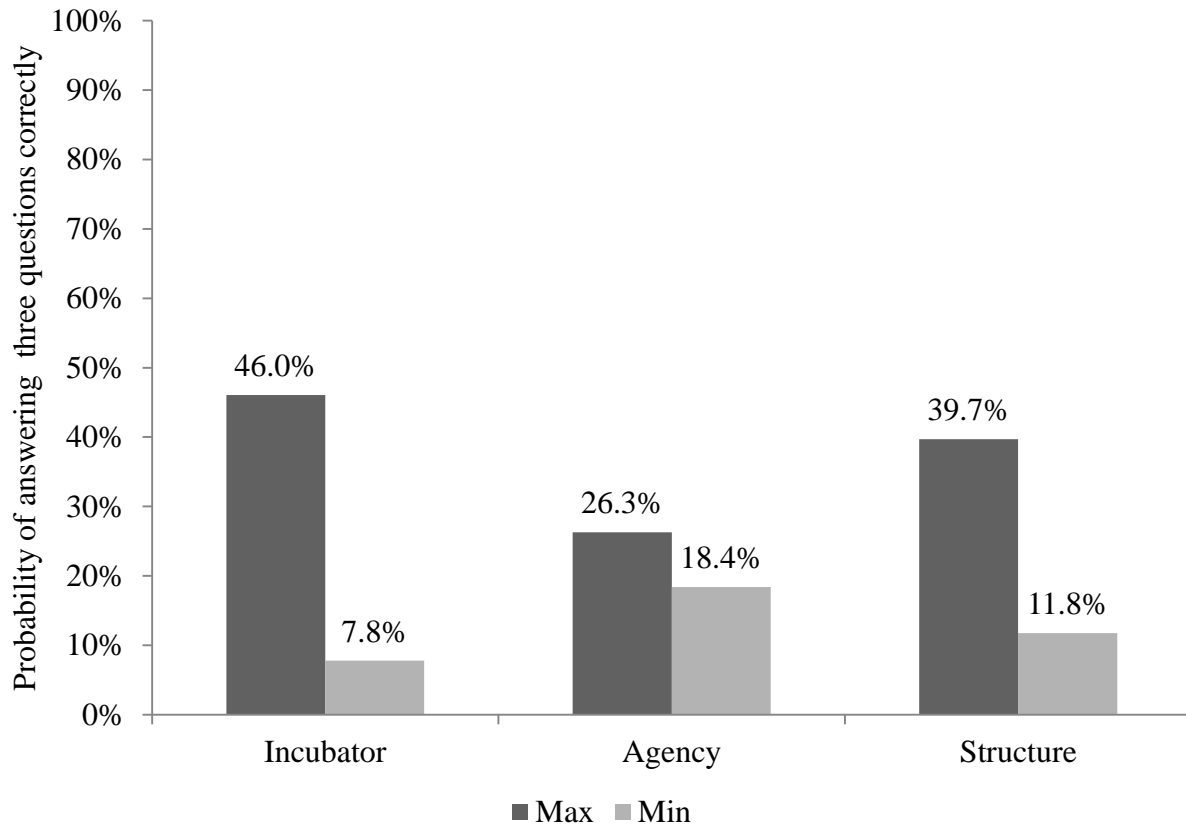
Figure 4.1 shows that when we set the incubator effect variable to its maximum level, there is a chance of 41 percent probability of answering correctly all three political knowledge questions. As people progress in their educational attainment their probability of answering correctly all political knowledge items increases. A person who responded with a completed elementary educational school in Mexico has a probability of 8 percent of answering correctly all questions of political knowledge all else being equal; this is a 33-percentage point difference comparing it

with a person who completed college or more (41 percent). On average people in the sample completed junior high school have 21 percent chance of answering correctly all political knowledge questions.

Figure 4.1 also shows that when the variable related to the agency effect is set at its minimum value (parental education), there is an 18 percent chance of answering correctly all political knowledge questions. When the agency variable is set to its maximum values, the probability increases to 26 percent. The higher the parental education the greater the encouragement for people to learn about politics.

In the same Figure 4.1, when the significant variables associated to the structural effect are set to their minimum values (income and age), people have about 12 percent probability of answering correctly political knowledge questions. Structural characteristics are part of the factors explaining the availability of resources when learning about politics. When age and income are set at their maximum values, the probability of answering correctly all political knowledge questions increases to 46 percent.

Figure 4.1. Predicted Probabilities of Answering Three Political Knowledge Questions Correctly by Incubator, Agency, and Structural Effects (Model 4 in Table 4.6).



Source: CSES 1997-2000-2003-2006- Mexico.

One of the goals of this study is showing how the structural, agency and incubator effects impact political knowledge by gender. For this, it is necessary to split the model by gender and to show how these effects vary among men and women independently. These independent models by gender confirm the existence of some structural and agency inequalities and that they affect men and women in different ways. This analysis is shown in Table 4.7.

Among the variables measuring the structural effect, income does not have the same impact for women than it has for men. Although income is positively associated with political knowledge for both men and women, the effect is half as strong on women. As expected in the structural

effect, the impact of income on political knowledge for women is not as strong as the impact of the same variable for men's political knowledge.

Table 4.7. Ordinal Regression: Political Knowledge by Structural, Agency and Incubator Effects among Men and Women.

Variables	[1] Men		[2] Women	
	Coeff.	(SE)	Coeff.	(SE)
Income	0.131 ***	(0.027)	0.093 **	(0.034)
Married	0.199 **	(0.078)	-0.027	(0.073)
Employed	0.085	(0.086)	-0.021	(0.080)
Age	0.321 ***	(0.047)	0.299 ***	(0.046)
Parental education	0.070 ***	(0.022)	0.045 *	(0.020)
Female municipal pres.	-0.126	(0.175)	0.354 °	(0.192)
State legislature (women)	-0.008	(0.006)	-0.009	(0.008)
Education	0.280 ***	(0.023)	0.301 ***	(0.025)
Migration	0.015	(0.053)	-0.014	(0.058)
Rural	-0.296 *	(0.148)	-0.310 *	(0.145)
Indigenous	-0.408 ***	(0.096)	-0.277 **	(0.099)
2000	-0.292 *	(0.131)	-0.020	(0.133)
2003	0.282 *	(0.139)	0.427 **	(0.137)
2006	0.358 *	(0.145)	0.922 ***	(0.163)
Cut1	0.566	(0.249)	1.008	(0.236)
Cut2	2.180	(0.241)	2.581	(0.241)
Cut3	3.546	(0.247)	3.943	(0.249)
Number of Observations	2682		2918	
LR χ^2	531.4 ***		475.7 ***	
Pseudo R2	0.084		0.081	
Robust standard errors in parentheses				
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001				

Source: CSES 1997-2000-2003-2006- Mexico

As expected, education is also positively associated with political knowledge. While I hypothesized that at all levels of education women should have a disadvantage in political knowledge, I do not find enough evidence for this hypothesis. Instead, the effect of education is exactly the same for men and women ($p<0.001$).

Marriage is also part of the structural effect. Interestingly, it only has a positive association with political knowledge among men ($p < 0.05$), and a negative (but not significant) association with women's political knowledge. A variable of the structural effect is marital status. Married men have a 37 percent probability of answering correctly political knowledge questions compared to 32 percent of not married men.

The gender gap should also exist because men and women have different motivations to learn about politics, which I call the agency effect. In this case, I measure agency by controlling for parental education and variables that measure the presence of women in elected office at the state and municipal levels. Similar to education, parental education has a positive association with political knowledge, and its effect is essentially the same for both men ($p < .05$) and women ($p < .01$). Of all three variables measuring the presence of women in elected office, only living in a town with a female municipal president is positively associated with women's political knowledge ($p < 0.05$). This variable has no impact for men.

Of the control variables, living in a rural area has a significant association on political knowledge that is negative, and essentially the same, for both men and women. For both men and women, identifying with an indigenous background has also a negative effect on their political knowledge. In particular, indigenous men have a greater disadvantage on political knowledge compared to indigenous women. Although out of the scope of this dissertation, there is an opportunity to conduct intra-gender comparisons. Recently, Allison and Panagos (2013) conducted a study locating gender gaps in political engagement among aboriginal and non-aboriginal women in Canada that highlights the importance of comparing gender gaps in political knowledge within men and women with different backgrounds.

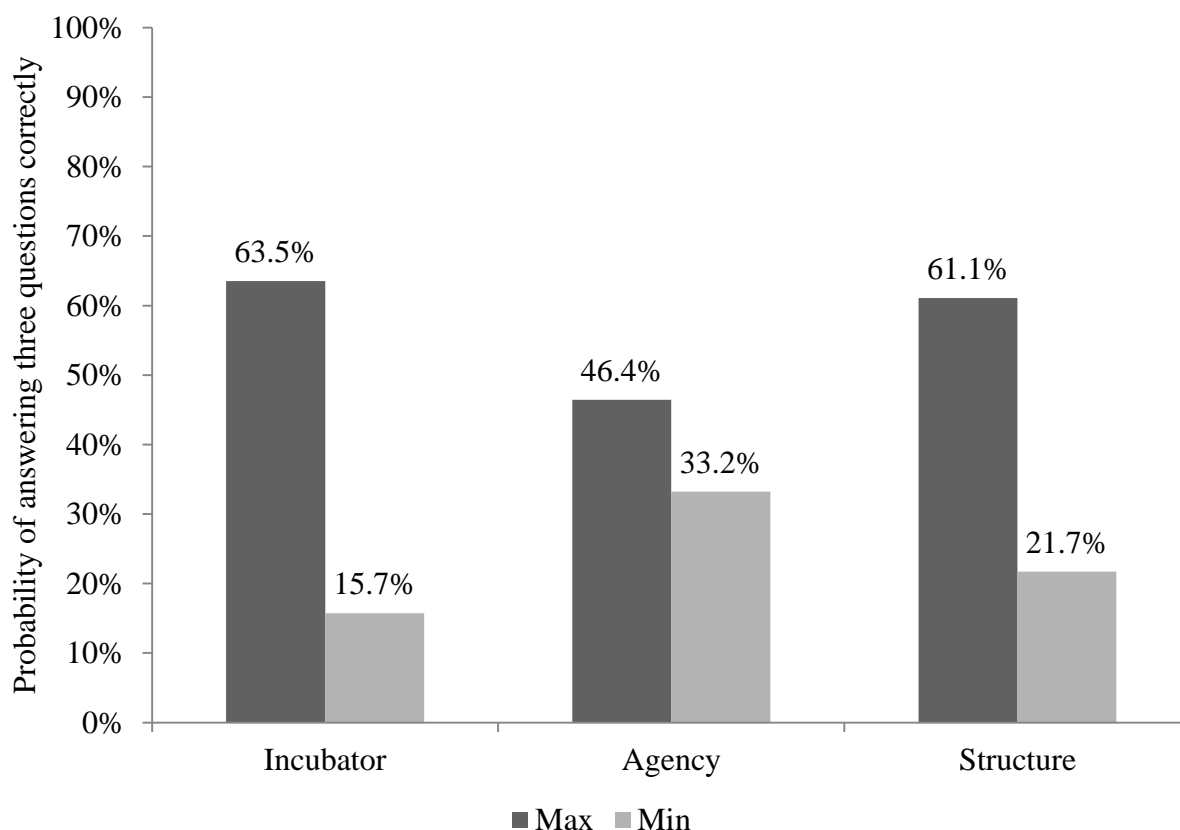
To illustrate the results from Table 4.7, Figure 4.2 shows the predicted probabilities of the model for men. The probabilities are based on an individual with a specific set of characteristics.¹⁹ The results in Figure 4.2, show that the incubator effect has a major impact on the probability that men have of answering correctly all political knowledge items. When educational attainment which is associated with the incubator effect is set at their minimum levels, men have about 16 percent chance of answering all questions correctly. When educational attainment is set at their maximum level, the probability increases to 64 percent, which is a four hundred percent increase.

The impact of the agency effect also has a positive impact on men's knowledge but the change from the maximum to the minimum value is not as major as in the incubator effect. When the variables are set at their minimum value, men have about 33 percent probability of answering all political knowledge questions correctly. When the same variables are set at their maximum level, the probability of answering all questions correctly changes to 46 percent.

A similar story to the incubator effect happens with the structural effect, which almost triples from 22 percent to 61 percent going from their minimum to their maximum values. The importance of the structural and incubator effect is similar in their effects in improving men's political knowledge. The agency effect also helps to increase men's political knowledge, but its impact is minor compared to the other two mechanisms.

¹⁹ These probabilities are based on a man for whom the values of the variables have been fixed. To understand the effects, each binary variable will be fixed to its mode. Income, age, educational attainment, parental education, the percentage of women in the legislature, and migration will be fixed at their means.

Figure 4.2. Predicted Probabilities of Answering Three Political Knowledge Questions Correctly by Incubator, Agency, and Structural Effects among Men (Model 1 in Table 4.7).



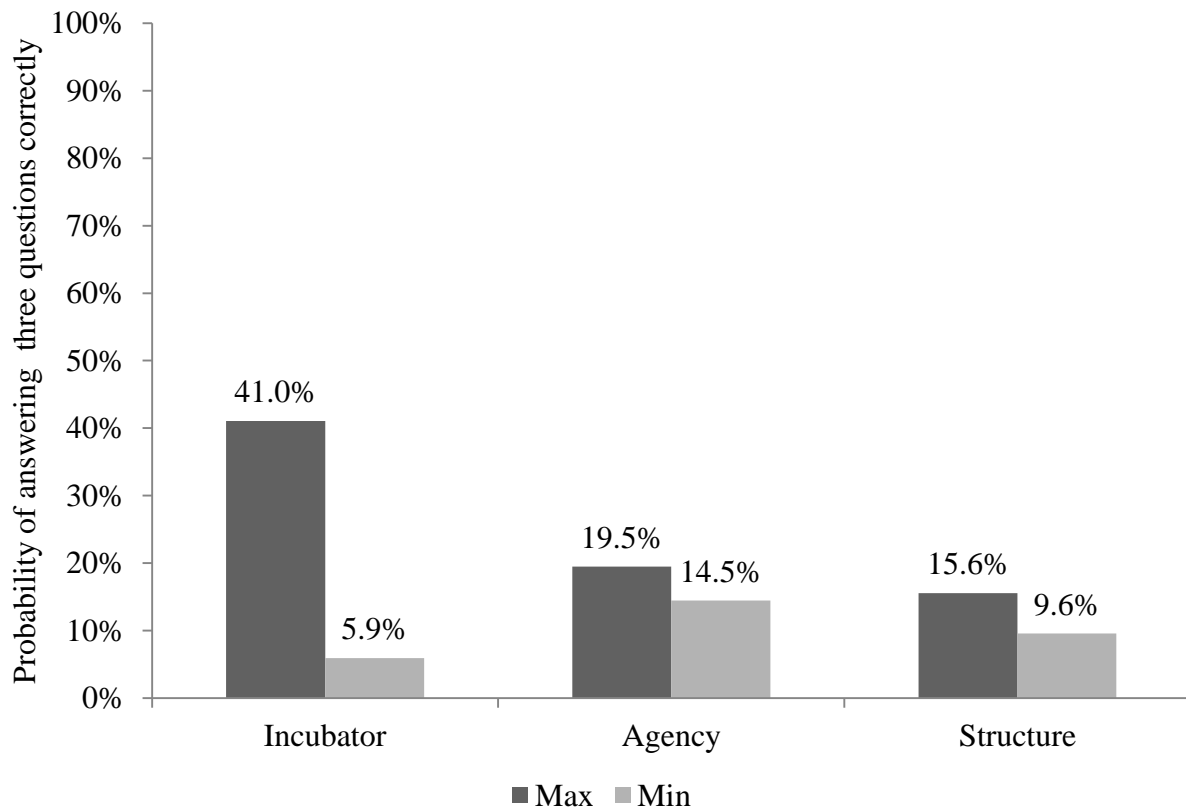
Source: CSES 1997-2000-2003-2006- Mexico.

For women, of all the effects measured, Figure 4.3 shows that the incubator effect has the largest effect on women's political knowledge²⁰. A woman with the lowest level of education only has a 6 percent chance of answering correctly all political knowledge questions, while a woman with the highest level of education has a 41 percent chance. The agency effect improves women's chances to answer correctly all political knowledge questions by only 5 percentage points. The agency effect in the model for women includes two significant variables, parental education and the presence of a female municipal president. Interestingly, for the case of men in which parental

²⁰ These probabilities are based on a man for whom the values of the variables have been fixed. To understand the effects, each binary variable will be fixed to its mode. Income, age, educational attainment, parental education, the percentage of women in the legislature, and migration will be fixed at their means.

education was the only variable significant for the agency effect, the impact is much greater as previously shown in Figure 4.2. compared to the impact that the agency effect has on the model for women (Table 4.7).

Figure 4.3. Predicted Probabilities of Answering Three Political Knowledge Questions Correctly by Incubator, Agency, and Structural Effects among Women (Model 2 in Table 4.7).



Source: CSES 1997-2000-2003-2006- Mexico.

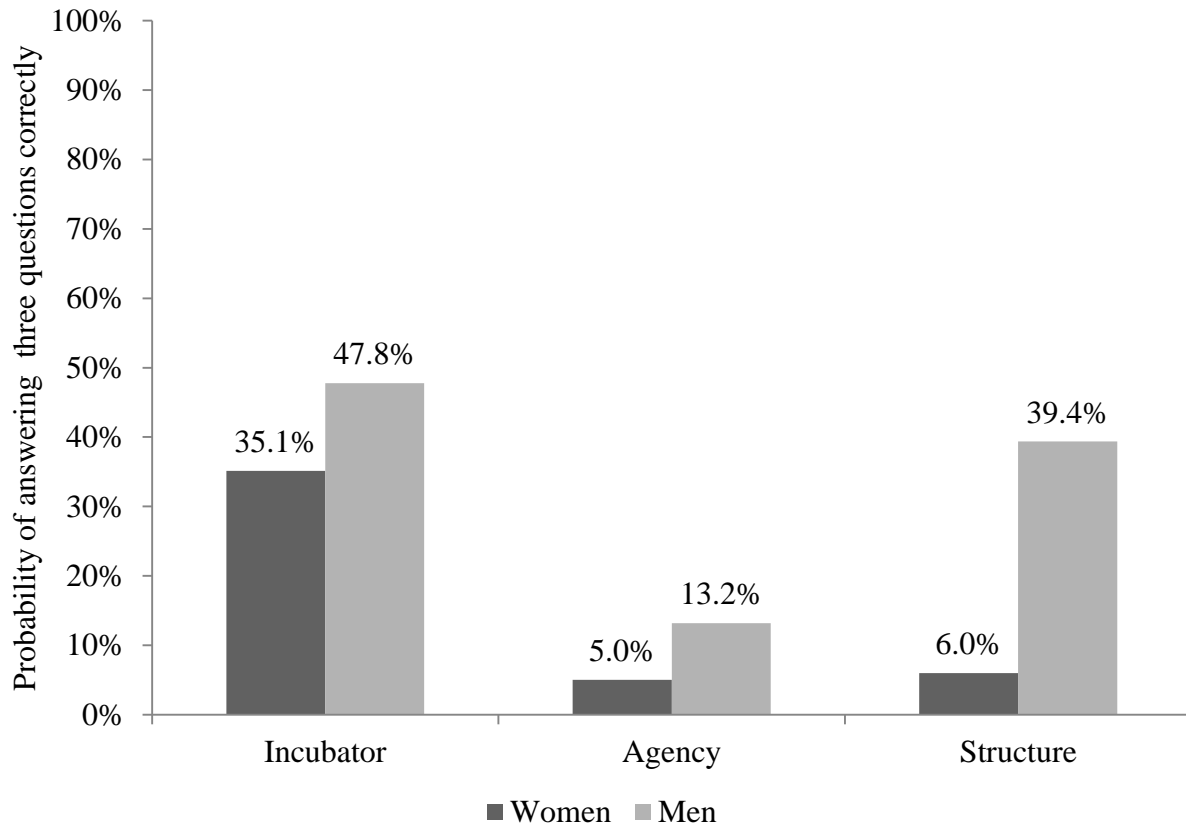
The impact of the structural variables is modest for women. Women who reported the lowest level of income and who are part of the youngest cohort have about a 10 percent probability of answering correctly all political knowledge questions whereas the probability improves to 16 percent when the income and age variables are set to their maximum values. The chances for women to answering all political knowledge questions increased about 6 percentage points in going from the minimum to the maximum levels of income and age cohorts. For men the

structural effect included also marital status and the probabilities of answering correctly all political knowledge increased almost three times when comparing the minimum and maximum values of the structural variables for men (22 percent to 61 percent in Figure 4.2 in page 89).

Figure 4.4 illustrates the changes in probabilities (from the minimum to the maximum) in political knowledge for men and women discussed in figures 4.2 and 4.3. While the net change in the incubator effect is greater for men than for women, it is important to notice that the relative impact is higher for women than for men. Men quadruple their chances of answering correctly all political knowledge questions thanks to the incubator effect (from 16 to 64 percent). The incubator effect for women improves their chances of answering all political knowledge questions by six-hundred percent, a seven-fold improvement (from 6 to 41 percent). This means that even when the raw change in the incubator effect seems stronger for men in reality has a greater effect for women but not enough to close the gender gap in political knowledge in the overall sample.

The change in the agency effect is three times higher for men than for women, but in reality the improvement in probabilities is not that different because a five percentage points change for women represents a 34 percent increase in their probability of answering all questions correctly , while a 13 percentage point change for men accounts for a 40 percent improvement in answering all political knowledge questions.

Figure 4.4. Change from Minimum to Maximum Effects in Predicted Probabilities of Answering Three Political Knowledge Questions Correctly (Table 4.7).



Source: CSES 1997-2000-2003-2006- Mexico.

Exploration of the Incubator Effect

In the last part of the analysis of this chapter I analyze further the impact of the incubator effect. The importance of education is important for women and influences greatly their chances of answering political knowledge questions, more so than the effect educational attainment has on men. Although the data for the adult population limits the measurement of the incubator effect solely to educational attainment, combining education with age cohorts²¹ should provide a clearer picture of the potential of the incubator effect.

²¹ The data here is not a longitudinal survey following respondents in different points of time. For a cohort analysis model using longitudinal data see Bartels and Jackmann (2014).

I split the sample into three groups: highly educated (high school education or more) Mexicans between the ages of 18-25, 26-40, and older than 41. The education filter was applied to only account for those who have been in school long enough to have received civic education in school. The age breaks are created to test whether among those who have received the same levels of education, the gender gap is constant through life, or it is smaller among those who are the closest to their school years and with the class materials more likely to be fresher in their minds. The gender gap in political knowledge should then appear again as women get older, their school years far behind them, and the other nuances of life (marriage, children, work) taking their toll in their learning time.

Table 4.8 in page 95 shows the results of a full regression model testing the structural and agency effects for all respondents who report having studied in high school (even if they did not completed it), and then three models dividing those with a high school education by age cohorts. Table 4.9 (page 96) follows the same process but only includes respondents with a college education and includes a full model of college-educated Mexican adults as well as three models divided by age cohorts.

The models testing political knowledge show that even among those with a high school or a college education, there is still a gender gap ($p < 0.001$) in both models. The gap exists in the models testing the structural and agency effects for highly educated Mexicans who are 26 to 40 years old and even greater among those who 41 years of age and older.

The most interesting result in Table 4.8 is that the gender gap in political knowledge does not exist among people who are 18 to 25 years old and who have a high school education (complete and incomplete). The same effect of closing the gender gap in political knowledge is observed

when the model is split for people who have a college education (incomplete university or university and more) in Table 4.9. These findings lend credence to the existence of the incubator effect since there is no gender gap among younger Mexicans with similar levels of education. Moreover, at this young age, the process of life-cycle events related to workplace responsibilities or the effect of marriage may not be as prevalent as later in life (Sears and Brown 2013).

Table 4.8. Ordinal Regression: Political Knowledge by Structural, Agency and Incubator Effects (Among Mexicans with High School Education by Age Cohorts).

School Education by Age Cohorts:								
	[1] High school		[2] High school & 18-25 years old		[3] High school & 26-40 years old		[4] High school & 41 or more years old	
	Coeff.	(SE)	Coeff.	(SE)	Coeff.	(SE)	Coeff.	(SE)
Female	-0.342 ***	(0.101)	-0.276	(0.190)	-0.341 °	(0.178)	-0.497 *	(0.250)
Income	0.091 *	(0.043)	-0.001	(0.067)	0.123 *	(0.057)	0.162	(0.107)
Married	0.095	(0.113)	-0.106	(0.227)	0.087	(0.207)	0.193	(0.351)
Employed	0.184	(0.141)	0.058	(0.192)	0.313	(0.217)	0.196	(0.329)
Age	0.351 ***	(0.087)						
Parental education	0.029	(0.029)	0.028	(0.046)	0.025	(0.044)	0.046	(0.068)
Female Municipal Pres.	-0.138	(0.263)	-0.197	(0.375)	-0.219	(0.368)	0.105	(0.356)
State legislature (women)	-0.008	(0.008)	-0.010	(0.014)	-0.001	(0.010)	-0.025	(0.017)
Migration	0.014	(0.081)	-0.074	(0.132)	0.122	(0.108)	-0.043	(0.197)
Rural	-0.264	(0.232)	-0.369	(0.398)	-0.262	(0.340)	-0.360	(0.802)
Indigenous	-0.381 **	(0.145)	-0.581 *	(0.236)	-0.384 °	(0.221)	0.008	(0.384)
2000	-0.066	(0.195)	0.039	(0.268)	-0.042	(0.255)	-0.262	(0.354)
2003	0.232	(0.189)	0.411	(0.281)	0.086	(0.265)	0.208	(0.424)
2006	0.640 **	(0.238)	0.900 **	(0.343)	0.676 *	(0.283)	0.156	(0.402)
Cut1	-1.220	(0.320)	-1.945		-1.662	(0.500)	-2.436	(0.790)
Cut2	0.333	(0.310)	-0.449		-0.010	(0.442)	-0.799	(0.724)
Cut3	1.652	(0.318)	0.739		1.491	(0.455)	0.399	(0.754)
Number of Observations: 1180			426		526		229	
LR χ^2	146.7 ***		29.0 **		35.6		19.7 °	
Pseudo R2	0.034		0.023		0.0273		0.0288	
Robust standard errors in parentheses								
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001								

Source: CSES 1997-2000-2003-2006- Mexico.

Table 4.9. Ordinal Regression: Political Knowledge by Structural, Agency and Incubator Effects (Among Mexicans with College Education by Age Cohorts).

	[1] College or more		[2] College & 18- 25 years old		[3] College & 26- 40 years old		[4] College & 41 or more years old	
	Coeff.	(SE)	Coeff.	(SE)	Coeff.	(SE)	Coeff.	(SE)
Female	-0.525 ***	(0.135)	-0.265	(0.222)	-0.619 **	(0.223)	-0.721 *	(0.362)
Income	0.155 ***	(0.045)	0.1833 *	(0.082)	0.149 °	(0.077)	0.150	(0.093)
Married	0.191	(0.145)	-0.168	(0.398)	0.358	(0.221)	0.460	(0.365)
Employed	-0.066	(0.125)	0.2228	(0.257)				
Age	0.253 **	(0.099)			-0.113	(0.260)	-0.143	(0.388)
Parental education	0.064 *	(0.031)	0.0553	(0.053)	0.062	(0.042)	0.072	(0.061)
Female Municipal Pres.	-0.084	(0.217)	0.1392	(0.328)	-0.363	(0.315)	-0.043	(0.393)
State legislature (women)	0.008	(0.010)	0.0146	(0.015)	0.018	(0.017)	-0.005	(0.018)
Migration	-0.103	(0.102)	-0.149	(0.201)	-0.044	(0.157)	-0.175	(0.218)
Rural	0.475	(0.368)	1.1335	(0.697)	0.454	(0.530)	-0.395	(0.660)
Indigenous	-0.579 *	(0.280)	-0.584	(0.388)	-0.291	(0.442)	-1.182 **	(0.383)
2000	0.083	(0.217)	-0.549 °	(0.301)	0.686 **	(0.282)	-0.262	(0.492)
2003	0.614 **	(0.244)	0.8302 *	(0.420)	0.692 °	(0.359)	0.034	(0.430)
2006	0.373	(0.244)	0.1582	(0.340)	0.570	(0.410)	-0.001	(0.466)
Cut1	-2.062	(0.464)	-2.395	(0.721)	-1.806	(0.770)	-4.326	(0.998)
Cut2	-0.216	(0.434)	-0.223	(0.678)	-0.241	(0.722)	-2.080	(0.663)
Cut3	1.289	(0.420)	1.1208	(0.671)	1.396	(0.710)	-0.287	(0.642)
Number of Observations	866		293		372		202	
LR χ^2	99.0 ***		40.0 ***		50.6 ***		39.6 ***	
Pseudo R2	0.049		0.056		0.0513		0.0651	
Robust standard errors in parentheses								
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001								

Source: CSES 1997-2000-2003-2006- Mexico.

Conclusions

In this chapter I found evidence showing that structural differences exist between men and women regarding income, age, and marriage. Income inequality, lower levels of political knowledge among elderly women, and the positive effect of marriage on men but not on women, lend evidence to the existence of a structural effect. Age particularly shows that older women may experience differently the burden of family responsibilities compared to younger women. Over time women have entered in greater numbers to the labor force and gotten educated at similar levels as men do. However, the findings related to structural inequalities are still related to the burden of family responsibilities that may affect more men than women in relation to their political engagement (Lawless and Fox 2010). In the case of political knowledge, women with more responsibility at home may not have the same time and resources to invest in accessing political information.

On the agency effect, I expected to find that the presence of women in elected office at the local level would have a positive impact on women's political knowledge. Moreover, through the variable of parental education I expected to capture the effect of socialization patterns related to the investment of education of girls in Mexico (Parker and Pederzini 2000). I found that parental education impacts similarly both men and women, but the change in probabilities slightly benefits men more than women.

Interestingly, the presence of women in an executive office at the very local level (municipal president) has a positive but moderate impact only for women. The finding about the positive relationship between political knowledge and the presence of women at the executive level in local communities supports the argument about the effect of women as role models activating

women's political engagement in general (Kittilson 2010; Wolbrecht and Campbell 2007). So far, scholarship has explored the influence of gender quota law in political engagement in Mexico and Latin America but has not found evidence of this relationship (Zetterberg 2009). However, there is a lack of research focusing on the executive office at the local level (municipality) and political knowledge. The positive relationship between the presence of a woman in a leadership position at the local level supports previous evidence arguing that women are generally involved and more knowledgeable about local politics (Stolle and Gidengil 2010).

In this chapter I also tested the incubator effect. At first sight the effect of education seems to benefit men much more than it benefits women. A closer look, by looking at the relative change shows that women benefit much more from the incubator effect but are hampered by a lower knowledge baseline. An additional finding shows that the effect of education in the youngest cohort closes the gender gap for people who have high school and a college degree. However, as women age the gender gap reappears.

The main implication of finding that 18-25 year olds do not have the gender differences in political knowledge of older cohorts is the link between school context and educational experiences that lead to close the gender gap among young people. A further exploration of this link should lead to a greater understanding of the causal mechanisms that close the gender gap in political knowledge among young people but widen as women age. What happens within the school context and among young people that helps to close the gender gap in political knowledge? In chapter 5 I will address whether the gender gap exist before adulthood in Mexico? Is the context of school, part of the incubator effect, benefiting young people's political knowledge? Chapter 5 includes a further exploration of the incubator effect within the school contexts. This chapter also includes the study of whether the gender gap exists before adulthood

and the presence of structural, agency and incubator effects among high school students in two cities in Mexico.

Chapter 5. The Origins of Gender Differences in Political Knowledge: Adolescents in Mexico City and Hermosillo.

Mexico City is a city of contradictions. Mexico's capital is a place that has enacted many liberal policies furthering gender equality: Abortion is legal in the city; there are no-fault divorce laws. The city is also known for its liberal policies and promoting gender equality. All this gender equality occurs, while other inequalities, particularly economic ones, continue and are not actively abated. For example, there is a well-documented growing gap between the rich and the poor in Mexico City (Bayón and Saraví 2013; Bosch and Manacorda 2010).

While Hermosillo is not a mirror opposite of Mexico City, the socioeconomic environment of Hermosillo is not as polarized as the one in Mexico City. The importance of manufacturing fuels Hermosillo's economy, making it the richest city in the state of Sonora (PNUD 2014, 87). While it has a high participation of women in the labor force, there are major problems related to violence against women, health disparities, and limitations on reproductive rights.

The variations in the cases of Mexico City and Hermosillo offer an opportunity to test that the incubator effect works within the context of schools, despite the structural and agency variations in each case of study. I argue that studying adolescents in their schools will provide insights into the origins of the gender gap in political knowledge in Mexico, specifically on the presence of the incubator effect.²² Within the schools, then, the gender gap in political knowledge should shrink. The use of these cities refers to a method of difference in which "the investigator...asks if

²² The concept of the school as an "incubator" has also been explored in relationship to the long-term effect of extracurricular programs on civic education See Pasek, Feldman, Romer, Jamieson (2008).

values on the study variable correspond across cases with values on variables that define its possible causes" (Van Evera 1997, 57).

The results of this chapter provide further evidence of the existence of the incubator effect, as there are no differences in political knowledge among high school students. Among the findings are that girls and boys have different approaches when learning about politics. Girls are more invested in the school process through the commitment to classes and topics that provide them opportunities to learn about politics. In contrast, boys are better equipped socially to learn about politics because they do not depend upon the school context to acquire information about politics. The consequence for this in adulthood is that, when the incubator effect is no longer available to girls, the structural and agency factors start working. Since girls do not have the social skills that boys have they inevitably lag behind in their access to information about politics. Finally, another finding in this chapter is that while the incubator effect acts as a haven by protecting girls from structural characteristics, it also protects boys from the socioeconomic inequalities in each context.

Previous Studies on Political Knowledge among Adolescents: How Deep are The Roots of The Gender Gap in Political Knowledge?

Several pioneering studies focus on the question of political knowledge in adolescents. Although these studies did not focus specifically in gender, they show that the gender gap before adulthood was not as consistent as it is in the adult population. Furnham and Gunter (1983) find moderate gender differences among adolescents' political knowledge, when testing knowledge about political parties, local leaders and parliamentary issues. Niemi and Junn (1998,103) show that there are small gender differences on political knowledge among high school students, especially

on topics related to rights of citizens and in the structure and function of the government.

Jennings (1996) also finds that young people are knowledgeable about textbook type of knowledge (e.g. government), since they are not far removed from the demands of the educational context, but students can also be well-informed about policies that are of interest to them (e.g. process on how to get a driver's identification).

More recently, Wang, Gabany, and Shah (2012b) find that gender differences among adolescents exist on policy-relevant knowledge but not on information related to political candidates' personal history. This early scholarship highlights the antecedents and the importance of gender on political learning even before adulthood, and it marks a transition in the literature toward a greater focus on the study of the roots of gender disparities in political knowledge.

Variations in the presence of the gender gap in political knowledge before adulthood are a function of the type of knowledge questions asked and the exposure to specific contexts in which to learn about politics such as rural areas, schools, political debates and settings marked by political diversity (Lay 2011; Niemi and Junn 1998; Wolak and McDevitt 2011). Especially in the new wave of literature on this topic, one notices that context is the common denominator of exposure to political information. Context influences the presence of large and moderate gender differences in political knowledge.

The U.S. based work of Wolak and McDevitt (2011) is leading a recent wave of studies that specifically focus on the origins of the gender gap in political knowledge. Unlike previous studies that focus on overall acquisition of political knowledge among adolescents (e.g. Niemi and Junn 1998), Wolak and McDevitt (2011) focus specifically on gender differences among adolescents' political knowledge. They find that boys and girls have different approaches when

learning about politics. Boys learn about politics in politicized and competitive environments with partisan diversity and from political debates, whereas girls prefer consensus building environments when learning about politics and are more likely to learn about politics in regions with partisan homogeneity and less conflict.

In another study in the United States, Lay (2011) argues that there is variation in gender differences in political knowledge between adolescents living in metro and non-metro areas. Her research shows that contrary to the traditional gender roles associated with women in rural areas (e.g. mothers, wives, domestic activities), there are no gender differences in political knowledge in non-metro areas and that girls are more knowledgeable than adolescents living in metro areas. Lay (2011) explains that this may be happening because girls have access to similar social networks that boys have in small communities and that changes during economic crisis have shifted non-metro areas toward more active role for girls in small communities.

Finally, at the international level, the work of Torney-Purta is widely cited when discussing civic knowledge at the international level among adolescents (e.g. Torney-Purta 2002; Torney-Purta and Amadeo 2013; Torney-Purta, Schwille, and Amadeo 1999). From an educational psychology perspective, the study of civic knowledge is multidimensional, and this differs from the use of fact-based questions in political science. This multi-dimensionality of political knowledge encompasses factual knowledge, items distinguishing facts from opinions, the interpretation of cartoons, attitudes toward democracy values and behaviors of students toward democracies, representatives, and institutions (Torney-Purta and Amadeo 2013). A multidimensional perspective to the study of civic education serves as empirical evidence to reject the belief that young people are "apathetic, disengaged, and unreliable" (Torney-Purta and Amadeo 2013, 108). Moreover, these studies motivate the study of the school and classroom

context. For example, Torney-Purta, Lehman, Hans and Wolfram (2001) find "an open classroom climate" influences on differences in participation and classroom environment that ultimately explain the learning process about politics (Torney-Purta , Lehman, Hans and Wolfram 2001; Torney-Purta and Amadeo 2013, 109).

Schools as incubators

The influence of the school context on political knowledge has sparked researchers' curiosity as to what part of educational attainment influences political knowledge. The links between education and political knowledge increased when Langton and Jennings's (1968) found that civic education did not influence political engagement. This led to a discussion to show further evidence of the importance of education and political knowledge.

Beyond classes, schools represent a community in which students may activate their political engagement through activities or discussions. Cicognani, Zani, Fournier, Gavray and Born (2012) showed that voting intentions among adolescents are moderately explained by a sense of community and institutional trust among students. Attending school, discussing politics, and achieving academically are all positively related to adolescents' political knowledge.

Aside from the importance of exposure to information and educational experiences within schools, there is evidence showing that exposure to information in political campaigns is key for understanding political knowledge acquisition and gender differences in political information. Wolak and McDevitt (2011) found that, as political campaigns enter advanced stages of media exposure, boys and girls increase their levels of political knowledge. This pattern is also found in adult men and women and the gender gap in political knowledge closes in advanced stages of political campaigns, when information is widely available (Ondercin, Garand, and Crapanzano

2011). Other studies have also tested school intervention programs of campaigns of political information, such as Kids Voting USA (Meirick and Wackman 2004), which show evidence of a significant increase in political knowledge among students.

Agency and the incubator effect

An interesting question that the incubator effect can help to explore is whether the school context through the similar supply of information to adolescents can help to close agency gaps as well. In other words, if differences in motivations can also shrink when adolescents access information about politics within the school context. The incubator effect may not have a direct impact on the agency of an individual, since an individual actively seeking information and taking more classes in the curriculum and seeking information outside the school context will have an advantage over the people who only depend on the school context to learn about politics.

There are two main causal interpretations for young people's motivations to learn about politics. The first is that youth have low interest and low knowledge about politics and that generation after generation of young people seems to tune out of politics. This lack of interest and knowledge, in turn, has implications for the future of political participation in any democracy. A second, contrasting interpretation is that young people are not necessarily less informed or interested in politics than adults are -- but they interact with politics on their own terms and for their own purposes (Dalton 2011). Martin and Chiodo (2007) find that making connection between politics and students lives are effective strategies for motivating adolescents to learn about politics. For example, Niemi and Junn (1998) show that students were more knowledgeable about information that was meaningful to them such as information related to driver's license permits. Jennings (1996) also shows that students were more knowledgeable

about textbook facts (since they are constantly tested on such topic within the school context and since they are expected to possess this type of information).

The media also plays a significant role in motivating students to learn about politics. In studies that focus on media usage and content and its relationship to political knowledge, researchers have found a link between increased media usage (public television, commercial television and newspapers) and higher levels of political knowledge (Conway, Wyckoff, Feldbaum, Ahern 1981; Vreese and Boomgaarden 2006). Through media, people can learn about politics if they watch TV programs with political content (Grönlund 2007; Jerit, Barabas, and Bolsen 2006) At the same time, negative information in the media related to political campaigns can also diminish the motivation young people have to learn about politics. Wang, Gabay and Shah (2012b) find that negative media (TV, print and online) have a negative effect on what young people know about policies and candidates and may decrease the motivations adolescents have to learn about politics.

Of the influence of socialization explanations to understand motivations about politics, there is the study of the influence of parents to engage young people's motivation to learn about politics. Parental education has a positive association for both girls and boys (Jennings 1996) and parental encouragement to learn about politics also has a positive influence on the way adolescents become motivated to learn about politics (Wang, Gabay, and Shah 2012b).

Structure and the incubator effect

The school as an incubator should neutralize students' socioeconomic differences when students access and learn about politics in the same context (as part of the incubator effect discussed in this chapter). This study follows Niemi and Junn (1998) arguing that the exposure to information

at home may depend upon the level of resources at home, as reflected by the number of books as well as opportunities for discussion at home with parents. In the case of high school students, household characteristics are important variables for capturing the availability of resources for accessing political information

The incubator effect should give girls a particular advantage that increases their chances to access political information and have similar knowledge as compared to men. The effect of the incubator and the advantages that it creates for women's political knowledge should erode after graduation, as girls commit to more responsibilities at home without the opportunity of neutralizing such responsibilities at school. In other words, the effect of the incubator mechanism should be greater than the impact of structural and agency mechanisms on explaining gender differences in political knowledge.

In the next section, I will further describe the cases of Mexico City and Hermosillo (Sonora) in relation to the integration of women into the political and economic contexts. I also incorporate a description of each public high school environment, as it relates to the level of access to political information.

The context of Mexico City and Hermosillo

Mexico City

Mexico City (also known as the *Distrito Federal* or “federal district”) is located in the central part of the country. Mexico’s capital city has a population of about 18 million people or nearly one-fifth of the country’s entire population is concentrated in the Mexico City Metropolitan area,

which includes parts of the State of Mexico.²³ The city is an active center of economic activity where municipal and federal government offices coexist with businesses and non-profit organizations. This diversity makes the city one of the top jurisdictions in terms of income in the country (PNUD 2014). Despite its wealth and economic diversity, Mexico City is marked by significant inequality in levels of education and income within its borders, which in turn generates a socioeconomic chasm in the city according to the Municipal Human Development Index (PNUD 2014).²⁴

These inequalities are evident when looking at the education and income indexes of the various municipalities that comprise the Metro Area.²⁵ An invisible socioeconomic line separates the northeast and southeast corners of the city from the central part and the southwest corner. This is the landscape where public high schools in Mexico City are located. The infrastructure of each school varies depending upon the neighborhood where it is located. For example, there are schools with only one building of classrooms built on the edge of a cliff but still with populations of around 2,000 students. In contrast, there are schools with more than 10,000 students and campuses of numerous buildings, surrounded by spacious recreation centers.

In addition to the landscape of socioeconomic inequality in Mexico City, access to public school is competitive because of the large number of young people demanding public education. It is true that in Mexico City the presence of girls who do not work or attend school is high (INEGI 2013b). This landscape stands in stark contrast to the liberal setting and gender friendly context

²³ Source:<http://www.setravi.df.gob.mx/wb/stv/estadisticas>.

²⁴ See PNUD (2014).

²⁵ The index of education includes average years of education for people of 24 years old or older and expected years of education in the population of 6 to 24 years old. The index of income is based on the Gross National Income and the current income of families in the municipality. The health index considers infant mortality at the municipal level.

evident at the political level, since many of the girls who do not work or study are dedicated full-time to household labor (Negrete Prieto and Leyva Parra 2013).

As the nation's capital city, Mexico City is a place where many political activities take place. This highly politicized environment includes constant demonstrations and protests in the streets, as well as other forms of political activism. This information environment is further enhanced by an array of Internet cafes, as well as the vast availability of print and broadcast media options. Of particular importance for this study is that gender equality is part of the public discussion with respect to legislation or to public awareness campaigns addressing issues such as abortion, same-sex marriage, violence against women, and divorce.

Hermosillo, Sonora

Hermosillo is the capital city of the State of Sonora, located in the northern part of the country bordering Arizona (United States) to the north and the Mexican states of Sinaloa to the South and Chihuahua to the East. The city has a population of 2.6 million people, or about one third of the population of the state of Sonora. Like Mexico City, it is an active center of government offices, internal migration, and business from the agricultural, mining, and manufacturing industries. Sonora is also known as "la tierra de los igualados" (translated "the land of equal people") which makes references to the land in which everybody is equal and where there are not class inequalities (Almada Bay 2011).

In terms of education, Sonora has the highest rates of graduation from high schools in Mexico followed by the Federal District; one third of secondary school graduates continue their study in tertiary education in Sonora (Puuka, Christopherson, Dubarle, Gacel-Ávila, Pavlakovich 2013, 21) and programs such as Sonora's Student Loan Institute (*Instituto de Crédito del Estado de*

Sonora, ICEES) provide low income students with opportunities to pursue higher education. Economically, according to INEGI (2013b)²⁶ the second largest industry in the state is manufacturing, where women are an important part of the workforce. Overall, women represent 17 percent of the manufacturing workforce in Sonora, compared to 11 percent in Mexico City.

The importance of women in Sonora's economy is distinct from that of Mexico City. The beginning of the North American Free Trade Agreement (NAFTA) positioned the states bordering the United States, including Sonora, as active centers of economic activity in the manufacturing industry; manufacturing activity was concentrated in special economic zones, also known as *maquiladoras*. As Hertel (2006, 56) explains, “maquiladoras are manufacturing plants that “finish” production of semi finished goods for export; colloquially also referred to as *maquilas*.” The growth of the manufacturing industry in Sonora brought larger incorporation of women to the workforce. While the growth of *maquilas* also positioned Sonora as another border state able to attract workers, *maquila* work also positioned Sonora in the 1990s as an industry with low remuneration and violation of labor, reproductive and economic rights, especially for women.

The structural situation of women in Sonora is combined with a higher and more homogenous socioeconomic landscape that Sonora (and especially Hermosillo) has compared to municipalities in Mexico City and the State of Mexico. The Pitic neighborhood is the wealthiest neighborhood in the city, and it is surrounded by homogenous communities mainly from middle and working class background. According to the Municipal Human Development Index (PNUD 2014, 87), Hermosillo scores highest in terms of income and education indexes in comparison to

²⁶ Anuario de estadísticas por entidad federativa (INEGI 2013a).

other areas within the state of Sonora. Also, Sonora is “among Mexico’s wealthier states with a GDP per capita about 15 percent higher than the Mexican average” (Puuka, Christopherson, Dubarle, Gacel-Ávila, Pavlakovich 2013, 19). Contrary to Mexico City, which still experiences wide educational and income gaps, Sonora’s disparities are largely concentrated on health services (PNUD 2014).

The political landscape of the state of Sonora is not as contentious as Mexico City's, where protests are a constant feature of politics. Yet, Hermosillo has experienced significant level of social mobilizations and civil society activity. A 2010 tragedy involving a fire in a daycare in Hermosillo that killed 44 children jumpstarted a debate regarding corruption in the approval of daycare licenses and the regulation of daycare centers in the State. This issue brought national and international attention to Sonora’s government and possibly cost the ruling party the election in that year (García Velázquez 2012; Luvianos, Aparicio and Rangel 2011). Other major political activities in the state include the mobilization of indigenous communities over water rights (García and Alberto 2012; Ortega 2011). There is also activism around the issues of health care and violence against women, along with women’s representation and labor rights (Arellano Gálvez 2008; Covarrubias 2004).

In sum, in Mexico City, inequalities are mostly socioeconomic. Students experience greater disparities inside and outside the schools but also benefit from an active political scene. Despite the inequalities in income and education, Mexico City has a policy of integrating women into political life. Hermosillo, by contrast, has an overall lower level of social and economic inequality in schools beyond that in Mexico City. Public schools in Hermosillo are more similar in their infrastructure and resources. There are programs targeting students to participate in political debates and to apply for student loans for higher education. While Hermosillo’s political

activity is less prominent than Mexico City's, students nevertheless have experienced some major events that have sparked social movements. The likely implications of these differences are that the school context should work similarly in both places, since it should neutralize girls from structural disadvantages or the influence of agency effects that exist outside the school.

Data and Analysis

The data come from an original survey that I conducted during September 2010 in Mexico City and September 2011 in Hermosillo, Sonora among a sample of 1,925 students in 14 high schools (grades 10-12); the particulars are summarized in Table 5.1. As a starting point, schools were selected from different parts of each city according to the socioeconomic status of the neighborhood where the schools were located. The reason for selecting schools by socioeconomic status of the neighborhood was to have a control over structural factors, particularly income, which is one of the salient predictors of political knowledge. Since the University of Connecticut's Internal Review Board does not allow asking minors about their income, controlling for the neighborhood socioeconomic status is a good proxy for understanding the economic conditions at home given that students in public schools usually attend high schools close to their own communities.

Neighborhoods were classified in three socioeconomic categories (high, medium or low) based on the CONAPO (2010a) (Consejo Nacional de Población - Mexico's population council) urban marginalization index (índice de marginación urbana). This index classifies geographic areas by specific socioeconomic levels based on education, health, household characteristics and owned goods at home²⁷. In cases where the municipal level was too broad, data from the INEGI

²⁷ For specific methodological information see CONAPO (2010).

(Instituto Nacional de Geografía y Estadística), Mexico's statistical agency were used.

Specifically, data from the AGEB at the municipal level (*Area geoestadística básica*), the smallest geographic units available, were used to determine if a particular neighborhood inside a large municipality fit the municipality's profile or if its socioeconomic profile was significantly higher or lower²⁸. I initially compiled a list of public high schools in each city, then, I used the statistical socioeconomic classification of the neighborhood to determine if it was a high, medium or low socioeconomic place.

The next step consisted in contacting the schools in an order provided by a random number until I got a quota of two schools per socioeconomic category. For this step I assigned random numbers to all the school in each of the three socioeconomic categories. Below, I will discuss some of the methodological aspects of the survey including sample, interviewing procedures and case selection. Table 5.1 summarizes the variations in socioeconomic status of the neighborhoods where the schools were located. In Mexico City the survey was conducted in 6 schools among a total of 1,070 students. The Hermosillo sample consists of 855 students across 8 schools.

²⁸AGEB was specifically used for the case of Hermosillo, Sonora in order to see the socioeconomic variations within the municipality of Hermosillo. For more information see http://www.conapo.gob.mx/work/models/CONAPO/indices_margina/marginacion_urbana/AnexoA/Mapas/24_Hermosillo.pdf

Table 5.1. Summary Statistics of Mexican Adolescents Survey Sample.

Sites	Date	N	Public High Schools	School's location SES
		1,070		2(High)
Mexico City	Sep/2010	teen boys = 501 teen girls = 569	6	2(Medium) 2 (Low)
		855		3 (High)
Hermosillo, Sonora	Aug-Sep/2011	teen boys = 409 teen girls = 446	8	2(Medium) 3(Low)
Total		1,925	14	

Source: García Trejo (Mexican Adolescents Survey 2010; 2011).

The questionnaire consisted of 43 items and took approximately 15 minutes to administer (See Appendix 8). The survey was conducted inside the classrooms during class time provided voluntarily by teachers. Students had the option to participate and could withdraw at any moment or leave unanswered any questions they felt uncomfortable answering. No personal verifying information of any student was collected.

Students received one of two versions of the questionnaire. One version included the political knowledge battery with multiple choice response options from which the students selected the correct answer. The second version of the questionnaire included the same political knowledge questions but the responses were open-ended, meaning that students had to provide the answers without any hints. Students were randomly assigned the version of the questionnaire they filled. Having two versions of the political knowledge questionnaire allowed for controlling for some of the methodological effects on the gender gap found in the literature. Previous studies have shown that the size of the gender gap in political knowledge varies depending on whether a question is multiple-choice or open-ended; and whether the “don’t know” option is offered to the respondent

(Mondak and Anderson 2004, Lizotte and Sidman 2009, Ondercin, Garand and Crapanzano 2011). Thus, in this study I wanted to have that as a control.

Dependent Variable

Political Knowledge

The dependent variable, political knowledge, is measured using items identical to those asked in national adult surveys dating back to the 1990s. Political knowledge is an index based on three political knowledge questions: (1) Which are the chambers of the Mexican Congress; (2) How long is the term of a representative; (3) What is the name of the governor of your state

The political knowledge index's construction follows a similar structure to the way of measuring political knowledge in public opinion surveys. First, correct answers were coded as one (1) while incorrect answers, "don't know" and refusals were coded as zero (0). The three questions were added to create an index that ranges from zero (0) to three (3), where 0 means that a respondent did not answer correctly any of the items (or refused) and 3 means that the respondent answered correctly all the questions.

Independent Variables

Incubator Variables

The incubator effect, which captures the exposure of information in the schools, is measured using the semester in which the student is enrolled in the school (1-2; 3-4 and 5-6 semesters).

About half of the sample of students (49 percent) is enrolled in the last year of high school (5-6

semesters). About 51 percent of girls are students enrolled in the last semester. Approximately 47 of boys were enrolled in the last grade of high school.

The incubator effect also includes the variable about students taking the survey during a social studies course.²⁹ Most of the students (83 percent were interviewed during a social studies class). The level of discussion about politics with classmates and teachers is also part of the incubator effect. Fifty-eight percent of the girls within the sample discuss national politics with their classmates and 77 percent discuss the topic with their teachers. Of the total of boys in the survey, 50 percent of them responded that they discussed national politics with classmates and 66 percent discussed national politics with their teachers. Most of the students (97 percent) responded that they took civic courses in junior high school (*secundaria*). Table 5.2 (page 119) shows the percentage of response for each independent variable by sex. I expect to find that the variables related to the incubator effect are positively related to political knowledge.

Agency variables

For the agency effect I expect to capture the motivation that boys and girls have when learning about politics. The measures testing the agency effect are political interest, if the student likes classes about the Mexican government, media usage (printed, broadcast, electronic, friends) and involvement in school activities (school council, school newspaper and whether the student has participated as a candidate for the president of the classroom)³⁰. Eight of every ten students in the sample used printed media and broadcast media. There are interesting gender differences in political interest that echo patterns on low levels of political interest among adults (Bennett and

²⁹ I asked about the number of classes students took in social studies but the question has reliability problems given that students counted hours of classes taken in some cases and total of classes. Therefore the question has mixed two types of information.

³⁰ In Mexico a classroom president is like a class officer but the responsibilities of this person only reside within the boundaries of the classroom. The classroom president is also elected by the students of the classroom.

Bennett 1989). Approximately 42 percent of girls are very interested or somewhat interested in political interest, whereas among the boys 47 percent of the sample responded to be very or somewhat interested in politics. Moreover, about 47 percent of the girls participating in the study like classes related to the Mexican government. This contrasts with the 51 percent of boys who like to study classes about the topic. Niemi and Junn (1998) found a similar gender disparity in their study about adolescents and political knowledge in the U.S.

Structural Variables

Structural variables measure the conditions in which students live. It includes the socioeconomic level of the neighborhood where the school is located (low, medium and high) and variables related to the home environment. Most of the girls in the sample attend schools located in neighborhoods with a medium socioeconomic status (42.3). Boys instead are more likely to attend schools located in low socioeconomic status neighborhoods (42 percent). The variables included as structural factors at the household level include the number of people living at home. About half of the students in the sample live with more than four people at home (48 percent). Other structural variables include, whether students live with both parents, which the majority of students do (74 percent), and if the house where the student lives is owned or rented.

Control Variables

The remaining variables are controls that indicate the city where the survey was conducted. About 44 percent of the sample lives in Hermosillo. The last control variables refer to the version of the political knowledge questionnaire (multiple choice and open-ended). Half of the sample received the multiple choice version in political knowledge questions. The other half responded

to open-ended questions on political knowledge. (See Appendix 9 for additional coding information and descriptive statistics).

Table 5.2. Distribution of Independent Variables, by Sex.

Individual level variables	Total (%)	Boys	Girls	χ^2
Semester				
1=1-2	24.4	24.8	24.1	
2=3-4	26.6	28.4	24.9	
3=5-6	49.0	46.8	51.0	
Subject				
1= Social studies class at the moment of the interview	83.1	80.6	85.4	**
Discusses with classmates				
1= Discusses	54.3	50.1	58.1	***
Discusses with teachers				
1= Discusses	71.7	65.7	77.1	***
Civic courses				
1= Took civic courses in junior high school	96.5	94.9	97.8	***
Likes class				
1=Likes to study classes about Mexican government	48.7	50.8	46.8	°
Political interest				
1= Very/Somewhat	44.3	47.4	41.6	*
Printed media				
1= Yes	80.6	81.0	80.3	
Broadcast media				
1= Yes	85.1	85.1	85.2	
Father's education				
1= None	0.9	0.8	1.1	
2= Incomplete primary	5.3	6.2	4.4	
3= Primary completed	7.5	7.3	7.7	
4= Incomplete secondary	15.4	14.4	16.3	
5= Secondary completed	15.4	15.1	15.7	
6= Incomplete post secondary	13.0	12.3	13.6	
7= Complete post secondary	14.4	13.9	14.9	
8= Incomplete university	8.3	8.6	8.0	
9= Complete University and more	19.8	21.4	18.4	
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001				

Source: García Trejo (Mexican Adolescents Survey 2010; 2011).

Table 5.2. Distribution of Independent Variables, by Sex (cont.).

Individual level variables	Total (%)	Boys	Girls	χ^2
Mother's education				
1= None	1.0	0.8	1.1	
2= Incomplete primary	5.8	5.6	5.9	
3= Primary completed	9.8	8.7	10.7	
4= Incomplete secondary	13.7	12.8	14.6	
5= Secondary completed	17.6	18.2	17.0	
6= Incomplete post secondary	11.1	11.9	10.4	
7= Complete post secondary	18.7	17.7	19.6	
8= Incomplete university	6.7	7.9	5.6	
9= Complete University and more	15.8	16.5	15.1	
Candidate for classroom president				
1= Yes	32.1	26.2	37.3	***
School's SES				
1= Low SES	35.2	41.7	29.4	***
2= Medium SES	36.4	29.8	42.3	
3=High SES	28.5	28.6	28.4	
Number of people at home				
1=More than 4	47.5	48.3	46.8	
Lives with both parents				
1= Yes	74.2	75.3	73.2	
Rents household				
1= Yes	10.8	9.5	12.0	
Books at home				
0=None	3.2	3.8	2.7	
1=1-10	25.6	26.8	24.6	
2=11=50	34.0	34.2	33.8	
3=51-100	21.1	20.5	21.6	
4=101-200	8.8	8.4	9.1	
5=More than 200	7.4	6.3	8.3	
Site				
1= Hermosillo	44.4	45.0	43.9	
Format				
1=Multiple	50.3	50.2	50.4	
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001				

Source: García Trejo (Mexican Adolescents Survey 2010; 2011).

Analysis and Findings

This section consists testing of two main hypotheses: first, whether gender differences in political knowledge exist among high school students. The second is a probe of the impact of the incubator, agency, and structural effects on adolescents' political knowledge in Mexico. The analysis starts by presenting a summary of the correct responses to the three questions used to test political knowledge. Next, I present an ordinal logistic regression for the entire sample and regressions split by gender.

The most relevant finding is that boys and girls, contrary to the adult population, do not differ in their political knowledge. Table 5.3a shows the percentage of all students, as well as the results by gender in each city. Adolescents in this case are similar to adults in their political knowledge because their knowledge varies also depending on the topic of the question. For example, naming prominent political figures such as the state or city executive is the question with the highest percentage of correct answers.

Table 5.3a. Summary of Political Knowledge Questions among Adolescents, by Sex and City.

Political Knowledge Question	Mexico City (2010)					Hermosillo (2011)				
	Total (%)	Boys	Girls	Diff. (B-G)	χ^2	Total (%)	Boys	Girls	Diff. (B-G)	χ^2
Which are the chambers of the Mexican Congress?	75.2	75.2	75.2	0.0	1.0	57.9	5.7	5.9	-0.1	0.7
How long is the term of a representative?	32.1	31.7	32.3	-0.6	0.8	29.6	29.8	29.4	0.4	0.9
What is the name of the governor of your state?	81.1	82.2	80.1	2.1	0.4	91.5	91.0	91.9	-0.9	0.6
N	1070	501	569			855	409	446		

p-value 2-sided

Source: García Trejo (Mexican Adolescents Survey 2010; 2011).

Numbers may not add to 100 due to rounding.

**Table 5.3b. Percentage of Respondents who Answered Correctly
Political Knowledge Items by Sex. (cont.).**

Political Knowledge Question	Total (%)	Men	Women	Diff. (M-W)	χ^2	p- value
Which are the chambers of the Mexican Congress?	45.0	52.7	38.1	14.6	158.6	***
How long is the term of a representative?	51.3	57.0	46.2	10.8	86.2	***
What is the name of the governor of your state?	66.9	74.0	60.5	13.5	150.3	***
Total	7380	3486	3894			

p-value 2-sided

° p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Source: CSES 1997-2000-2003-2006- Mexico.

Numbers may not add to 100 due to rounding.

The item with the highest percentage of correct responses is the name of the holder of the executive power: Sonora's governor in the case of Hermosillo, and the mayor of Mexico City or the governor of the State of Mexico. Nine out of ten students in Hermosillo Sonora know the name of the governor (91 percent for boys and 92 percent for girls), whereas eight out of ten students in Mexico City answered the same question correctly (82 percent for boys and 80 percent for girls).

The question about the chambers of the Mexican Congress has the second-highest percentage of correct responses. The correct responses vary by site. Three quarters of students in Mexico City know the correct answer (75 percent for both boys and girls), while about six out of ten students in Hermosillo know which are the chambers of the Mexican Congress (57 percent for boys and 59 percent for girls). The question with the lowest percentage of correct responses is the length of a representative's term. About one third of the students in Mexico City (32 percent of boys and girls) and Hermosillo (30 percent for boys and 29 percent for girls) know the correct answer.

In considering the results in Table 5.3a, it is worthwhile to contrast them with the results in the previous chapters with these same data in Table 5.3b (e.g. CSES data with the same political knowledge questions). When *adults* are asked the same questions that adolescents are asked, we usually see that 34 percent of men answer all political knowledge questions compared to 22 percent of women. Yet, when teenagers attending schools are asked the same questions, there are not differences across the two genders. Twenty-one percent of boys and girls answer all political knowledge questions.

Another interesting contrast is that adolescents have higher percentages of answering correctly two political knowledge questions (the average of correct responses for both *adults* and teenagers). Among the adult population 28 percent of men answer on average two questions correctly, whereas 25 percent of women respond correctly to two questions. About 48 percent of boys and girls answer two answers correctly.

While I find no significant gender differences among adolescents, levels of political knowledge differ within school populations. In analysis not shown, I find that fourteen percent of students in schools located in low socioeconomic neighborhoods know the correct answer for all three political knowledge questions. This proportion of correct responses almost doubles (29 percent) among students attending schools located in affluent neighborhoods. I, thus, test whether the incubator, structural, and agency effects help us to illustrate why the gender gap among teenagers is relatively small among students in public high schools in Mexico.

Table 5.4 shows the distribution of the number of correct answers of the political knowledge index. In this table I compare the sample of adolescents with the adult population. Whereas the

adult population shows consistently gender differences, there are no significant differences in political knowledge between young boys and girls.

Table 5.4. Distribution of Political Knowledge Index, by Sex (adult and adolescent population).

Number of correct answers	Total (%)	Men	Women	Gap (M-W)	Total (%)	Boys	Girls	Gap (B-G)
0 correct answers	18.2	12.7	23.1	-10.4	6.5	6.7	6.3	0.4
1 correct answers	28.1	25.3	30.6	-5.3	24.2	23.6	24.6	-1
2 correct answers	26.2	27.8	24.8	3	48	48.5	47.6	0.9
3 correct answers	27.5	34.3	21.5	12.7	21.4	21.2	21.5	-0.3

Differences are statistically significance at $p < 0.001$ among adults.

Source: CSES 1997-2000-2003-2006- Mexico & García Trejo (Mexican Adolescents Survey 2010; 2011).

Numbers may not add to 100 due to rounding.

Table 5.5 presents the results of ordinal logistic regression analysis. The coefficients here are not interpreted directly, but the magnitude of their effect and the direction of the relationship can be interpreted. The non-existence of the gender gap in political is consistent in all the models in Table 5.5. According to the incubator effect hypotheses, exposure to information in school and school characteristics should matter in explaining acquisition of political information for boys and girls. Table 5.5 in the full model shows that semester is positively associated with political knowledge ($p < .001$). Going from the first year of high school to the last grade increases the probability of answering correctly all political knowledge questions from 19 percent to 29 percent. As expected, upperclassmen are more knowledgeable about politics than lowerclassmen. In addition to this, Model 1 in Table 5.5 including only the variables associated to the incubator effect showing also that taking a social study classes ($p < .001$) and discussing with classmates about national politics ($p < .01$) has a positive relationship with political knowledge. The effects of social study course and discussing national politics with classmates disappear when taking the rest of the variables into account in the full model.

Table 5.5. Ordinal Regression Models 1-4: Political Knowledge Controlling for Structural, Agency, Incubator, and Combined Effects.

Variables	[1] Incubator level		[2] Agency level		[3] Structural level		[4] All	
	Coeff.	(SE)	Coeff.	(SE)	Coeff.	(SE)	Coeff.	(SE)
Female	-0.066	(0.088)	0.010	(0.091)	-0.073	(0.088)	-0.091	(0.095)
Semester	0.313 ***	(0.056)					0.276 ***	(0.059)
Social Studies course	0.332 °	(0.125)					0.188	(0.133)
Disc.w/classmates	0.424 ***	(0.094)					0.157	(0.102)
Disc. w/teachers	0.073	(0.103)					-0.115	(0.111)
Civic courses	0.004	(0.243)					-0.191	(0.255)
Likes class			0.316 **	(0.106)			0.313 **	(0.109)
Political interest			0.442 ***	(0.106)			0.333 **	(0.109)
Printed media			0.143	(0.119)			0.213 °	(0.123)
Broadcast media			0.311 *	(0.130)			0.261 *	(0.133)
Fathers' education			0.019	(0.025)			-0.027	(0.027)
Mother's education			0.082 **	(0.026)			0.038	(0.027)
Classroom president			0.205 *	(0.098)			0.171 °	(0.100)
School's SES					0.569 ***	(0.059)	0.536 ***	(0.066)
Num. people at home					-0.008	(0.090)	-0.032	(0.095)
Lives w/ both parents					-0.053	(0.101)	-0.150	(0.111)
Rents household					0.024	(0.143)	0.166	(0.154)
Books at home					0.007	(0.038)	-0.024	(0.042)
Site: Hermosillo	-0.035	0.097	-0.206 *	(0.093)	-0.238 *	(0.095)	-0.008	(0.110)
Format: Multiple	1.513 ***	0.094	1.459 ***	(0.097)	1.548 ***	(0.095)	1.536 ***	(0.099)
Cut1	-1.001	0.313	-1.028	(0.222)	-1.917	(0.174)	-0.805	(0.381)
Cut2	1.070	0.308	1.079	(0.213)	0.200	(0.157)	1.445	(0.375)
Cut3	3.522	0.319	3.557	(0.229)	2.703	(0.171)	4.051	(0.388)
Number of Observatio	1918		1794		1890		1758	
LR χ^2	358.57 ***		352.64 ***		385.06 ***		452.03 ***	
Pseudo R2	0.0778		0.082		0.085		0.108	
Robust standard errors in parentheses								
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001								

Source: García Trejo (Mexican Adolescents Survey 2010; 2011).

Site refers to the place where the interview was conducted (Mexico City is the baseline category).

Format indicates political knowledge question format: Multiple choice or open-ended (baseline).

The variable measuring whether students discuss national politics with their teachers is not significant for the model. This does not mean that students do not discuss about politics with teachers. Almost 54 percent of the students answered that they discuss about national politics with their teachers. In fact, if one observes students who discuss national politics by level of political knowledge, 25 percent of students who discuss national politics with their teachers know the answer to all three political knowledge questions. Discussion about politics with professors is not necessarily triggering the acquisition of political information but that does not mean that the discussion is not taking place. Students may trust or rely more on discussion with peers rather than somebody that occupies a hierarchical position above them and a position of authority in the classroom. The variable measuring whether students took civic courses in junior high school did not result significant for the model.

Yet, while schools provide equal opportunities to learn, individuals who are motivated to learn about politics can still accrue a knowledge advantage over their less-engaged peers. Among the variables measuring the agency effect, Table 5.5 shows that students who report liking their classes related to the Mexican government have a positive relationship with political knowledge ($p < .001$). Having an interest in political knowledge has the greater coefficient of the variables related to agency and has a positive relationship with political knowledge ($p < .001$). The use of printed media is significant and has a positive association with political knowledge but the relationship is moderate ($p < 0.10$). The use of broadcast media (TV and radio) has a positive and significant association with political knowledge ($p < .001$).

In contrast to the adult population, where parental education resulted in statistical significance, in the case of the teenagers, parental education loses its significance in the full model. When analyzing only the agency related variables in Model 2 (Table 5.5), the greater the mother's

educational attainment the higher the levels of political knowledge among students ($p < .001$). The education of the father is not significant in relation to political knowledge. Among the participation variables that are expected to activate student's agency to learn about politics, only student participation as candidates for classroom president has a moderate positive significance in relationship to political knowledge ($p < .0.10$). The participation of candidates for classroom president is a common practice in Mexico. Students assume a role of leadership inside the classroom and are elected and supported by the rest of the students inside the classroom. Students may actively seek leadership positions, and this may help to increase their levels of political knowledge.

At the minimum level of the agency variables students have 17 percent of chance of answering correctly all political knowledge questions, but if the agency variables go to the maximum value, the chance to answer all political knowledge questions correctly goes to 43 percent. While school incubates against becoming uninformed, students still exercise meaningful agency when learning about politics. Two variables have the greatest effect: interest in politics and preference for classes about the government have the greatest impact on the agency-related variables. For instance, a student who does not like classes about the Mexican government and who is not interested in learning about politics (while the other variables values are set to the baseline)³¹

³¹ These probabilities are based on an individual for whom the values of the variables have been fixed. To understand the effects, each binary variable will be fixed to its mode and the rest of the variables will be fixed at their mean values. The baseline is a girl, attending an average semester (3th and 4th semesters or 8th grade), taking a social studies class at the moment of the interview. This student discusses about national politics with teachers and classmates, has taken civic classes in junior high school, does not like classes about the government, is not interested about politics and has used printed and broadcast media to get information about politics. The parents of this student have average information, the student has never participated as candidate for classroom president, attends a school located in a neighborhood with average socioeconomic status. This person lives in a house with less than four people, the student lives with both of her parents, owns a house, has an average number of books at home, lives in Mexico City and received multiple choice format political knowledge questions.

values) has a 25 percent of chance to answer correctly to all political knowledge variables. The chances increase more to double (38 percent) when students like classes about the government and are interested in politics.

Of the variables related to the structural mechanism, there is a positive relationship between students attending schools located in neighborhoods with high socioeconomic status and political knowledge ($p < .001$). Students who attend schools located in wealthier neighborhoods have 37 percent chance of answering correctly all political knowledge questions, whereas this probability reduces to 17 percent if the student attends a school located in a socioeconomically disadvantaged neighborhood. There are no gender differences in political knowledge in schools located in neighborhoods with high and medium socioeconomic status neighborhoods; however, in schools located in the most disadvantaged neighborhoods of the sample the gender gap in political knowledge reappears³². In additional analyses (not shown) I run the regressions separating the models by socioeconomic status where the school is located. The gender gap in political knowledge is only present among the students attending schools with lower socioeconomic status. The agency and incubator effect variables still have a positive effect but in extreme cases of socioeconomic disadvantaged the incubator effect is not enough to act as a haven for girls. The structural characteristics for girls need to improve as well to have them improve in their overall access in knowledge about politics.

The variables associated with structural characteristics at home, such as number of people at home, living with both parents, whether the student house in a rented house, and the number of

³² Young women are more likely to drop out from high school due to household responsibilities in Mexico (See SEP 2012, 51). This is a reminder the incubator effect varies and decreases its effect among girls in low socioeconomic status schools who are not getting this "haven" effect in order to benefit from the school context.

books at home do not have an impact on the acquisition of political knowledge. This effect may not be present because the incubator and agency effects are neutralizing the structural effects at home.

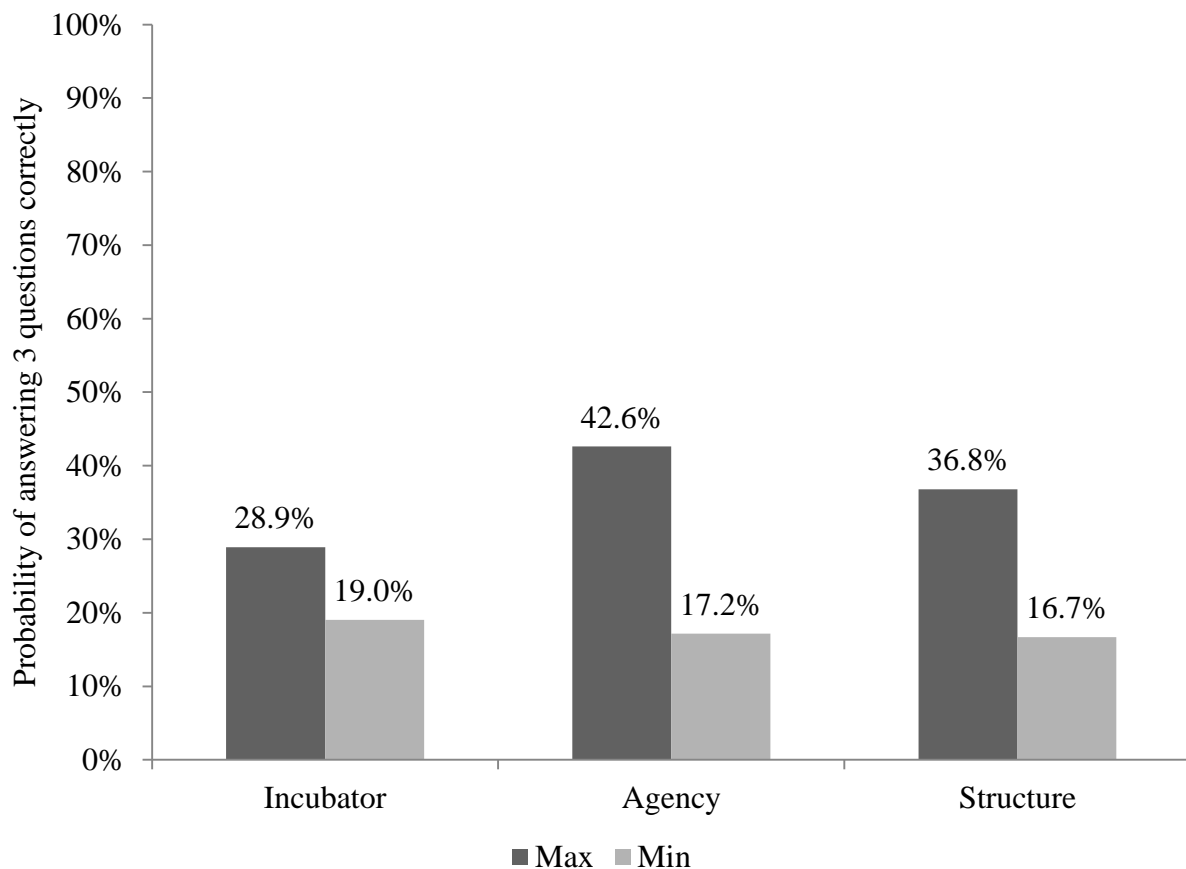
Contrary to expectations, none of the variables measuring the structural mechanisms in relationship to household characteristics were significant in the model. This may suggest that the effect of the agency and incubator variables is neutralizing the effect of structural characteristics at home and giving support to the hypotheses that the incubator effect helps to neutralize the effects of structural characteristics for women.

Finally, a multiple-choice format of the political knowledge question results in a positive association with political knowledge. This echoes previous work showing that the format of the question matters. In Mondak (1999) and Lizotte and Sidman (2009) evidence shows that open-ended questions related to political knowledge have generally lower levels of correct response rates; whereas questions with multiple-choice categories increase the chances to answer correctly political knowledge questions (Lizotte and Sidman 2009; Mondak 1999). The last control variable is site, and it does not result in a statistically significant relation to political knowledge. Yet, it is importance to note that students living in Hermosillo have low levels of political knowledge in comparison to students from the Mexico City sample. The coefficients in all models related to Hermosillo are negatively associated with political knowledge.

To illustrate the results from Table 5.5, Figure 5.1 shows the predicted probabilities of the full model's findings. To understand the effects of the independent variables in political knowledge, it is necessary to convert the coefficients into probabilities. Figure 5.1 includes the change in the probability of moving from the minimum to the maximum values for each of the significant

variables related to the incubator, agency and structural effects for the entire sample. These probabilities are based on an individual from whom the values of the variables will be fixed. To understand the effect of change then, each variable will be fixed to its mode if it is a binary variable and to its mean if it is a continuous variable (See for example Fox Lawless 2014 on the use of the changes in probabilities for the study of the origins of the gender gap in political ambition).

Figure 5.1. Predicted Probabilities of Answering Three Political Knowledge Questions Correctly by Incubator, Agency, and Structural Effects (Model 4 in Table 5.5).



Source: García Trejo (Mexican Adolescents Survey 2010; 2011).

Figure 5.1 shows that when we set the incubator effect variables to its maximum level, there is a chance of 29 percent probability of answering correctly all three political knowledge questions.

As students progress through school their probability of answering correctly all political knowledge items increases. A student who is in the first semester in high school has a probability of 19 percent of answering correctly all questions of political knowledge all else being equal; this is a 10-percentage point difference comparing it with being in the last semester in school.

Figure 5.1 also shows that when the variables related to the agency effect are set at their minimum value, there is a 17 percent chance of answering correctly all political knowledge questions. When the agency variables are set to their maximum values, the probability increases to 43 percent a staggering increase of more than 25 percentage points. The agency effect includes students who like classes related to Mexican government, are interested in politics, use broadcast media, and have been candidates for classroom president.

In the same Figure 5.1, students attending schools located in neighborhoods with high socioeconomic status have a 37 percent probability of answering correctly political knowledge questions. Socioeconomic status is part of the structural effect and students attending schools located in low socioeconomic status neighborhoods have a lower chance of responding correctly the same political knowledge questions (17 percent). There is a 20 percentage point change in probability compared with the students attending schools located in neighborhoods with high socioeconomic status (37 percent).

The next model (Table 5.6) tests whether the incubator, agency and structural effects affect boys' and girls' political knowledge in a similar way. In the case of the adult population, women's structural characteristics prevent them from fully accessing political information and the incubator effect through education helps them to decrease gender disparities in political

knowledge. Although we know there are gender differences in political knowledge among boys and girls, from previous literature (Wolak and McDevitt 2011), there is evidence that girls and boys approach differently political learning. To test this, Table 5.6 shows an ordinal logistic model that includes incubator, agency and structural effects split by gender.

Table 5.6. Ordinal Regression: Political Knowledge by Structural, Agency and Incubator Effects among Boys and Girls.

Variables	[1] Boys		[2] Girls	
	Coeff.	(SE)	Coeff.	(SE)
Semester	0.294 ***	(0.088)	0.248 **	(0.082)
Social Studies course	-0.158	(0.193)	0.535 **	(0.189)
Disc. w/classmates	0.260 °	(0.149)	0.058	(0.142)
Disc. w/teachers	-0.146	(0.156)	-0.079	(0.161)
Civic courses	-0.476	(0.320)	0.259	(0.430)
Likes class	0.273 °	(0.161)	0.407 **	(0.150)
Political interest	0.324 *	(0.162)	0.352 *	(0.150)
Printed media	0.503 **	(0.184)	-0.043	(0.167)
Broadcast media	0.282	(0.198)	0.250	(0.183)
Fathers' education	-0.043	(0.039)	-0.014	(0.037)
Mother's education	0.042	(0.041)	0.035	(0.037)
Classroom president	0.062	(0.156)	0.267 *	(0.133)
School's SES	0.493 ***	(0.094)	0.626 ***	(0.094)
Num. people at home	-0.145	(0.140)	0.067	(0.131)
Lives w/ both parents	-0.052	(0.166)	-0.240	(0.151)
Rents household	0.131	(0.242)	0.195	(0.201)
Books at home	-0.051	(0.064)	0.001	(0.058)
Site: Hermosillo	-0.176	(0.167)	0.110	(0.149)
Format: Multiple	1.497 ***	(0.146)	1.583 ***	(0.138)
Cut1	-1.217	(0.511)	-0.099	(0.602)
Cut2	0.885	(0.501)	2.327	(0.597)
Cut3	3.530	(0.518)	4.940	(0.616)
Number of Observations	826		932	
LR χ^2	209.24 ***		264.06 ***	
Pseudo R2	0.1067		0.120	
Robust standard errors in parentheses				
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001				

Source: García Trejo (Mexican Adolescents Survey 2010; 2011).

Among the variables measuring the incubator effect the semester in school benefits both boys ($p < 0.001$) and girls ($p < 0.01$) in their political knowledge. Among those who took the survey in a social studies class, girls' political knowledge benefitted significantly ($p < 0.01$), while it did not have a discernible effect on boys' political knowledge. In contrast, having discussion about politics with classmates has a small but positive effect on boy's political knowledge ($p < 0.1$); the relationship is not significant for girls. Having discussions with teachers about politics and having taken courses in civics is not significant. In sum, the results of the incubator effect show that the incubator effect benefits the political knowledge of both boys and girls; yet, there are interesting disparities in how girls' political knowledge increases through the academics and boys' knowledge through the social interaction with peers (See appendices 5-7 for models split by effect and sex).

The variables associated with the agency effect show that political interest is positively associated with political knowledge regardless of gender ($p < 0.1$). The differences in agency between boys and girls suggest that girls benefit more from the school environment, while boys are more motivated to learn about politics from external sources. For instance, the model in Table 5.6 shows that liking their classes about government has a positive association with political knowledge but this association is stronger for girls ($p < 0.01$) than for boys ($p < 0.1$). Moreover, participation in classroom politics, measured as being a candidate for classroom president, improves girls' political knowledge ($p < 0.05$) but does not have an effect on boys' political knowledge. This reinforces the notion that girls take advantage of the school context when learning about politics. Boys seemed to be more interested in sources of knowledge outside school as demonstrated by the fact that searching for information in printed media (newspapers,

reports, magazines, etc) is positively associated with their political knowledge ($p < 0.001$) but this is not significant for girls.

The socioeconomic status of the neighborhood where the schools are located is the only significant variable associated with the structural effect. The relationship between the socioeconomic status of the school's neighborhood and political knowledge is positive for boys and girls ($p < .001$) although the effect is stronger among girls. This result implies that availability of resources for learning about politics is greater in wealthier school. The importance of resources for adolescents mirrors the importance of resources among the general population as discussed in chapter 4. The rest of the variables associated with structural characteristics at home are not significant and suggest that the realities inside the home (e.g. family composition, home ownership) are similar for boys and girls.

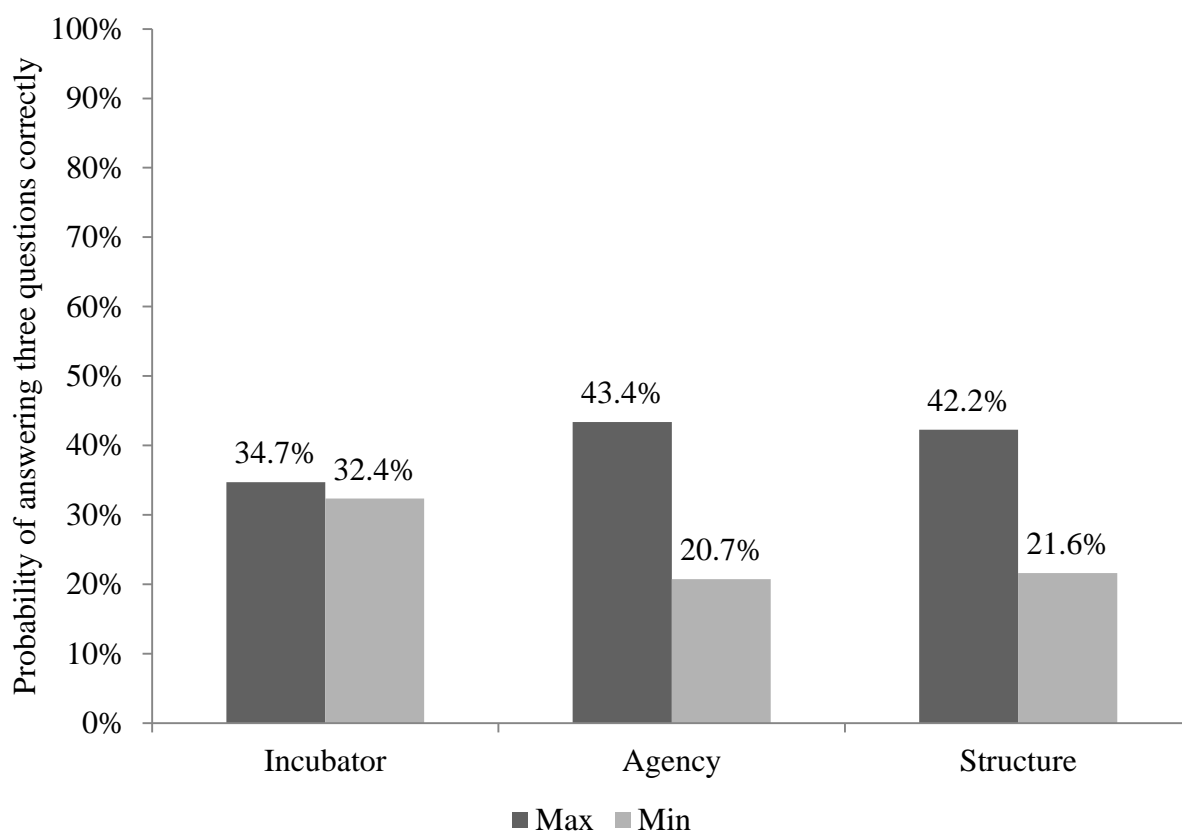
Of the control variables, multiple choice formats ($p < 0.001$) had a positive effect for both boys' and girls' responses related to political knowledge and there were not significant differences in the sites where the surveys were conducted.

To illustrate the results from Table 5.6, Figure 5.2 shows the predicted probabilities of the model for boys. The probabilities are based on an individual with a specific set of characteristics.³³ The results in Figure 5.2, show that the incubator effect does not have major impact on the probability that boys have of answering correctly all political knowledge items. When all the variables associated with the incubator effect are set at their minimum levels, boys have a 32

³³ These probabilities are based on a boy for whom the values of the variables have been fixed. To understand the effects, each binary variable will be fixed to its mode and the rest of the variables will be fixed at their mean values.

percent chance of answering all questions correctly. When the same variables are set at their maximum level, the probability increases to about 35 percent.

Figure 5.2. Predicted Probabilities of Answering Three Political Knowledge Questions Correctly by Incubator, Agency, and Structural Effects among Boys (Model 1 in Table 5.6).

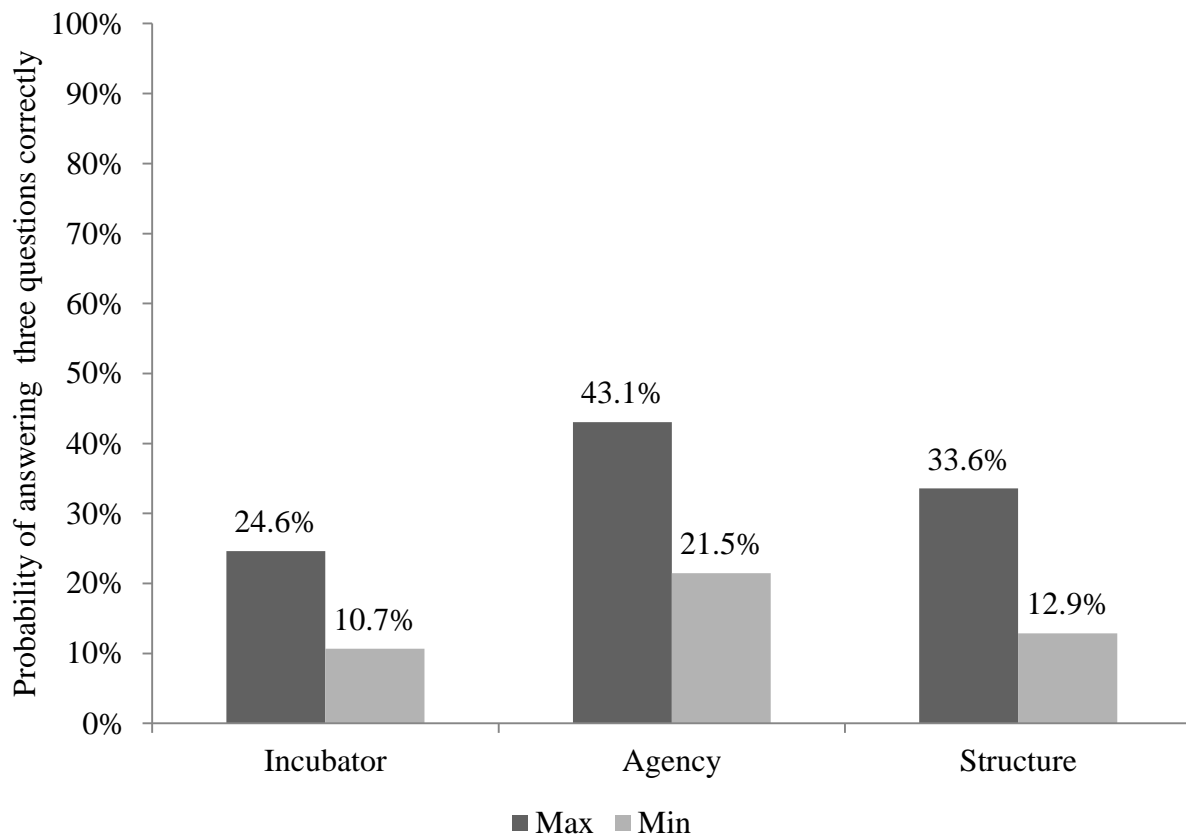


Source: García Trejo (Mexican Adolescents Survey 2010; 2011).

The impact of the agency effect tells a different story. When the variables are set at their minimum value, boys have about 21 percent probability of answering all political knowledge questions correctly. However, when the same variables are set at their maximum level, the probability of answering all questions correctly doubles to 43 percent. A similar story happens with the structural effect, which doubles from 22 percent to 42 percent going from their minimum to their maximum values. The importance of the structural and agency effect is similar in their effects in improving boys' political knowledge. The incubator effect also helps to increase boys' political knowledge but its impact is minor compared to the other two

mechanisms. This effect demonstrates that although the incubator effect helps boys' political knowledge, they rely more on structural and motivational mechanisms in their learning process.

Figure 5.3. Predicted Probabilities of Answering Three Political Knowledge Questions Correctly by Incubator, Agency, and Structural Effects among Girls (Model 2 in Table 5.6).



Source: García Trejo (Mexican Adolescents Survey 2010; 2011).

For the girls (Figure 5.3), the impact of the incubator, agency and structure tells a different story. While the incubator effect has a minor impact on boys' political knowledge, among girls its impact is greater by orders of magnitude. The change in probability of answering all political knowledge questions for girls is 2.5 times greater when the incubator effect variables are set to their maximum values (25 percent) than when they are at their minimum values (11 percent).

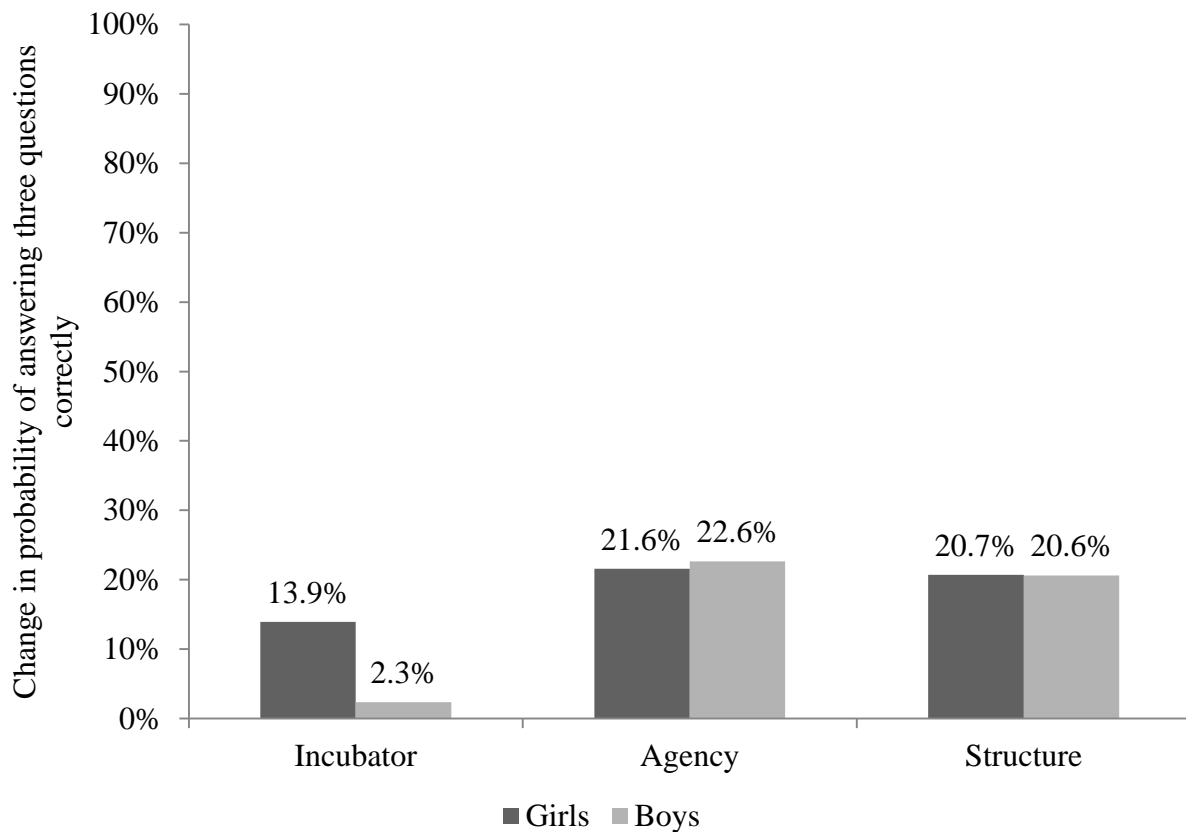
The agency effect is similar for girls as it is for boys. The change in probability of answering all political knowledge questions correctly when the agency variables are set to their minimum is 22 percent. If the variables are set to their maximum value, the predicted probability changes to 43 percent. As in the case of boys the effect of the agency effect doubles the probability that girls have when answering all political knowledge questions correctly.

The impact of the structural variables is greater for girls. Girls attending a school located in a neighborhood with a low socioeconomic status have 13 percent probability of responding to all political knowledge questions. The chances for girls to answer all political knowledge questions when attending a school located in a high socioeconomic status neighborhood increases nearly three times (34 percent) when the structural values are set at their maximum level.

Figure 5.4 shows the change from the maximum to the minimum probability of answering all political knowledge questions correctly for boys and girls. Although the incubator mechanism appears greater (overall) in Figure 5.2, the greatest change from maximum to minimum is among girls for the incubator mechanism, however (2.3 percent change for boys and 13.9 percent change for girls). This result confirms the hypothesized impact of the incubator effect.

Considering that the change in the agency and structural effects are similar for boys and girls, it is the impact of the incubator effect that helps closing the gender gap among high school students. This also shows the importance of the supply of information in the learning context in leveling the political knowledge of boys and girls.

Figure 5.4. Change from Minimum to Maximum Effects in Predicted Probabilities of Answering Three Political Knowledge Questions Correctly among Boys and Girls (Table 5.6).



Source: García Trejo (Mexican Adolescents Survey 2010; 2011).

Conclusions

This chapter explored the origins of the gender gap in political knowledge. This chapter also tested whether the incubator, agency and structural effects help to explain gender differences in political knowledge. Contrary to the results in chapter 3, there is not a gender gap in political knowledge among adolescents in Mexico.

Inside the schools, there are no gender disparities in levels of political knowledge. Within the school context both boys and girls are expected to have similar knowledge about politics and to perform well in school.

Yet, the survey found that boys and girls use different approaches to supplement their learning about politics (academic vs. social). The political knowledge of girls benefits more of the academic side of the school context and motivations to learn about politics. Girls have higher probabilities of learning about politics when they take classes related to social studies, like classes about the Mexican government, and when they have participated as candidates for the leadership of their classrooms. The academic approach of girls is also reflected in their educational achievement. At the high school level girls are more likely to attend classes, have higher GPAs and are less likely to fail classes in comparison to boys (SEP 2012).

In the case of the boys, they rely more on a “social” approach to learn about politics (e.g. discussion with classmates and use of printed media). Boys use a “social” component when learning about politics through discussion and from sources of information outside the school. Thus, when boys leave school (and even inside the school) they already have a social advantage that, when combined with the benefits from education, positions them to attain a higher level of access and exposure to political information. Because girls rely more on the academic characteristics of the school itself and the motivations associated with school to learn about politics, they lack the use of the “social” aspect to learn about politics when they leave the school setting. In sum, the incubator effect has the positive effect expected but it benefits more boys than girls. It is also important to mention that although the incubator effect is also at work in the schools located in neighborhoods with lowest socioeconomic status. Although the incubator effect is at work in this setting in extreme cases of socioeconomic disadvantaged the incubator effect is not enough to close the gender gap in political knowledge.

Further research is necessary to test the extent to which the incubator effect acts as a haven for boys, and girls, when learning about politics because the socialization effect for girls toward

political learning is present even when there are no gender differences in political knowledge. Moreover, more research is necessary to understand how adolescents who are not experiencing a school context are learning about politics.

According to a survey on factors affecting high schools drop-out rates in Mexico, most of the students who decide to drop out of school leave for lack of socioeconomic resources (52 percent). However, there are important differences by sex regarding the reasons for leaving school. For example, 23 percent of girls leave school because of marriage and pregnancy, whereas boys leave school because they need to earn money to help at home (27 percent). Outside the school the structural effect may create significant barriers for boys and girls in their access and exposure to political knowledge.

The importance of education and the school context are important to continue understanding the origins of the gender gap in political knowledge. This research contributes to the conversation about the different styles that girls have in comparison to boys when approaching politics, as recently documented among adults and adolescents in advanced democracies (Dolan 2011; Stolle and Gidengil 2010; Wolak and McDevitt 2011). My research explores further the role of schools as a context in which boys and girls access and learn about politics. Understanding how girls and boys approach politics connects, in turn, to the study of the persistence of the gender gap in political knowledge during adulthood. Understanding of the origins of the gender gap in political knowledge among adolescents provides additional insight into how the presence (or not) of gender differences in political knowledge influences the political life of adult men and women.

Chapter 6. Conclusions

The study of the gender gap in political knowledge is a puzzle for scholarship in any democracy. This dissertation focused on Mexico, but the lessons learned from this project could apply to any democracy, advanced or developing, where the macroeconomic conditions of women have improved relative to women of previous eras but women still face many barriers. The gender gap exists and persists despite improvements in the socioeconomic conditions of women, including the closing of educational and voter turnout gaps, increased participation in the workforce, and more women being elected to office (Delli Carpini and Keeter 2005; Fraile 2014; Kenski and Jamieson 2000). This does not mean that the gender gap in political knowledge is the only political gap that has not been closed. Other gaps still exist: Women are still paid less than men for the same work (Ñopo 2012), and women are still less likely to run for political office and to be elected when they do run (Lawless and Fox 2010).

The approach to studying the gender gap in political knowledge in this dissertation consisted of three theoretical mechanisms (structural, agency, and incubator) that incorporate individual socioeconomic characteristics, motivations, and contextual factors known to be related to the gender gap in political knowledge. The combined explanatory power of these mechanisms improves on those models that are purely behavioral (and focus primarily on the individual) or purely social (and focus primarily on the sociological factors involved in learning political information). The incubator mechanism contributes a way of understanding the gender gap by studying the context of the supply of information.

The importance of the incubator mechanism is that it acts as an information haven, neutralizing—albeit temporarily in the case of adult women—the disadvantages women

historically experience, either because they are socialized not to be interested in politics, or because they are economically disadvantaged and lack the resources to obtain information. The incubator mechanism shows that the gender gap is not a default or a given. It shows that when boys and girls have the same sources of information and are part of a similar environment, their political knowledge is similar. This project demonstrates further that even among adults who are outside of school, there is some carry-over of the incubator mechanism. That there are no gender differences in political knowledge among highly educated young men and women under the age of 25 further confirms the power of learning contexts in reducing or eliminating the gender gap. Outside of schools, such an incubator mechanism is less likely to exist as women age and adult life appears with the freedom and responsibilities that it entails. The idea of schools as a leveling field for boys and girls has also been studied from anthropological and educational standpoints. For example, Levinson (2001) finds that adolescents within a junior high school context in Mexico (Secundaria) shared a strong belief in equality and implement it in activities, discussions, classes, etc., within the school. However, once the students leave this type of environment (grupo escolar), it seems these experiences of “equality” and “solidarity” do not permeate students’ later life (Levinson 2001, 320). The contribution of the incubator mechanism in this study is that provides the theoretical building blocks for the study of the origins of the gender gap in political knowledge beyond an advanced democratic context. This incubator mechanism also shows the importance of the study of the learning context in reducing gender differences in political knowledge. Moreover, the incorporation of subnational comparisons of two cities (Mexico City and Hermosillo), especially in Hermosillo, reinforces the importance of conducting research in the northern states of Mexico, especially with regard to political engagement, since political engagement and how people access information about politics is also influenced by the

proximity to the United States. Practices such as town hall meeting and opportunities to contact representatives are therefore more common.

The structural mechanism sheds light on how socioeconomic inequalities affect women's access to political information. Structural inequalities are pervasive and influence women's learning contexts. Women do not prioritize seeking political information nor do they often have the resources to access such information. Why should women access political information when they are already experiencing a socioeconomic burden that places them in a position to only address urgent needs and, therefore, information about general politics is a luxury for them to invest in? The lack of a gender gap among adolescents and among young adults with higher levels of education implies that the problem occurs later in life, suggesting the presence of "life cycle" effects in political socialization and learning. Marriage is not a significant factor in women's political knowledge but it is for men, a positive one. As long as women face the double burden of outside work and household work, they will be potentially subsidizing the political knowledge of their husbands. The implications for younger democracies in Latin America, the most socioeconomically unequal region in the world (Gootenberg and Reygadas 2010), are serious. Socioeconomic inequality creates other political inequalities that permeate the political system: women with fewer resources will not run for office and³⁴ women with a high burden of household work do not have time to write petitions or letters to representatives, to participate in civic organizations, or to inform themselves about the important issues of the day. In other words, structural inequalities affect the quality of a democracy when half the population is

³⁴ For a discussion of socioeconomic class and political representation in Latin America see Carnes and Lupu (2014).

excluded from the system that governs them because they cannot afford to be fully integrated into it.

Women's agency is also important. Women are socialized into believing that politics is the realm of men (Gidengil, O'Neill, and Young 2010; Sapiro 2001,2004). They do not see many people like them in the system as leaders. The underrepresentation of women in elected office should only reinforce such beliefs. In this study, the representation of elected women in leadership positions at the local level has a moderate but positive association with political knowledge. The representation of women at the very local level may offer an opportunity to explore further what elements from the political representation of women can influence women's political engagement.³⁵ Previously, Gutmann's (2002) study on Mexican democracy pointed out the importance of agency in women's decisions to participate in local politics around their neighborhoods (e.g. militant activism), which contradicted "the clichés about Mexican women being submissive in their homes and passive in public" (Gutmann 2002, 225). Further research is necessary to understand how agency and the representation of women at the local level motivate other women to learn about politics.

Another element related to the agency women have in deciding what to learn about politics relates to topics asked in political knowledge questions. Similar to the work of Dolan (2011) and Stolle and Gidengil (2010) in the United States and Canada, in which they found that the gender gap varies in size depending on the topic asked, in the case of Mexico, the gap coincides with these findings as it is more likely to close on topics related to human rights, social policy, and knowing the date of the state of the union. The findings on the patterns of the questions asked in

³⁵ For a study on political engagement at the municipal level in Mexico see Hiskey and Bowler (2005).

political knowledge in Mexico point toward the importance of continued understanding of the agency mechanism and how it relates to the improvement of questions measuring political knowledge. For example, findings in this study also show that not all gaps are created equal since the degree of difficulty influences how people respond to political knowledge questions. There is a pending research agenda to continue understanding what motivates women to learn about certain topics, what are the implications of gains in political knowledge over time, and what is the balance that one should implement when asking questions with various levels of difficulty and of different topics. Further research is necessary to understand how the agency mechanism—the decision to actively seek political information—matters to methodological approaches in the study of the gender gap in political knowledge.

Do the concepts I explored in this dissertation help advance a broader theoretical agenda? I suggest that one potential application of the study of the gender gap in political knowledge is with regard to the importance of social networks in tracing the processes of how people learn about politics. Gidengil, Goodyear-Grant, Nevitte, and Blais (2005) showed that an increase in social capital increases political knowledge for both men and women. They also find that men possess larger and more diverse social networks that give them an advantage to increase their political knowledge. This is similar to the case of the adolescents in this study. My study finds that boys are better equipped socially, even within the school context, so by the time they leave the incubator they already have the social tools to continue acquiring political knowledge, leaving girls at a disadvantage outside the incubator mechanism. The concepts of my dissertation can help us understand the social networks of men and women. These concepts can also shed light on intra-gender comparisons to study, for example, women (or men) with different socioeconomic backgrounds.

Another example of a potential application is on our understanding of political knowledge in transnational communities. The structural, agency, and incubator mechanisms can be used to understand how people acquire political knowledge as they become socialized into a new political system, one in which they are acquiring political information. There is current research on studies of political participation among migrants focusing on the influence of the institutional characteristics of the country of origin and how people translate this information about how institutions work from their country of origin to another political context (Fox 2005; Terriquez 2012; White, Nevitte, Blais, Gidengil, and Fournier 2008). For example, there is evidence that an attachment to a political party in the country of origin leads to party attachments in the country to which people migrate (Wals 2011). An understanding of the structural and agency mechanisms among young people and adults who are experiencing a different political system could shed light on how they access information and what barriers prevent them from learning about politics in a country to which they recently migrated.

The findings of this project offer also an opportunity for suggesting policy actions. The findings related to the structural mechanism, especially those related to marriage and income, suggest that policies addressing these inequalities could help ameliorate the effect of structural gender inequalities on political knowledge. One way would be by providing policies that allow women flexibility, such as family leave and other policies that facilitate the juggling of work and family life. Policies like this, however, in some ways deepen other gender inequalities as they still work under the assumption that family responsibilities are primarily women's. The small but positive effect of female representation among adult women and the impact of participation in school activities among girls demonstrate that the importance of agency cannot be overstated. Agency

matters but how to make girls and women interested in politics requires also looking at the activities to which women contribute at the local level and at the contents of school curricula.

Another natural suggestion, after seeing the evidence of the importance of the school context in closing the gender gap in political knowledge among adolescents, is to invest in education.

However, such a suggestion would be misguided. Educational gaps have been closing over time and the gender gap still exists. This study shows that education works: when women (girls) are treated equally as their peers (boys), when they learn the same concepts and spend the same amount of time in school, girls' knowledge matches that of boys. The same is true for young Mexicans who have at least attended high school. This means that while education is part of the solution, it is not the only solution. The long-term implications of the existence of the gender gap are an indictment on society. Structural effects—lesser income, a double-burden at home, and other institutional constraints—set women's political knowledge back.

Finally, there are challenges beyond the scope of this dissertation. The next step is to study the implications of low levels of political knowledge on women's political participation in electoral and non-electoral activities and political efficacy. Another topic beyond this dissertation is the cross-country study of the gender gap in political knowledge. The gender gap in political knowledge exists in Latin America (LAPOP) and widens in countries in Central America while it shrinks in Argentina and Uruguay.³⁶ The gender gap in political knowledge also exists in seven Middle Eastern and North African countries (Arab Democracy Barometer 2006-2007; Singer and García Trejo 2011). The gender gap in political knowledge is a worldwide problem and the theoretical mechanisms advanced in this dissertation can shed light on the patterns of the

³⁶ Author's own calculations using the Latin American Public Opinion Project.

distribution of gender differences in political knowledge in other countries and regions. In sum, the study and implications of the gender gap in political knowledge is important in advanced and younger democracies as well.

Appendices.

Appendix 1. List of Political Knowledge Questions in Figure 3.1.

Year	Political knowledge questions	Men(%)	Women (%)
	Foreign Affairs		
2010	What is the name of the Secretary of Foreign Affairs in Mexico?	6.4	5.1
1991	Do you know if the Gulf War still continues or has ended?	10.2	9.4
2004	What is the meaning of the acronym... IMF (International Monetary Fund)	23.2	11.0
2006	Do you know the name of the UN Secretary?	27.6	16.1
2010	What is the meaning of the acronym... OAS (Organization of American States)	28.7	17.9
2006	What is the meaning of the acronym... WTO (World Trade Organization)	33.3	20.4
2010	What is the meaning of the acronym... SRE (Secretary of Foreign Affairs in Mexico)	32.8	22.5
1992	What is the date when Mexican president will sign the North American Free Trade Agreement?	36.2	31.3
1994	Do you think Proposition 187 is an immigration policy that applies at the state level policy or applies at the national level in the U.S.?	48.2	31.3
1991	Do you know how many people in total live in all the countries signing NAFTA (Canada, Mexico and the United States)?	46.1	38.1
2010	Do you know the name of the European Union currency	53.8	35.9
2010	What is the meaning of the acronym... FIFA (Federation Internationale de Football Association)	58.0	34.2
2010	(ONU) Organización de las Naciones Unidas	65.1	54.6
2010	Do you know the name of the President of the United States?	76.3	63.7
1993	Do you know what countries the [Mexican] President visit in his last trip?	81.4	79.9

	Campaigns and Elections		
2000	Do you know what political party or candidate said this phrase... "In Mexico we are more than two" ["En México somos mucho más que dos"]?	12.0	5.7
2000	I will read some political campaign phrases. Please tell me what/who [political party/candidate] says....If we unite, we are the majority ["Unidos, somos mayoría"]	17.6	8.6
2001	Who is the person in picture No. 9? [Picture of Josefina Vázquez Mota]	13.8	12.9
2000	Do you know what political party or candidate said this phrase...["la clase humilde es como los pies de barro de la ciudad"]	18.3	16.0
2001	Who is the person in picture No. 8? [Picture of Francisco Barrio]	19.5	16.0
2000	I will read some political campaign phrases. Please tell me what/who [political party/candidate] says..."México cuenta contigo para que tú cuentes con México"?	22.9	13.4
2000	What party has the majority of seats in the Senate?	25.7	17.0
2001	Who is the person in picture No. 6? [Picture of Jorge Castañeda]	24.1	19.6
2000	Do you know what political party or candidate said this phrase..."The oil is ours, Mexico is ours" ["El petróleo es nuestro, México es nuestro"]?	45.0	33.3
2000	Do you know what political party or candidate said this phrase..."With Mexico, to the victory" ["Con México a la victoria"]?	48.2	36.2
2000	Do you know what political party or candidate said this phrase...["Ya, ya, ya, ya, ya basta"]	52.1	43.6
2001	Who is the person in picture No. 3? [Picture of Santiago Creel]	55.9	45.9
2000	Do you know what political candidate has a TV ad announcing to a crowd that he is going to win the presidential elections on July 2?	54.4	48.2
1993	Do you know the date of the next presidential elections?	52.4	58.1

2000	Do you know what political party or candidate said this phrase...["que encarceló a la mitad de los policías cuando fue gobernador y que las autoridades..."]	61.4	54.8
2001	Who is the person in picture No. 6? [Picture of Diego Fernández de Cevallos]	70.9	60.4
2000	Do you know what political party or candidate said this phrase "Que el poder sirva a la gente"?	75.6	60.2
2001	Who is the person in picture No. 6? [Picture of Andrés Manuel López Obrador]	73.6	63.4
2000	Do you know what political party or candidate said this phrase...["Ya basta & vota por el cambio"]	73.6	67.1
2000	Do you know what political party or candidate said this phrase...["Ya ganamos"]	78.6	72.0
2001	Who is the person in picture No. 7? [Picture of Martha Sahagún]	78.2	73.2
2000	Do you know what political party or candidate said this phrase..."will make possible that public schools have computers and English classes" ["que hará que en las escuelas públicas se den clases de inglés y computación"]?	80.6	80.9
2003	Do you know the date of the House of Representative's elections?	84.1	81.7
2000	Do you know the name of the presidential candidate from the PRD (Partido de la Revolución Democrática)?	87.8	78.7
2000	Do you know the name of the presidential candidate from the PAN (Partido Acción Nacional)?	86.1	80.4
2000	Do you know the name of the presidential candidate from the PRI (Partido Revolucionario Institucional)?	92.4	87.4
2001	Who is the person in picture No. 6? [Picture of Vicente Fox]	98.3	98.1
	Government and national issues		
2003	What party has the majority of the seats in the House of Representatives?	29.8	21.6
1992	What was the Inflation percentage for last year?	34.0	27.0
2005	What is the name of the potential new site to build the main airport in Mexico?	38.1	29.2
2008	What are the branches of the government?	46.7	33.9
2001	Who can amend the Constitution?	48.1	33.1

2002	Do you know the new date of a Petróleos Mexicanos' strike to demand a salary increase?	58.5	48.2
2009	Do you know what are the chambers of the Mexican Congress?	58.3	50.2
2002	What is the name of PEMEX's general director?	65.1	47.3
2009	What is the length of the term of a House Representative?	60.4	54.4
1994	Do you know the date of the state of the union?	72.1	71.9
Year	Political knowledge questions	Men(%)	Women (%)
2004	What is the meaning of the acronym... SEP (Secretary of Public Education in Mexico)	76.2	73.6
1991	What institution protects the rights of the citizens ?	76.9	75.5
2009	What is the name of the governor of your state?	80.0	75.4
1997	What is the meaning of the acronym... AFORES (Retirement funds administration)?	80.1	76.8
2001	What is the party affiliation of the governor of your state?	84.0	74.4
1992	What is the name of the social program to alleviate poverty?	80.8	83.2
1991	Who is he director of the Human Rights institute?	82.5	86.3
1997	What is the length of the Presidential term?	90.3	81.4
1991	What is the date of the "Solidarity" week (social policy program)?	88.8	83.6
	Gender related issues		
1991	Who is he director of the Human Rights institute?	82.5	86.3
1991	What is the name of the social program to alleviate poverty?	80.8	83.2
1991	What institution protects the rights of the citizens ?	76.9	75.5
2004	What is the date of the "Solidarity" week (social policy program)?	76.2	73.6
1991	Sabe usted cuando se celebros la Primera Semana de la Solidaridad>	88.8	83.6
2001	Who is the person in picture No. 9? [Picture of Josefina Vázquez Mota]	13.8	12.9
2001	Who is the person in picture No. 7? [Picture of Martha Sahagún]	78.2	73.2

2000	Do you know what political party or candidate said this phrase... "will make possible that public schools have computers and English classes" ["que hará que en las escuelas públicas se den clases de inglés y computación"]?	80.6	80.9
1997	What is the meaning of the acronym... AFORES (Retirement funds administration)?	80.1	76.8

Source: Roper Center for Public Opinion Research, Banco de Información Aplicada en Ciencias Sociales (BIIACS-CIDE), AmericasBarometer and Mexico, las Américas y el Mundo. National household samples except for the 1989-1994 surveys which were conducted on six major cities. Data are weighted when available.

Appendix 2. Political Knowledge by Structural, Agency, and Incubator Effects (Hierarchical Linear Model).

	[1] Full	(SE)
INDIVIDUAL-LEVEL		
Female	-0.519 ***	(0.053)
Income	0.100 ***	(0.022)
Married	0.092 °	(0.055)
Employed	0.083 °	(0.152)
Age	0.339 ***	(0.034)
Parental education	0.045 **	(0.015)
Education	0.311 ***	(0.018)
Indigenous	-0.259 ***	(0.068)
2000	-0.127	(0.170)
2003	0.422 *	(0.180)
2006	0.651 *	(0.200)
MUNICIPAL-LEVEL		
Presidente municipal(women)	0.036	(0.173)
State legislature (women)	0.004	(0.015)
Migration	0.047	(0.070)
Rural	-0.714 ***	(0.184)
d(1)	1.432 ***	(0.042)
d(2)	3.093 ***	(0.062)
Municipal Variance Component	0.769 ^A	
Number of Individuals	7381	
Number of Municipalities	209	
Log Restricted Likelihood	-1.332	
Robust standard errors in parentheses		
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001		
^A $\chi^2=1095.931$ p<0.001		

Source: CSES 1997-2000-2003-2006- Mexico.

Appendix 3. Political Knowledge by Structural, Agency, and Incubator Effects among Men and Women (Hierarchical Linear Models).

	[1] Men (SE)			[2] Women (SE)		
INDIVIDUAL-LEVEL						
Income	0.129	***	(0.030)	0.083	*	(0.034)
Married	0.163	*	(0.079)	0.034		(0.074)
Employed	0.079		(0.087)	0.011		(0.086)
Age	0.360	***	(0.049)	0.299	***	(0.046)
Parental education	0.069	*	(0.021)	0.025		(0.020)
Education	0.294	***	(0.024)	0.318	***	(0.026)
Indigenous	-0.354	***	(0.098)	-0.153		(0.108)
2000	-0.387	*	(0.193)	0.048		(0.207)
2003	0.267		(0.220)	0.450	°	(0.238)
2006	0.164		(0.190)	1.024	***	(0.237)
MUNICIPAL-LEVEL						
Presidente municipal(women)	0.220		(0.168)	-0.118		(0.188)
State legislature (women)	-0.006		(0.015)	0.007		(0.016)
Migration	0.058	°	(0.072)	0.034		(0.074)
Rural	-0.861	***	(0.182)	-0.871	***	(0.178)
d(1)	1.415	***	(0.054)		***	
d(2)	3.073	***	(0.085)		***	
Municipal Variance Component	0.570 ^A			0.830 ^B		
Number of Individuals	3486			3894		
Number of Municipalities	209			209		
Log Restricted Likelihood	-6.283			-6.95		
Robust standard errors in parentheses						
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001						
^A χ ² = 554.556 p<0.001; ^B χ ² =793.218 p<0.001						

Source: CSES 1997-2000-2003-2006- Mexico.

Appendix 4. Question Wording and Coding for Independent Variables in Regression Models.

Independent variables	Question	Range	Mean	Mode	S.D.	Coding
Female	Gender	0-1	0.53	1	0.499	Woman(1) Man (0)
Income	Now, tell me, putting on consideration the ranges I show you on this card (GIVE CARD 12). In which one do you place your monthly family income from your household?	1-7	3.28	2	1.69	0-678 (1) 679-2034 (2) 2035-3390 (3) 3391-4746 (4) 4747-6780 (5) 6781-20340 (6) 20341 - more (7)
Married	Could you tell me your marital status?	0-1	0.65	1	0.48	Yes (1) No (0)
Employed	What was your main activity the last week?	0-1	0.51	1	0.50	Employed (1) Otherwise (0)
Age	How old are you?	1-4	2.28	2	0.93	18-25 (1) 26-40 (2) 41-60 (3) 61 + (4)
Parental education	Which is (was) the maximum degree of studies of your father (mother)?	1-9	3.05	2	2.22	None (1) Incomplete primary (2) Primary completed (3) Incomplete secondary (4) Secondary completed (5) Incomplete post secondary (6) Complete post secondary (7) Incomplete university (8) Complete university and more (9)

Appendix 4. Question Wording and Coding for Independent Variables in Regression Models (cont.).						
Presidente municipal(women)	N/A	0-1	0.07	0	0.26	Female Municipal President(1) male municipal president (0)
State legislature (women)	N/A	0-1	16.02	24	7.63	Percentage of women representatives in State Legislatures
Education	Until which year did you study (maximum degree)?	1-9	4.65	3	2.36	None (1) Incomplete primary (2) Primary completed (3) Incomplete secondary (4) Secondary completed (5) Incomplete post secondary (6) Complete post secondary (7) Incomplete university (8) Complete University and more (9)
Ethnic Self-identification	In some countries the people have similar characteristics. In others, the people have different characteristics. How do you consider yourself: Indígena, mestizo, blanco	0-1	0.18	0	0.38	Indigenous(1) Otherwise(0)
2000	Survey year	0-1	0.24	0	0.43	Year 2000 (1)
2003	Survey year	0-1	0.44	0	0.44	Year 2003 (1)
2006	Survey year	0-1	0.41	0	0.41	Year 2006 (1)

Source: CSES 1997-2000-2003-2006- Mexico.

Appendix 5. Ordinal Regression: Political Knowledge among Adolescents Controlling for Sex.

Variables	[A] Bivariate	
	Coeff.	(SE)
Female	-0.010	(0.086)
Semester		
Social Studies course		
Disc. w/classmates		
Disc. w/teachers		
Civic courses		
Likes class		
Political interest		
Printed media		
Broadcast media		
Fathers' education		
Mother's education		
Classroom president		
School's SES		
Num. people at home		
Lives w/ both parents		
Rents household		
Books at home		
Site: Hermosillo	-0.305 ***	(0.086)
Format: Multiple	1.481 ***	(0.093)
Cut1	-2.292	(0.116)
Cut2	-0.286	(0.089)
Cut3	2.100	(0.103)
Number of Observations	1925	
LR χ^2	282.54 ***	
Pseudo R ²	0.061	
Robust standard errors in parentheses		
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001		

Source: García Trejo (Mexican Adolescents Survey 2010; 2011).

Appendix 6. Ordinal Regression: Political Knowledge Controlling for Structural, Agency, Incubator and Combined Effects among Girls.

Variables	[1] Incubator level		[2] Agency level		[3] Structural level	
	Coeff.	(SE)	Coeff.	(SE)	Coeff.	(SE)
Semester	0.273 ***	(0.077)				
Social Studies course	0.532 **	(0.178)				
Disc. w/classmat es	0.438 ***	(0.129)				
Disc. w/teachers	-0.060	(0.150)				
Civic courses	0.241	(0.417)				
Likes class			0.397 **	(0.145)		
Political interest			0.366 *	(0.145)		
Printed media			-0.049	(0.161)		
Broadcast media			0.287	(0.177)		
Fathers' education			0.043	(0.035)		
Mother's education			0.081 *	(0.035)		
Classroom president			0.250 °	(0.129)		
School's SES					0.670 ***	(0.085)
Num. people at home					0.139	(0.124)
Lives w/ both parents					-0.183	(0.137)
Rents household					0.061	(0.187)
Books at home					0.040	(0.052)
Site: Hermosillo	0.037	(0.130)	-0.164	(0.127)	-0.148	(0.130)
Format: Multiple	1.534 ***	(0.130)	1.487 ***	(0.134)	1.597 ***	(0.131)
Cut1	-0.727	(0.507)	-1.107	(0.300)	-1.722	(0.234)
Cut2	1.408	(0.501)	1.104	(0.286)	0.501	(0.211)
Cut3	3.846	(0.515)	3.567	(0.309)	3.011	(0.234)
Number of Observations	1011		947		1003	
LR χ^2	194.03 ***		193.43 ***		228.76 ***	
Pseudo R2	0.080		0.086		0.095	
Robust standard errors in parentheses						
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001						

Source: García Trejo (Mexican Adolescents Survey 2010; 2011).

Appendix 7. Ordinal Regression: Political Knowledge Controlling for Structural, Agency, Incubator and Combined Effects among Boys.

Variables	[1] Incubator level		[2] Agency level		[3] Structural level	
	Coeff.	(SE)	Coeff.	(SE)	Coeff.	(SE)
Semester	0.343 ***	(0.082)				
Social Studies course	0.133	(0.177)				
Disc. w/classmates	0.426 *	(0.137)				
Disc. w/teachers	0.184	(0.143)				
Civic courses	-0.148	(0.301)				
Likes class			0.232	(0.155)		
Political interest			0.522 ***	(0.155)		
Printed media			0.373 *	(0.179)		
Broadcast media			0.302	(0.192)		
Fathers' education			-0.004	(0.036)		
Mother's education			0.082 *	(0.038)		
Classroom president			0.142	(0.152)		
School's SES					0.486 ***	(0.082)
Num. people at home					-0.167	(0.133)
Lives w/ both parents					0.091	(0.151)
Rents household					-0.007	(0.222)
Books at home					-0.032	(0.057)
Site: Hermosillo	-0.138	(0.146)	-0.264 °	(0.136)	-0.333 *	(0.140)
Format: Multiple	1.500 ***	(0.137)	1.434 ***	(0.142)	1.505 ***	(0.139)
Cut1	-1.172	(0.415)	-0.972	(0.312)	-2.024	(0.243)
Cut2	0.839	(0.407)	1.032	(0.299)	-0.010	(0.218)
Cut3	3.315	(0.423)	3.541	(0.324)	2.501	(0.237)
Number of Observations	907		847		887	
LR χ^2	169.86 ***		165.430 ***		164.910 ***	
Pseudo R2	0.078		0.082		0.078	
Robust standard errors in parentheses						
° p<0.10, * p<0.05, ** p<0.01, *** p<0.001						

Source: García Trejo (Mexican Adolescents Survey 2010; 2011).

Appendix 8. Mexican Adolescents Surveys 2010-2011 Questionnaire.

My name is Yazmín García. I am originally from Mexico and currently a Ph.D. student at the University of Connecticut. I am conducting an anonymous and voluntary survey to know your opinion about political issues in the country. You are free to answer or not to answer all or any of the questions in this survey. All your responses will be added with the responses of others in order to conduct an aggregate statistical analysis for my dissertation. Thank you for your participation.

I.To begin with tell me about you:

1. Sex: A. Male () B. Female ()
2. How old are you? _____
3. In the school, in what semester you are?
A. First ()
B. Second ()
C. Third ()
D. Fourth ()
E. Fifth ()
F. Sixth ()
4. How many people live in your household?

5. How many people under 18 live in your household? _____
6. On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the way democracy works in Mexico?
A. Very satisfied ()
B. Fairly satisfied ()
C. Not very satisfied ()
D. Not at all satisfied ()
E. Don't know ()

II. Now, we have a set of questions concerning to information about political issues.

7. Please could you tell me the name of the governor of your state?_

8. Could you tell me which are the chambers of Mexico's Congress?
A. Deputies and Senators ()
B. Senators ()
C. Deputies ()
9. In general, how many years does a Deputy stays on his or her charge?
A. Three years ()
B. Four years ()
C. Other ()
10. In a democratic political system, which of the following ought to govern the country?
A. Moral or religious leaders
B. A small group of well educated people
C. Popularly elected representatives
D. Experts on government and political affairs

III. Now, I have a set of questions concerning to information about some political leaders. For every name listed below do you know what job or position he or she is in charge with?

Name	Job or position
------	-----------------

11. Beatriz Paredes Rangel	
----------------------------	--

12. Felipe Calderón Hinojosa	
------------------------------	--

13. Barack Obama	
------------------	--

14. Hillary Clinton

IV. Now, let's talk about your interests, opinions and how frequently you get information about politics

15. How interested would you say you are in politics?

- A. Very interested ()
- B. Somewhat interested ()
- C. Not very interested ()
- D. Not at all interested ()

16. How interested would you say your parents are in politics?

	Father	Mother
A. Very interested		
B. Somewhat interested		
C. Not very interested		
D. Not at all interested		

17. How often do you have discussions of what is happening in your country's **national** politics...

	Never	Sometimes	Often
A. With your classmates in your classroom?			
B. With people of your same age?			
C. With your mother?			
D. With your father?			

E. With your teachers?			
------------------------	--	--	--

18. How often do you have discussion of what is happening in **international** politics...

	Never	Sometimes	Often
A. With your classmates in your classroom?			
B. With people of your same age?			
C. With your mother?			
D. With your father?			
E. With your teachers?			

19. People use different sources to learn what is going on in their country and the world. For each of the following sources, please indicate whether you used it last week or did not use it last week to obtain information.

	Used last week	Not used last week
A. Daily Newspaper		
B. News broadcast on radio or TV		

C.Printed magazines		
D.In depth reports on radio or TV		
E.Books		
F.Internet, E-mail		
G.Talk with friends or colleagues		
H.Internet social network (Facebook, Hi Five, My space, etc.)		

20. How many books do you have in your home right now – not including text or school books?

- A. None ()
- B. From 1-10 ()
- C. From 11-50 ()
- D. From 51-100 ()
- E. From 101-200 ()
- F. More than 200 ()

V. Now, let's talk about your classes...

21. Since you started your high school how many classes have you taken related to social sciences? _____

22. How much do you like to study the Mexican government?

- A. A lot ()
- B. Something ()
- C. A little ()
- D. Nothing ()
- E. I have not taken classes on the topic ()

23. Did you take civic classes in junior high school?

- A. Yes
- B. No

24. How far in school do you want to go?

- A. To finish high school
- B. To finish a Technical degree
- C. To finish University or more

VI. Now some questions about your participation in several activities.

25. I'm going to list some different forms of political action that people can take, and I'd like you to tell me, for each one, whether you have actually done any of these things, whether you might do it or would never, under any circumstances, do it.

	Have done	Might do	Would never do
A. Signing a petition			
B. Attending lawful/peaceful demonstrations			
C. Participating in an illegal strike			
D. Occupying a building or a factory			

26. Have you participated in the following organizations?

	Yes	No
A. A student council/student government		
B. A youth organization affiliated with a political party or union		
C. A group which prepares a school newspaper		
D. An organization sponsored by a religious group		
E. An environmental organization		
F. A student exchange or school partnership program		

G. A human rights organization		
H. A group conducting voluntary activities to help the community		
I. A charity collecting money for a social cause		
J. A cultural association based on ethnicity		
K. Student's committee		
L. Pseudo student organization		
M. A sports organization or team (basketball, soccer; gym, aerobics, etc.)		
N. Social Networks (Facebook hi-5, My space, etc.)		
Ñ. Candidate to lead your homeroom		
O. Other (Specify _____)		

VII. Now, for each of the following statements below, can you tell me how much you do you agree strongly, agree, disagree, or disagree strongly?

27. On the whole, men make better political leaders than women do

- A. Agree strongly ()
- B. Agree ()
- C. Disagree ()
- D. Disagree strongly ()

28. On the whole, University is more important for a boy than for a girl.

- A. Agree strongly ()
- B. Agree ()
- C. Disagree ()
- D. Disagree strongly ()

29. On the whole, men know more about politics than women.

- A. Agree strongly ()
- B. Agree ()
- C. Disagree ()
- D. Disagree strongly ()

VIII. Now tell me how do you feel about the following statements:

30. I feel that I have a pretty good understanding of the important political issues facing our country

- A. Agree strongly ()
- B. Agree somewhat ()
- C. Neither agree nor disagree ()
- D. Disagree somewhat ()
- E. Disagree strongly ()

31. I don't think public officials care much what people like me think

- A. Agree strongly ()
- B. Agree somewhat ()
- C. Neither agree nor disagree ()
- D. Disagree somewhat ()
- E. Disagree strongly ()

32. How much do you think you can trust in the Mexican government to make things right?

- A. Always ()
- B. Most of the time ()
- C. Sometimes ()
- D. Never ()

IX. Now I need to ask you some questions that will help me to understand better the general characteristics of the students who responded to this survey:

33. Do you live with your father and your mother?

- A. Yes ()
- B. No, I live only with my mother ()
- C. No, I live only with my father ()
- D. No, I live alone ()
- E. No, I live with relatives ()
- F. No, I live some time with my father and some time with my mother. They have shared custody ()
- G. No, I live with my legal guardian ()

34. Do you own or rent the place where you live?

A. Own () B. Rent ()

35. In your household, who is the main support of income?

A. Man () B. Woman ()

36. Can you tell me what is the occupation of your parents? Please write down below the name of the occupation for each of your parents. If they are not currently employed, please write down for example, if they are unemployed, retired, students, disabled permanently, etc.

Father's _____ occupation?

Mother's occupation? _____

— Legal guardian? (answer this option just in case you have a legal guardian and do not know the occupation of any of your parents) _____

37. Do you usually sympathize with any particular political party?

A. Yes ()
B. No ()

38. In general, Do your parents usually sympathize with any particular political party?

	Father	Mother
A. Yes		
B. No		

39. How far in school did your mother and father go?

	Father	Mother
A. Did not finish elementary school		
B. Finish elementary school		
C. Finish some high school		
D. Finish high school		
E. Some vocational/technical education after high school		
F. Some university courses		
G. Completed university or more		

40. Thinking on the neighborhood where you currently attend school and thinking on the possibility of being a victim of a robbery. Do you feel safe, somewhat safe, somewhat unsafe or unsafe?

A. Safe ()
B. Somewhat safe ()
C. Somewhat unsafe ()
D. Unsafe ()
E. Don't know ()

41. Could you tell me your religion? _____

42. How do you consider yourself:?

A. Indígena ()
B. Mestizo ()
C. Blanco ()
D. Other
(Specify) _____

43. Do you speak an indigenous language or dialect?

A. Si () B. No ()

Thank you for your participation!

Appendix 9. Question Wording and Coding for Independent Variables in Regression Models (Mexican Adolescents Survey).

Question	Range	Mean	Mode	S.D.	Coding
Sex	0-1	0.53	1	0.50	(0) Male (1) Female
In the school, in what semester you are?	1-3	2.25	3	0.82	(1) 1-2, (2) 3-4; (3) 5-6
Class subject at the time of the survey	0-1	0.83	1	0.38	(1) Social studies (0) No social studies
How often do you have discussions of what is happening in your country's national politics with your classmates in your classroom?	0-1	0.54	1	0.50	(0) Otherwise (1) Discusses
How often do you have discussions of what is happening in your country's national politics with your classmates in your classroom?	0-1	0.72	1	0.45	(0) Otherwise (1) Discusses
Did you take civic classes in junior high school?	0-1	0.96	1	0.19	(0) No (1) Yes
How much do you like to study the Mexican government?	0-1	0.49	0	0.50	(0) Otherwise (1) Somewhat/A lot
How interested would you say you are in politics?	0-1	0.44	0	0.50	(0) Otherwise (1) Somewhat/Very
People use different sources to learn what is going on in their country and the world. For each of the following sources, please indicate whether you used it last week or did not use it last week to obtain information. Variable combining the source of printed media: newspapers/magazines/reports/books.	0-1	0.81	1	0.40	(0) Otherwise (1) Used
People use different sources to learn what is going on in their country and the world. For each of the following sources, please indicate whether you used it last week or did not use it last week to obtain information. Variable combining the source of broadcast media: TV and radio.	0-1	0.85	1	0.36	(0) Otherwise (1) Used

Question	Range	Mean	Mode	S.D.	Coding
How far in school did your mother and father go?	1-9	5.96	9	2.19	None (1), Incomplete primary (2), Primary completed (3), Incomplete secondary (4), Secondary completed (5), Incomplete post secondary (6), Complete post secondary (7), Incomplete university (8), Complete University and more (9)
How far in school did your mother and mother go?	1-9	5.77	7	2.14	None (1), Incomplete primary (2), Primary completed (3), Incomplete secondary (4), Secondary completed (5), Incomplete post secondary (6), Complete post secondary (7), Incomplete university (8), Complete University and more (9)
Have you ever participated as...A candidate to lead your classroom?	0-1	0.32	0	0.47	(0) Otherwise (1) Participates
Socioeconomic status of the school neighborhood	0-2	0.93	1	0.80	(0) Low, (1), Medium (2) High
How many people live in your household?	0-1	0.47	0	0.50	(0) ≤ 4 ; (1) > 4
Do you live with your father and your mother?	0-1	0.74	1	0.44	(0) otherwise (1) lives with both
Do you own or rent the place where you live?	0-5	2.29	2	1.24	
How many books do you have in your home right now – not including text or school books?	0-5	2.29	2	1.24	(0) None (1) 1-10 (2) 11-50 (3) 51-100 (4) 101-200 (5) > 200
Survey's city	0-1	0.44	0	0.50	(0) Mexico City (1) Hermosillo,
Survey's format	0-1	0.50	1	0.50	(0) Open-ended (1) Multiple

Appendix 10. Average Number of Correct and Incorrect Responses; “Don’t Know” and Refusals among Adolescents and Adults.

	Mexico City (2010)			Hermosillo (2011)			CSES (1997-2006)		
	Boys	Girls	t-test p-value	Boys	Girls	t-test p-value	Men	Women	t-test p-value
Average number of correct answers (3 items)	1.89	1.88	0.77	1.78	1.80	0.74	1.84	1.45	0.00
Average Number of DK answers (3 items)*	0.23	0.25	0.68	0.40	0.37	0.59	0.69	1.02	0.00
Average number of Refusal answers (3 items)*	0.24	0.23	0.84	0.09	0.16	0.02	0.03	0.03	0.52
Average number of correct answers (open-ended)	1.61	1.58	0.73	1.45	1.46	0.96	--	--	--
Average number of correct answers (multiple choice)	2.20	2.16	0.52	2.07	2.14	0.26	--	--	--
Average number of incorrect answers (open-ended)	1.39	1.42	0.73	1.55	1.54	0.96	--	--	--
Average number of incorrect answers (multiple choice)	0.80	0.84	0.52	0.93	0.86	0.26	--	--	--
Average number of DK answers (open-ended)	0.43	0.48	0.51	0.79	0.67	0.18	--	--	--
Average number of NA answers (open-ended)	0.38	0.35	0.74	0.17	0.30	0.03	--	--	--
Average number of DK answers (multiple-choice)	0.01	0.02	0.37	0.06	0.08	0.57	--	--	--
Average number of NA answers (multiple-choice)	0.09	0.11	0.46	0.02	0.03	0.64	--	--	--

*In 1997, for the CSES data the question about number of chambers in the Congress did not have "don't know" and refusal categories available for recoding purposes. The average number of "don't know" and refusals does not include 1997.
Source: CSES 1997-2000-2003-2006- Mexico & García Trejo (Mexican Adolescents Survey 2010; 2011).

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