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The Power of Perceptions: How Social Capital is being impacted by Crime and Corruption in Mexico

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Abstract

Coinciding with the transition to democracy in Mexico (and elsewhere in Latin America), violent crime increased substantially and joined with the citizenry's concerns about corruption. The overarching question of the research can be summarized as: How and how much do perceptions and experiences with crime and corruption impact democracy? In its most general conception the thesis is that in Mexico, an increasingly adverse context (experience + perceptions) of crime and corruption has a negative and significant impact on social capital. This discussion can be viewed as a partial assessment of the quality and strength of democracy in Mexico. The topic is of relevance because the magnitude of crime and corruption in Mexico suggest that they have become 'regularized patterns of interaction'.

Social capital is viewed as a two-dimension/three-components concept that can be measure by adding the stocks of its components: trust, reciprocity and participation. This dependent variable, as well as its determinants, is measured

integrally and in depth using ad-hoc public opinion survey research. Analysis of two different groups is contrasted using confirmatory factor analysis to validate measurements and structural equation models to test causal relations between variables. The general model of interaction and causality between variables is confirmed by the data.

The principal finding is that crime/corruption have direct and indirect effects of both the cognitive and structural dimensions of social capital as well as on human capital and other democratic attitudes. Individuals that have been victims of crime/corruption or those who have greater perceptions of the magnitude of these problems, live with greater fear, are less likely to trust individuals or institutions, to cooperate with others and to participate in formal/informal social organizations. Additionally they report lower levels of personal health and lower satisfaction with democracy. The research provides evidence of the negative impact that crime/corruption have on democracy and development.

The relation between variables is tested using alternate data (an hemispheric wide survey) and method of analysis (linear regressions). Some results are confirmed but others are contradictory and it is argued that the main reason is the difference in measurement and method.

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The Power of Perceptions:

How Social Capital is being impacted by Crime and Corruption in Mexico

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1.1. Introduction

Transition to democracy in Mexico has been a slow and steady process that began in the late sixties[1]. The 2000 presidential elections that brought alternation in the presidency constitute a political inflection point: after seven decades of a one party system, a president from the opposition came to power. This historical event can be considered as the end of a three-decade gradual transition to democracy and the beginning of a democratic consolidation phase. Electoral institutions and a growing participation from civic society played a central role in the transition. To advance toward consolidation, however, additional institutional, structural and cultural changes need to take hold. In this new scholarly agenda on quality of democracy, a central problem merits priority: coinciding with the transition to democracy in Mexico (and elsewhere in Latin America), violent crime increased substantially and joined with the citizenry's concerns about corruption.

How and how much do perceptions and experiences with crime and corruption impact democracy? This is the overarching question of the research. To address

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[1] See Dominguez and McCann (1996) and Dominguez and Poiré (1999).

it, the work focuses mainly on values, perceptions, opinions and behavior of the general public --both at the aggregate and individual level of analysis-- and these are viewed as instrumental aspects for democracy. Direct and indirect experiences as well as received information that individuals interpret as their reality have a direct impact on their attitudes and behavior. This constitutes the *power of perceptions*.

1.2. Research thesis and hypothesis to be tested

In its most general conception the thesis is that in Mexico, an increasingly adverse context (experience + perceptions) of crime and corruption has a negative and significant impact on social capital. The public's perceptions of public safety and corruption are viewed as symptoms of the existence of these problems and I will argue that such perceptions have negative consequences for democracy. To assess the consequences of these perceptions, my research explores with particular emphasis specific conditions that could adversely impact the consolidation of democracy. I expect to find a qualitative aspect to perceptions that is directly related to the experience of crime or corruption and has implication both at the individual and aggregate level. At the individual level, experience and/or perception of these problems, be it by direct experience or by other sources of information should result in a higher tendency to modify attitudes and/or behavior (direct experience with crime determining fear for example). At the aggregate, the sum of these effects over time could result in

diminishing capacity of the social system's ability to prefer, practice or maintain democracy.

Recent scholarly agenda on democracy in Latin America has revolved around three central questions that are closely related: how did it happen (transition), what is the outcome (state of democratic governance), and what are its chances (consolidation)? My discussion is placed within the last two questions and should be viewed as a partial assessment of the quality and strength of democracy in Mexico. I view democratization as an ongoing process: unfinished business that can and should be widened and deepened, and for which there exist the probability of an authoritarian regression. The 2010 report from the Americas Barometer, the largest comparative survey in the hemisphere, explores the state of democracy and political culture in the context of what Freedom House has label as a "worldwide democratic recession"[2]. Results for Mexico of key democratic indicators in the 2010 round of the survey support the *recession* argument (Paras et. al. 2011) and the trend is confirmed by the latest 2012 results (Paras and Vidal 2012).

As shown in Figure 1.1 the general hypothesis is that perceptions and experience of crime and corruption have a negative effect on key democratic beliefs, feelings, and intended and real behavior. Specific relations between crime/corruption to key democratic indicators are explored in the research in order to unpack this general research question.

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[2] Information on this topic and evaluations on the quality of democracy can be found at:
http://freedomhouse.eu/

Figure 1.1: General research hypothesis of how democracy is being impacted by perceptions of crime and corruption

PERCEPTIONS
of Crime and
Corruption

→

DEMOCRATIC
Preferences
Attitudes and
Behavior
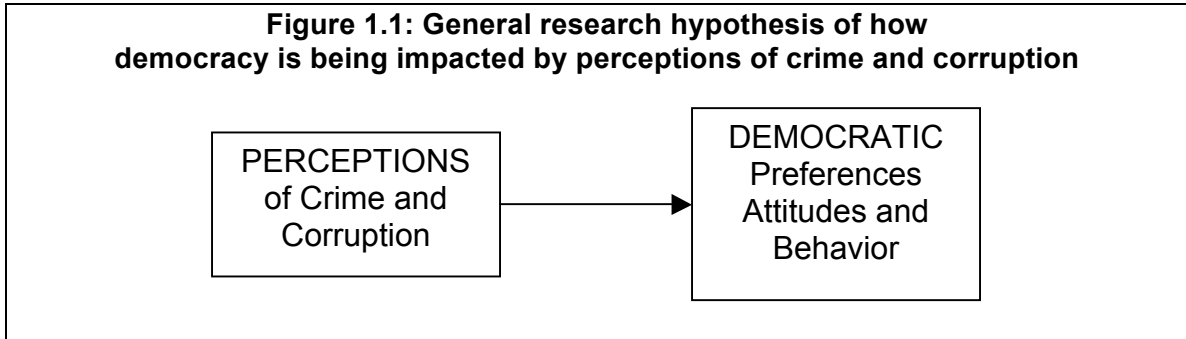
The following are the specific hypotheses tested in the research:

Individuals with high perceptions of crime and/or corruption are less likely to …

a) Trust other individuals;
b) Trust institutions;
c) Reciprocate with their peers;
d) Participate in formal and/or informal organizations;
e) Report good personal health;
f) Be satisfied with democracy and have democratic attitudes;

… than individuals with low perceptions of crime and corruption.

The hypotheses outlined above refer to the way I intend to explore the political cost of crime and corruption. The first four are part of the scholarly agenda of the concept/theory of social capital (*a* to *d*) and human capital (*e*). Additional political costs of crime and corruption are explored by measuring the impact on democratic attitudes and preferences (last hypothesis) and indirectly by assessing the quality of democracy from a social capital theory perspective. Taken all into account the research question driving the analysis can be

rephrased to: How and to what degree is social capital (and democracy) in Mexico being impacted by crime and corruption?

1.3. Perceptions, Social Capital, Crime and Corruption

The concept and theory of social capital (SC) will be reviewed in depth in the second chapter. Following is a brief general description of the concept that serves as an introduction. Social Capital has two dimensions. The first is *cognitive* and it is best captured by the amount of trust an individual has of others (individuals or institutions). The second is *structural* and refers to the amount of participation of an individual in formal and informal organizations. These two dimensions are viewed in the literature both as indicators and determinants of the quality and strength of democracy. The social capital argument can be summed up as follows: societies with high proportions of individuals that trust each other and actively participate in social organizations have stronger democracies. This *Tocquevillan* view of the virtues of civic engagement is viewed here as crucial for Mexico due to its specific context (high crime and corruption) and specific moment (consolidation of democracy). If indeed crime and corruption impact social capital, and if they are large, widespread and increasing problems, then the impact they have on the future of the quality of democracy in Mexico's could be significant.

A review of democracy in Latin America conducted by the United Nations Development Program provides among others the following conclusions: countries in the region need to advance from an electoral to a citizen democracy;

societal deficits constitute challenges for democracy; and growth cannot be achieved with out social cohesion (PNUD 2004). I believe this to be true for Mexico and I will try to demonstrate that crime and corruption have important political consequences. It is within this line of thought that researching the effect on democracy of these two *social regrettables* is of practical and theoretical importance. The data presented will also help to describe the magnitude of the crime/corruption problems and provide a partial assessment of stocks of social capital in Mexico.

As it was mentioned above, my research is interested in the specific context of crime and corruption in Mexico and its impact on trust and cooperative behavior (i.e. participation). These two dimensions or constructs –trust and participation— constitute my attitude objects. In other words: what feelings, beliefs and intended behavior result from interaction of an individual and his/her specific context regarding crime and corruption. Adding to the experiences of individuals, the power of perceptions is twofold. On one hand, and because it has a direct impact on what be feel, belief and do, it should be viewed as an important component of the research agenda in political and other social sciences. Research including perceptions could measure its determinants, its components and/or its impacts on attitudes. On the other hand, and because perceptions are directly impacted by the context, it has a practical value as we can assess probable outcomes of changes in context. This could be important for the institutionalization of democracy in Mexico. O'Donnell defines institutions as a: "regularized pattern of interaction that is known, practiced, and accepted (if not

necessarily approved) by actors who expect to continue interacting under the rules sanctioned and backed by the pattern" (1994: 58). Under such definition have crime and corruption become institutionalized in Mexico? I will argue that they have. The numbers that describe the state of crime and corruption in Mexico, presented later, do suggest that they have become 'regularized patterns of interaction'. For now let me just mentioned three international sources that reflect the seriousness and magnitude of the crime/corruption problems. Regarding crime, the latest Conflict Barometer published by the Heidelberg Institute for International Conflict Research categorized Mexico as a "war" zone in it's High Intensity Violent Conflicts map of 2012[3]. This is a clear indication that organized crime has been on the rise for the past years. Regarding corruption the Americas Barometer places Mexico in second place, just after Haiti, in its victimization by corruption indicator; and Transparency International gives Mexico a 3.2 grade on a its ten-point scale 2008 Corruption Perception Index[4].

Regularities in the context become reinforcing information for individuals, that over time become consistent perceptions that can strongly influence attitudes. The more stable a context of interaction the more reinforcing it becomes of feeling, beliefs and intended behavior. So, do most Mexicans face a real or perceived (to be real) context of high crime and corruption in their every day activities? The following chapters present enough information to conclude that they do; for now let me provide an example of what a typical weekday morning of an imaginary average resident of a large urban center in Mexico may be like. The

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[3] The full report and map can be found in the Institute's web site: http://www.hiik.de/en/index.html
[4] Results can be found on their respective web sites: http://www.vanderbilt.edu/lapop/ and http://www.transparency.org/

purpose is to show the kind of information presented to and interpreted by individuals living in a context of high- crime, high-corruption.

Let's give her a name, Lupe Perez and let us assume that she is thirty four years old, married, mother of three, living in a small rented house in a medium-low income neighborhood in a southern demarcation of the city. She is a hard-working administrative assistant of a medium size company. After making *migas* (scrambled eggs with chopped tortillas) for breakfast and leaving her youngest child with a next-door relative, Lupe takes her other kids to a nearby public school. They have to take the orange line of the subway from Copilco to the Viveros station; from there is a short walk to the school. After dropping her kids she takes a *pesero* (small public bus) to work. She sits in the back of the bus holding her purse tightly between her legs. She can't help of being suspicious of some of the people sharing the ride. In her mind she remembers the conversation with her sister the previous night about the increasing number of assaults. She recalls her words: "I tell you *querida*, they strike everywhere now: in the subway, buses, in the street, even in the neighborhood; surely you watched the news. I don't know, but these days you can't trust anyone." She is horrified by the front-page news of a local newspaper held by a passenger to her right: "Eight more executions by the Templarios in Michoacan". She turns to the window for a while trying to escape her memories. She spots a police patrol blocking the left lane and a policemen discussing with an apparently upset driver. That's going to end with a bribe, she thinks to herself as she speculates whether it is worse to ride the *pesero* or to own a car and face the morning traffic. She

grabs her purse with all extremities in an instinct-like reaction when a young man sits besides her. He smiles to her and adjust his earphones from a small MP3 player. She makes a quick assessment: he seems harmless. She reaches her stop, gets down form the bus and walks quickly to the office building. At her desk a colleague asks: "How was it *manita*? You weren't mugged today?" She moves her head from side to side as she sadly remembers the incident of seven months ago when two young men boarded the *pesero* and took as much as they could from what little the passengers had. Most likely she will not be mugged again for along time, maybe never; however, it is very likely that she will continue to feel insecure, belief that there is danger in her every morning ride and behave distrustfully of others. She lives with fear as her perceptions of danger and risk are slowly increasing and being constantly reinforced by the experience of others. She has become distrustful and distant of *others* she did not mind in the past; she has turn inwards as she begins to avoid certain situations that might expose her to future dangers; she reinforces her feelings, beliefs and actions from information presented in the media and discussed with her close group of family and friends.

Democracy faces a big challenge if many Mexicans, like our imaginary Lupe, react to a context of crime and corruption (perceived to be adverse for them) in ways that constraint social cohesion and cooperation. If crime and corruption are perceived to be so widespread that they are norms rather than exceptions, maybe they have become internalized --maybe to the point of institutionalization--

in the life of most individuals. But a context can be changed, and these changes can trigger or detonate new patterns of behavior, and in turn create democratic norms.

Electoral participation in Mexico is a good example of how *new regularities* of a context can slowly help develop new attitudes and habits. Since the early 90´s the electoral reforms in Mexico have work in favor of new patterns of interaction within the electoral aspect of democracy in Mexico; a slow transition from an uncertain and unstable, to an efficient electoral context with real competition.[5] Probably the most salient change was the creation of the Federal Electoral Institute (IFE for its Spanish acronym).[6] The IFE has guarantee clean and fair elections since 1994. It has created a stable and regular electoral context recognized worldwide, but most important, trusted by the Mexican electorate. Surely the alternation in power at the level of the president of the year 2000 could not have been possible without the IFE. Transiting to another party after seventy years of one party rule was possible by a clear definition and enforcement of the rules of the game with the IFE as the electoral watchdog. It is until recent, that Mexican voters have experienced the meaning and value of their votes. Before the electoral reforms existed and were successfully enforced, the perception of

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[5] Mexican voters had not experienced real electoral competition before the late 80's. In the 1988 presidential election two strong opposition candidates challenged the status quo and "voters shocked the political establishment with their demand for fundamental political change". This was a decisive event for years to come, and it was probably a bitter, but temporary lesson for the electorate as the election "was marred by widespread and not unfound accusations of electoral fraud" (Dominguez 1999: 2). The system after all, was able to contain the shock. Gradual change was ahead. In 1989 the PRI lost for first time a gubernatorial election since 1929. By 1997 the opposition had a majority of seats in the Chamber of Deputies; controlled seven governorships (six ruled by the PAN and one, Mexico City, by the PRD); and most of the mayors of the largest cities were governed by the PAN (Dominguez 1999: 5-10).

[6] An excellent discussion of the electoral reforms can be found in Becerra, Salazar and Woldenberg 2005.

fraudulent election was the norm for the average Mexican. The incentive to vote prior to the reform was low, in part because there was no organized opposition but also because voters perceived that their votes matter very little. Creation of the IFE helped change such perceptions. One of the most salient *regularities* of the electoral context before the reforms was the fact that electoral participation was in great part the result of political coercion. Today, electoral participation in Mexico, a crucial behavioral aspect of any democracy, is the result of free will.

1.4. The Power of Perceptions

Our attitudes and behavior are directly and greatly influenced by our perceptions because they are determined by our interpretation of the world. Research in different disciplines explores the relation between perceptions and attitudes/behavior. In Tanzania for example, the use of a condom of a sexually active teenager is determine in part by his perception of the like/dislike of the use condom during intercourse of his partner, and also by his belief of the condom as an effective prevention against HIV infection (Maswanya et al., 1999). According to a study in Georgia USA, perceptions of food quality and food safety are determinants of food consumption habits (Rimal et al., 2001). Text in the field of consumer behavior shows that sensations and perceptions play a key role when making a purchasing decision (Solomon et al., 1996). Dutch motorists are asked about their perceptions of the quality of the environment and urban neighborhoods to assess alternative public policies (IVEM 2006). Perceptions between competitors are used as input for a repeated interaction rational choice

model to determine business actions in an oligopoly market (Marks 1998). Global-scale surveys that capture perceptions of business leaders on competitiveness (Economic World Forum) and corruption (Transparency International) determine in part future foreign direct investment decisions. Crime surveys in England and Wales are use to determine the main perceptual predictors of perceptions of crime levels and worries about crime (Nicholas and Walker 2004). In psychology, perceptions are key components of influential theories on learning such as those of Bandura or Rotter. This is just a short list of example of the large empirical research providing evidence on how perceptions play an important role in determining attitudes and behavior of individuals.

The examples mentioned above reflect research agendas and priorities that respond to specific contextual characteristics, be that of the field of study or of the specific geography (time and place): HIV transmission in Tanzania, food safety concerns in the United States, environment in the Netherlands, or oligopolies in economic theory. In my case the research agenda is placed within the field of political science, survey research methodology, and social capital theory; but also defined by the specific characteristics and context of Mexico in the new millennium. Crime and corruption were chosen because public opinion survey in Mexico shows they are perceived as widespread problems and because empirically it has been shown that they have a direct impact of support for and satisfaction with democracy[7].

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[7] Both the Americas Barometer (http://www.vanderbilt.edu/lapop/) and the Latinobarometer (http://www.latinobarometro.org/), the two largest surveys in the hemisphere have documented

What are the differences between attitudes and perceptions? I take attitudes to be "relative lasting clusters of feelings, beliefs, and behavior tendencies directed toward specific persons, ideas, objects or groups" (Baron and Byrne 1984: 126). Definitions that include these three components are known in the literature as the ABC model of Attitudes: Affect (feelings), Behavior and Cognition (beliefs). It is important to stress that under the concept of attitude, behavior refers to intention (i.e. verbal statements about intended behavior) rather than action (actual behavior). The ABC's are directly impacted by outside stimuli. At the individual level, the relation between a person and outside stimuli is defined by his/her sensations and perceptions. Solomon defines sensations as "the immediate responses of our sensory receptors ... to such basic stimuli as light, color and sound [and perceptions as] the process by which these stimuli are selected, organized, and interpreted" (1996: 56). I take perceptions to be the interpretation that results from the interaction of an individual with his/her context. Under such definition, perceptions are taken as key determinants of feelings, beliefs and behaviors (i.e. attitudes). In other words, to what we are exposed to and how we make sense of the selected information that results from that exposure, determines to some degree, the components of the ABC model of attitudes. Spooncer (1992) represents the components of attitude in a triangle impacted by outside stimuli; such conceptualization is useful because it depicts the type of information we obtain when measuring attitudes using survey research. His research suggest that when we intent to capture attitudes --through the use of

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and supported this claim in their respective series of surveys. Both series of surveys are public and can be consulted in the mentioned websites.

structured interviews as the one used in public opinion surveys-- we measure some/all of its components (see Figure 1.2). In other words we measure: 'verbal statements of feelings', 'verbal statements of beliefs' and 'verbal statements about intended behavior'. We can also assume that when we use survey research to capture feelings, beliefs, and intended behavior, we are indirectly and partially measuring the result of the specific interaction and interpretation of the world by the individual; hence *context* and *perceptions*. After time and as a function of input (i.e. experience with context) and processing of information (perceptions), the individual develops somewhat coherent and stable attitudes, that in turn impact the way we interpret new or repeated input, and that also impacts the way we respond to specific situations. This process is graphically presented in Figure 1.2 as an adaptation of Spooncer's components of attitudes diagram. The differences with the original diagram are that stimuli are presented as a two-part process, and that it shows a feedback loop between attitudes and perceptions, suggesting mutual interaction.

The diagram depicts a funnel in which first an individual is exposed to a context that produces information; secondly, interprets it by processing selected information (perceptions); and finally the result of such interpretation impacts our attitudes (ABC's), opinions and preferences. The diagram suggests that an attitude, once developed by the individual, can have an impact on how we select and interpret future information[8]. Attitudes can also be partial determinant of actual behavior. Berlo's model of the formation of habit strength (FHS) looks at

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[8] Values are not included in the diagram but they can be viewed as deeper, more stable and long lasting than attitudes. According to Salomon "a value is a belief that some condition is preferable to its opposite. (1996: 142)

how the interpretation of information impacts responses, in other word behavior (1960, Cultsock). Such responses can be either viewed as a fourth step in the diagram or as an alternative third step as suggested by Berlo's. A final step in the FHS model is the evaluation of responses made by the individual. When actions are assessed, either as bringing reward or punishment and producing some sort of reinforcement (positive or negative) they impact future behavior (habit formation).

Figure 1.2: Formation of attitudes

(1) Information   -----   (2) Interpretation   -----   (3) Attitudes

Behavior

Affect   ----------   Cognition

Source: Adapted from Spooncer (1992)
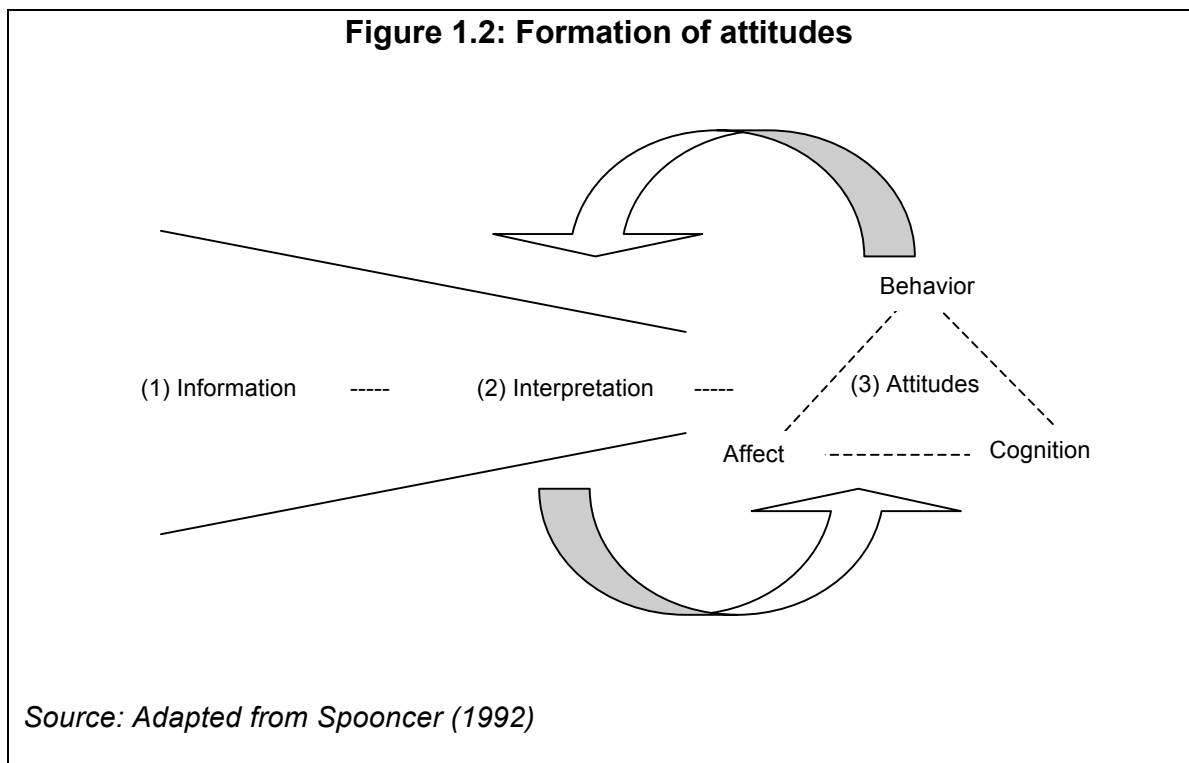
An additional ingredient that needs to be considered is the effect of social interactions; after all, individuals do not live in a social vacuum. The social learning theory developed by Rotter (1954), states that direct experience is not a

necessary condition for knowledge. Downs' (1957) also discusses the role *others* play as *informational shortcuts* in the discussion of the rationality of public opinion. The impact of social interactions is probably best captured by Chomsky's (1988) *poverty of stimulus* argument: "There would not be enough time for us to experience enough to learn everything we know, so we learn much from observing the effects of other people's experiences.". It follows that we can learn about crime or corruption from what we perceive of the experience of others (i.e. indirect experiences and third-party information) and in turn develop attitudes toward these problems even of we are not direct victims of them. Thus, learning is in part determined by our perceptions of our own experiences as well as the experiences of others. After all and as Dennet (1995) reminds us we are Skinnerian, Darwinian and Popperian creatures, in other words: biology, environment and reason.

To sum up we have a process where a context (including observation of and information form *others*) produces information that is selected and processed by the individual. Perception is the result of this interaction and has a direct impact on attitude formation and on behavior (directly and indirectly through attitudes). Finally attitudes and evaluation of responses, create a feedback loop that impacts the way an individual interprets and reacts to future contexts and information, where most likely an individual will favor those actions that s/he evaluates as having positive consequences.

1.5. General overview of the dissertation and the research design

Considering the way perceptions impact attitudes, and that they are determined by the specific context in which these perceptions and attitudes are found, it becomes crucial that I cover three things. The first one refers to the context of crime and corruption as I need to show that they have significantly permeated everyday life of Mexicans. By describing such context, I will be able to view them and evaluate them as important components of the information received and processed by individuals and assess their consequences on perceptions and attitudes. The second thing I intent to accomplish is to show that this input/context has a direct and negative effect on specific democratic beliefs, feelings and behaviors. As it was mentioned above, assessing the impact of crime/corruption on the cognitive and structural components of social capital and other relevant democratic attitudes will partially do this. Finally, I will discuss how social capital is relevant for democratic performance, democratic chances and economic development in Mexico.

Before discussing the research design and giving a brief overview of the thesis, I provide definitions of the key concepts that drive the analysis and have not yet been defined. My intention is to frame for the reader the perspective that guides the basic components of my research: literature review, treatment and analysis of secondary data, methodological design, and interpretation of the results. The most relevant concepts to be used throughout out the thesis are: perceptions, attitudes, institutions, public opinion, trust and social capital. The first three have been discussed. The aggregate measure of a representative sample of

individuals will be used here as the definition of public opinion. This one vote-one count operationalisation can be described as a simple sum of individual's responses. However as it was pointed out in the discussion above, we should acknowledge that survey answers reflect and/or measures perceptions (interaction with context and processing of information), attitudes and behavior. Trust will be used as "the state of readiness for unguarded interaction with someone or something" (Tway 1994, 8). Finally, Social Capital is defined initially here as the "norms and values that permit cooperative behavior on the part of groups" (Fukuyama 1997) and of "any aspect of informal [or formal] social organization that constitutes a productive resource for one or more actors." (Coleman 1994: 170). All of these, as well as the other relevant concepts of the research, such as quality of democracy, crime and corruption, will be discuss in grater depth in the next chapter.

This introduction has provided a general description of the research by stating the purpose of my inquiry and my intended analytical perspective. The logic of how perceptions are formed and impact attitudes and behavior has been discussed also. The following paragraphs provide further details of the specifics of my research design by using the language of inference. To test the six hypothesis outlined above, the *social systems* under study are Mexico City and the state of Guanajauto. While the former constitutes a high-crime, high-corruption context, the later represents the opposite. The inclusion and analysis of these two different social systems is a useful control mechanism that allows

me to compare and discuss the findings and their implications in greater depth. The comparison across social systems will contrast its individuals to test if perceptions, attitudes and behaviors are independent of context or not. My *level of analysis* is set at the individual differences. I am interested to describe, explain (and prescribe if possible) how the impact of perceptions are determined by the characteristics of individuals.

A detailed discussion on the operationalisation of variables and the statistical analysis is included in chapter three and documented in the annexes. For this introduction let me just mention that because my goal is to explore the complexity of the issue at hand, Structural Equation Model (SEM) is used as the main *statistical model of analysis*. In SEM a variable can be impacted by one or many variables (dependent) but it can also impact others (independent). Thus, SEM captures direct and indirect (trough other variables) impacts, and depicts a multiple interaction relation between variables. The measurement model presented, that is the causal relation between variables, is set according to the theory presented in chapter two. Because the relevant concepts to my analysis can be of complex nature, most of them are measured using two or more items (variables). From here on, such multi-item measurement of concepts will be referred to as constructs. The validity and reliability of each construct will be assessed using confirmatory factor analysis.

In great part, my research design is concerned about the quality of measurement and that is why I use items that are *behavioral referents* of *specific* situations to capture the constructs that interest me. A component of the third chapter is the

discussion and assessment of the quality of measurement of available data or proposed variables. The variables/constructs included in the SEM can be grouped into: demographics, determinants of perception, components of perceptions of the crime/corruption problems, components of social capital (cognitive and structural), components of human capital, and democratic preferences. The most relevant causal relation for my thesis is the impact of the components of perceptions of the problems of crime/corruption on the components of social capital; however the full model allows me to place my research in a larger context and assess the interaction of other relevant variables.

I will be using two main types of data. The first constitutes the set of available secondary data dealing with the topics relevant to my inquiry. Such bank of information will be used mainly to describe the 'state of the art' of corruption, crime, social capital and democracy in Mexico from the public's view. Such data from other surveys is used to complements and contextualized the findings and it includes among others the national victimizations surveys conducted by the ICESI and INEGI; national surveys of corruption and good government conducted by the local chapter of Transparency International; the Americas Barometer, an hemisphere-wide survey of political culture conducted by the Latin American Public Opinion Project of the University of Vanderbilt; the World Values Survey conducted by the University of Michigan; and several other relevant sources. The data used for the SEM and test the proposed research hypothesis presented above, and to contrast the two social systems under comparison here,

is an ad-hoc survey specifically designed for this purpose. The surveys in Mexico City and Guanajuato were conducted and sponsored by a Mexican private consulting firm.   My intention is to go beyond the scattered research that has been done using public opinion surveys to compare differences between individuals according to their personal experience with and perceptions of crime and corruption. To my knowledge there aren't any surveys available that allow this comparison, and include measurement of key social concepts (constructs) like the ones under study here.

I do not intent to solve the complete and complex puzzle of how crime and corruption impact social capital and democracy. My main task is to provide evidence of the presence and magnitude of the political cost of crime and corruption under study here. To do so I will be interested in determining the significance and magnitude of the effect size.   The limitations and scope of the research --be it by methodological approach or by research design—as well as comparison to finding in the field, will be discussed in the appropriate sections.

The next chapter provides an in depth literature review of the main topics of interest. These include: the origins and definitions of social capital, its relation to democratic attitudes, the link between crime/corruption and social capital, measurement of social capital and the stocks of social capital in Mexico. This chapter provides the conceptual framework for my research, placing it within a specific area of the political science literature, and discusses its relevance. It also presents the expected findings of the research. The third chapter is a detail discussion of the research design and its focus is on how to study the relation

between crime/corruption and social capital and democracy. Included here is the description of the data, the operationalisation and validation of the key measurement constructs, the general measurement model and a discussion of alternative measurements of social capital. In the fourth chapter I discuss the main results of the research in three sections: (a) does the data support the measurement model and confirms the hypothesis; (b) the magnitude and direction of the effect of crime/corruption on social capital; and (c) additional findings of the impact on key democratic constructs. In the final chapter the results of the analysis are put into context by showing the magnitude of crime and corruption in Mexico in recent years, by showing additional hemispheric data to discuss if the results can be generalize and to provide a prospective discussion of the future stocks of social capital in Mexico. In the last section of this chapter we conclude by providing a synthesis of the main findings.

Chapter 2: The Power of Social Capital

"The new currency won't be intellectual capital. It will be social capital -the collective value of whom we know and what we'll do for each other. When social connections are strong and numerous, there is more trust, reciprocity, information flow, collective action, happiness, and, by the way, greater wealth."

James Kouzes, Chairman Emeritus of Tom Peters Company.

2.1 What is social capital?

A relative new comer to the social sciences, the concept of social capital has gained popularity and momentum. This has generated a substantial amount of scholarly research dealing with the subject; however we are yet to reach a clear understanding of what it is, how it operates, how it is created and what are its outcomes. The chapter is guided by these four general questions and has two main objectives: to frame my theoretical and methodological approach; and to introduce the link between crime, corruption, social capital, and democracy. While the former defines the focus and scope of my research, the later justifies its theoretical significance.

As I will show, the use of the concept has been the focus of recent research in multiple fields of study, addressing a wide variety of topics, relying on different methodological approaches at different levels of unit of analysis. Social capital has been treated as a dependent as well as an independent variable (Coleman 1994, Brehm and Rahn 1997, Seligson 2005, Paras 2007); in the earlier literature it had been studied in the developed world (Putnam 1993, Brehm and Rahn 1997, Minkoff 1997, Newton 1997, Stolle and Hooghe 1998, Paxton 1999) with a

growing literature that focuses on the developing world (Narayan and Pritchet 1999, Grootaert 1999, Krishna and Uphoff 1999, Krishna 2002) and in few cases as a multi-country endeavor (Knack and Keefer 1997, Stolle and Rochon 1998, Seligson 2005,)[9]. The words of Paldam serve to illustrate the apparent expansion and explosion of social capital: "One of the main virtues of social capital is that it is close to becoming a joint concept for all social science." (2000: 631) Whether that should be view as a virtue or a weakness is debatable.

In addition to this introduction, the present chapter is organized into eight sections. The first one is a general review of the concept of social capital that includes the concept's origin, the most influential definitions found in the literature, the apparent consensus around the main components of the concept and a discussion of its power and weaknesses (i.e. its dark side). The second section defines the scope of my research as it lays out my approach and use of the concept. The third is an in-depth discussion of the power of *trust*, which will be presented as a key component of social capital. The following sections deal with two important topics: why is social capital important to the quality and strength of democracy, and what is its conceptual and causal link to crime and corruption. The next section is a general discussion on how to measure social capital, and the next to last provides some general indicators of social capital in

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[9] The Social Capital Gateway: Resources for the Study of Social Capital provides a good example of the rapid growth of this field of study. It is an internet page that shows the most important resources on the topic including books, journals, dissertations, digital libraries, web sites, directory of researchers, research by geography, career, courses and conferences. It divides its huge electronic reading list in six different topics and many subtopics. This Internet site (www.socialcapitalgateway.org) is edited by Fabio Sabatini of Sapienza University of Rome.

Mexico. On the final section I conclude the chapter and present a brief description of the expected findings of my research.

2.2 The Concept of Social Capital

2.2.1 Origins and seminal authors

Although its origins can be traced back to earlier theorist such as de Tocqueville, Durkheim or Weber (Healy and Sylvain 2001); Bourdieu, Coleman and Putnam "have generally been credited with introducing it to the theoretical debate" (Baron, Field and Schuller 2000: 1). From a Marxist perspective, Bourdieu has a normative conception and views it as an exclusive asset of the privileged. Coleman (1988) uses a game-theory approach and is mainly interested in the concept as a determinant of human capital. Putnam provides a path dependent explanation of social capital and is responsible for the recent popularity of the concept by providing robust evidence of the declining stocks of social capital in the United States in his widely read book *Bowling Alone*[10]. In the seminal work of these three authors, social capital is understood as a *resource to collective action* that produces different —and mostly positive— outcomes (Stone 2001: 4).

I believe that social capital has gained theoretical relevance for two main reasons. The first one is Coleman's contribution of placing it as a link between explanations of individual action provided by apparent extremes theories of social

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[10] See Field 200 for a comprehensive review of the authors.

norms and rational choice (Coleman 1994). The key to his argument is that social capital helps to explain cooperative solutions between individuals. As Field points out, where 'mutually reinforcing relations' exist, reciprocity and sanctions increase the likelihood of cooperative solution in game theory (Field 2003). The idea of social capital is appealing because it places the emphasis at the *micro* level of individual interaction —departing from the macro-emphasis of classical writers—but at the same time it represents a reaction against the consequences of increased individualism (Field 2003: 7-8). The second reason has to do with Putnam's ability to raise a yellow flag on democracy by pressing the *Tocquevillian button*; in other words creating awareness of the decrease in civic engagement and its consequences for democratic regimes and the quality of democracy. The findings of both authors can also be viewed as having far reaching effects. While Coleman found a strong and positive effect on human capital, a key determinant of development, Putnam showed it importance on institutional and social performance.[11] These two authors should be placed at the origins of the theory of social capital. Bourdieu's impact has been more limited but it should not be discarded completely, as it can be a helpful qualifier when discussing the allocation of the benefits of social capital trough an individuals network.[12]

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[11] Putnam's seminal work, "Making Democracy Work: Civic Traditions in Modern Italy", compares different regions of Italy according to their historical disposition towards cooperation. He finds that the level of culture/values of trust and cooperation of each region determines the future performance of society and institutions.

[12] This refers in general terms on how an individual benefits from having a network of contacts. Comparatively speaking trust, reciprocity and participation have been ways of operationalising the concept of social capital that have been used more frequently than the measurement of an individual's "network".

Coleman introduced the concept as a "particular kind of resource available to an actor" therefore qualifying it in the family of *capitals*. He defined it as "a variety of different entities, with two elements in common: they all consist of some aspect of social structures, and they facilitate certain actions of actors ... within the structure" (Coleman 1990: 98). Putnam is by far the most influential proponent of social capital, but unfortunately —and that is part of the conceptual shortcomings of the term—provides a general definition that has spawn in many directions. Putnam defines social capital as "connections among individuals –social networks and the norms of reciprocity and trustworthiness that arise from them" (Putnam 2000: 19). Coleman allows for all sorts of norms of behavior within all sorts of social organization (i.e. entities) to be part of the construct of social capital, however the literature focuses mainly on the components included in Putnam's definition: two norms (trust and reciprocity) within forms of social organization (formal or informal) that produce cooperation. Field (2003: 40) reminds us that these components have been of scholarly interest for a long time; however the specific contribution of social capital is to view them as resources. The norms constitute the *cognitive* dimension of the concept and the networks the *structural*. But even within the smaller scope of the two dimension-three components definition, we find ourselves in open territory as each component presents a potentially complex object of analysis. This is why some of the critics of social capital argue that the concept has been stretch conceptually becoming diffuse or too general. The dimension and components of the concept will be discussed in greater detail later in the chapter.

Empirically trust and networks have been measured and analyzed in very different ways. Quantitatively speaking, the theoretical and empirical focus of the social capital literature has addressed these two components far more than reciprocity. This has maybe to due with the fact that in relative terms reciprocity is a harder concept to grasp and/or measure. A significant part of the literature focuses exclusively on one of the three components and the robustness of empirical evidence varies greatly across authors. All of this has produced a growing body of loosely connected findings about specific aspects of the components of social capital and their impact on diverse (and again loosely-related) variables. To use the language of Kuhn, we could consider that we find ourselves in the early stage of social capital's route to normal science. Hayes suggests this in an article that presents eight specific criticisms[13] about social capital: "is not an original concept, but rather a rebranding of a loose collection of themes related to trust and group participation from social psychology, sociology and economics – it isn't a theory" (2009, 8). There is however, a great deal of convergence around two findings that will be discuss later in this chapter: (a) trust is a powerful predictor of behavior (both positive and negative) and institutional performance; and (b) the presence and quantity of trust and networks are associated with well-being. To me these two findings can be taken as the main *building blocks* of knowledge in the field of social capital. Putnam pointed us in the right direction by *rediscovering* the importance of trust and social

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[13] The eight criticisms are: a concept based on a misleading metaphor, it isn't social, it isn't a theory, is tautological, it is difficult to show which direction causality originated, it is impossible to measure, has a dark side and is difficult to operationalise. All of these are address to some degree in the dissertation.

interactions. The next section presents additional conceptualizations of social capital by discussing the work of additional authors.

2.2.2. Other influential definitions of social capital

In order to deal with the problems of a loosely defined and an all-inclusive subject of analysis, authors have come up with definitions of social capital that are tailored to their specific and narrow inquiries. This is perfectly fine, but it has not necessarily contributed to our understanding of the subject nor has produce plausible generalizations that can be tested and replicated in different settings. The work of Krishna (2002) is a good source to find the alternate definitions and measurements of the term. Her work shows how social capital has taken many different forms, from quality of associational life (Narayan and Pritchet 1999) to values that govern interaction (Grootaert 1998), or collective efficacy (Sampson et al. 1997). The outcome of social capital is also of great variety in scholarly research: confidence in political institutions (Brehm and Rahn 1997), per capita household expenditure (Grootaert 1998), neighborhood violence (Sampson et al. 1997) or poverty (Morris 1998) are a few examples to illustrate the point.

The World Bank has been an important promoter of knowledge generation on the topic. Its interest appears to have spawned from the potentially beneficial impact that social capital has on development. Grootaert and Bastelaer, salient authors of the bank's Social Capital Initiative, clearly identify the two dimensions of social capital in their definition; however in line with Coleman, the cognitive aspects are not limited to trust and reciprocity. They define social capital as: "institutions,

relationships, attitudes, and values that govern interactions among people and contribute to economic and social development" (2002: 3-4). While they are straight forward in regards to their interest in outcome (i.e. development) their definition could be classified as indefinite. Such vague conceptualization begs the question of clarification: which relations, which attitudes and which values? While we may find that several attitudes beyond trust and reciprocity do have a significant impact on interactions between individuals, it is desirable to set a limit on the scope of the cognitive aspect of social capital. However, what is crucial about Grootaert and Bastelaer definition is their clarification that the dimensions of social capital should be understood as a (partial) determinant of social relations and its outcomes.

Stone also provides a general definition of the concept but an important and useful one because it provides a minimum common denominator: "social capital can be understood as a *resource to collective action*, which may lead to a broad range of outcomes" (Stone 2001: 4, italics mine). While the first part of this common denominator places the concept within the family of capitals (along with others such as financial, physical and human capital), the second qualifies it. In other words, the concept needs to be treated as a kind of capital, and its existence can have a wide variety of consequences. These two facts have led to at least two important debates. Borrowing from Krishna, the first debate can be called the *detonation* of social capital, which revolves around a key question: Are the three components of the concept a necessary condition for social capital to exist? The second debate is what has been called in the literature the 'Dark Side'

of social capital. The first debate is addressed in the following lines and the second discussed at the end of this section.

Whether I put it them to use or not, my knowledge –a crucial component of human capital-- or my monetary assets are worth something. The same should be said of social capital. I understand this to be the *resource* component in Stone's 'resource to action' conceptualization. The second part of the equation, the *action*, is more complicated. Several authors seem to place the emphasis or existence of social capital exclusively of the condition of *being used*, in other words when it is producing an outcome; Paxton, Putnam or Grootaert for example. Others like Krishna suggest that social capital can have a latent state and that some detonation (i.e. agency) is needed for it to become productive. According to Paxton "When social capital is *present*, it increases the capacity for action and facilitates the production of some goods. When *active*, it facilities various ends for the members of a group and for the group as a whole. Social capital could, however, remain *latent* within the group and be viewed as potential energy." (Paxton 1999: 93, my emphasis) However she argues that the two components are a necessary condition for social capital to be productive and limit the existence of social capital to its productive state (Paxton 1999: 95). I disagree with this point of view, along with Krishna, Field and Paldam. For me social capital exists also in its latent (potentiality productive) state, when any of the components are present and even if the others are missing. *Per se* value is an

attribute of the family of *capitals* regardless of its use. The following are the additional characteristics of this family that apply to social capital[14]:

- Productive: it can be used to produce other goods or services;
- Result of labor: individual or group work generates it;
- Result of savings: individuals set apart a part of their time or other resources to foster relations and create networks;
- Accumulative: can be stocked; and
- Finite: it is not constant or permanent.

Arrow (1999) argues that three additional characteristics are implied in the term capital and that are not present in social capital: longevity (i.e. extension in time), deferred benefits in time and alienability. I agree with him on the last one but not on the first two; however one can make the case that the structural dimensions is indeed "referable" —and in this sense alienable—between individuals. It is important to mention here that some authors like Parts, consider that both human and social capital loose value when they are not in use (2010). This *degradation* could be considered as an additional characteristic not necessarily present in others types of capital. It is perhaps clearer if we understand social capital as a relational construct: "It can only provide access to resources where individuals have not only formed ties with others but have internalized the shared values of the group" (Field 2003: 139)

In my view, the different components of social capital are precisely that –specific characteristics– and they do not need to be simultaneously present or in use to be counted as a stock or asset of an individual, a group of individuals or society

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[14] For more information see: Boldizzoni (2008) and Hennings (1987).

as a whole. Just like we can determine the financial wealth of a person by counting her/his portfolio of assets (e.g. properties, savings, investments, etc) we can also determine the wealth or stocks of social capital of an individual by determining her/his possessions of trust, reciprocity and networks. This view allows for social capital to be *counted*, another important quality of the family of capitals. "Social capital can be termed capital in so far as it gives rise to resources that can be deployed in order to enable actors – both individuals and groups – to pursue their goals more effectively than they could without it." (Field 2003: 138)

Once accounted for, additional qualifiers are useful to determine the potential of social capital. One possibility is to take Paxton´s idea of *per se* value of social capital in a latent state and separate it by dimension. The result is set of four categories of productivity shown in Figure 2.1. Societies with individuals with high trust/reciprocity and high participation in networks or organizations would be classified as active in terms of social capital use and hence the most productive and efficient. On the opposite extreme we would have unproductive societies with low or non-existing social capital. The other two categories would be classified as potentially productive but inefficient; however those societies with high trust maybe viewed as of higher potential than those with low level of trust[15]. Within this categorization my arguments will be that in Mexico: (a) the great majority of the stocks of social capital are found in cell "B" in a inefficient state but

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[15] Paxton suggest that social capital is only present in category "A" of Figure 2.1. My contribution is to recognize social capital and qualify it in all four categories.

with high potential to be detonated; and (2) crime and corruption threaten to move the stocks of available social capital from "B" to "C".

According to Groeter and Bastelaer (2002) social capital works on two continuums, one has to do with the level of impact (micro to macro) and the other on the meaning of the concept (structural to cognitive). Any group activity (i.e. social networks) belongs to the structural category and any aspect of trust to the cognitive. In their classification reciprocity operates everywhere. Thus we end up with a useful map of social capital that differentiates the micro and macro level impact of trust and networks with reciprocity *dancing* around all over the place.

Figure 2.1: Categorization of the productivity of social capital

		STRUCUTURAL DIMENSION Objective Associations	
		High	Low
COGNITIVE DIMESNION Subjective type or ties (trust and reciprocity)	High	(A) Productive and efficient	(B) Productive but inefficient. High potential.
	Low	(C) Productive but inefficient. Low potential.	(D) Unproductive: Low or Non existent

Source: adapted from Paxton 1999

This map provides better clues on where to look for social capital, however because of the nature of the classification it does not solve the problem of diffuse conceptualization. For the authors structural manifestation can include any type of interaction among people (formal or informal networks) for any type of purpose

(social, economic, cultural, etc). The cognitive aspect is also very general as it includes hard grasping constructs such as values, norms, and trust. This conceptual generalization present two problems; on one part the components can include practically every type of human interaction, and on the other we have the complex interconnectedness of the components of social capital that is not solved by providing a clearer or more complex maps of categorization[16].

Another influential set of scholars such as Woolcock (2001), prefer to use a different *map*. They rely on a more parsimonious classification of social capital around three basic trust-centered forms of the phenomena: bonding (trust in family or ethnic groups), bridging (trust in others) and linking (trust within institutionalized interaction)[17]. These types of conceptualizations can be defined as cognitive or trust centered. However in such definitions of the concept, linking can be viewed as similar to networks/structures but given greater emphasis on the importance of trust and its performance. The role and importance of reciprocity is not evident under such schema. The discussion is complemented by Granoveter (1973) by qualifying the intensity of the relations: "the strength of a tie is a ... combination of the amount of time, the emotional intensity, the intimacy ... and the reciprocal services which characterize the tie". I will later argue that crime and corruption negatively impact all of these determinants of a relation,

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[16] For example, trust is both a prerequisite and a result of interaction: if I trust I participate and if I participate I increase (or decrease) my trust in others. Reciprocity is an incentive for interaction and trust (I have future benefits of trusting you and thus I decide to cooperate/participate) but it can also be a prerequisite (I trust/interact only if I know for a fact that is beneficial for me). Thus social capital becomes too many things at once.
[17] Based on the influential work by Woolcock and Healy many posterior authors have treated these types of trust as types of social capital. For me bonding, bridging and linking represent "subaccounts" of the trust component. See Figure 2.2.

thus hurting social capital. An additional contribution of Granoveter is the classification of ties as strong, weak or absent that can be positive, negative and/or asymmetric (1973, 1361). The last type could play an especially important role in *cleintilistic* political systems such as Mexico in the last half of the XIX century under the PRI rule.

Many other influential definitions of social capital can be found in the literature; those by Healy, Wolcook and Cote, and Paldam are good examples. Most of them provide a general/normative definition and are usually cognitive or structural laden. In order to focus the scope of my research it is useful to consider a more concise definition of the concept that is limited to the two dimension-three component scope and avoids the use of *catch-all* concepts that include multiple values/norms in the cognitive dimension. This is viewed as a practical minimum common denominator.

2.2.3 Consensus: two dimensions, three components

As it was mention above, the main proponents of the concept of social capital coincide at what appears to be a minimum common denominator of the term with two dimensions (cognitive and structural) and three components (trust, reciprocity and participation)[18]. The argument for trust and reciprocity as the main (or exclusive) components of the cognitive dimension can be made from rational choice theory. From this perspective the two components serve as *lubricants*[19] in social interactions that increase the "propensity to play the cooperative solution

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[18] Kaasa and Parts (2008) provide a precise diagram of the two dimensions conceptualization with a breakdown of components but fail to include "reciprocity" in the cognitive dimension.
[19] Paldam characterizes social capital as "the 'glue' generating excess cooperation" (2000: 629)

even if it is not the (Nash) equilibrium" (Paldam 2000: 637). In other words, if individuals trust each other and have some expectations of mutual retribution, then it is likely, and in their interest, that they will cooperate when they interact. Many other cultural traits could be considered as valuable for social relations or social cooperation such as tolerance, compromise, and responsibility. However the literature has identified trust and reciprocity as key ingredients for social capital. As pointed out before, in its origins and "Despite the differences, [Bourdieu, Coleman and Putnam] ... consider that social capital consists of personal connections and interpersonal interaction, together with the shared sets of values that are associated with these contacts." (Field 2003: 13). However more recent literature has produce –conceptually or empirically– a reduction of scope in the cognitive dimension by focusing mainly (and almost exclusively) on trust alone or both trust and reciprocity.

The structural dimension is more clearly define and identifiable. It refers mainly to the networks of relations or groups in which an individual belongs or participates. Its operationalisation or accounting can be achieved in many ways such as available networks, membership or participation in formal or informal groups, network of personal relations by type (strong, weak or absent) or voluntary work.

As suggested, in this reduction of the scope of the concept it is assumed that the dimensions and components are correlated in a positive way. For example, the more an individual participates in a group the more it creates trust amongst the group members; or the more an individual experiences reciprocity when interacting with others the more likely s/he will increase her/his trust on them.

This interaction between dimensions/components can be viewed as a mutually interacting and/or reinforcing system[20].

Defining social capital as a two dimensions-three component concept has two main purposes. The first is that it clarifies and limits its scope allowing us to provide a concise definition of the term. The second is that it helps its operationalisation because it provides a clear guide of *what* to measure in empirical analysis of social capital. It follows that we could provide a potentially exhaustive set of accounts that could measure the stocks of social capital of a given society. Illustrated in Figure 2.2 is an example of an accounting system for a two dimension-three component definition of social capital. As illustrated in figure 2.2, some (sub) components of social capital are perceptions, some are experiences and some are behaviors. It is in this sense that this type of capital can be more complex and have greater social, economical and political implications than other types of capital. The purpose is not to try to provide a comprehensive list; such endeavor would be quit difficult[21], but rather to show that the concept consists of multiple (sub) accounts[22]. Similar to how we would construct a detail accounting of the stocks of financial capital where we would need to consider cash as well as long and short-term investment, fixed assets, debt, etc.

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[20] An interesting example of the interaction between components is provided by Shah et. al. (2010) in their 4X4 *interactive social capital matrix* where a 16 interactions system is produced by the relation of four key stakeholders: Individuals, Community, Organizations and State.
[21] The list would be potentially very large, as different authors have included different proxies or measurement of what can be counted as social capital. One author, for example, considers parental involvement as a form of social capital of children (see Hango 2005). For some this particular indicator could be included as a sub-account in the structural dimension.
[22] See Narayan and Cassidiy (2001, 67) for a larger inventory and list of potential accounts with twenty-seven subaccounts.

I will use a two dimension-three component definition as a practical way of defining, limiting and orientating the research. As suggested above, social capital can be a double-edge sword, before discussing the definition of the concept to be use here, I will discuss in general terms its positive and negative effects.

Figure 2.2. An example of an integral accounting system for a two dimension-three component definition of social capital

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1. Cognitive Dimension
    a. Trust
        i. Interpersonal trust (bonding and bridging)
        ii. Institutional trust (linking)
    b. Reciprocity
        i. Perceived reciprocity
        ii. Received reciprocity

2. Structural dimension
    a. Membership in formal organizations
    b. Membership in informal organizations
    c. Participation in formal organizations
    d. Participation in informal organizations
    e. Network of personal relations
        i. Strong ties
        ii. Weak ties
    f. Voluntarism

2.2.4. The Power of Social Capital

Many beneficial outcomes can be achieved from a healthy degree of trust and reciprocity between individuals and from an active and organized civil society. I provide here some examples of the positive impact of social capital on

society, democracy and the economy to illustrate the power of social capital. In the next section the *dark side* of social capital will be discussed.

The most salient category of the beneficial impact of social capital is the body of work linked to the political culture theory, the so called "civic voluntarism model" initiated by Toqueveille and explored empirically by authors such as Almond and Verba, Putnam, Ingleheart and Seligson and pursued in the agendas of international institutions like the World Bank. One of the main theses of the earliest theorist of social capital is precisely that trust and civic engagement enhance democratic attitudes in general (Coleman 1990, Putnam 1993), and there are specific examples of this such as its impact on political tolerance (Cigler and Joslyn 2002).

But there is a plethora of additional scientific explorations in the field of political science, sociology and economy --most based on empirical findings-- that show a wide variety of positive effects. The following are examples of these scholarly work that illustrates other positive effects that have been explored: economic growth or economic development or sustainable development (Grootaert 1998, Woolcock 2001, Beugelsdijk and Smulders 2009, Skidmore 2000); effects on government efficiency (Boix and Posner 1998); transition to democracy (Paldam and Svendsen 2000); impact on technical progress and economic growth (Fukuyama 2001, Antoci et. al. 2009); poverty alleviation (Woolcock and Narayan 2000); how cognitive social capital benefits the adoption of corporate social responsibility of firms (Sacconi and Degli 2011); happiness and life satisfaction and living standards (Sarracino 2001 and Pugno and Verme 2012, Adriani and

Karyampas 2010, Groot et. al. 2007); and personal health (d´Hombres et. al. 2006).

It is worth mentioning that there is a growing literature that focuses on how the digital world (i.e. online social networks) are shaping the interaction between individuals and with what consequences (see Antoci et. al. 2011a and 2011b for examples) many of which are treated favorably because of the growing networks formed on line. After all, nowadays terms like "social networks" refer to the growing interaction of individuals on line.

All of these examples are evidence of the potential benefits of social capital. I do not mean to take a normative approach towards the concept, but rather acknowledge that it is potentially beneficial that have been documented extensively.

2.2.5 The Dark Side of Social Capital

As it was mentioned above, if we are dealing with a concept that includes the term *capital*, we most assume among other things: (a) that its existence and quantity can be determined; and (b) that such stock of capital has a value per se, even when it is not being use. An additional characteristic of the family of capitals, with two important implications, is that its use can have positive or negative (sometimes both) consequences for an individual or a group of individuals. The first implication is straightforward: social capital can be use for good or for evil. The drug cartels or organized crime can be used to exemplify this. Individuals efficiently operate these networks with a significant degree of

trust amongst them. The Medellin Cartel in the early 90´s or the exponential growth of organized crime in the north and center of Mexico in recent years are examples of this.

The second implication has to do with how benefits are distributed among a society and it could be viewed as negative when it increases social inequalities. The words of Paldam illustrate this point: "Social capital may turn out to be conservative or even harmful in some cases, even if it is productive and benign in other cases" (2000: 635). "Social capital can promote inequality because access to different types of networks is very unequally distributed." (Field 2003: 74,) This is because a payoff can be determined by the quality or specific weight of the connection, which is especially true in hierarchical societies (Portes 1998 and Lin 2001). However we should warn that this is a network biased conception of social capital and we could make a counterargument that an increase in capital maybe more beneficial to lower income individuals (or proportionally more so to less connected individuals) that are also likely to bear the cost of unequal access to networks. This is partially the view of agencies like the World Bank that perceive the high potential of social capital when new networks are created targeting lower income communities. If there is evidence to recognize that social capital is potentially beneficial and it can be of crucial relevance for the developed world, then it is important to know how and to what extent existing stocks of social capital are depleted by crime and corruption. This will be discussed in greater length when we explore the relation between social capital, democracy and development later in the chapter.

In sum the harmful effects of social capital can contribute to reinforce inequality or support negative behavior (Field 2003). The literature uses the term "dark side of social capital" for situations where social capital has these or other kind of negative impacts. In my approach social capital is viewed in its positive form, in terms of cooperation efficiency that enhance benefits for individuals but we should recognize that such cooperation could have positive or negative consequences for some individuals or even as a total outcome for a given society. And the same can be said of other types of capitals; in fact all capitals should be viewed as *double-edge swords*.

2.3 My definition of social capital

I would like to propose a definition of the concept that (a) can clearly guide the research agenda; (b) that is contained within the two dimension three components limits; and (c) that focuses on the actual and potential productivity of these components. Under such guidelines, and as a starting point, social capital would be defined simply and straightforward as the stocks of trust, reciprocity and networks found on a given social unit in a certain point in time. A quantity: a non-normative and neutral calculation of stocks of certain attitudes and interactions between individuals. But further, I propose to qualify this definition by viewing trust as the *currency* of social capital, reciprocity as the *incentive* to invest that currency and networks (formal and informal) as places where

investment can take place with the optimal outcome of such investment being cooperative behavior and/or increase value of the currency[23].

This proposed definition allows for social capital to exist, at least in a latent state, when any of its components are present.   Additionally, under such conceptualization the importance of trust is highlighted as a cause of cooperative behavior and network formation (implied in Paldam´s work) but it also recognizes mutual causation between the dimensions and components. It also helps explains how the trust-reciprocity and trust-network complex are determined and/or determine the individuals expected (and real) amount of benefits or payoffs. Even tough trust is not a necessary condition for common action (i.e cooperation between individuals) –an interaction does not necessarily imply trust- - it can be argued that it does increase the likelihood of such cooperation.   The same can be said for reciprocity.   In other words, for two individuals to act together, I do not have to trust and individual or believe that my actions may be repaid in the future.   However, trust and reciprocity do increase the likelihood, intensity and future of cooperative behavior between individuals.   This can be taken as an axiom in social capital theory. Also implied in the definition, and a somewhat generalized agreement found in the literature, is the assumptions that activity within networks (i.e. social interaction and cooperation) produces trust.

As stated up to here, my definition of social capital is neutral, recognizes a latent state of social capital and depicts the type of interactions between dimensions/components as recursive or reinforcing or of mutual causation (see

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[23] Such characterization is influenced by Lin´s definition of social capital as "an investment in social relations with expected returns in the marketplace" (2001, 6) and also by the concept of "credit slips" found in Coleman (1994).

Figure 2.3). Additionally it has the benefit of guiding the measurement of the stock of social capital of a given society on a certain point in time. If we can define what constitute each of the three components or sub-components (see Figure 2.2) we can then try to operationalise them in order to provide a precise empirical measurement of each. In part my work constitutes an in-depth proposal of an integral measurement of social capital using survey research. A detail discussion on the validity and reliability of the main instrument used to test my hypothesis is provided in the next chapter.

Figure 2.3: Causal relation between the dimensions and components of social capital

Cognitive Dimension

Trust

Reci-procity

Structural Dimension
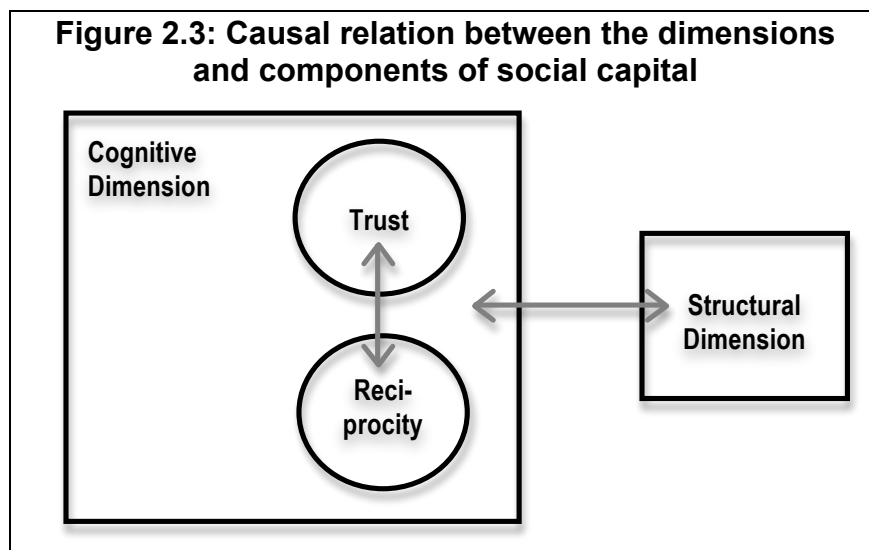
2.4 The Power of Trust

Barber defines trust as "socially learned and socially confirmed expectations that people have of each other, of the organizations and institutions in which they live, and of the natural and moral social orders, that set the fundamental understanding for their lives." (Barber 1983 163). Such conceptualization implies three characteristics of trust: (a) individuals have some

knowledge and expectancy/certainty of how the others will act when interaction occurs; (b) it is a matter of degree; and (c) it is condition to the specific to the subject of the interaction. This last point is especially important because it defines trust as *particular* and it implies that an individual can trust some (individual or institutions) but at the same time distrust others. Trust as Rotter points out "is specific rather than generalized" (1971: 444). Individuals do not have a single level of trust that defines their interaction with every object or subject they encounter.

The work of Tway, which focuses on trust in organization, is a critic of those who treat trust as a single entity or a single concept. His definition of the concept is simple and straightforward: "state of readiness for unguarded interaction either with someone or something" and he continues, "We even trust that our perceptions of what is real are truly 'real'. Without this unguarded interaction ... life would be impossible" (1994: 8-9).

A lot of work has been conducted using a measure of generalized trust included in the earlier versions of the World Value Survey. Even thought the OECD qualifies this definition an acceptable proxy of trust, Field is critical of such proxy but recognizes that "the apparent simplicity of measure can be extremely misleading" (2003, 125). I am also critical of such measure for several reasons but mainly because the definition of trust indicates that it is particular to the interaction in questions and therefore it cannot be general (or generalized)[24].

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[24] Additional arguments for the measurement of generalized trust uses in the WVS are that it has range restriction problems, the risk of measuring a potentially complex (in terms of variability in intensity due to specificity) concept with a single indicator and that are its response options are not mutually excluding.

Uslaner argues that trust has a moral foundation and suggests that the generalized trust is the best indicator because it reflects "positive views of strangers, of people who are different from ourselves and *presume that they are trustworthy*" (2002: 2, italics in original). This is perfectly fine but it ignores two important facts: (1) once you interact with a stranger he becomes a familiar subject for which a specific level of trust will be bestowed based upon experience and perceptions; and (2) most of our daily interactions are with people that are familiar with us, not with strangers. Hence a single item measurement at the most generalized level will only capture a fraction of the general trust between individuals. The biggest problem with using a single measure of trust can be summarized by the words of Chun and Campbell: "When a measure is either less than fully refined or not linked with substantive theory, the data which accumulated from its continued use are likely to be coarse in quality and equivocal in meaning.   The accumulation of studies in turn increases the pressure for further use of the same measures, thus completing a spiraling cycle" (Chun and Campbell 1974 – cited in Tway 1994). I subscribe to this point of view and use for this dissertation, a multiple-items measure of trust that is relational specific; I also provide multi-item measurements of other key variables of my research.

Why is trust so important within the two-dimension-three-component definition of social capital? On the one hand, it is an easier concept to define and measure that *reciprocity*. But mainly it has to do with the fact that trust is a crucial factor of social relations.   "Perhaps there is no single variable which so thoroughly

influences interpersonal and group behavior as does trust ... trust acts as a salient factor in determining the character of a huge range of relationships" (McConkie 1975 cited in Tway 1994). Fukuyama offers a definition of trust that has clear social implications for the three basic forms of trust. He defines it as the "expectation that arises within a community of regular, honest and co-operative behavior, based on commonly shared norms, on the part of other members of the community…" (1995: 26). Rotter confirms its importance by stating that "The entire fabric of our day-to-day living, of our social order, rest on trust—buying gasoline, paying taxes, going to the dentist, flying to a convention—almost all of our decisions involve trusting someone else. The more complex the society, the greater the dependence on others" (1971: 443). These statements clearly define trust as a powerful predictor of human behavior.

The social capital literature provides evidence of the positive outcome of high levels of trust at the individual or aggregate level. The words of Putnam serve to illustrate this: "Other things being equal, people who trust their fellow citizens volunteer more often, contribute more to charity, participate more often in politics and community originations, serve more readily on juries, give blood more frequently, comply more fully with their tax obligations, are more tolerant of minority views, and display many other forms of civic virtues" (2000: 136). It is precisely because trust is potentially a crucial explanatory variable of many concepts that we need to measure it with precision employing valid and reliable indicators.

To finish the review on the importance of trust it is relevant to point out that there are several types of trust as it was stated above, and that it is not a necessary condition, but rather a qualifier, for interactions to occur. According to Stone there are different types of trust, the most important being: familiar, civic (i.e. as individual relates to as citizen), social (generalized, relate as strangers) and institutional (2001). Paxton presents a different but comparable classification: between the individual to (a) another individual; (b) another individual in a group setting and (c) to a collection of individuals (1999, 98). As stated above, I believe that social capital can exist in a latent state and as such no actual interaction has to occur in order for trust to exist; this makes possible to measure trust as an attitude (or even as a perception). This is important because when we measure trust in a survey, we are capturing an attitude defined by past interaction/experience that will determine future interactions. In this sense, trust can be a partial indicator of the performance of available networks.

2.5. Social capital and democracy

The positive link between trust and democracy was suggested in the previous section. This section covers a more general discussion of democracy and its relation to social capital with a focus on the Latin America region and later in Mexico.

The way we define democracy has important consequences for theory building and research design. In defining democracy the main challenge is to find a balance between analytic differentiation (diversity) and conceptual validity

(setting standards) while avoiding the problems of conceptual confusion and lack of consistency when assessing causality (Collier and Levitsky 1997). While there is not a single definition of democracy most of the literature accepts "electoral democracy" as the minimum standard for differentiating a democratic from a non-democratic regime. For many, a better minimum standard is found in Dahl's definition of polyarchy (1971). In comparative research, after setting a minimum standard to separate democratic from non-democratic regimes, different components serve to classify the type of democracy of each country (illiberal, hegemonic party, constitutional defect, etc.). After all, democracy is an ongoing process, as Schmitter states "the label democracy hides a continuous evolution in rules and practices and an extraordinary diversity of institutions" (1992: 444), and as Farer qualifies, democracy is a "matter of definition" but it is also a "matter of degree" (1996: 3)[25].

Two important questions of the literature on democratization are: what causes democracy (i.e. correlates of democratic stability)[26] and what is the state of democracies in Latin America[27] (i.e. the quality of democracy)? To answer these questions there is a growing dialogue within and between the main schools of thought: economic performance, political institutions and representation of social groups, and political culture/civil society[28]. Such conversation is producing better

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[25] Lowenthal provides an example of this when he cautions that in Latin American elections are the norm "but their meaning and validity vary greatly" (1997: 59).
[26] A good summary of the key causes is found in Lipset (1994).
[27] I will focus my review of the literature of democracy in Latin America.
[28] Two additional important correlates found in the literature are external factors/international relations (Farer 1996) and mode of transition. These are influenced and/or informed by the democratization (transition) literature: economic and social modernization (Lipset 1994), structural perspective (Collier, Collier 1991) and elite strategic behavior (O'Donnell and Schimitter 1986).

methodologies and complementing and qualifying explanations[29]. As stated above, both the cognitive and structural dimensions of social capital can be taken as important factors of these three correlates.

Studies of democracy in Latin America have revolved around three central questions that are closely related: how did it happen (transition), what is the outcome (state of democratic governance), and what are its chances (consolidation)? The *third wave* of democratization in Latin America was inaugurated with the restoration of democratic institutions in Ecuador in 1979[30]. More than a quarter of a century later "the durability of third wave democracies, once a matter of concern, is now a source of surprise: democratic collapse thus far remains the exception rather than the rule." (Cruz 2003: 88). Democracy in the region has so far, survived severe economic crisis (Mexico and Argentina), political crisis (Peru and Ecuador) and social crisis (Central America, Colombia, Venezuela and Bolivia). However, there are recent events within the region that present question such *democratic normality* in the region, mainly in the ALBA countries. Lowenthal´s warning can be viewed as still valid: "talk of consolidating democracy is premature and misleading … because it implies that democratic institutions exist and need only to be reinforce. This is not the case in most Latin America, where democratic governance is far from assured" (1997: 61). Low levels of economic, social and political institutionalization are indeed a reality in many countries of the region.

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[29] According to Huntington (1997) they are interdependent and play specific roles; according to Inglehart (1997) they should be viewed as mutually supportive causes not deterministic; and according to Dahl (1989) the three correlates are interdependent; and there is not a unique pattern/path of such interdependence.
[30] See Colburn (2002) for a precise record of dates of the transitions of each country.

The concept of democratic consolidation is of problematic nature. While it appeared to be appropriate under the enthusiastic post-authoritarian frame, it soon became obvious that it was a diffuse concept. While most authors agree on Dahl's concept of *polyarchy*[31] as the minimum requirement to start discussing the possibility of consolidation --O'Donnell, Linz and Stepan, Huntington, Schimitter among others-- we find a growing *desencanto* with the term consolidation[32]. We are back studying democracy rather than consolidation. O'Donnell provides the following definition of institution: "regularized pattern of interaction that is known, practiced, and accepted (if not necessarily approved) by actors who expect to continue interacting under the rules sanctioned and backed by the pattern" (1997: 42)[33]. Under such definition institutions and norms are basically the same, and it is in this sense that attitudes such as trust and reciprocity together with behaviors such as civic participation, could definitely impact the degree and

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[31] According to Dahl (1989) there are seven main attributes that characterize polyarchy: elected authorities, free and clean elections, universal vote, right to compete for public post, freedom of expression, alternative sources of information and freedom of association (taken from O´Donell 1996).

[32] According to Diamond (1997), most of the contributors of the literature, converge in a concept of consolidation "as a discernible process by which the rules, institutions and constraints of democracy come to constitute "the only game in town," the only legitimate framework for seeking and exercising political power" (1997: xvi-xvii; the definition is attributed to Linz) . On "Illusions about Consolidation", O'Donnell (1996b), one of the most provocative scholars of consolidation and certainly one of the most important on Latin American democratization, makes two crucial arguments. The first one is that it is not a good idea to mix two highly polysemic concepts. This argument had also been forwarder by Scheduler (conceptual disorder of the term) and by Gunther (double-barreled concept). The second argument points out a key weakness of Linz's "only game in town" definition. He reminded us of the importance of informal rules in the LA democracies. If polyarchy is "embodied in an institutional package" and if informality (due to the presence of the practice of particularism in most of the region) is a key characteristic of Latin American democracies, we have an empirical problem in trying to study consolidation.

[33] My only objection to O'Donnell assessment is his deterministic treatment of particularism in Latin America. He identifies the presence of particularism (rules within the game) within formal institutions (the game) and seems to conclude that we are condemned to live with such norms. For example he argues that electoral process have been sustained by international pressure rather than by local institutionalization. While this maybe true in some cases (Peru after the *fujimoraso* for example) it is not in most.

quality of democracy. Schmitter (1992) is even clearer in linking interaction and behaviour: "social relations [that] become social structures, i.e., patterns of interaction can become so regular in their occurrence, so endowed with meaning, so capable of motivating behavior that they become autonomous in their internal function and resistance to externally induced change".

A great deal of *institutionalization* of democracy then becomes a question of what we do, how we do it, who we do it with. Effective institutionalization is what we need to transit from informal practices to formal norms of democracy and by this I mean (a) clear definition of the "rules of the game" and (b) the ability to enforce such rules[34]. As suggested above, there are conceptual problems in the term *democratic consolidation*, however the goals of democratic consolidation (i.e. expectations of regime continuity) are still present and drive much of the research. Regardless of the label we continue to study the main topics included in the consolidation literature: "diffusion of democratic values, the neutralization of anti-system actors, the removal of authoritarian enclaves, party building, the organization of functional interest, the routinization of politics, judicial reform, the decentralization of state power, and the alleviation of poverty" (Schedler 1998: 2). And others have recently been added to the agenda such as human rights, women and democracy, public opinion, market reforms, and labor (Dominguez 2003).

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[34] A good example of this is the recently created Institute for the Access of Information in Mexico (IFAI). Since its creation (rules) and because is has been successfully enforced (only game) Mexico has witness an increase access/diffusion of government information increasing the accountability of key political actors and institutions.

In terms of the discussion around the *state* of democracy we find additional factors that have an impact on its quality. These factors are usually viewed in a negative form because they are missing or because they have poor quality (or scope) or because they present a threat to the stability of democracy. These include abuse of power, repression, corruption, criminality, political violence (Diamond 1997, Aguero and Starks 1998), ethnic differences (Huntington 1997, Linz and Stepan 1996), "pervasive particularism, delegative rule and weak horizontal accountability" (O'Donnell 1998), and simultaneous political and economic reform (Linz and Stepan 1996). They should not be viewed as a single debate, but rather a complex set of smaller debates on the impact (if exist and to what degree) of specific factors and thus beyond the scope of my research and impossible to cover here[35].

So how does social capital impact democracy? As I have stated above, democracy is an ongoing process with different components that define its presence and/or quality. Mainly the economic conditions, the political institutions and the political culture impact it. In general terms, trust and reciprocity can have a direct effect on the economy, political institutions and in turn these are impacted by social participation. Additionally the cognitive aspect of social capital can be taken as an important part of the political culture of a given society.

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[35] For example the ethnic argument as a potential source of erosion has been a clear source of conflict in Arab countries or East Europe and it can be argued for countries with highly indigenous populations in Latin America, however it is not a given result where cultural differences exist. Recently Huntington made the highly controversial and unempirical argument that "persistent inflows of Hispanic immigrants, threaten to divide the United States into two peoples, two cultures and two languages" (Huntington 2004). There is substantial evidence, -mostly based on public opinion polls like the ones conducted by Roderic Camp or Wayne Cornelius) - that the opposite (integration) is happening, explained in part with what Latin calls "competitive-assimilation game", spawn from socialization and participation theory.

Specifically, the positive link between social capital and democracy has been illustrated by many scholarly contributions (Baron et al. 2000, Paldam 2000). According to Inglehart, "The literature on democratic theory suggests that mass participation, interpersonal trust, tolerance of minority groups, and free speech are important to the consolidation and stability of democracy" (1997: 3). Paxton's (2020) review of the literature shows that there is sufficient empirical evidence between levels of social capital and maintenance of democracy and that trust can have a positive effect on political tolerance and political dialogue within a society and demonstrates that participation trough associations have a positive impact on democracy that is recursive[36]. Social Capital has external and internal effects on democracy[37]. The external effects can be summarized as a mean of social action, in which –using Putnam's words-- "… individual and otherwise quiet voices multiply and are amplified" (2000: 338). The internal effect is concisely defined as a "school for democracy" (Putnam 2000: 339). For all these reasons, from a social capital perspective, the discussion on the institutionalization and quality of democracy can be summarized by the words of Cruz: "no strong civic microfoundation, no strong democracy" (2003: 100). Figure 2.4 illustrates the positive causal relation between the dimensions of social capital and democracy. Additionally the positive link between democracy and development has been documented from several perspectives; by sequence of political en economic reforms (Person and Tabellini 2006), performance of political economic

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[36] Some case studies challenge high level of trust and civil society are necessary requirements for a democracy; see Fatton (1995) and Gibson (2001).

[37] But we most we aware of generalizations: "The mechanism by which social capital is supposed to produce such a range of laudable outcomes are over-general and under-specified" (Li, Pickles and Savage 2003).

institutions (Henson and Jerome 2007) and mainly due to its close relation to Human Capital.

According to Coleman changes in knowledge (and health) determine human capital by providing new skill and abilities for the individual; and changes in trust (and other norms) determine social capital by facilitating cooperative behavior (1998, 100). It appears then that trust is to social capital as knowledge is to human capital. They are both potentially beneficial assets of individuals and/or groups, and they appear to be a partial element of the concept they represent. According to Eve Parts "No country has achieved sustained economic growth without a high level of education" (2003 – 15) --a key component of human capital, and the two concepts can be related in several directions of causality with development (see Figure 2.5).

Figure 2.4: Causal relation between the dimensions of social capital and democracy

Cognitive Dimension

Structural Dimension

Democratic Attitudes
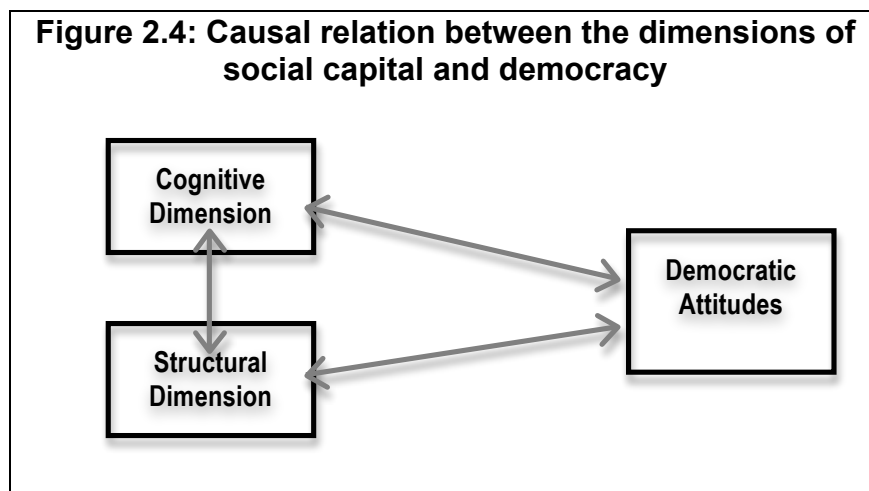
More recently, studies of happiness and quality of life have also included social capital as components or correlates.[38] There is empirical evidence that "in

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[38] For example a Mexican NGO has conducted two surveys on the quality of life that include specific measures of trust and participation, this is an example of how social capital is being

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general, social capital broadly does what the theorist have claimed: to put it crudely, people who are able to draw on others for support are healthier than those who cannot; they are also happier and wealthier; their children do better at school, and their communities suffer less from anti-social behavior" (Field 2003: 45)

Figure 2.5: Causal relation between social capital, human capital and development
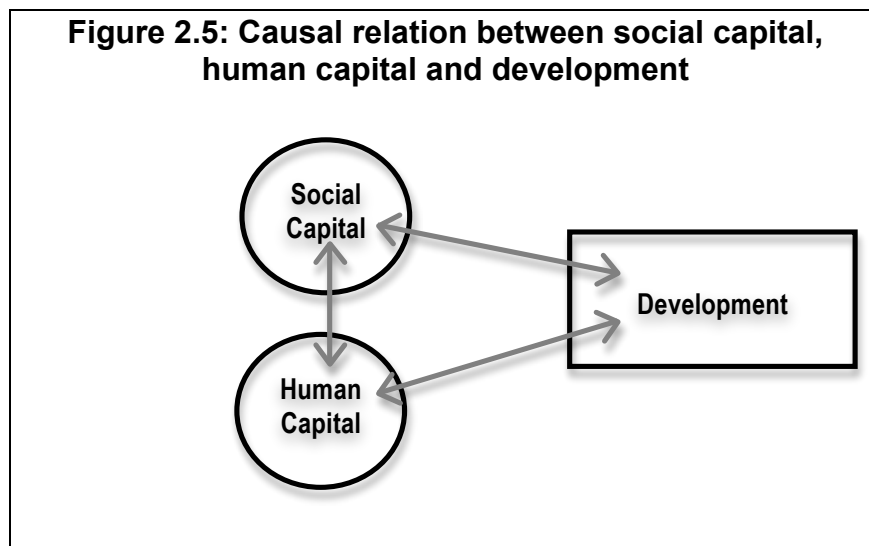
Modern political history in Mexico can be viewed as one with increased civic involvement with the following crucial inflection points: the student movement of 1968, the first state election in modern times won by an opposition party (Baja California 1989), the Zapatista social movement of 1994 (coinciding with the signing of the North American Free Trade Agreement), the electoral reforms on the 90´s, alternation of government in the city of Mexico (1997) and in the presidency (2000)[39]. The growth of the civic society was parallel to the

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considered part of the quality of live and linked to other components of this general concept that tap into the quality of democracy. The surveys can be found in: http://www.jaliscocomovamos.org
[39] For a detail account of the political situation and *sexenal* crisis in Mexico from 1968 to 1987 see Basañez (1990). For a discussion on the political changes in Mexico after the 1990´s see Dominguez (2004). See also Knight (1996) and Hernandez Valdez (2000).

advancement of democracy in Mexico. However in the last decade or so, coinciding with the *push* of civil society, the country has experienced increased levels of crime and corruptions that will be documented in the last chapter that show, But more importantly, data will be presented to analyze that, at the individual level, perceptions and experience of crime and corruption have a negative impact on the two dimensions-three component of social capital. There should be some concern on the quality of democracy in Mexico due to the fact that comparative data shows the decrease of key political culture indicators in Mexico from 2004 to 2012, a period in which the country has experience a public safety crisis. Using data form the Americas Barometer, Paras and Romero (2012) show that from 2004 to 2012 an indicator for stable democracy has decreased from 41% to 26% while an indicator of authoritarian stability has increased from 23% to 34% of the adult population.

I turn now to a central question: how do crime and corruption impact social capital?

2.6 The link between crime/corruption and social capital

A review of the literature conducted by Krishna and Uphoff (1999) identified eight determinants of social capital but do not include crime or corruption[40]. The exploration of this link is fairly recent and an ongoing discussion. The analytical model presented in the next chapter controls for some

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[40] The eight determinants are (1) prior collective action experience; (2) existence of rule of behaviors; (3) extent of participation in decision-making; (4) quantity of sources of information; (5) education; (6) economic status; (7) demographic characteristics; and (8) district history. More recent literature has added additional determinants like inequality/income (Cordova 2006); gender or hours spent using Facebook (Ertan 2011).

key demographics characteristics but it is mainly interested in exploring to what degree the dimensions/components of social capital are being impacted by crime and corruption. Heinemann and Verner group the costs of violence into four categories: direct monetary cost, non-monetary cost, economic multiplier effects and social multiplier effects (2006, 9). The link discussed here should be included in the last category; according to the author it erodes social capital and social fabric. In the following lines we discuss this key relation to my research starting with the link between crime/corruption and the cognitive dimension of social capital.

According to Krishna there are three competing hypothesis on the causal placement and theoretical importance of the concept of social capital. The first category is the Social Capital Thesis, representing the work of those who explain many social phenomenons as being related causally to the concept. Putnam belongs in this category. The structuralist or institutionalist present the opposite argument and treat it as a residual of structures. "The structuralist rejoinder against social capital picks up on what is perhaps the weakest point of the social capital thesis: the issue of origins. How is social capital brought into being, and why do levels of social capital vary from one society to another?" The intermediate position asserts only marginal causality (Krishna 2002: 14-19). My work could be classified as *structuralist* where I view crime and corruption as structures that impact trust and participation. However I prefer what I would consider a fourth category: *interdependence* relation, which is how Inglehart views the relation between culture and structures. This focus also allows for

recursive relations between variables. The discussion of the importance of culture or structures on social capital formation is beyond the scope of my research. In the following lines I review empirical studies that show –with different directions of causality—that there is significant relation between crime/corruption and social capital.

As stated above, trust plays an important role in my research, as it can be the strongest theoretical link between experience and perceptions of crime/corruption and social capital. It seams plausible to think that crime and corruption can undermine current or future stocks of *trust in others* (particularly *bridging,* often referred to as "thin trust") that the individuals have amongst each other. Putnam work shows that at the aggregate level[41], trust is a social necessity with desirable spillover effects, and crime and social trust are negatively correlated (2000: 136-138 and 308)[42]. He states: "higher levels of social capital, all else being equal, translate into lower levels of crime" (Putnam 2000: 308) a similar conclusion is reached by other authors (Halpern 2001, Rosenfeld et. al. 2001, Gatti et. al. 2003, Akcomak and Weel 2008). Arguing a reverse causality, the work of Seligson shows that crime and violence impact the level of social trust and decrease the stocks of social capital (2000). Other authors find the same causal

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[41] However while these findings are important, they are limited and potentially underpowered as he looks exclusively at the relation between homicide and cognitive aspects of social capital. Putnam relies on aggregate level data, and assumes the causal arrow going from social capital to crime. Putnam places social capital as an independent variable impacting several dependent while others make the reverse assumption.

[42] An additional relevant study, as it directly relates to my research question and draws conclusion from individuals rather than aggregates, is the work of Brehm and Rahn. They point out that one of the characteristics of Social Capital is that "is an aggregate concept that has its basis in individual behavior, attitudes, and predispositions", further "[i]t is not a 'community' that participates or builds trust, but the people who compromise that community who belong to civic organizations and acquire positive feelings towards others" (1997: 1000-1003). However their research is limited in terms of the construct measurement.

direction for interpersonal trust (Brehm and Rahn 1997, Seligson 2000). In part the issue of causality has to do with the level of analysis and in general we find that scholars looking at aggregates place social capital as the independent variable but those working at the individual differences level claim the opposite placement.

Since I work with survey research data, and my analysis is at the individual level differences, I will treat social capital as a dependent variable and will test if it is impacted by crime/corruption. I concur "the logical sequence is to define social capital at the micro level, and then reach the macro level by aggregation." (Paldam 2000: 631). However I acknowledge that it is likely that the causal relation between social capital and crime/corruption --as it is the case with other correlates of the concept—is recursive. What it is important is that there is a growing amount of empirical findings that supports the causal link between crime (Seligson 2000, Paras 2007) or corruption (Seligson 2002, Bailey and Parás 2006) on social capital. Most of the work focuses on crime, however it is equally plausible that perceptions of corruption cause distrust in individuals, institutions and expected cooperative behavior (i.e. reciprocity). I test this hypothesis in my model. I also expect that crime will have a greater impact on interpersonal trust and corruption on institutional trust[43]. Institutional corruption empirically showed to be correlated to GDP and trust in institutions (Eve Parts 2003 – 25-26).

We also find evidence that the relation to crime/corruption can be thought of as mutual causations dependent on the level of the analysis. With aggregate data

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[43] Suggested to a degree by Paldam (2000).

we find studies that show that "associational networks have a negative and significant impact on property crimes across" (Buannano et. al. 2006). The reverse causality is used in studies using crime victimization data such as the work of the Saegert and Winkel (2004). They test to see if crime has a *chilling* effect or an *energizing* effect on social capital. While the former suggest that it contains or reduces participation, the later implies a building effect on individual's participation in community organizations. Their research finds that crime has *chilling* effect on social participation. This is the thesis put forward by Field stating that social capital can have a large and multi-level effect: "Social capital can ... be seen as one factor among others that helps to influence the amount of criminal activity in a community. It also seems to play a part in determining whether or not particular individuals turn to criminal behavior. Nor is this simply a matter of how the community and its members behave; social capital can also shape the behavior of law enforcement agencies. Social capital may also have a bearing on people's respect for law enforcement agencies ... And of course, this is a self-reinforcing pattern." (Field 2003: 61-2). This is crucial and brings us back to the discussion of the dark side of social capital as "social networks [can] change their nature if they are located in social contexts where organized crime is relevant. Here the perusal of a social network is just a necessary condition to enter the labour market rather than a deliberate choice" (Menella 2011, 1). This is what I believe is happening in some regions of Mexico in States like Michoacan, Durango, Sinaloa or Tamaulipas which have large presence of organized crime.

There are some empirical analysis that find a *energizing* effect, showing that increased violence and crime can be associated with increased political participation (Bateson 2009) a specific type of participation that is not always included under social capital. Two cases in Mexico serve to illustrate this type of effect: Marti and Sicilia both became important activists after each one lost a son/daughter to organized crime. The former is a businessman whose daughter was kidnapped and murdered and later he founded an NGO called S.O.S that aims at providing citizens observatory on issues of public safety[44]. The latter is a similar and more recent case of a public figure, in this case a well-known writer, whose son was also murdered; as a reaction he started a movement called *Marcha por la Paz*, that received such support and attentions that it has transformed into a formal dialogue between organizations of the society and the federal government and more recently was a invited witness in the proposal for a "law for victims". I found none or little evidence that other types of participation or trust are directly and positively link to increase in crime or corruption to confirm this energizing effect.

Most of the literature reviewed up to here in this section deals with the relation between crime and social capital. For corruption there are similar findings of a direct effect with evidence of the causal direction going both ways. Some authors suggest that social capital can reduce corruption (Bjørnskov 2003) and others find that corruption erodes trust or participation (Morris and Klesner 2010 and Bailey and Paras 2006). A direct (not inverse) effect between social capital

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[44] More information can be found in the organization's website: http://www.mexicosos.com

an corruption can also be found in the literature because it is argued, that a decrease in trust or reciprocity creates a favorable environment for corrupting acts between individuals (Harris 2007). In my models I test the negative effect that corruption has on social capital. As with crime, the research has great variation on how the intervening variables are defined and operationalised. For my research I use two types of measures to explore the effect of crime and corruption; one has to do with perceptions of the magnitude of the problem and the other with direct victimization indicators. These are discussed in the next chapter.

Crime and corruption have additional burdens on democracy that have been explore elsewhere as they "stalk constantly on the citizens of Latin America propagating fear and discrediting the instances of the State" (Cordova and Seligson 2010, my translation); and also on democratic consolidation (Johnston 2000). Additionally crime/corruption have important consequences on human capital (Buannano and Leonida 2005) and on economic growth (Haque and Kneller 2005, Ugur and Dasgupta 2011). Finally, and as depicted in Figure 2.6, the evidence suggests that at the individual level, crime and corruption are also linked feeding of each other (Chatterjee and Ray 2009). In the fourth chapter, in part of my analysis, I will treat these two problems as a system or a context to try to assess their impact.

Since I define trust as "unguarded interaction", perceptions of safety of an individual to its environment play a crucial role. It is under this concpetualization that *fear* is placed as an intervening variable between crime and social capital,

and significant impacts are expected especially form fear to the cognitive dimension. While the iterature shows that fear is related to crime and violence, this does not imply that the direct link between crime/corruption disappears in the mediation of fear, but rather it means that it impacts in two ways: directly and trough fear (see Figure 2.6). Again we find evidence that the reverse causation is possible, in other word that trust and networks can reduce fear (e.g. Lenguas and Ruprah 2008). The increased use of urban-gated communities, as a response to an increasingly perceived dangerous environment, is an example that suggests changes in social cohesion and social controls (Smets 2005).

Figure 2.6. Causal relation between crime, corruption, fear and social capital
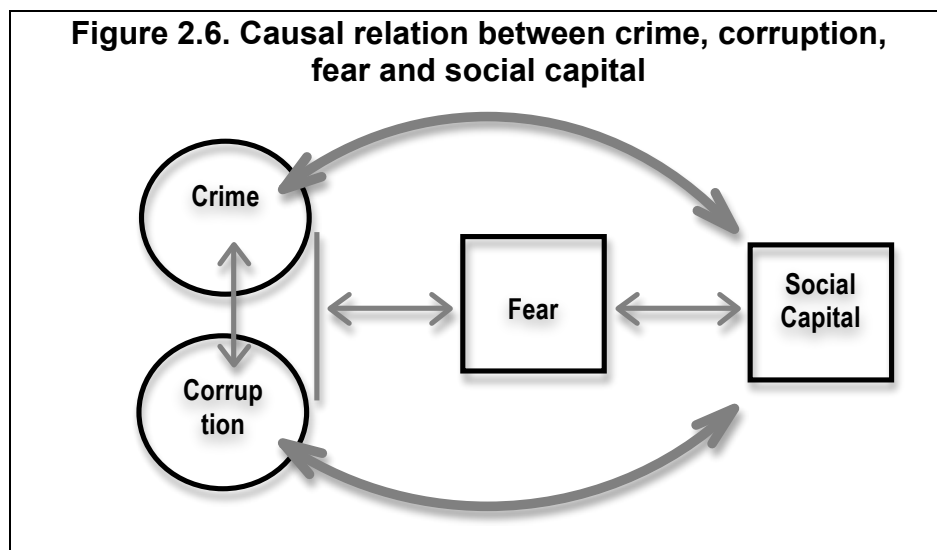
2.7. Measuring social capital

As it has been discussed up to here, most authors agree that social capital is composed of three main components in two dimensions: trust, reciprocity and networks/participation. However the measurement, importance and interaction of these components vary across scholars. Measuring social capital has been done as simple and general as assessing the level of interpersonal trust with one

general question or as complex and integral as the Saguaro-Harvard project on social capital, which includes more than 60 variables. Foley and Edwards (1999) conducted a review of thirty articles and found an equal number of authors that treat social capital as a dependent or as a determinant, an equal number of those that use cognitive or structural laden definitions and found that most used a normative use of the concept. This is just an example of the variety ways that a potentially large in scope concept can be treated empirically. For a complex concept such as social capital, operationalisation is key and potentially complex.

After a comprehensive and detailed research that includes all sorts of cross sectional data at the individual and aggregate level, in Bowling Alone Putnam (2000) concludes that the stocks of social capital in the United States are decreasing. Specifically responding to that claim, and after agreeing on the crucial importance of social capital, Ladd convincingly shows that Putnam maybe reaching an incorrect --I would label it inconclusive-- finding because of measurement problem due to selective and bias indicators of the concept. Putnam shows that membership in the Benevolent Elks is decreasing while Ladd (1996) claims that the United States is becoming a soccer nation. Both are right; so the debate revolves around which measure is a better (i.e. more valid and/or relevant) indicator of social capital in order to properly assess its stocks.

The answer may depend in part on the context. I have had the chance to take my kids to soccer practice in two very different soccer nations: the United States and Mexico. I can say the following from my experience, the *north* appears to be better organized (has larger number of formal leagues) and more inclusive (it has

incorporated girls in greater degree to the practice of soccer); however in the *south*, the practice of soccer is of much more social relevance and the interaction around the activity could be of greater consequences to the stocks of social capital than in the United States. In New England, for example, parents bring their kids, a cup of coffee, and something to read, while in Mexico after the game the different families get together to have lunch. Using soccer leagues as a proxy of social capital can then lead to unreliable and potentially wrong assessments. Additionally one cannot assess, as do Inglehart (World Value Survey) or Lagos (Latinobarometer), the levels of interpersonal trust of a given society by using the *generalized* trust indicator, a potentially unreliable single-item indicator[45].

Stone (2001) provides probably the most in depth and comprehensive review of how social capital has been measured. Her work is a helpful classification tool when measuring the stocks of social capital of a given community, as she provides a criterion to define the scope and focus of empirical research on the subject. As the author correctly points out, most of the earlier work was based on analysis of secondary data, and although primary data collection on the topic is growing, we are still in a developmental stage, often relying on measures of questionable quality and/or unlinked to theory. She contends: "A theoretical informed approach to the measurement of social capital is essential to overcoming empirical confusion and enabling proper investigation of social capital as it relates to a range of outcomes". Three main recommendations for the research design can be identify in her work: (a) research should rely on a

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[45] A lengthy discussion about the shortcomings and problems of such approach was presented by the author at the 60th Annual Conference of the American Association of Public Opinion Research, at Miami FL, May 12-15, 2005 (co-authored with Luis Estrada).

multidimensional measurement of valid indicators of the three components of the concept; (b) it is helpful to distinguish between indicators and outcomes of social capital; and (c) it is useful to understand and operationalise social capital as 'a resource to action' (2001: 6, 34).

The first recommendation is discussed in length in the third chapter. The second presents empirical challenges because it is much harder to measure indicators than outcomes. Even if indicators prove to be better measurements of social capital as Stone suggest, such empirical approach could constraint the types and application of measurement techniques that can be used. My position is that survey research is a technique best suited to measure attitudes and behavior (outcomes) than values, norms and culture (indicators). In fact, it is often the case that researches trying to capture deeper indicators such as values or norms rely on outcomes or on perceptions of the norms, simply because they are easier to observe. To avoid the tautological problem of finding social capital to be related to its measured outcome –a warning found in Stone's work– we most clarify the kind and type of measurement we are using, but also make the a priori assumption that a norm, value or culture is a necessary condition of an outcome. In other words, outcomes of social capital are only possible if indicators are present.[46] Finally the benefit of the third recommendation is that it guides our research by focusing on aspects that enable/disable cooperative behavior and productive resources for individuals.

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[46] Stone also differentiates between proximal and distal types of outcomes. The later are measurements of outcomes that that are directly related to the three dimensions of social capital; the former measure them indirectly or are not liked directly to them (2001: 5). It is clear that proximal indicators are better than distal for determining social capital.

As stated above I propose to use a neutral definition of social capital but subscribe to a normative approach based on this "resource to action" focus and considering the potential benefits that a healthy stocks of social capital can have on democracy and development as pointed out earlier.

Regarding techniques, the assessments of social capital can be qualitative or quantitative. Regarding scope we can have partial or integral measures of the concept based on how many components are included in our measurements. Regarding depth we have different degrees of measures depending on the number of indicators uses to capture each component. And regarding focus can have network or cognitive laden approaches. While the later are usually concerned in providing a detail account of the quantity and type of relation that are available to an individual, the former concentrate more on attitudes of trust and reciprocity and could include proxies of networks such as membership and/or participation.

For my research I use a quantitative approach because I am interested in analyzing how the stocks of social capital have evolved in time and more particularly how are this being impacted by crime and corruption. I rely both on ad-hoc and secondary analysis using public opinion research and conducting analysis ate the individual level but analyzing trends at the aggregate. I rely on an integral in depth scope as I include multi-indicators of the three components. Finally my approach can be classified as integral but somewhat cognitive laden.

The Social Capital Assessment Tool (SOCAT) developed by the World Bank[47], recommends to have four basic requirements when assessing social capital empirically: (a) to have a flexible (allowing for context differences) single conceptual framework; (b) to capture both dimensions; (c) to measure activities that are collective in the context under study; and (d) use both qualitative and quantitative techniques. My research covers the first three. Qualitative techniques can best capture the complexity entailed in the interaction of a group and that is the main reason supporting using both techniques: "Institutional mapping, focus groups, and other qualitative techniques provide a more nuanced understanding of institutional characteristics". (Grootaert and Bastelaer 2002: 22). The survey instruments developed by SOCAT along with the Saguaro Project are two of the most influential measurement tools available that have been use comparatively. Some of my indicators are taken from these instruments but I also use or have been influenced by other important surveys such as the World Values Survey and the Latin American Public Opinion Project of Vanderbilt University (LAPOP). A detail discussion on operationalisation of variables in the research design is included in the following chapter.

To the extend of possible, I have tried to consider the following recommendations form the World Bank as to the desirable properties of indicators:[48]

1. Be developed within and agreed on conceptual and operational framework
2. Be clearly defined and easy to understand

[47] See http://siteresources.worldbank.org/INTPSIA/Resources/490023-1121114603600/13000_6_SOCAT.pdf

[48] Source: Grootaaert (1998)

3. Be subject to aggregation (from household to community, form community to nation)
4. Be objective (be independent of the data collector)
5. Have reasonable data requirements –either available data or data that can be collected at limited cost and within the capacity of the country's statistical apparatus
6. Have "ownership" by user
7. Be limited in numbers
8. Reflect input, process, or outcome

Two final points are relevant in this section. The first one has to do with the need to use multiple and multi-item indicators of the components. As it was mentioned above in this chapter and because of the definition of each component, an integral measurement of social capital requires that we capture different aspects of each component and when need using multi-items. Take trust for example, it has several dimensions (interpersonal, institutional, familiar, etc.) and each of these is situational and requires that we try to capture it as a construct. My design takes this into account. The second point has to do with the fact that we have seen an increase number of surveys in Mexico that measure social capital as a whole or are interested in providing an in depth measure of a given (sub) component. Examples of this are The Urban Social Capital Survey (Sedesol 2006), the National Surveys of Solidarity and Voluntary Actions of CEMEFI (2005 and 2012), the National survey on Philanthropy of ITAM (2005 and 2008) and

several measurements of the components of social capital conducted by Data OPM[49].

2.8. Social capital in Mexico

When comparing the 1990 and 2000 Mexican data of the World Value Survey, we find mixed evidence on social capital indicators. While structural aspects have remained the same (networking), perceptions of personal health and happiness increased, indicators of interpersonal trust decreased significantly, however political participation has been on the rise for the last 15 years.

This suggests –as it was mentioned before-- that the concept of social capital includes multiple constructs (underlying dimensions or factors to use statistical terms) that exits simultaneous closely related and theoretically linked to some structural features. Additionally it is important to mention that, coinciding with the transition to democracy, we have seen an increased social and political participation. A *Putnam* like indicator of this process is the number of associations of the civil society (OSC for their Spanish acronym) over time. According to Mexican Centre for Philanthropy (CEMEFI) there were 10,704 formally constituted organization of the third sector in Mexico 2009. The number seems small for a country the size of Mexico; however according to CEMEFI

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[49] The ENSAV (*Encuesta Nacional sobre Solicdaridad y Acciones Voluntarias*) has been conducted in 2005 and 2012 by the CEMEFI and cover in depth voluntary actions, a sub-account of social participation. The ENAFI, conducted by the ITAM, a private University, has capture in 2005 and 2008 is a national survey on philanthropy and donations (it is expected to be replicated again in 2013). Data OPM is a private research firm founded by the author that specializes in social capital among other topics (www.dataopm.net)

there is a significant increase in the number association from 2,364 in 1995 and 4,246 in 1999[50].

The information presented in Table 2.1 is also puzzling and inconclusive. It covers a shorter and more recent period (from 2004 to 2012) using data form the Americas Barometer Survey in Mexico. It shows that most indicators of structural and cognitive social capital have remain fairly stable over this period, with the exception of a larger participation in religious meetings, smaller participation in PTA and community improvement meetings and decrease trust in mass media. On the other hand we have evidence that crime and corruption have significantly increased, especially crime in the new millennium (figures presented and discussed in chapter 5). For example, according to the Trans-border Institute of the University of San Diego the number of executions in Mexico has risen from 1,080 in 2001 to 8,281 in 2009.

Does this means then that there is no relation between crime/corruption and social capital in Mexico? Not necessarily. As it was shown above the results on social capital literature are highly dependent on scope and operationalisation of indicators. It maybe the case that crime has an adverse effect on bridging but a different impact on bonding. There is data for Mexico that suggests that trust in family members is increasing while trust in persons outside the family circles is decreasing. Individuals may be reacting to an adverse environment by "turning-inwards by closing-out". An additional consideration when assessing the data may be that Mexico has already achieved such high levels of crime/corruption, especially on perception indicators, that most of the effect has already taken

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[50] For more information access: http://www.cemefi.org

place. That is why my model compares individuals with dissimilar characteristic in terms of experience and perceptions to test if these have an impact on their attitudes and behavior.

Table 2.1: Selected participation and trust indicators for Mexico 2004 - 2012

Participation Indicators	2004	2006	2008	2010	2012
Did not contribute in the solution of a community problem in the last 12 months (%)	-	-	71.2	65.3	71.6
Does not participate in religious meetings (%)	49.1	33.7	38.7	42.3	44.3
Does not participate in PTA meetings (%)	56.0	55.1	59.6	7.9	65.3
Does not participate in community improvement meetings (%)	68.6	72.4	72.4	72.2	78.7
Does not participate in political meetings (%)	86.3	86.6	86.9	83.8	89.6
Trust Indicators	**2004**	**2006**	**2008**	**2010**	**2012**
Very or somewhat trust in others (%)	63.5	65.9	62.8	60.5	62.8
Average trust in Justice System	50.2	50.5	50.8	48.1	49.0
Average trust in Armed Forces	67.7	72.4	70.8	72.2	70.2
Average trust in the Police	42.4	37.7	43.6	36.4	39.9
Average trust in Political parties	41.5	43.0	41.5	35.4	39.5
Average trust in Mass Media	66.0	67.1	63.0	60.4	59.7
Average trust in the Catholic Church	72.1	72.6	70.2	70.4	69.0

Source: Americas Barometer survey in Mexico conducted by Data OPM for the Latin American Public Opinion Project of Vanderbilt University.

One way to conclusively test if crime and corruption have a direct and negative impact on social capital at the individual level is to rely on an integral and comprehensive measurement of all of these constructs. I use the term construct

because most of the variables needed included in my research are non-directly observable phenomena and thus we have to use a multi-item measurements to *construct* them. It is also desirable to include all components of social capital (in an integral way) to be able to differentiate the effects between them. The main model to test my hypotheses has these characteristics and is described in length in the next chapter.

A comprehensive and integral measure of the stocks of social capital in Mexico is pending work and beyond the scope of my research.

2.9. Expected findings

In this section I close the review of the literature on social capital by providing a brief summary of the chapter and introducing a general model of the expected findings.

As it has been discussed in length, the concept of social capital consists of two dimensions-three components that had been studied by scholarly work before the term was invented. The three components are: trust, reciprocity and participation. The contribution of the concept is to *join* them together as a new kind of capital and to document their impact on many social phenomena. Social capital has been studied by several disciplines, with different analytical tools and in most cases focusing in one of the three components. There is a general consensus on two building blocks of the social capital theory: its components significantly affect behavior and institutional performance and are generally associated with well-being. It has been generally treated from a normative

perspective but most authors concur that it can have negative effects; this has been label the ´dark side´ of social capital. It has been place in the family of capital because it possesses most of their characteristics. As it is the case with the other types of capital, it has a value per se even when it is not being used, in other words it has a latent state and it can deteriorate over time.

Its beneficial impacts on democracy and development have been documented extensively. Its three components –trust, reciprocity and networks—are closely tied together in a recursive manner and trust is potentially the most important of the three; the tree are viewed as important factors on the main correlates of democracy. The literature showing the negative impact that crime and corruption have on social capital is also extensive. I have presented scholarly work that suggests a recursive relation between them and also between social capital an democracy/development. I acknowledge this mutual causation but will use a non-recursive model to test my main hypothesis with the components of social capital as dependent variables. Figure 2.7 shows a general model that I will use for which all causal relation between variables have been discussed in this chapter and that cover the hypothesis presented in the first chapter. The research that supports this model includes multi-item constructs of the outcomes studied by Bourdieu (economic well-being), Putnam (democracy) and Coleman (human capital). Additional and more specific models will be presented in the next chapters.

If social capital can have a positive impact on the quality of democracy --that can be of particular importance to a country in a developmental stage such as

Mexico—and the levels o crime and corruption in Mexico threatened to reduce trust, reciprocity and participation, it becomes important that we assess such impact. That is the content of the following chapters.

Figure 2.7. General causal model of the research

Experience   **Perception**   **Behavior**

Experience with Crime	Perceptions Public Unsafety and Fear	Social Capital Cognitive and Structural
Experience with Corruption	Perceptions of Corruption	Change in Behavior

Preference for Democracy
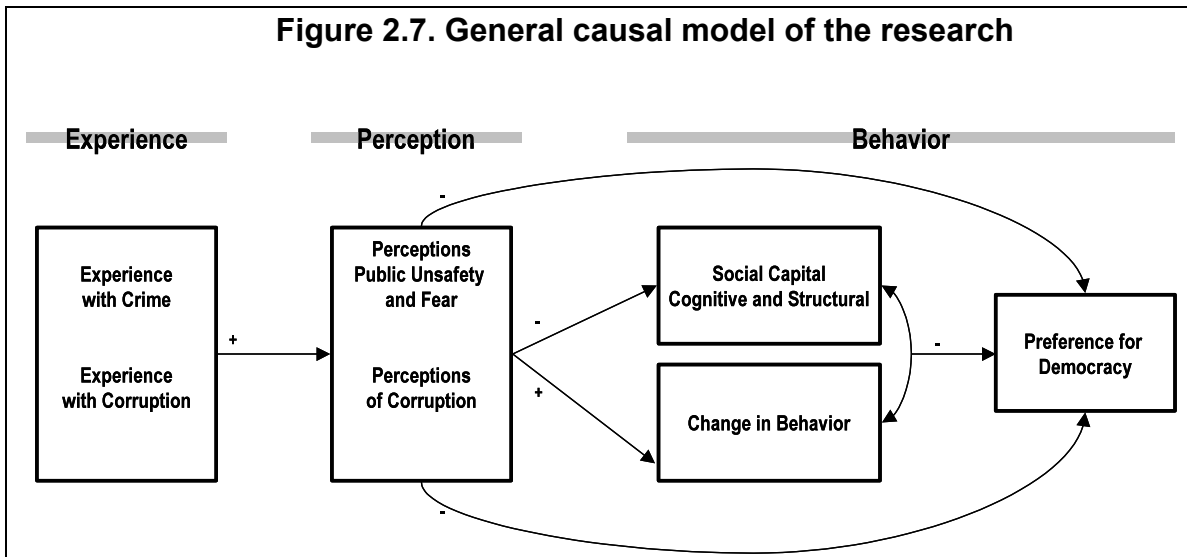
Chapter III: Assessing the impact of

crime and corruption on social capital

Where social capital has been measured to date, it has often been done so using 'questionable measures', often designed for other purposes, and without sufficient regard to the theoretical underpinnings of the concepts to ensure validity or reliability

Wendy Stone

3.1. Introduction to the research design

Up to here I have provided a general introduction to my research by stating the main purpose of my inquiry and my intended analytical perspective. I have also discussed the logic of causality found in the literature and discussed how perceptions impact attitudes and behavior. These constitute a first window into the operationalisation of my research. This chapter contains a description of the research design as well as of the principal source of data from which the hypotheses are tested. It also contains a discussion on operationalisation and measurement of the key constructs and the main statistical methods use to validate the data and confirm the hypothesis.

My research design is greatly influenced by the words of Crespy:

> No, what has been found wanting is the way so much attitude research has been conducted with, on the one hand, reliance on attitude scales of an unwarranted high order of generality and abstraction and, on the other hand, theory that is overly particularized and concrete. If we reverse this, so that measurements are highly particular and specific in their behavioral referents while our theory presents us with generalizable models, the goal of developing attitudinal measurements and theories that are predictive can be achieved. (1977: 294)

Even tough Crespy was writing about the topic of voting turnout, I believe his argument to be valid for many other social phenomenon. He is referring to the quality of measurement and research design (general and abstract measurement of attitudes) to decrease the probability of committing a type I (finding a non significant relation between two variables that are causally related) or type II error (finding significant causal relation between variables where none really exist). My research design is greatly concerned about the quality of measurement and that is why I use items that are behavioral referents of specific situations to capture the concepts that interest me. Because the relevant concepts to my analysis are of complex nature, most of them are measured using two or more items (i.e observed variables). In a single item measurement "all of the measurement eggs of a theoretical variable are placed in one basket of its single observed measure" (Kline 1998). This is precisely what I tried to avoid. From here on, such multi-item measurement of concepts will be referred interchangeably as constructs or latent variables. The validity and reliability of each construct is assessed using confirmatory factor analysis and discussed later in this chapter[51].

My main goal is to explore the complexity of the issue at hand using a Structural Equation Model (SEM) as my main statistical tool. In SEM a variable can be impacted by one or many variables but it can also impact others. Thus, SEM

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[51] Reliability refers to measurements performing consistently overtime, that is "... yield the same result on repeated trials" and have a "tendency toward consistency". Validity means that the question "measures what it purports to measure" (Carmines and Zeller 1979: 11 and 12). There are different types of validity, the most common are: criterion, content, construct, convergent and discriminant. The CFA is a test to partially assess content, convergent and discriminant validity (Kline 1998: 60). For a detail discussion on reliability and validity see Carmines and Zaller.

allows me to measure direct and indirect effects, and to show a multiple interaction relation between variables. SEM also allows the use of the multi-item constructs specifically constructed to test the entire hypotheses. The measurement model, that is the causal relation between variables, is set according to the theory discussed in the previous chapter: details of the model are provided later in this chapter. The constructs included in the SEM can be grouped into the following categories: demographics anchors, contextual variables (experience and perceptions of crime and corruption), dimensions of social capital (cognitive and structural), and democratic attitudes (human capital, civic engagement and satisfaction with democracy). The most relevant causal relation for my thesis is the impact of the contextual variables on the dimensions of social capital; however with the full model we are able to place the research in a larger perspective and assess the interaction on other relevant indicators as well as explore differences by key demographic segments.

3.2. Data description

The following paragraphs provide details on the specifics of my research design and introduce the principal source of data for my analysis[52]. The *social systems* under study are Mexico City and the state of Guanajuato. While the former constitutes a high-crime, high-corruption context, the latter entails the opposite. The inclusion and analysis of these two different social systems is a useful control mechanism that allows me to compare and discuss the findings

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[52] A brief footnote will be included when other sources of data are used to complement the analysis and discussion.

and their implications in greater depth. Since the exact same questionnaire was used in both cities, the analysis could also have conducting combining both samples and this in turn would have increase the statistical power (i.e. N size or number of interviews) of the analysis. However, we have enough sample size on each city and *group* comparison is done by design to test if perceptions, attitudes and behaviors are independent of context or not. It also serves as a simple replication of the hypothesized model of interaction and since my level of analysis is set at the individual differences I am interested in testing if the same pattern of interaction between variables occur in different settings. I am interested to describe, explain (and prescribe if possible) how the impact of experiences and perceptions differ according to the characteristics of individuals including their context. Finally since the two surveys were conducted in different days we may encounter exogenous effects if we pooled the two surveys together.

The data used to test the impact of crime and corruption on social capital comes from two independent cross-sectional surveys. The first one was conducted in September 2004 to a representative sample of the adult population (i.e. 18 years of older) of Mexico's capital, the *Federal District* (D.F.). The D.F. accounts for roughly 40% of the total population of the metropolitan area of Mexico City and it is the country's political and financial center. The second was conducted in March 2005 and is a statewide representative sample of adults living in the state of Guanajuato located northwest of Mexico City (see Figure 3.1 for a geographic reference). The sample size for the D.F. survey is 994 cases and the results

have an expected margin of error of +/- 3.2% at a 95% confidence level. For Guanajuato a total of 1200 interviews were conducted with an expected margin of error of +/- 2.9% at the same confidence level.

It is important to note that the survey results speak of the particular situation of 2004 and 2005 and that the context, of crime specially, has dramatically change for the worse after president Calderon's government took office in 2006 and decided to directly confront organized crime with the use of the army in some states of the country[53]. Even though the army has not been directly used in the D.F. and Guanajuato recent survey data shows that the incidence and perceptions of crime have significantly increased[54].

The questionnaire used in both surveys was specifically design to test the hypotheses presented in chapter one and to be able to run the statistical analysis presented in the previous section. As stated, each construct relevant to the research was measured with two or more items or questionnaire variables. For example five items were used to measure the construct named FEAR: fear at home, at work, in the streets, in public spheres and driving/using public transportation. The exact wording of the questions can be found in Annex 1 were I show for every construct the exact wording of the questions and document any transformation made on items for the analysis. Many of the questions were borrow from other surveys such as the World Value Survey; several other,

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[53] For a discussion of the magnitude of the problem and the use and trust of the army to fight crime see Bailey, Paras and Vargas (2013 forthcoming).
[54] For national and statewide victimization surveys and data on crime see the ICESI's and INEGIS web site http://www.icesi.org.mx and INEGI's: http://www.inegi.org.mx. For historical data on corruption see the national survey of corruption and good government conducted by the Mexican chapter of Transparency International in the following website: http://www.tm.org.mx

however, were writing specifically to measure the variables of interest to the present research.

Figure 3.1: Map of Mexico City and Guanajuato
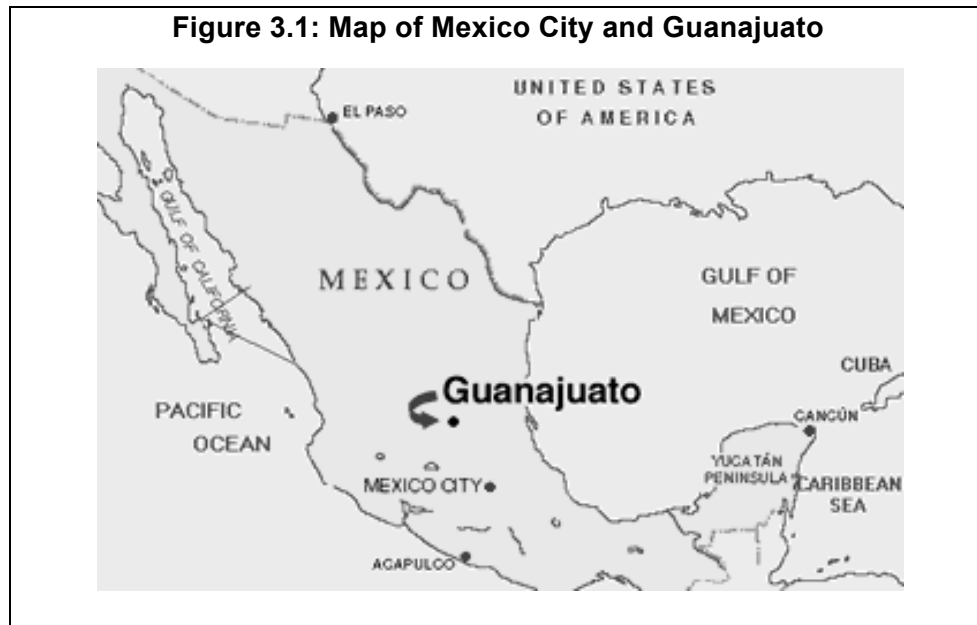
3.3. Measurement of the key constructs

The main thesis of the research is that an adverse context of crime and corruption —constituted by experiences and perceptions of individuals—will decrease the levels of social capital. To confirm it in an integral way, we need robust measurements of at least the following aspects of these complex issues: experiences with crime and corruption, perceptions of crime and corruption, institutional trust, personal trust, reciprocity, and formal and informal participation. Additionally and since we are interested in testing a specific causality (crime and corruption decreasing social capital), we rely on demographic anchors and because these are intrinsic to individuals we are certain that they are not caused

by the other variables in the model. Therefore they are placed as independent variables and partially served to confirm the hypothesized causality. Additionally we are interested to test if other political costs of crime and corruption exist. To test this we include additional measurements of the following key constructs that speak to the quality of a democracy: satisfaction with democracy, civic engagement and human capital. Except for the demographic anchors and for the variable of "satisfaction with democracy", each construct is measured using two or more items and most or confirmed an observed construct. Each item represents a survey question.

A total of 65 items in 13 different latent factors are used in the confirmatory factor analysis, and the principal SEM model reflects the use of a total of 69 measured items or questionnaire variables. Table 3.1 presents the demographic variables and latent variables used in the SEM model as well as the number of items used to measure each construct.

Before proceeding to conduct the required factor analysis to confirm that each item belongs in the specified construct, we conducted a careful screening of the Data. Such screening is seen here as a step in the control of the quality of the information gathered. The process includes the six types of screening recommended by Kline (2004) that we briefly describe here. Each variable was screened for missing data and non-response. Very few variables had a non-response rate higher than ten percent. Non-response was treated with the imputation method, which is the replacement of the non-response value for an

intermediate value defined by the scale of each item, such modifications can be found in the last column of Annex 1.

Table 3.1. Variables and constructs use in the analysis

Concept	Variable/Construct	No. of items used
Demographic anchors	Gender	1
	Age	1
	Education	1
	Socio economic level	1
Social Capital	Cognitive	
	(1) Institutional trust	10
	(2) Personal trust	5
	(3) Reciprocity	3
	Structural	
	(4) Formal participation	8
	(5) Informal participation	2
Quality of democracy	Democratic attitudes	
	(6) Satisfaction with democracy	1
	(7) Civic Engagement	5
	(8) Human capital	6
Crime context	(9) Experience	4
	(10) Perception	5
	(11) Fear – personal safety	6
Corruption context	(12) Experience	5
	(13) Perception	5
	Total = 13 constructs and 4 demographic anchors	**Total = 69 items**

A pair-wise correlation matrix was analyzed to detect potential problems of redundancy (multicollinearity) a test that is later reconfirmed in the confirmatory factor analysis. Since most of the variables are categorical and use a five-point

likert-type scale (e.g. a lot, some, little, none), there aren't any problems with outliers. The variables were also tested for normality (e.g. if they present a normal distribution) running the test for skewness and kurtosis. Normal distribution is a key requirement for SEM models, especially of endogenous variables. The majority of the items (84%) were found to have an accepted value between -2 and 2 in the test of skewness and kurtosis. Since the items will eventually become construct and/or indexes a similar test of skewness and kurtosis was performed on these to ensure that the assumption of normality is met. Finally an assumption of linear relations between factors is to be placed upon the data when we run the structural equation model.

3.4. Confirmatory factor analysis

Confirmatory factor analysis (CFA) was performed on each construct using a DOS base program developed by Mark Hamilton and John Hunter in 1988. Based on theory each item was set to be part of a single unobserved construct or latent factor. This is a key difference between CFA and the most widely used EFA (Exploratory Factor Analysis). While the former assumes a correspondence of measurement between an item and an unobserved and theorized construct, the latter explores relations between items to come up with rather subjective constructs. In other words, the operationalisation of measures in the survey was conducted after a careful understanding of concepts needed to test my hypothesis. It is also important to note that while CFA is conclusive (i.e.

confirmatory) exploratory factor analysis is not. Such confirmation includes several statistical tests to assess the reliability and validity of each construct.

The most widely known test is Cronbach's Alpha, a test of the internal consistency/reliability of the items; in other word if the items are indeed measures of the same construct. Cronbach's alpha is a conservative test that is highly sensitive to the number of items per factor as well as the inter-item correlation (Kline 2004: 45). Table 3.2 shows the alpha coefficient from the CFA analysis. Most of the construct show an acceptable alpha coefficient of .65 or greater. Lower values are highlighted in bold; the items used to measure reciprocity have a low internal consistency and the ones for perceptions of corruption and perceptions of crime in Guanajuato have a moderate consistency. In the case of reciprocity I do believe we need to use better items and have a more precise definition of this *hard to grasp* concept. I believe the moderate alpha in the case of perceptions is more the reflection of the potentially large number of issues needed to better capture such complex construct. All of the constructs are kept in the SEM for three reasons: (1) they are uni-dimensional as they do not load into any other factor; (2) they perform well in tests of external consistency when we explore their expected sign and magnitude of correlation to other factors; and (3) it is theoretically reasonable to group them together to constructed indexes or run second order factor analysis or models. Factor loadings of each item included in the measurement of constructs can be found in Annex 2.

Of greater significance is the fact that my measurements and assessment of constructs (internal consistency and external validity) performed consistently and

equally well in both groups. This finding should be interpreted as a test of *replicability* of measurement and it implies that the instrument —the proposed multi-item measurement of unobserved factors—is consistent across-groups. While this may not be viewed as conclusive evidence of the general applicability of the measurement across-groups or across-cultures it is certainly a modest but strong argument about such possibility.

	Cronbach´s Alpha	
Construct	**D.F.**	**Guanajuato**
Institutional trust	.834	.829
Personal trust	.683	.729
Reciprocity	.345	.280
Formal Participation	.731	.680
Informal participation	.704	.674
Civic engagement	.767	.853
Human capital	.760	.808
Fear – personal safety	.772	.838
Experience crime	.651	.669
Perception of crime	.543	.470
Experience corruption	.743	.774
Perception of corruption	.360	.448

Table 3.2. Reliability of constructs.
Test of internal consistency by social system

The above description of the CFA analysis should be taken as an internal consistency method of assessing reliability[55]. "Theoretically, interest lies in the underlying unobservable (and directly unmeasurable) concept that is presented by the response." (Carmines and Zeller 1979: 10). It follows that inferences should be made only after assessing the relation between observable response

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[55] According to Carmines and Zeller (1979) there are four methods of reliabity estimation: test-retest, alternative-form, split-half and internal consistency.

and unobservable concept. Otherwise –if the measurement is weak or wrong—we increase the probability of committing a type II error. I do not intend to have perfect measures but rather to contribute to the discussion of better measurement and higher standards for research design.

3.5. Structural equation modeling

Once we have confirmed that items are indeed observations of the proposed latent construct we can precede to test the hypothesized causal relation. SEM models allows us to use observed and unobserved variables simultaneously, such model are called hybrid models and represent the interaction between factors or between factor and observed variables. The literature suggests that there should be 20 observations per item in a model. If we decided to use the 69 items (4 observed demographic variables and the 12 unobserved latent constructs from the 65 items tested in the CFA) we would need a sample size of 1380 interviews in each social system (i.e. in D.F. and Guanajuato)[56]. Since we do not have enough cases for either group and in order to have a more parsimonious model it was decided to generate indexes for each factor by simply adding the responses of the items of each construct[57]. By doing these I will treat them as observed multi-item indexes rather than unobserved

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[56] My research presents a very complex model with a great number of variables. SEM is more often used in other disciplines such as communication science or psychology were the models tested include fewer variables. According to Kline a sample of 200 cases is usually considered large (Kline 1998: 12).
[57] Some authors state that it is possible to run models with a 10:1 ratio (See Elordi 2005 and Kline 1998). Under such specification I would have enough cases to analyze the 69 variables in the model. Since SEM models using latent factors instead of indexes were tested because they yield similar results, it was decided to use an SEM model with indexes to simplify the model and discussions of results.

latent factors. However, as it was stated above, a careful validation of each construct was conducted prior to transforming it into an index.

Several SEM models with fewer constructs were tested before settling on a starting parsimonious model. "The goal … of model building is to find a parsimonious model that also fits the data reasonably well" (Kline 1998: 148); in other words, a model that is as simple as possible but that it is able to test the research hypothesis. Each tested model performed well and reported significant relation between variables in the expected directions. Since the findings are consistent with the ones in the parsimonious model they are not included here. SEM models that do not contain unobserved variables (i.e. factors) and that do not have mutual causation between variables are called structural non-recursive models.   The SEM model tested and discussed in the following lines is an example of such models.   It is possible that by eliminating the use of factors I will lose some statistical power, hence the effects between variables maybe conservative.   Additionally I will not be able to completely 'unpack' all of the effects at the item level but will do so at the construct level. Before running the SEM parsimonious model the test of skewness and kurtosis was performed on the indexes to confirm normality in their distribution. Table 3.3. shows the result of these tests by group. In the table we observe that all of the indexes can be assumed to have acceptable normal distribution except for formal participation. Once again the consistency between groups is remarkable. This confirmation of normality allows me to run a SEM model using a maximum likelihood calculation.

The main goal of SEM analysis is "to understand patterns of correlations among a set of variables, and to explain as much of their variance as possible with the model specified by the researcher." (Kline 1998: 10-11) In fact, common statistical procedures such as regression and factor analysis are specific cases of SEM (Kline 1998: 8). The SEM proposed here can be viewed as a set of concurrent regressions which I believe constitutes a more precise description of relations between variables hence a more powerful statistical tool in areas of studies such as political science. Additionally and unlike regression, SEM models can handle latent variables and allow for correlation between residuals. Finally, an additional virtue of SEM is the ability to analyze *nested models*, something that cannot be done with regressions[58].

Construct	D.F. / N = 994		Guanajuato / N = 1200	
	Kurtosis	*Skewness*	*Kurtosis*	*Skewness*
Institutional trust	0.085	0.713	-0.314	0.406
Personal trust	-0.747	-0.152	-0.476	-0.545
Reciprocity	-0.257	-0.174	-0.077	-0.350
Formal Participation	**5.043**	**2.056**	**4.917**	1.955
Informal participation	-1.245	-0.024	-1.224	0.004
Civic engagement	-0.998	0.535	1.574	1.664
Human capital	-0.508	-0.663	-0.390	-0.787
Fear – personal safety	-0.602	-0.065	-0.539	0.515
Experience crime	-0.376	0.692	1.940	1.589
Perception of crime	-0.866	0.103	-0.471	0.333
Experience corruption	-0.751	-0.361	-0.475	-0.182
Perception of corruption	-0.396	-0.550	-0.747	-0.182

Table 3.3. Test of Kurtosis and Skewness on indexes by group

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[58] Nested models are models related to each other where one is the extension of the other.

My approach can be classified as *model generating* which aims at discovering a model that is theoretical sound and empirically fitting. It is not strictly confirmatory nor a testing alternative models technique (Kline 1998: 9). I start with a hypothesized model and test if the data fits it, however I will make further modifications to the model to improve fit and thus fully explore undefined relations between variables. My main task is to provide evidence of the presence and magnitude of the political cost of crime and corruption under study here. To do so I will be primarily interested in determining if the effect size are statistically significant, and not so much on the size of that effect size. In other words my main concern is to determine which causal relations exists based on whether they are statistically significant or not.

3.6. The general measurement model

In order to explore the impact of crime and corruption on social capital and democracy, six specific hypotheses were presented in the first chapter. Figure 3.2 presents the causal model of these hypotheses supported by the literature discussed in the previous chapter. This general model specifies that and adverse context of crime and corruption —formed by experiences and perceptions of individuals— will negatively impact both the cognitive and structural dimensions of social capital as well as other indicators of the quality of democracy. The model also shows that the condition of *living in fear* acts as a moderating variable between the adverse context of crime and corruption and social capital and the indicators of quality of democracy. Hence the adverse context will directly and

indirectly (through fear) affect social capital and democracy. Fear is included as a separate variable not included in the context because individuals react differently to their specific environment; it is in this sense that it is hypothesized that the condition of living in fear is somewhat dependent on personal experiences and perception.

With the exception of ´fear´, all of the boxes in Figure 3.2 contain more than one index. For example the cognitive dimension of social capital contains three indexes that capture three different constructs: personal trust, institutional trust and reciprocity. This makes the model more complex because each construct within a box acts a separate variable in the model and so a line for each causal relation has to be established. Each line in the model is a hypothesized link that will be tested when we run the SEM to confirm if it is significant or not.

Figure 3.2: General measurement model:
Hypothesized causality of the structural equation model
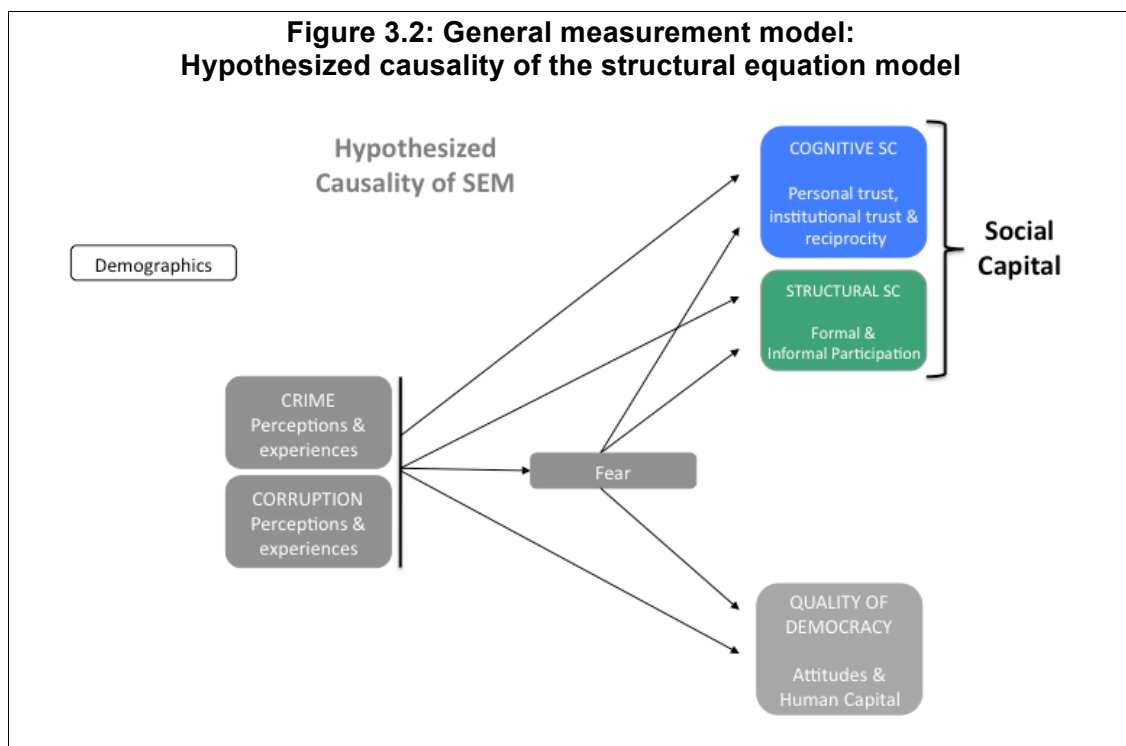
Figure 3.3 shows the model with full specifications for causal relation between the thirteen indexes that are briefly describe here. Perceptions of crime and corruption both impact fear; they also determine the indexes of both dimensions of social capital and the indexes of quality of democracy. Hence there are nine lines coming out of each of the boxes of perception indicating that it is thought that they are determinants of these other variables. Experiencing crime only impacts fear and the cognitive aspects of social capital. Experiencing corruption determines fear and the structural aspects of social capital. Comparatively speaking, the model gives greater relevance to perceptions than to experiences (nine to three links respectively) and that is why we speak of The Power of Perceptions. The incidence of direct experience (i.e. condition of being a victim of) with crime and corruption is potentially lower than the perception of the existence of these problems or the view that they constitute something that is currently affecting or can affect the individual in the future. In other words, while experiences of crime and corruption only occur in a small percentage of the population, perceptions are present in all individuals. If these perceptions are adverse –caused by a real adverse context and experiences or not—they can have a significant and large effect on how people behave and relate to each other.

The model also shows that ´fear´ impacts all of the dependent variables on the right except institutional trust. No causal assumption is made on demographic anchors that are placed in the model as exogenous variables. Once we run the model the data will guide us as to which links should be included from these

demographic anchors to other variables in the model[59]. None of the demographic

anchors can be caused by any other variable in the model, if this is supported

empirically in the data it can be taken as partial confirmation of the hypothesized

model.

Figure 3.3. Starting model with full specification of hypothesized causal relations
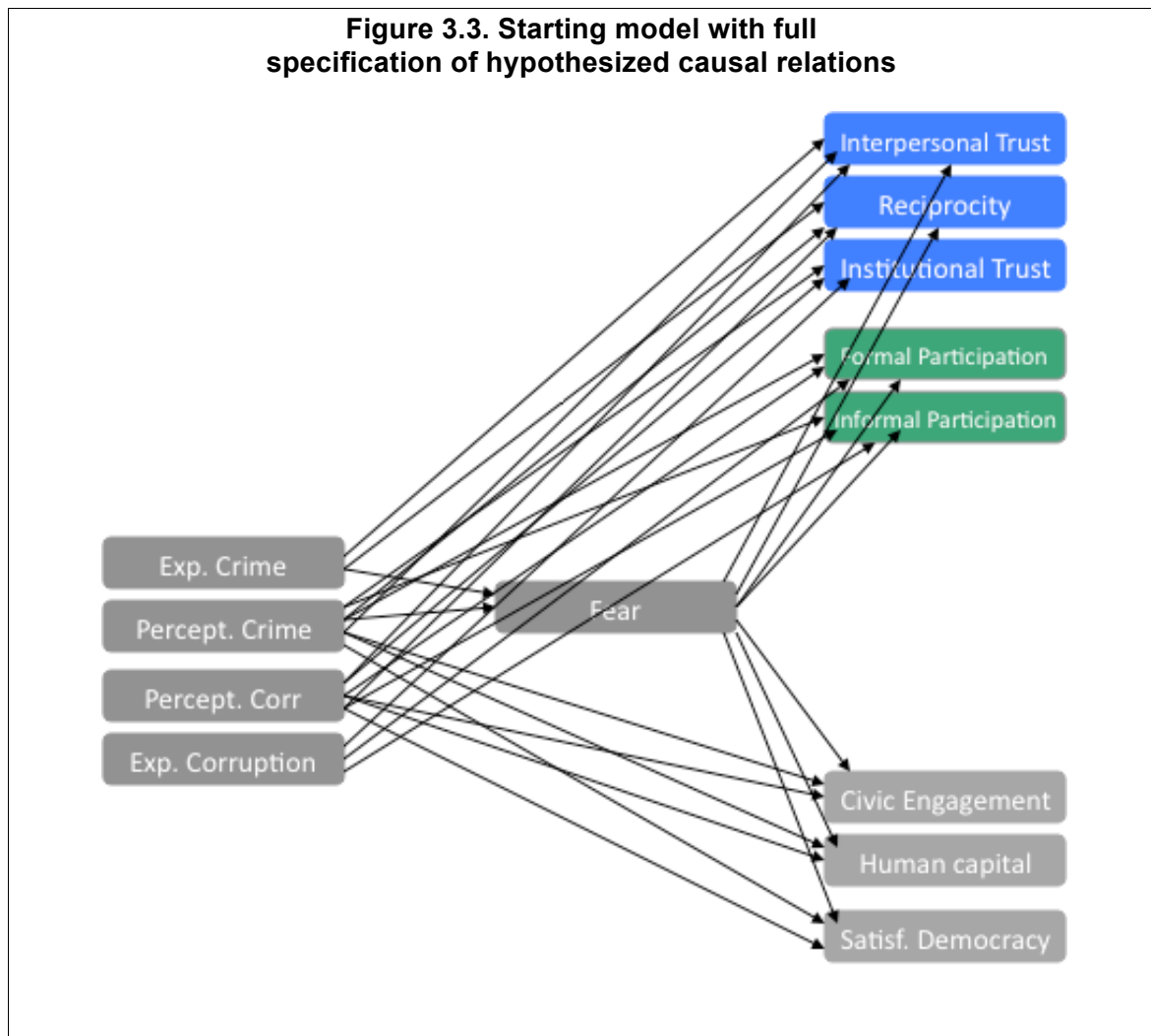
We also have not placed any causal linkage between the dependent variables

found in the cognitive or structural dimensions of social capital nor on the

indicators of the quality of democracy. It is expected that single or bidirectional

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[59] For reasons of simplicity the demographic anchors are not depicted in Figure 3.3.

relation may exit between some of these variables as suggested in chapter two. We did not include them because we are mainly interested in how key aspects for democracy such as social capital are being affected by an adverse context of crime and corruption. However once we run the SEM the program will indicate us if we should ´draw´ additional casual linkages between these variable in order to obtain a better fit for the model. Results of this complex model of interaction are presented in discussed in the next chapter.

Chapter IV: The Political Cost of Crime and Corruption

We are not talking here simply about nostalgia for the 1950s. School performance, public health, crime rates, clinical depression, tax compliance, philanthropy, race relations, community development, census returns, teen suicide, economic productivity, campaign finance, even simple human happiness -- all are demonstrably affected by how (and whether) we connect with our family and friends and neighbors and co-workers

Robert Putnam

The above quote from Putnam is a summary of the *power* of social capital that was discussed in length in the second chapter. While the concept has been measured —partially or integrally—in many different ways it is commonplace to find that social capital is correlated positively to many social phenomena. In a nutshell: social capital is good for a society because it means that individuals who posses it (i.e. trust each other and participate) have desirable civic virtues and conform a cohesive and strong society. In the second chapter we also discussed the issue of the direction of causality: whether it is crime and corruption affecting stocks of social capital or whether it is the opposite. We concluded that it is likely to be a circular causation in which in one hand, an adverse context of crime and corruption negatively impacts the stocks of social capital and in the other healthy stocks of social capital can prevent crime and corruption. Because we are interested in the political costs of crime and corruption, the model used for my research —presented in the previous chapter—is an example of the former, however the data can be used to test reverse directionality and/or circular causation between crime/corruption and social capital.

Of greater importance is a recent debate found in the literature that discusses the issue of the *sign* of the relation. While earlier research had showed that crime and corruption diminishes social capital (Paras 2007, Seligson and Both 2009) more recent studies are finding that the opposite may be happening (Bateson 2009). This dilemma, discussed in greater detail later in this chapter, is still unresolved and it may have to do with three things: the magnitude of crime and corruption at the time of the study and the responses from government and civil society to these problems and the research design and indicators used in the analysis. It is important to mention that most of the research looking into this causal relation focuses only on parts of it, for example establishing the relation between victimization and formal participation. The model of interaction presented in the last chapter (Figure 3.3) constitutes an *integral* approach where all dimensions and components of social capital are included and where problems such as crime or corruption are measured both as experiences and perceptions. To my knowledge there is not a research of such robustness found in the literature.

This chapter presents the finding of the research divided into three parts. On the first we discuses whether or not the hypothesized parsimonious model is empirically supported by the data. This is crucial to support the arguments of causality presented so far, the sign of the relation (i.e. positive or negative effect) and the effect size between crime/corruption and social capital. In the second part we focuses exclusively on the findings of the part of the model that explores this relation and on the third we discussed additional significant relations found

elsewhere in the model. All of the SEM results presented here were conducted using AMOS software version 4.0.[60]

4.1. Does the data support the measurement model?

Kline (1998) proposes a six-step process to test a hypothesized model. The first one is to specify the model, in other words to draw or describe the equations that show causal relations between variables or constructs. This was done in the last part of chapter three were we discussed and illustrated the parsimonious model that represents our hypothesis. The second step consist of determining if the model is identified or not, that is "if it is theoretically possible for the computer to derive a unique estimate of every model parameter" (Kline 1998: 49). There are specific procedures to do this that have to do with the number of variables and causal links in the model as well as degrees of freedom and number of cases. Identification of the model is not discussed here because it is a requirement of AMOS software in order to run any model. In other words, a successful run of an SEM in AMOS is confirmation that the model is identified. The third step proposed by Kline is to collect the data. An in depth discussion of data source and data screening was presented in the previous chapter. It is important to note that the first versions of the hypothesized model were drawn before the generation of data. Therefore the questionnaire and sample design responded to the research agenda and not the other way around.

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[60] Today AMOS is a model of the software SPSS. At the time my analysis was conducted AMOS was an independent stand-alone software.

Once the data is collected the next two processes are conducted using the specialized SEM software. The first one is the estimation of parameters within the model. Such estimations constitute the findings and show both the significance and magnitude of relations between variables. As it was suggested in the previous chapter we used a Maximum likelihood estimation because it "works just fine for most types of structural equation models so long as the data have been properly screened an their distributions are reasonably normal" (Kilne 1994: 145). Secondly we need to evaluate the fit of the model, a crucial step that defines if the model is confirmed empirically or not. In this step we conclude if the data supports the hypotheses drawn in the model or not. It is important to note that such confirmation means only that such model is possible and supported empirically by the data. It is not by any mean confirmation that this is neither the only model nor the *best* model. Additionally it is important to mention, that this entails only partial (not final) confirmation of causality. The final step in the six-step process is to conduct, if needed, a respecification of the model. If a respecification of the model is conducted, the first five steps need to be done again. Before presenting the major findings, the following lines provide in depth discussions of the model fit and respecifications that were conducted.

4.1.1. Confirmation of the general model of interaction

The main task of the SEM analysis is to accept or reject the model based on the fit of the data. This is confirmation that the variables relate causally to each other in the way it was expected/hypothesized. It is important to mention

that evaluation of the whole model has precedence over the impact between variables (Kline 1998: 13); thus the principal goal is to accept or reject the model. The final model from where I discuss the findings in the next section is achieved after two respecifications. The discussion of the fit of model that follows is based on the final model[61]. To accomplish confirmation of the model we need to look at the fit estimates of the model. There are several fit estimations available in most SEM software programs. Table 4.1 shows four alternative fit measures for three models: the starting original model, and the ones achieved after one and two respecifications. A description of these respecifications is found later and its documentation can be found in Annex 3.

The first fit measure is the Chi-square that shows the degrees of freedom of the model and its *p* value. This test is highly sensible to sample size and it is not relevant for studies of 200 cases or more. It is presented mainly to show the degrees of freedom of the models as well as the achieved improvement after each respecifications. The other three measures are the ones used here to determine if the model is accepted or rejected. The value of the Comparative Fit Index (CFI) test should be above 0.90 to be acceptable and is it considered of good if it is higher than 0.95. The Root Mean Square Error (RMSE) is expected to be below 0.05 with the lower bound approaching cero and the upper bound not higher than 0.10. The third criterion is provided by the Hoelter .05 index which is expected to produce a number higher than 280 for the model to be considerer of good fit. These are the most commonly used fit measures and the ones

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[61] The original as well as the first respecified model were also confirmed by their respective fit estimates.

appropriate for the type of model under analysis. Additional measures include the Chi Square to degrees of freedom Ratio, the Bentler-Bonett Index or Normed Fit Index, Tucker Lewis Index or Non-normed Fit Index, p of Close Fit, Standardized Root Mean Square Residua, Akaike Information Criterion and Bayesian Information Criterion (see Kenny 2012 for a description and discussion of fit measures).

As the table 4.1 demonstrates both groups present a good fit, thus the general model of causation is accepted in both the D.F. and Guanajuato. The CFI was lower than the accepted standard in the original model but in the final (after the second respecification) an acceptable fit was achieved in D.F. and a good fit for Guanajuato. A similar thing happens when we evaluate the fit according to RMSEA and as it is shown both in D.F. and Guanajuato we have a good fit according to this indicator. Finally if we evaluate the Hoelter .05 index, we see very good fits in both groups after the first respecification. This is conclusive evidence that the hypothesized causal relation is confirmed empirically by the data. In other words, the data confirms that it is possible that perceptions of crime and corruption impact social capital in the hypothesized way. This is not conclusive evidence of causality and does not constitute the only available relational model available for this specific set of variables. This means that other causal relation between variables –including some with reverse or circular causation—can also fit the data.

Respecification of the models was conducted with an empirical test[62] method following three criteria supported in the literature: they were based on theoretical rationale; a causal link was eliminated if found to be statistically insignificant; or added a casual link for relations between variables with high modifications indexes that lead to a significant causal link. Both the first and either the second or third criteria were needed in order to make respecifications to the original model. It is important to note that the respecifications for D.F. and Guanajuato are slightly different which means that group moderates the model. However final models group do not vary greatly; the differences are discusses later in the chapter.

Table 4.1. Measures of model fit by group

D.F.

		Model	
Measure of fit	**Original**	**Respecification 1**	**Respecification 2**
Chi square (DF), p	766,951 (97),	419.150 (98),	250.142 (87),
CFI	0.619	0.817	0.907
RMSEA (lower /	0.083 (0.078 /	0.057 (0.052 /	0.043 (0.037 /
Hoelter .05 index	157	290	436

GUANAJUATO

		Model	
Measure of fit	**Original**	**Respecification 1**	**Respecification 2**
Chi square (DF), p	1008.407 (97),	315.470 (90),	205.881 (86),
CFI	0.574	0.911	0.952
RMSEA (lower /	0.089 (0.084 /	0.046 (0.040 /	0.034 (0.028 /
Hoelter .05 index	144	431	633

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[62] According to Kenny there are two general methods to respecify a model: (a) a priori looking at potential modifications or simplifications of the model form a theoretical perspective; and (b) and through the use of empirically test in the data (2010).

As it was discussed in the previous chapter, the demographic anchors were not defined in the original model; however it was expected that each of these four demographic variables would impact other variables in the model. Most of the respecifications are of this type; that is casual links between demographic anchors and substantive variables. Demographic variables are only allowed to function as exogenous or anchors in the model, in other words they can only be independent variables. For the D.F. a total of eight links between a demographic anchor and a substantive variable were added in the first respecification and six in the second. For Guanajuato we have 12 and 4 respectively. Additionally in both groups there were several added links from experience of crime and corruption to other substantive variables (three in D.F. and six in Guanajuato), which means that experience of crime and corruption are more *powerful* than originally expected. Information on added or deleted links is presented in Table 4.3 and Annex 3. Specific results are discussed below.

4.1.2. Confirmation of causality between variables

Now that we have confirmed the general model of interaction we need to assess if we met the requirements to confirm causality between variables. A first step is to assess three criteria in order to infer causality form correlations: time precedence, correctly specified causation and control for other variables (see Kline 1998: chapter 5). My measurement of variables is concurrent (i.e. obtained in the same measurement instrument), so technically speaking I cannot demonstrate time precedence. However admission by a respondent of being a

victim or having participated in corruption measure past events and the rest (e.g. interpersonal or institutional trust) reflect the opinion of the interviewee on the day of the interview. Hence theoretically speaking there is room to make the argument for time precedence[63]. This *substantive rationale* way to argue causation and precedence is complemented by Seligson and Booth (2009). They argue that victims of crime and corruption are not selected by criminals depending on their levels of participation or trust. In other words the more trusting or participating individuals are equally likely to be victims of crime and corruption that individuals with lower levels of participation and trust; selections of victims is independent of current levels of social capital of the victim.

The second thing needed to infer causality from correlation is to have a correct specification of causation. In other words to correctly draw lines in the model form causing variables to caused variables. This refers to the issue of directionality discussed in chapter two were we stated that (a) it is possible that the relation between crime/corruption and social capital is reverse or circular; and (b) form a theoretical point of view it holds that levels of social capital can be reduced by crime and corruption. The third aspect, control for other variables, assures that relation between variables holds when we partial out (i.e. control for) the effect of other variables. This is achieved in regression analysis and in SEM models as the one presented here where the other variables in the model control the effect of each independent or causing variables.

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[63] However I do think, as it is suggested by the diagram of the impact of perception on attitudes discussed in chapter one, that there is reciprocal causation. For example becoming a victim in time 1 may cause an individual to become less trustful of others in time 2 and this in exchange can make this individual less likely to become a victim in future times.

Additional to this assessment of causality form correlation and as a way to conclusively determine causality, we could do further experiments, have accurate predictions or replicate the model across independent samples. The scope of my research does not include any follow up survey or additional experiments. It is also impossible to determine if predicted causations were accurate or not; this would be a *criterion* type of validation rarely achieved in the area of political science. However, since my research is by design a comparison between groups --in my case independent samples in the D.F. and Guanajuato-- and because they were conducted at different times (2004 and 2005 respectively), this can be viewed as evidence of a successful replication of the causal model. Such replication contributes to the robustness of the results and is seen here as partial confirmation of causality. The next two sections talk about the results and discuss the main finding comparing the D.F. to Guanajuato.

4.2. How and how much is social capital impacted by crime and corruption?

4.2.1. Interpretation of the data

"The simplest way to conduct a multisample path analysis is to estimate the model separately for each group and then compare the unstandardized solutions" (Kline 1998: 187)[64]. This is the procedure that was followed. Each factor loading obtained in the model represents the effect size between two

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[64] Once the model has been respecified based on empirical evidence we will use standardized coefficients.

variables in the model that have a causing link between them, They are easier to use because they are similar to regression coefficients[65]. Following is an example on how to read the numbers presented from here on and that determine how social capital and other relevant democratic attitudes are impacted by crime and corruption. If a relation between two variables in the model is said to have an effect size of 0.15 it should be understood that the dependent variable or caused variable is *expected* to have an increase of 0.15 standard deviations for every change of one full standard deviation in the independent or causing variable. If the effect size has a negative sign it means the opposite effect (Kline 1998: 120). As in a regression, the effect size is controlled by the other variables impacting the dependent variables that are included in the model. In order to evaluate the magnitude of the impact we will consider the following: small effect size if the value is lower than 0.10, medium if it s a value around 0.30 and large if it is greater than 0.50 (see Bollen 1989: 137). It is important to note that as a result of a large sample such as the one presented here, effect size between variables is expected to be highly significant but of very small magnitude (Kline 1998: 13).

4.2.2. How is social capital impacted by crime, corruption and fear?

Figures 3.2 and 3.3 presented the hypothesized causal relations included in the model. A total of 19 relational links were drawn in the model between the main causing variables (crime, corruption and fear) and the key independent variables that capture the concept of social capital (personal trust, institutional

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[65] Standardized coefficients are equivalent to correlations and/or variance explained. For more information see Kline (1984) and Kenny (http://davidakenny.net/kenny.htm)

trust, reciprocity, formal and informal participation). Table 4.2 is a summary of these 19 hypothesized relations included in the original model before the respecifications. We need to remind that these are not all the links included in the model but only the ones that impact the cognitive or structural components of social capital. A total of thirty causal arrows are drawn in the model shown in figure 3.2 and we expect additional links once the significant impacts of the four demographic anchors are included in the respecifications. It is important to note that it was also hypothesized in the original model that fear would be caused by both experience and perceptions of crime. The exact same model was tested (i.e replicated) in both groups.

Table 4.3 shows for both groups the regression estimates obtained in the original model. This are consider *direct effects* between the variables. About half of the hypothesized causal relations hold when we run the original model: 10 out of 19 in the D.F. and 9 in Guanajuato[66]. Before we discuss specific impacts between variables two important general findings need to be pointed out. The first one is the number of relations that have a statistically significant effect, in other word the number of hypothesis that is empirically confirmed by the data. The last two columns in Table 4.3 present an account of which relations were kept and which dropped in the respecification process. As the reader can see we have very similar patterns in both groups with the greatest variations found on experience and perceptions of crime. However as it is shown in the table *fear* negatively impacts most components of social capital and because both

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[66] Because new relational links are added in the first and second respecification, some of these kept links can be eliminated in the later (respecified) models. In the final model achieved after two respecifications ends up with nine of the original links in the D.F. and six in Guanajuato.

experience/perception of crime/corruption increases fear, *indirect effects* (through fear) can be found between crime/corruption and social capital. This total impact, which includes direct and indirect effects is discusses later in the chapter.

Table 4.2. Summary of the hypothesized causal relations from crime, corruption and fear to of social capital

	Social Capital Dimensions					
	Cognitive dimension			Structural		
Independent	Personal Trust	Institutional Trust	Reciprocity	Formal Participation	Informal Participation	Total
Crime experience	+		+			2
Crime perceptions	+	+	+	+	+	5
Corruption experience		+		+	+	3
Corruption perceptions	+	+	+	+	+	5
Fear	+		+	+	+	4
				Total number of hypothesized relations		**19**

The second relevant general finding is that not all effects (significant or not) in the model are in the expected direction. However in practically all cases these relations are not statistically significant. In the D.F. both experience and perceptions of crime present a significant impact in a direction opposite to the one expected. This is the case of the paths of experiences of crime to personal trust and perceptions to reciprocity and formal and informal participation. Additionally we see that in both groups experience with corruption increases institutional trust but in a non-significant way. The same happens with the relation between fear and formal participation but this relation is only statistically significant in Guanajuato.

As the table shows experience of crime impacts reciprocity in Guanajuato and the effect of perceptions of crime on institutional trust is only confirmed in the D.F. Regarding experience with corruption we see that the hypothesized impacts

on the structural social capital are confirmed in both groups but the opposite happens for the impact on institutional trust. For perceptions of corruption we also see confirmation of impact on the cognitive variables in both group but only a small significant impact on formal participation in the D.F. Finally fear impacts three out of four expected variables in each group but it is not significant on formal participation in the D.F. nor on informal in Guanajuato.

Table 4.3. Empirically tested causal relations in the original model between crime, corruption and fear and social capital

		Regression Weights Estimates / Original model		Result	
Independent	Dependent	DF	Guanajuato	DF	Guanajuato
Crime Experience	Personal Trust	0.021	-0.054	Dropped	Dropped
	Reciprocity	-0.076	-0.211**	Dropped	**Kept**
Crime Perception	Personal Trust	-0.037	0.078	Dropped	Dropped
	Institutional Trust	-0.194**	0.132	**Kept**	Dropped
	Reciprocity	0.014	-0.008	Dropped	Dropped
	Formal Participation	0.009	-0.010	Dropped	Dropped
	Informal Participation	0.015	-0.010	Dropped	Dropped
Corruption Experience	Institutional Trust	0.041	0.013	Dropped	Dropped
	Formal Participation	0.042*	0.043**	**Kept**	**Kept**
	Informal Participation	0.025**	0.016*	**Kept**	**Kept**
Corruption Perception	Personal Trust	-0.133**	-0.092*	**Kept**	**Kept**
	Institutional Trust	-0.406**	-0.591**	**Kept**	**Kept**
	Reciprocity	-0.086*	-0.062*	**Kept**	**Kept**
	Formal Participation	-0.147*	-0.047	**Kept**	Dropped
	Informal Participation	-0.037	-0.014	Dropped	Dropped
FEAR	Personal Trust	-0.145**	-0.195**	**Kept**	**Kept**
	Reciprocity	-0.076**	-0.074**	**Kept**	**Kept**
	Formal Participation	0.021	0.076*	Dropped	**Kept**
	Informal Participation	-0.093**	0.016	**Kept**	Dropped

*p<.05; **p<.01

Before discussing the total effect (direct plus indirect effect) that crime, corruption and fear have on social capital, following is a brief description of the significant effects found in the final model (after two respecifications were conducted). Table

4.4 shows the unstandardized regressions weights of all variables in the model; it includes the first modification and second modification or final model for each group. Many things can be discussed from the table, which is equivalent to the data of twelve regression equations (one for each dependent variable listed in the second column). In the next section we will discuss the impact of crime/corruption on other democratic attitudes as well as how the demographic anchors shape the model. For now we continue the discussion of the impact of the context of crime/corruption on social capital. For easiness of identification of variables included in the measured concept of social capital are highlighted with a small gray square to their left. The table first shows the substantive dependent variables (crime, corruption and fear) and then the demographic anchors. In Table 4.3 we presented the variables that were dropped from the model because no empirical evidence was found in the data to support their hypothesized causal relation. We now turn our attention to causal relation that were not hypothesized but were added in the first or send respecification of the model. Added links are highlighted in bold in Table 4.4. We remind the reader that links were added only if they made sense from a theoretical rationale and if they presented high modifications indexes that could lead to a significant causal link and/or improve the fitness of the model discuss earlier in the chapter. For the moment we will only discuss additional links from crime/corruption/fear to social capital.

A link from crime experience to informal participation was added in both groups[67] and in Guanajuato an additional link from this causing variable to formal participation was included. Because it was hypothesized that perception of crime

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[67] In Guanajuato this link was non-significant and dropped in the final model.

and corruption would negatively impact all the five social capital variables (three cognitive and two structural) no additions links were possible. In the final model achieved through two respecifications we get confirmation for three of these link in the D.F. (the three cognitive) and only two in Guanajuato (institutional trust and reciprocity). An important link for its potential indirect effect was added from experience of crime to fear. It was hypothesized that fear would impact all social capital items except institutional trust; in final model the link from fear to formal participation is dropped and in Guanajuato the impact on personal trust is also eliminated. We turn now to the major findings based exclusively on direct effects found to be statistically significant in the final model (see Table 4.4.).

Experience of crime has little direct effect in the D.F. impacting significantly only informal participation. In Guanajuato it has a negative and significant impact on reciprocity but a large and positive impact on formal participation. This is an energizing effect like the *Marti* or *Sicilia* reactions described in chapter II. An alternative or complementary way is to see it as in part as an increment of activity from formal organizations due to an increased concerned of the situation with crime and part as a "focus of attention" from these organizations to approach and focus on the issue of crime, as in the case of the organization found by Marti or the movement triggered by Sicilia's actions. Whatever the case it seems that in many individuals the experience of crime serves as powerful detonator for action. Be it to abandon the city where they live to find a safer place or to stand up and fight, these experiences appear to be having a "last straw" effect and are

increasing the participation of individuals. We have yet to see if this is a long positive effect or only a momentary reaction from a cornered or wounded society.

It was expected that the experience of crime would impact personal and institutional trust but these links are not found in the data as a direct effect. There was only one direct effect of perception of crime: negative impacts on institutional trust in the D.F. No other direct effects of perception of crime were found on either group, again something not expected. However perception of crime has a considerable impact on fear on both groups (0.328 and 0.342 respectively) and experience of crime has a large impacts fear in the Guanajuato (0.914) but not in the D.F. Therefore significant indirect effects of crime, from either experience or perception, are found in both groups, which will be discussed later.

Out of the four *contextual* variables (i.e. the two crime and two corruption indexes) the one with the biggest effect on social capital is perceptions of corruption. In the D.F. it negatively impacts the three components of the cognitive dimension of social capital with small effects size on personal trust and reciprocity and medium effect on institutional trust. In Guanajuato no effect was found on personal trust but the findings report similar small and medium impacts on reciprocity and institutional trust respectively. Under the argument that corruption is generally a situation were an institution is present it was expected that the largest effect would be found from perception of corruption to institutional trust. However it could be relevant to the quality and future of democracy in Mexico that the data show that perceived corruption is also impacting individual

trust and attitudes of reciprocity between individuals. It was hypothesized that perceptions of crime would impact the structural dimension of social capital but such causal relation wasn't found in the data for neither group. For the experience of crime four causal relations were expected but none confirmed. However this variable has a significant impact on fear, which means that it indirectly can impact social capital. In both groups fear negatively impacts personal trust and reciprocity and in the D.F. it also has an effect on informal participation.

We now turn to the total effect of crime/corruption/fear on social capital. The total effect results from the sum of the direct and indirect statistically significant effects (in this case thorough fear) between variables in the final model of interaction. The AMOS software used to run the SEM analysis produces calculates both effects so by adding them we can present the total effect between variables, which is reported in Table 4.5. All the numbers presented in the table are statistically significant standardized coefficients[68] and represent the sum of the direct and indirect effect of each causal relation link in the final model. To discuss the result we will now turn our attention to the dependent variables, that is the dimensions of social capital found in the six first rows of each group in the table. The table also includes results for the three variables that do not form part of the social capital construct but are relevant democratic attitudes or correlates: human capital, civic engagement and satisfaction with democracy (last three rows of each group). Findings for these variables are discussed in the next section.

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[68] The numbers in Table 4.4 are unstandardized coefficients and thus different from the ones in this table.

Table 4.4. SEM Regression Weights: First Modification and Final Model by Group
Unstandardized Coefficients

Independent	Dependent	DF Regression Weights		GUANAJUATO Regression Weights	
		First Resp.	Second Resp.	First Resp.	Second Resp.
CRIME Experience	Reciprocity			-0.207**	-0.211**
	Formal Participation			**0.514****	0.586**
	Informal participation	**0.112****	0.127**	**0.08**	
	FEAR			1.005**	0.914**
	Human Capital			**0.107***	0.078
	Civic engagement		-0.112**		-0.122**
CRIME Perception	Institutional Trust	-0.170*	-0.172*		
	FEAR	0.320**	0.328**	0.383**	0.342**
	Civic engagement	-0.116**	-0.101**	-0.119**	-0.112**
Corruption Perception	Personal Trust	-0.147**	-0.147**	-0.063	
	Institutional Trust	-0.395**	-0.379**	-0.529**	-0.495**
	Reciprocity	-0.088**	-0.076*	-0.065**	-0.054**
	Formal Participation	-0.115			
	Human Capital	-0.063**	-0.065**		
	Satisf. Democracy	-0.06**	-0.06**	-0.034**	-0.034**
Corruption Experience	Formal Participation	0.042*	0.03	0.026	
	Informal participation	0.010		0.002	
	FEAR	**0.069****	0.077**		**0.056****
FEAR	Personal Trust	-0.150**	-0.150**	-0.192**	-0.196**
	Reciprocity	-0.076**	-0.078**	-0.076**	-0.073**
	Formal Participation			0.029	
	Informal participation	-0.086**	-0.083**		
	Human Capital	-0.088**	-0.087**	-0.081**	-0.077**
	Civic engagement	-0.106**	-0.099**	-0.084**	-0.073**
	Satisf. Democracy			-0.022**	-0.021**
DEMOGRAPHICS					
AGE	Informal participation	**-0.029****	-0.03**	**-0.028****	-0.028**
	FEAR				**-0.026****
	Human Capital	**-0.009***	-0.009*	**-0.027****	-0.026**
	Exp. Corruption			**-0.05****	-0.050**
EDUCATION	Informal participation	**0.109****	0.105**	**0.101****	0.108**
	FEAR		**-0.173****		
	Human Capital	**0.116****	0.115**	**0.15****	0.169**
	Exp. Crime		**0.093****	**0.096****	0.097**
	Percept. Crime		**0.166****	**0.19****	0.218**
SOCIO ECONOMIC LEVEL	Formal Participation		**0.105****		
	Informal participation	**0.033****	0.041**		
	Human Capital	**0.029****	0.029**	**0.023**	
	Exp. Crime			**0.182****	0.209**
	Percept. Corruption				0.056**
GENDER (Female)	Informal participation	**-0.546****	-0.578**	**-1.158****	-1.173**
	FEAR		**0.889****		
	Human Capital	**-0.745****	-0.816**	**-0.794****	-0.798**
	Civic engagement		-0.433**	**-0.267****	0.300**
	Percept. Crime				**0.345****
	Percept. Corruption				**-0.287**

*p<.05; **p<.01
In bold = variables that were added to the model on the criteria of (1) theoretical consistency and (2) magnitude of the modification index

The first major finding is that the three components of the cognitive dimension of social capital, personal and individual trust and reciprocity, are significantly impacted by both crime and corruption. Only in the D.F. we find no effect from experience of crime to any of the three components. Perceptions of crime and corruption, each impact the three components in the D.F. and two of the three in Guanajuato. Personal trust and reciprocity appear to be particularly hurt by the four contextual variables (i.e. experiences and perceptions of crime and corruption). All of these contextual variables impact personal trust in both groups with the exception of experience of crime in the D.F. and perceptions of corruption in Guanajuato. We find a similar effect on reciprocity but in this case only experience of crime in the D.F. does not affect it. Results also suggest that in the D.F. perceptions are more important than experiences but they are equally *powerful* in Guanajuato.

The second major finding is that we see very different patterns of affection of the structural dimension of social capital. In Guanajuato only formal participation is impacted by experience of crime and in direction opposite to the one expected (i.e. in a positive way). On the D.F. however, formal participation is not impacted by any of the four contextual variables but informal participation is affected by three of them. As in Guanajuato, there is a positive impact of experience of crime to this dependent but experience of corruption and perceptions of crime have as negative impact on this variable. Such dissimilar patterns may be attributed to the amount of crime and corruption found in each group. At the time of the surveys

the D.F. was a high crime/corruption context while the opposite was true for Guanajuato.

The third relevant finding is the large effect that crime/corruption have on fear; this was expected and greatly contributes to the total effect (direct plus indirect) results of Table 4. 5. There are three important issues to be discussed about this relation. One hand there is the issue of the pattern: in both groups we find no effect from perceptions of corruption and fear but significant impacts of perceptions of crime and experience of corruption. We expected causal links from crime to fear but little or no effect from corruption to crime. It is very interesting and relevant that experiencing corruption, a variable that unfortunately is increasing, as we will see in the next chapter, makes individuals live with more fear. Experience of crime impacts fear only in Guanajuato. This may have to do with the size of the problem of victimization in the D.F.; this does not suggests that experience of crime does not impact fear but it probably means that we find little variations in individuals, because most individuals have had close experiences of crime (directly or through close relatives). In other words experience of crime in the D.F. in 2004 behaved less a variable and more as a constant.

On another hand we have the issue of the size of the effect. As we see from the results comparatively speaking the context of crime/corruption has a greater impact on fear than on variables of social capital. This is crucial for two reasons: (a) it means that it has a greater impact on feelings (fear) than attitudes (trust) or behaviors (participation); and (b) strongly suggest that studies of how social

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capital and other key democratic attitudes are being impacted by crime and corruption should be moderated (or at least control for) by a measurement of individual fear otherwise we may find unwanted results such as type II errors, spurious relations and even result showing wrong directionality. The third thing is the issue of how individual react differently to adverse context. Not all individuals that experience/perceive crime or corruption will become fearful. For example two people that experience the same car crash or that live together through the same robbery or crime do not react in the same way. While one may be greatly affected by the event and become fearful and distrustful of others while the other one may become angry/braver wanting to do something about it like actively participate in finding a solutions on combating these problems. It is very possible that the less the adverse the context in terms of crime the more fearful an individual becomes when experience crime. This is the case of a low crime environment such as Guanajuato 2005. However in high crime environments such as the D.F. people overcome fear, precisely out of surviving it through repeated and extended experiences, and become sort of immune to it. This may be similar to what happened to cities like Medellin in the early 90´s and partially explains why experience of crime detonates participation. Another aspect that need to be consider is how violent are the experienced crimes. The type of crimes and the degree of violence associated with them is very different in Colombia 1990, than in D.F. 2004, the U.S.A. after 9/11 or Monterrey violent murders in 2011. My data has no sufficient depth to incorporate *variance by violence* but this is something that should be explored in future research.

The fourth and last finding discussed from the results of Table 4.5. is how fear (last column) affects social capital. In both groups we see a negative impact on personal trust and reciprocity. We find no effect on institutional trust but we do see that stocks of cognitive social capital may diminish if levels of fear in a society increase. That personal trust and reciprocity, crucial relational attitudes, are affected in such way by the conditions of fear should be of great concern due to the power of perceptions. One of the largest effects found in the model is that perceptions of crime greatly impact fear. In an context like that of Mexico 2010-2011, were a perceived environment of crime and public insecurity has greatly increased, as well as actual crime victimization and violent deaths, there is a real possibility that the stocks of personal trust and reciprocity in most areas of Mexico have and continue to be affected. Recent data on victimization and perceptions of crime and corruption is presented in the next chapter.

We have been analyzing the result from specific to general. We first looked at the direct effects of each causal relation for both groups (Table 4.4); we then turned our attention to the total effect (the sum of direct and indirect effect found in Table 4.5) also in both groups. To conclude this section we now analyze a simpler model that we will call the *context* model. This model groups the four contextual variables into one single index to capture the effects of an adverse context of crime/corruption that includes both experiences and perceptions of individuals. We know from the lengthy discussion above about the specific results that the more complete/detailed models depict a series of complex interactions. However all the findings indicate that crime and corruption do

adversely impact social capital and this is clearly shown in this simpler *context* model. The model showing impact of context on social capital is shown in Figure 4.1.

Table 4.5. Total Effect of Crime, Corruption and Fear on Social Capital by Groups

	CRIME		CORRUPTION		FEAR
D.F.	Experience	Perception	Experience	Perception	
COGNITIVE SOCIAL CAPITAL					
Personal Trust	ne	-0.044	-0.030	-0.103	-0.182
Reciprocity	ne	-0.033	-0.023	-0.078	-0.139
Institutional Trust	ne	-0.079	ne	-0.137	ne
STRUCTURAL SOCIAL CAPITAL					
Formal Participation	ne	ne	ns	ne	ne
Informal Participation	0.099	-0.042	-0.029	ne	-0.176
FEAR	ne	0.240	0.164	ne	-
HUMAN CAPITAL	ne	-0.046	-0.032	-0.083	-0.193
CIVIC ENGAGEMENT	-0.109	-0.259	-0.043	ne	-0.262
SATISFACTION DEMOCRACY	ne	ne	ne	-0.187	ne

	CRIME		CORRUPTION		FEAR
GUANAJUATO	Experience	Perception	Experience	Perception	
COGNITIVE SOCIAL CAPITAL					
Personal Trust	-0.063	-0.053	-0.026	ne	-0.255
Reciprocity	-0.154	-0.031	-0.015	-0.067	-0.150
Institutional Trust	ne	ne	ne	-0.198	ne
STRUCTURAL SOCIAL CAPITAL					
Formal Participation	0.162	ne	ne	ne	ne
Informal Participation	ne	ne	ne	ne	ne
FEAR	0.248	0.207	0.103	ne	-
HUMAN CAPITAL	ns	-0.036	-0.018	ne	-0.176
CIVIC ENGAGEMENT	-0.167	-0.268	-0.024	ne	-0.236
SATISFACTION DEMOCRACY	-0.031	-0.026	-0.013	-0.127	-0.125

All numbers show standardized coefficients
ns = included in final model but not statistically significant
ne = no effect

Table 4.6 shows the total effect (direct and indirect) of this nested hybrid model, in which the experience and perception of crime and corruption are grouped into a single unobserved latent variable called context[69].

Figure 4.1. Context model
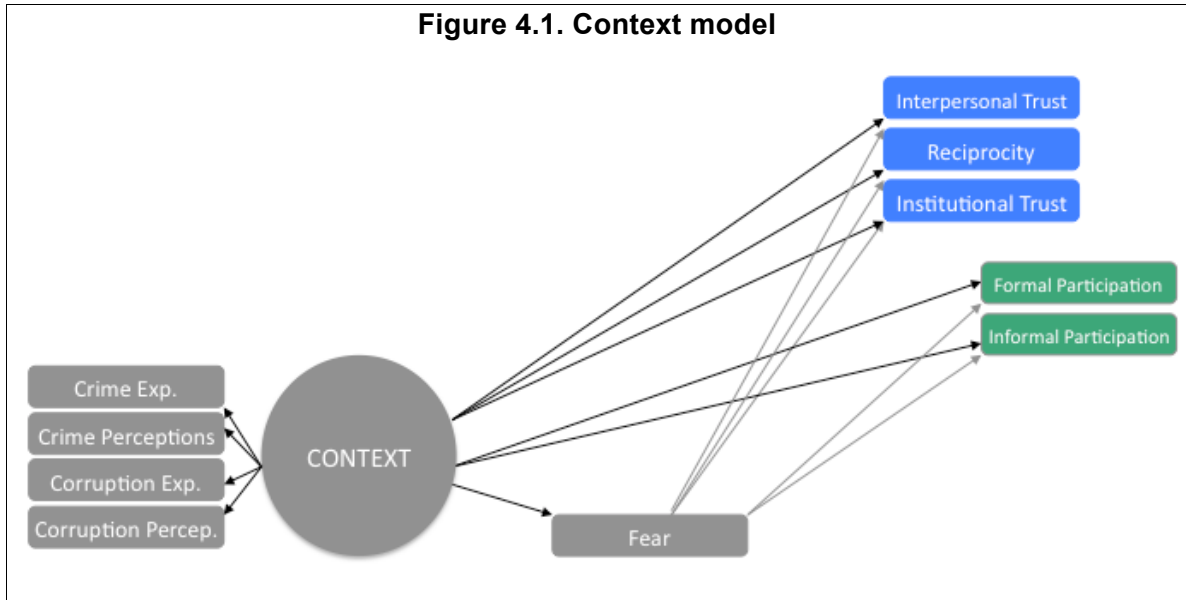
By doing so, I am able to show in a single number the effect of the context of crime and corruption on each of the components of social capital. The impact of crime and corruption on the cognitive dimension of social capital is significant and moderately high in both groups. We find practically the same pattern of the effect of context of crime and corruption on social capital in both groups although there are interesting differences in the magnitude of these effects. The three most important things reinforce the discussion we have had up to here and can be viewed as a summary of the major findings.

- Crime and corruption adversely impact the cognitive dimension of social capital: people that experience or perceive a context charged with crime

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[69] It is a hybrid model because it includes both unobserved construct and observed variables or indexes. In this model "Context" is not an added index of the four contextual variables but rather a calculated unobserved construct that results form these variables.

and corruption are more likely to have lower levels of personal and institutional trust and reciprocity than those who don't.

- The impact of crime and corruption on the structural dimension of social capital appears to be dependent on the context with small effects in high crime/corruption contexts such as the D.F. and almost non-existent in low crime/corruption environments like Guanajuato.

- Context of crime and corruption has a strong effect on fear in both groups but is significantly higher in Guanajuato were the problems are less wide spread and historically less common than in the D.F. This is of great importance because fear impacts both the cognitive and structural dimensions of social capital.

Table 4.6. Total Effect of Context on Social Capital by Groups

	D.F.	Guanajuato
COGNITIVE SOCIAL CAPITAL		
Personal Trust	-0.219	-0.243
Reciprocity	-0.229	-0.329
Institutional Trust	-0.221	-0.120
STRUCTURAL SOCIAL CAPITAL		
Formal Participation	-0.011	ne
Informal Participation	-0.071	-0.017
FEAR	0.408	0.619
HUMAN CAPITAL	-0.140	-0.087
CIVIC ENGAGEMENT	-0.350	-0.519
SATISFACTION DEMOCRACY	-0.244	-0.246

Standardized coefficients, All effects are significant at p<.001
ne = no effect

4.3. Additional findings: the impact of crime and corruption on democratic attitudes and differences by key demographic segments

Up to here we have presented in detail the results that show the impact of crime and corruption on social capital. We first discussed the direct effect on all hypothesized and added (through respecifications) causal links followed by the total effect and finally presented a more parsimonious model called the context model. We now turn to two additional sets of results that are found in the data and that complement our understanding of the political cost of crime and corruption. The first one is how human capital and other important democratic attitudes are being impacted by crime and corruption. The second set of results has to do with how the four demographic anchors of the model (i.e. gender, age, education and socio-economic level) impact the rest of the variables. For the former we will discuss the results presented in Table 4.5 and 4.6 and for the latter will use Table 4.4.

4.3.1. The impact of crime and corruption on democratic attitudes

In sum the context model discussed at the end of the previous section, tells us that: (a) crime and corruption have a small negative effect on human capital measured here partially as self-reported personal health; (b) medium to high negative impact on civic engagement a behavior measured by the activity index; and (c) a moderate negative impact on satisfaction with democracy. These findings hold for both groups (see Table 4.6). We find data on specific interaction between the four contextual items and these other democratic attitudes in Table

4.5. Here we see that perceptions and experience of corruption as well as perceptions of crime are negatively impacting human capital in the D.F. Fear also negatively impacts human capital with greater effect size. We find the same pattern in Guanajuato except that here there is no significant effect from perceptions of corruption. These findings speak of an additional and relevant political cost of crime and corruption as it is confirmed that they hurt an important component of human capital.

We find an identical pattern of the impact of crime/corruption on civic engagement in both groups: experience and perceptions of crime as well experience of corruption and fear negatively impact civic engagement. The biggest impact comes from perceptions of crime and fear, more than double the impact of the two other variables. Finally we see that satisfaction with democracy is greatly impacted in Guanajuato --the four contextual variables plus fear have a negative impact on it—but we only see that perceptions of crime mildly impact it in the D.F. It is not clear why we see this dissimilar pattern and why there is a very little effect on democratic satisfaction in the group with higher crime/corruption.

4.3.2. Differences by key demographic segments

Table 4.4 shows regressions weights of all variables in the model by group. Many things can be discussed from the table, which as it was already said, is equivalent to the data of twelve regression equations. To illustrate the depth and richness of the data and how we can *unpack* many details of the

complex interaction contained in the model we will discuss the case of the impact of gender on informal participation: This will serve as an example of the potentially rich interpretation that can be produced from such SEM models. To conclude the chapter we will do a summary of the main effects of the demographic anchors.

Gender related research on social capital shows that in the less developed world, women play a central role in the generational stocks of social capital (Molenaers 2003). The reason is very simple: these women do not work and stay at home in higher proportions than women in the developed world. Thus they have a higher impact on the transmission of values (e.g. trust and reciprocity) and knowledge (e.g. interpretation of context) to future generations. Additionally they are in many instances 'the motor' behind all sorts of informal cooperative behavior, from sharing child-caring responsibilities to informal financial networks of support. In places where these two assumptions hold (I believe this is the case of Mexico, especially in middle/low socio-economic stratus) women play a crucial role on the stocks of social capital, particular on future stocks. The results of my model show that there is an inverse relation between gender (male) and informal participation; this confirms the second assumption. Unfortunately results also show that women are more prone to become fearful and less active thus reducing civic engagement, remember we have shown that fear is one of the variables that in greater amount appears to adversely impact social capital. As this example shows, the model can help qualify some complex relations; in this

case additional information to fine-tune the adverse effect of crime and corruption on future stocks of social capital in Mexico.

The statistically significant effects of the demographic anchors are as follow. Age negatively impacts informal participation and human capital in both groups and experience of corruption and fear in Guanajuato. It is understandable and expected that younger individuals participate more, report better personal health and are less fearful than older individuals. However it was not expected that they would be less exposed to or participate in corruption; this however is a positive thing for democracy and it can signal a change in culture as younger individuals are less prone to be active in corrupt practices. Education has a positive impact on informal participation, human capital, experience and perceptions of crime in both groups and additionally an inverse impact on fear in the D.F. These all can be expected if we understand that education is highly correlated with income, hence it is understandable that the more educated the individual the more likely that s/he participates and the more well off s/he will repot better person health and be more concerned about crime and potentially report lower levels, perhaps more reasoned and/or informed, of fear. Socio-economic level has a significant effect on both formal and informal participation and on human capital but only in the D.F. However it shows no significant relation to perceptions of crime or fear on either group. In Guanajuato it also shows a moderate impact on experience with crime and low on perceptions of corruption. These effects were not necessarily expected but have been documented before. Finally we come back to the impact of gender. Women report statistically significantly lower levels of

human capital and informal participation, but greater levels of fear and civic engagement than men for both the D.F. and Guanajuato. Additionally in Guanajuato they report lower levels of perceived corruption but higher perception of crime.

Chapter V: The magnitude of the problem today

There can be no daily democracy without daily citizenship.

Ralph Nader

In the previous chapters I presented the theoretical relevance of the main research question and have empirically tested and accepted all working hypothesis. Are Mexicans that have greater perception and exposure to crime and corruption less likely to trust each other and participate actively in their communities? The answer is yes, and as the results have shown, in turn this may prove to have a significant impact on the quality of democracy and economic development. The data presented here is evidence that victims of crime/corruption and individuals who have greater perceptions of the magnitude of these problems live with greater fear, report worse personal health, report lower levels of personal and institutional trust, participate less and are less satisfied with democracy (see Table 4.6).

There are four discussions in this final chapter. The first one presents aggregated and individual level data on crime and corruption in the last decade as a way of showing the magnitude of the problem in Mexico as well as its current trends. In the second section additional data at the hemispheric level on the impact of crime/corruption on social capital is presented; the discussion of the generalization of my findings is covered here. The third is a prospective discussion on the stock of social capital in the context of the findings of the previous chapter and the current crime/corruption data. The last section closes

with general concluding remarks, included here is the discussion of the implications for the quality of democracy in Mexico.

5.1. The Magnitude of crime and corruption in Mexico in the new millennium

The Conflict Barometer (CB) of the Heidelberg Institute for International Conflict Research has developed a four-category countries classification: non-violent country, crisis country, country with limited war and country with war[70]. Mexico had been a non-violent country until 2007 when the CB classified it as a country with a sever crisis; however starting in 2010, and for the last three years, Mexico has been considered a *war* country. This is how bad things have gotten in terms of crime and violence in Mexico.

Many expected that the country's executions would significantly decrease with the presidency of Peña Nieto arrival of the return of the PRI to government but this has not been the case. A total of 2,338 executions were reported in the last 100 days of president Calderon who's government started the "war on crime" by directly confronting the drug cartels with the use of the army; in the first 100 days of the new government this number slightly increase to 2,351[71]. An average of almost 800 deaths (almost 30 daily) by execution is a ridiculously high figure and by far the most salient news topic. Even though the fight against crime is concentrated geographically, the phenomenon has permeated perceptions

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[70] For more information on the reports with results and classification criteria consult the Institute's web site at: http://www.hiik.de/en/konfliktbarometer/index.html
[71] Source: Ejecutometro by Reforma newspaper (http://gruporeforma.reforma.com).

across the country. This has been captured in public opinion polls and victimization surveys.

According to the Consulta Mitofski poll series, perceptions regarding the main problem facing the country are concentrated in economic and security issues with a recent change in the incidence of each. The data is presented in Figure 5.1 and shows that the percentage of Mexican adults that responded that *security* is the main problem facing the country was about on fifth to one third of the population from 2006 to 2009; however we see an inflection point starting in early 2010 with a peak in 2011[72]. The numbers show that since 2011 security is the main concern for roughly half of the adult population. Perceptions have clearly been impacted and unfortunately it is not just a *media* effect or social paranoia. There is evidence that the number of victims has been on the raise lately.

Figure 5.1. Perceived main problem of Mexico 2006 - 2013

Source: Consulta Mitofski

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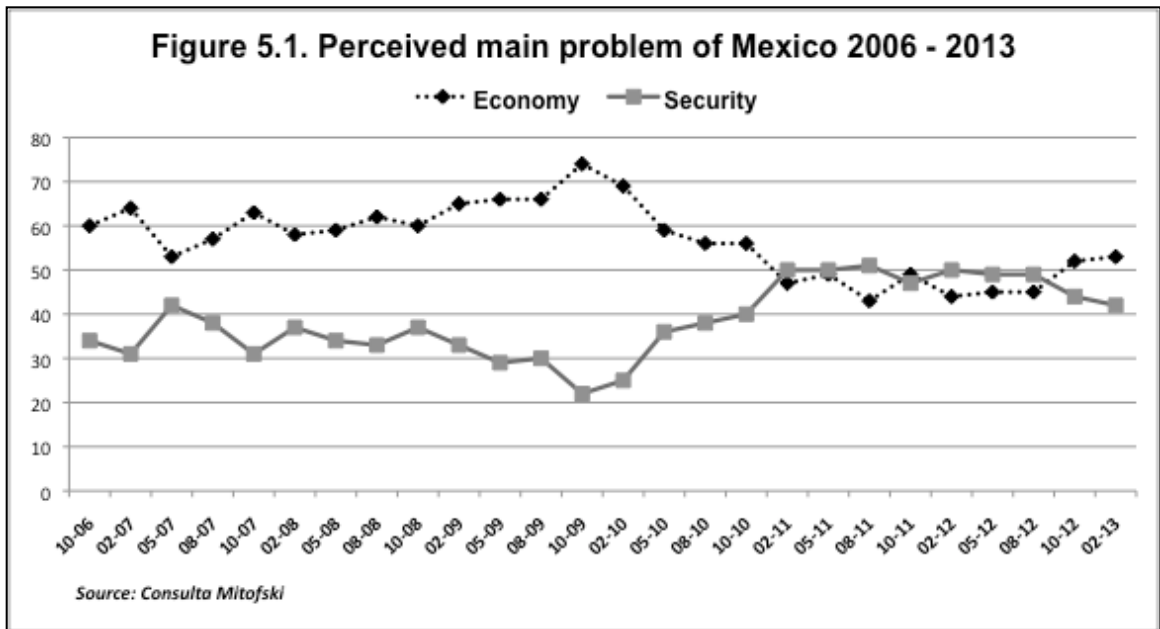
[72] Information can be found at: http://consulta.mx/web/

According to the Americas Barometer (AB) of the LAPOP project the number of households that report having one or more members that have been victims of crime in the last twelve months has doubled from 17.3% in 2004 to 33.7% in 2012[73]. These numbers are confirmed by the victimization surveys conducted by the census bureau INEGI. The main figures of the 2012 National victimization and perceptions about public security survey (ENVIPE) are presented in Table 5.1. As the numbers show two thirds of the population perceive a problem with security and one third has been victimized recently; the total number of victims and crimes is alarming with more than 22 million crime incidents per year. While most of these crimes are simple street robberies (28.9%) other types of crime like extortions (19.6%), vehicle thefts (14.0%), frauds (8.6%) or threats (7.8%) are also significant. The bottom line is that a common Mexican adult has a very high probability of being a victim of crime on any given year and most likely will perceive a highly insecure environment for her/him.

Table 5.1: Selected figures of the 2012 ENVIPE conducted by INEGI

Indicators	
Households with victims 2011 (%)	30.6
Total number of victims of 18 years or older in 2011	18,675,004
Total number of crimes in 2011	22,389,492
Percentage of respondents that perceive insecurity (%)	66.6

Source: ENVIPE 2012.
http://www.inegi.org.mx/est/contenidos/Proyectos/Encuestas/Hogares/regulares/envipe/ envipe2012/default.aspx

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[73] All data for the Americas Barometer can be found at: http://www.vanderbilt.edu/lapop/

Regarding corruption we also find alarming data both at the aggregate and individual level. The Americas Barometer shows that consistently since 2004, a fifth to a quarter of the adult population reports that policemen asked her/him for a bribe in the last year; bribes asked by public officials are reported at around 10% every year and similar percentages are found in five other social relations measured in the survey. The total victimization by corruption reported by the AB series has been consistently between 30% and 40% of the adult population from 2004 to 2012. According to this the AB the percentage of adults that believe that corruption if *very* generalized phenomenon is about 45% with an additional 35% thinking it is *somewhat* generalized. The Mexican chapter of Transparency International conducts a bi-annual survey on the topic called the ENCBG. This is a summary of their 2010 survey results[74]:

 [In the 2010 survey] Mexican households reported more than 200 million acts of corruption […] in 10.3 out every 100 times that a private or public service was provided the households reported giving a bribe. The economic cost of corruption surpassed 32 thousand million pesos, an increment from 2007 of 5 thousand millions […] Mexico increased from 197 millions corruption acts in 2007 to 210 millions in 2010 and increased in the average cost per act from $138 pesos to $165 pesos. […] These acts of corruption represent an *additional tax* equivalent to 14% of the total income of the average household and of 33% of households with income of one minimum wage or less.

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[74] For more information see: http://www.tm.org.mx/indice-nacional-de-corrupcion-y-buen-gobierno-primera-serie-historica-de-corrupcion-en-mexico/

Aggregated data complements the magnitude of the problem: Mexico is ranked 105 out of 176 countries in the 2012 Corruption Perception Index of Transparency International receiving 34 points in a 100 points scale; a similar grade that countries such as Algeria, Armenia, Bolivia, Gambia, Kosovo, Mali and the Philippines. In the G20 countries Mexico is listed as number 18 only surpassed by Indonesia and Russia; in the group of the OECD countries it occupies the last place in the perceived levels of public sector corruption. As with crime/insecurity these are very high figures for both the incidence and the perceptions about corruption in Mexico. The common Mexican adult has a very high probability of being a victim of corruption on any given year and most likely will perceive a highly corrupt environment.

As it was mentioned above, there are not only social and political impacts of this reality --as shown in the models of the previous chapter-- but also economic ones. According to INEGI, in 2011 the estimated total cost as a direct consequence of crime and insecurity is equivalent to 1.38% of Mexico's GDP. The numbers from the latest ENCGB represent similar high cost and the impact on other sectors of the economy is being hard felt. In tourism for example, Mexico is classified 121 out of 140 countries in the "security and risk" indicator of the 2013 Travel and Tourism Competitiveness index of the World Economic Forum[75]. For the first time in many years, Mexico may loss its place among the world's top-10 tourist destinations.

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[75] For more information see: http://www.weforum.org/issues/travel-and-tourism-competitiveness

5.2. Can we generalize the findings?

A very relevant discussion has to do with the generalization of the findings: is this pattern observed only in Mexico or can we generalize the findings to other countries in the hemisphere? I try to answer to answer this question using the Americas Barometer 2012 survey, which allows analyzing and comparing individuals from 26 countries of the western hemisphere. Comparable key indicators of my research are use in the AB with the exact same wording in all countries. I say comparable because unlike my model that relies on multi-item construct measurements of variables, the AB includes single item indicators for most of these. It is a possibility that such differences in the research design can impact the results. However the AB is perfect for my purpose because it includes indicators of both cognitive and structural social capital and also includes both perception and experiential indictors of crime and corruption.

To test if crime and corruption have an impact on social capital I will run two regression models, one for each dimension of social capital. The fact that the analysis of chapter IV relies on structural equation models constitutes another important difference when comparing results. In the first model we have a single item measure of interpersonal trust as the dependent variable and in the second a multi-item of participation at the community level. In each model we have nine predictors: experience and perceptions of crime and corruption plus five key demographic variables. Crime victimization is captured as a direct question to see if the respondent was a victim of crime in the last twelve-month period. Corruption victimization is also a single indicator but is constructed from a list of

several situations where the respondent may have been a victim of corruption in the same period. The two perception questions are single item four-scale questions of the problem. The mathematical expression of each model is presented below:

Interpersonal trust = f(C, CrV, PI, CoV, PC, G, SP, Edu, Age, SEL)

Community participation = f(C, CrV, PI, CoV, PC, G, SP, Edu, Age, SEL)

where

C	= constant
CrV	= crime victimization
PI	= perception of insecurity
CoV	= corruption victimization
PC	= perception of corruption
G	= gender of the respondent (female)
SP	= size of place of residence (form small rural to capital city)
Edu	= education level
Age	= age of the respondent
SEL	= socio economic level (quintals of wealth)

I test each model at the *hemispheric* level using the 39 thousand interviews included in the 2012 AB survey to see if there is evidence, at the individual level, that crime/corruption are determinants of the dimensions/components of social capital. The beta coefficients and significance of variables for each model is presented in Table 5.2; the results are shown graphically in Figure 5.2. No anomalies were detected when assessing the adjustment of the models and distribution of residuals.

The results at the hemispheric level are very interesting. Regarding the cognitive dimension, we observe that all variables in the model are statistically significant predictors of interpersonal trust and all but perception of corruption impact in the expected direction. Victims of crime and corruption and those with high perceptions of insecurity have lower levels of interpersonal trust than non-victims. This is supporting evidence of the negative impact of crime/corruption on trust. We also observe that men and people living in smaller areas have greater interpersonal trust in other than women and people of larger urban centers; greater education level, older age of the respondent and greater wealth correspond to larger interpersonal trust.

Regarding the structural dimension we observe a very different pattern that in part contradicts the findings of the SEM model of chapter IV. On one hand we see that perceptions do not have a significant impact on participation at the community level and on the other the crime/corruption experimental indicators have a significant impact but in the opposite direction. The AB data supports the claim of an "energizing" effect of crime/corruption on the structural dimension of social capital, which contradicts some of my research hypothesis.

The model was also tested with Mexico respondents only for two reasons. First to show that there are differences by country and to have a potentially closer comparison with the results of the ad-hoc survey results of the previous chapters. The complete results are reported in Annex 4. Using the same regression with 2012 AB data for Mexico we find that the strongest predictor of interpersonal trust is perception of insecurity and that neither perceptions of corruption or

crime/corruption victimization are significant. Of the demographic variables only wealth has a direct and significant relation on interpersonal trust. For community participation only experiential corruption has a significant and *energizing* effect. Gender, age, and place of residence are also statistically significant.

Table 5.2. Standardized coefficients for the hemispheric regression models of the cognitive and structural dimensions of social capital

Predictor	Cognitive Dimension Int. Trust	Structural Dimension Participation
Crime Victimization	-0.38**	.033**
Perception of Insecurity	-.282**	-.001
Perceptions of corruption	.016**	-.005
Corruption Victimization	-.054**	.138**
Gender (women)	-.029**	.153**
Size of place of residence	-.073**	-.101**
Education level	.031**	-.020**
Age	.069**	.067**
Quintiles of wealth	.066**	.025**

Source: Americas Barometer 2012 by the LAPOP project of the University of Vanderbilt (N = 39,000 interviews)
** Significance at .05 level

The AB data permits to explore the 26 countries individually but such effort is beyond the scope of my research. Suffice to know that, as expected, different patterns emerge when we change the level of analysis from hemisphere to country.

Figure 5.2. Graphic representation of hemispheric regression models

Determinants of Participation at the community level

R-Squared =0.053
F=179.010
N =35214

95% Confidence Interval (Design-Effect Based)
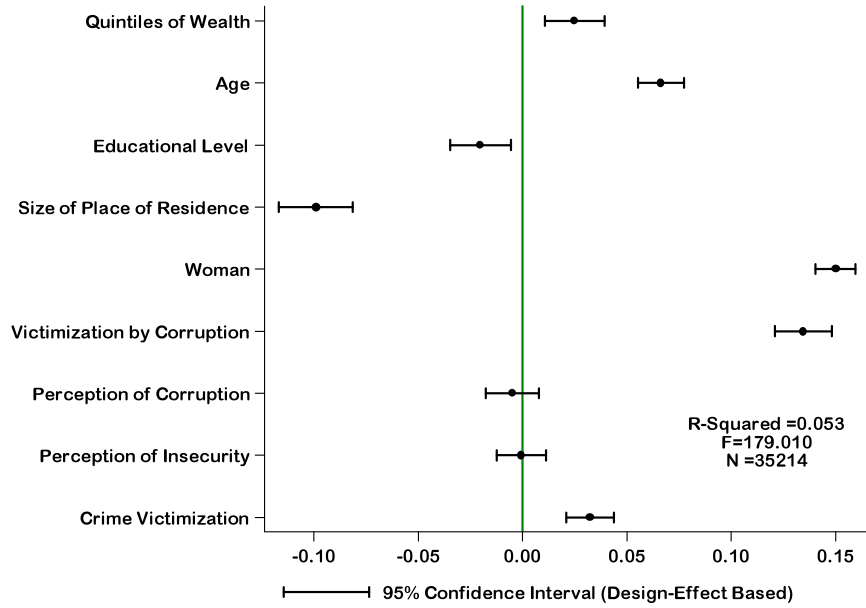
Source: AmericasBarometer by LAPOP

Determinants of Interpersonal Trust

R-Squared =0.114
F=334.395
N =34518

95% Confidence Interval (Design-Effect Based)
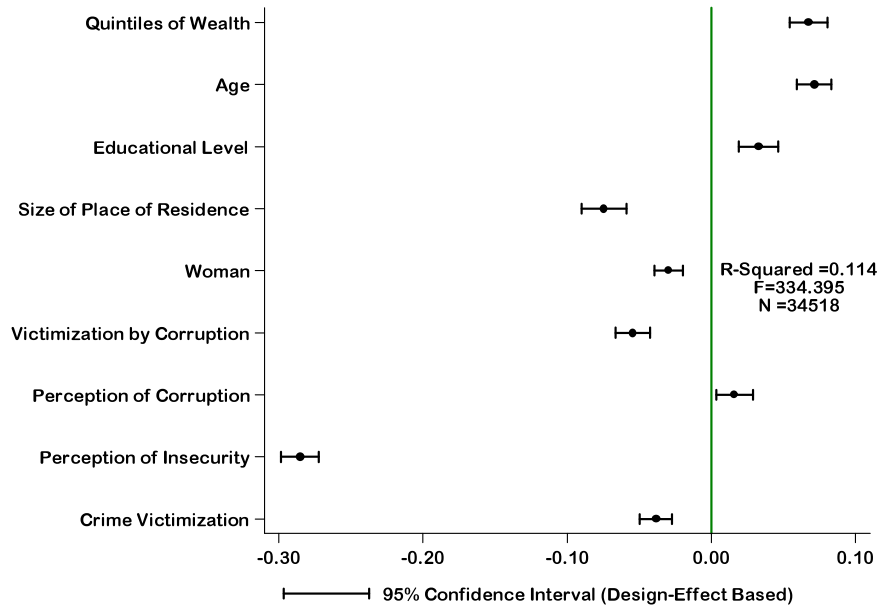
Source: AmericasBarometer by LAPOP

I believe that the main source of the apparent contradictory or non-significant findings has to do with the research design and the analytical tools. This will be discussed in the last section of the chapter as part of the research conclusion. However what is of most importance is the fact that it is clear, as the hemispheric data show, that crime, corruption and social capital are causally related in significant ways and that additional analysis to better understands this important and potentially complex relation is needed.

5.3. Assessing the future of stocks of Social Capital in Mexico

It is hard to have a prospective assessment of social capital in Mexico due to the fact that different determining and opposite forces coexist in the first have of the second decade of the new millennium. The recently inaugurated government of Peña Nieto has achieved what its two predecessors could not: political consensus. The *Pact for Mexico*, an agreement between the three big political parties has been successful in agreeing and getting approval for three key structural reforms: labor, education and telecommunications and it is hoped that it can produce similar results for the energy sector and fiscal reform. It has also pushed for a *National Crusade* against hunger. In economic terms Mexico has significant and large international reserves that amount to a total of 165,675 millions of dollars[76]; there has been a healthy inflow of direct foreign investment and Mexico is being treaty as a "new economic tiger"[77]. Following the process of

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[76] See: http://eleconomista.com.mx/taxonomy/term/899
[77] See: http://www.economia.gob.mx/comunidad-negocios/competitividad-normatividad/inversion-extranjera-directa/estadistica-oficial-de-ied-en-mexico. And:
http://www.cnnexpansion.com/economia/2013/01/31/mexico-el-nuevo-tigre-economico

democratic transition that started in the late 60´s and early 70´s the number of non-for-profit and non-government associations continues to growth (Aguayo and Peña 2012).

Unfortunately the figures for crime and corruption are not encouraging. The number of executions in the fight against organized crime as well as the personal victimization figures are quite high and stable or slightly increasing. Even tough the new government plans to create a new anti-corruption office, in Mexico "corruption presents a systemic and institutional character that implies the existence of a very complex network of interests in which private and publics actors of all sectors and government levels participate" (Cejudo and Lopez 2013, my translation). Both problems, as the quote suggest, seem to be structural and will be very hard to resolve or improve.

My estimation is that while improved economic and political contexts will continue to push for an organized society and participation, many individuals directly hurt by crime/corruption or perceiving themselves to be threatened by these problems, will slowly turn inwards. In the short and medium term, trust in friends and family will increase will while trust in "others" will decrease. Participation and closer, more familiar and safer situations such as at the community level, will also slightly and momentarily increase as a reaction to an adverse and increasingly perceived violent environment. In the longer run and if the crime situations start be resolved and corruption decrease, we will see a detonation of both cognitive and social capital coinciding with the continuation of organized civil society.

5.5. Concluding remarks

I started with a general research question: How and to what degree is social capital (and democracy) in Mexico being impacted by crime and corruption? Due to the complex nature of the question six specific hypotheses were presented and later tested empirically. Operationalisation of the research was a key concern and four crucial aspects were considered as a way of contributing to the scholarly literature.

The first one was to explore crime and corruption, both at the perceived and experiential problem as significant determinants of social capital. In some models these were treated as separate indicators to be controlled by each other but also in more parsimonious models they were treated as a single *context of adversity* to test for potentially larger and total effects on our key independent variables.

The second contribution was to include in the analysis an integral, not partial, measure of social capital with several indicators for each of the two-dimension and three-components of the phenomenon. The model included interpersonal trust, institutional trust, reciprocity, and formal and informal participation. Each of these indicators was treated as non-directly observable and/or referential phenomenon that needed to be measure using multi-item constructs and each of these was validate using confirmatory factor analysis. This constitutes the third contribution. Finally and due to the complex nature of the hypothesis measurement model, the forth contribution is the analysis of data using a Structural Equation Model that allows for multiple layers of causation and the use of important intervening variables such as *fear*.

I am convinced that such a robust research design produces better inferences of such a complex model of interaction between social phenomena as the one tested by my hypothesis. My results were contrasted by other findings in the literature (chapter II) as well as additional models using alternate data and alternate methods of analysis in this second section of this chapter. I believe that the main source of contradictory or non-significant findings, in this specific field of research, has to do with the research design and the analytical tools. Phenomena covered by humanities and social sciences like in this case are usually large and complex. I am convinced that structural equations models are better tools to try to synthesize and model these realities. It is also clear that when we are working with variables that cannot be observed directly we need to rely on multi item measurements and validate these by the use of confirmatory (not exploratory) factor analysis. Political science should consider these two observations for the generation of knowledge in its field. If we don't, we increase the risk of committing type I or type II errors.

The literature reviewed in the second chapter was used to come up with a non-normative straightforward and integral definition of social capital that was later efficiently operationalise to capture the two dimensions and three components of social capital. It also provided the arguments to justify the causal relation between the main concepts of my research model identifying that alternate or recursive causation was also found in the scholarly research. Finally it provided enough evidence of the positive link between social capital and democracy and development to frame the theoretical and practical relevance of the findings. The

model, supported by the literature, can be summarized as follows: crime/corruption have direct and indirect effects of both the cognitive and structural dimensions of social capital as well as on human capital and other democratic attitudes. It is in this hypothesis causation, later supported empirically by ad-hoc research, that I provide evidence of the negative impact that crime/corruption have on democracy and development.

Individuals that have been victims of crime or corruption or those who have greater perceptions of the magnitude and adverse effects of such problems, are less likely to trust individuals or institutions, to cooperate with others and to participate in formal/informal social organizations. Additionally they report lower levels of personal health and lower satisfaction with democracy. In sum, it can be concluded that crime/corruption deteriorate social capital and have an adverse effect on social structure; in turn these effects have an impact on the quality of democracy. Of great concern should be the fact that the figures in Mexico for crime and corruption are alarmingly high. If trends continue as they are or if the numbers hold at least 1 out of every 3 adult will be a victim of crime or corruption and the large majority (two thirds or more) will perceive that these problems are real and a close concern to them and/or live with some level of fear. This is clearly nor desirable nor healthy for any given society. This has had clear economically implications for individuals and the country as a whole and my research shows that the political cost are likely to also be significant.

Just yesterday my two daughters experienced first hand the undesirable situation I have described throughout the chapters. It was a typical Sunday afternoon when we decide to go out for ice cream. We like to go out to a place that serves yogurt ice cream with self-served toppings. When we were getting to the parking lot we noticed two policemen getting out their patrol car and walking towards the ice cream parlor. When we got there a visible upset women was standing outside the door of the establishment, she told us that the place was closed because it had just been robbed. Inside the store, the policemen were talking to the families that had the misfortune to witness the robbery and had been themselves robbed. Upon the news received by the lady, my daughters twelve and thirteen years of age, instinctively reached to each other to hold hands and then to me to ask to quickly get away from there. They were clearly alarmed. If we had come ten minutes earlier, we would have been victims instead of witnesses. On our way back home they could not stooped discussing the event they have just experienced. I tried to calm them. The discussion included several topics from the harsh reality of our city to the potential risk they now know they are exposed too. It is hard to know how this specific event will impact our future behavior; it is clear that they, and I, will be much more concerned and aware about the conditions and safety of our close environment. I am glad that my daughters had this experience; it will be part of their life lessons and will better prepare them for the real world. It is now important to find ways to achieve a safer environment for them, with them contributing, and to make sure this isolated event does not disproportionally defines their future perceptions and behaviors.

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Annex 1: Transformation of items by construct

Item	Variable name	Question Wording	Recoded Values (Original code on questionnaire)
DEMOGRAPHICS ANCHORS			
SEX	Gender (Female)	Gender (MARK WITHOUT ASKING)	O (1) = male / 1 (2) = female
AGE	Age	Could you tell me what is your age?	18 to 90 years
EDU	Education	What is the last year of school you completed?	0 = no education to 10 = graduate studies
SEL	Socio economic level	Approximately, how many light bulbs do you have at home?	0 = cero to 50 = light bulbs / Mean (99 No response)
(1) INSTITUTIONAL TRUST (IT)			
IT1	Church		
IT2	Army		
IT3	Mass media (TV)		
IT4	Political Parties	I am going to read to you a list of organizations. For each please tell me how much trust do you have in them: a lot of trust, some, little or no trust at all?	4 (1) = a lot / 3 (2) = some / 1 (3) = little / 0 (4) nothing / 2 (9) Intermediate
IT5	Big business		
IT6	Federal government		
IT7	Congress		
IT8	Public officials		
IT9	Judges [b]		
IT10	Police		
(2) INTERPERSONAL TRUST (PT)			
PT1	People in my neighborhood	For each group of people tell me if you have a lot of trust in them, some trust, little trust or not trust at all?	4 (1) = a lot / 3 (2) = some / 1 (3) = little / 0 (4) nothing / 2 (9) Intermediate
PT2	Clerks of stores where I shop		
PT3	People on the street		
PT4	Family members		
PT5	Generalized trust (most people can be trusted)	In general terms, would you say that most people can be trusted or that you can never be too careful when dealing with someone?	3 (1) = most people can be trusted / 1 (2) = you can not be too careful / 2 (9) = Intermediate
(3) RECIPROCITY (RC)			
RC1	Most people help (each) others	In general terms, would you say that most people frequently help each other or almost always look out only for themselves?	3 (1) = help each other / 1 (2) = help themselves / 2 (9) = Intermediate
RC2	When in need, neighbors have helped me	Do you agree of disagree with the following: When in need, neighbors have helped me?	5 (1) = agree / 3 (2, 9) neither / 1 (3) disagree
RC3	Helping others I help myself	Do you agree of disagree with the following: Helping others I help myself	
(4) FORMAL PARTICIPATION (FP)			
FP1	Neighborhood association		
FP2	Related to education (e.g. PTA)	I am going to read to you a list of organizations, for each please tell me if you are an active member, a member but not active, was once a member o never have been a member.	4 (1) = active member / 3 (2) = passive member/ 1 (3) = was a member / 0 (4) never has been member / 2 (9) Intermediate
FP3	Credit union/cooperative		
FP4	Political party		
FP5	Sports team/club		
FP6	Cultural club/association		
FP7	Church group		
FP8	NOG's or private assistance organization		

Item	Variable name	Question Wording	Recoded Values (Original code on questionnaire)
(5) INFORMAL PARTICIPATION (FP)			
IP1	Time spent with friend	For each activity please tell me if its something you do every week, every other week, once a month, few times a year or never do it?	4 (1) = every week-every other week / 3 (2) = once a month / 2 (3) = few times a year / 1 (4) = never / 2.5 (9) Intermediate
IP2	Time spent with colleagues outside work		
(6) SATISFACTION WITH DEMOCRACY (D)			
D3	Satisfaction with democracy	In general would you say that you are very satisfied with democracy, somewhat satisfied, little satisfied or not satisfied at all?	4 (1) = very satisfied / 3 (2) = somewhat satisfied / 2 (3) = little satisfied / 1 (4) not satisfied at all / 2.5 (9) = Intermediate
(7) CIVIC ENGAGEMENT – LESS ACTIVE (LA)			
LA1	Visit friend/family		
LA2	Go out at night	Please tell me if you have stop doing the following for fear of being a victim of an assault.	1 = yes / 0 (2, 9) = no
LA3	Go out early in the morning		
LA4	Use taxis		
LA5	Use public transportation		
(8) HEALTH / HUMAN CAPITAL			
HC1	Frequent headaches		
HC2	Easily get scare		
HC3	Feel nervous frequently		
HC4	Difficult performing daily activities	Please tell me if you have experience the following during the past four weeks ...	0 (1) = Yes / 3 (2) = No / 3 (9) Intermediate
HC5	Feel tired most of the time		
HC6	Self reported state of personal health		
(9) CRIME CONTEXT - EXPERIENCE (CRE)			
CR1	Victim anytime during life	During your lifetime, have you ever been a victim of a crime in city/state?	1 (1) = Yes / 0 (2, 9) = No
CR2	How many times victim past year	And during the past twelve months how many times have you personally been a victim of a crime incity/state?	0 (1, 9) = No / 1 (2) = Once / 2 (3) = Twice / 3 (4) = three or more
CR3	Victim other household member past year	With out counting you, has any other person living in this home has been a victim of a crime during the past twelve months?	
CR4	Victim other close relative past year	With out counting the persons living in this home, has a close relative been a victim of a crime during the last twelve months?	1 (1) = Yes / 0 (2, 9) = No
(10) CRIME CONTEXT - PERCEPTION (CRP)			
CR5	Risk of being a victim on the future	In your opinion, how much risk do you run of being a victim of a crime: a lot, some, little or none?	5 (1) = a lot / 4 (2) = some / 2 (3) = little / 1 (4) none / 3 (9) = intermediate
CR6	How grave is the problem of public safety in city/state [b]	How grave do you consider the problem of public safety in city/state?	5 (1) = very grave / 4 (2) = somewhat grave / 2 (3) = little / 1 (4) not grave at all / 3 (9) = intermediate
CR7	Possibility of ending with problem of public safety in city/state	In your opinion how possible is to end with the problem of public safety in city/state?	1 = very possible / 2 = somewhat possible / 3 = little / 4 not possible at all / 2.5 (9) = intermediate
CR8	In one year public safety in city/state will be better or worse	A year from now do you think that the problem of public safety would be greater, the same or smaller?	5 (1) = greater / 1 (2) = smaller / 3 (3, 9) = same

Item	Variable name	Question Wording	Recoded Values (Original code on questionnaire)
CR9	How threatened by local crime and violence	How threatened by local crime and violence do you and your family feel?	5 (1) = very threatened / 4 (2) = somewhat threatened / 2 (3) = little / 1 (4) not threatened at all / 3 (9) = intermediate

(11) FEAR – PERSONAL SAFETY

Item	Variable name	Question Wording	Recoded Values (Original code on questionnaire)
F1	At Home		
F2	At Work	When you are in ..., how do you feel: completely safe, somewhat safe, somewhat unsafe or completely unsafe?	1 = completely safe / 2 = somewhat safe / 4 (3) = somewhat unsafe / 5 (4) = completely unsafe / 3 (9) = Intermediate
F3	In the Street		
F4	In a Public place (market)		
F5	Driving / public transportation		

(12) CORRUPTION – EXPERIENCE (COE)

Item	Variable name	Question Wording	Recoded Values (Original code on questionnaire)
CO4	Bribe (*mordida*) anytime during life	During your lifetime, have you ever had to give a bribe to obtain a product/service in city/state?	1 (1) = Yes / 0 (2, 9) = No
CO5	Bribe (*mordida*) past six months	And during the past six months have you ever had to give a bribe to obtain a product/service in city/state?	1 (1) = Yes / 0 (2, 9) = No
CO6	Frequency bribes transit agents	In your community how common is to bribe ..., answer using a scale from 0 to 10 where 0 means not common at all and 10 means very common?	0 to 10 / 5 (99)
CO7	Frequency bribes avoid red tape		
CO8	Frequency bribes obtain permits		

(13) CORRUPTION – PERCEPTION (COP)

Item	Variable name	Question Wording	Recoded Values (Original code on questionnaire)
CO1	How grave is the problem of corruption in city/state	How grave do you consider the problem of corruption in city/state?	5 (1) = very grave / 4 (2) = somewhat grave / 2 (3) = little / 1 (4) not grave at all / 3 (9) = intermediate
CO2	Possibility of ending with problem of corruption in city/state	In your opinion how possible is to end with the problem of corruption in city/state?	1 = very possible / 2 = somewhat possible / 3 = little / 4 not possible at all / 2.5 (9) = intermediate
CO3	In one year corruption in city/state will be better or worse	A year from now do you think that the problem of corruption would be greater, the same or smaller?	5 (1) = greater / 1 (2) = smaller / 3 (3, 9) = same
CO9	Most Mexicans are honest or corrupt	In you opinion would you say that most Mexicans re hones or corrupt?	1 = honest / 5 (2) = corrupt / 3 (3, 9) neither
CO10	Clean-corrupt self-placement	On a scale from 1 to 10, where 1 means very corrupt and 10 very clean, how do you considered yourself?	Inverse of scale

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Annex 2: Confirmatory factor analysis: group comparison of Item factor loading and reliability by construct

Construct	ID	Item	Factor Loading DF	Factor Loading GTO	Cronbach's Alpha DF	Cronbach's Alpha GTO
ECONOMIC PERCEPTION	1 PES	Personal economic situation	61	62	.519	.538
	2 FES	Economic optimism – personal situation	61	62		
FORMAL PARTICIPATION	1 FP1	Neighborhood association	49	48	.731	.680
	2 FP2	Related to education (e.g. PTA)	58	48		
	3 FP3	Credit union/cooperative	57	**39**		
	4 FP4	Political party	55	52		
	5 FP5	Sports team/club	40	**37**		
	6 FP6	Cultural club/association	49	56		
	7 FP7	Church group	**38**	**34**		
	8 FP8	NOG's or private assistance organization	58	54		
INFORMAL PARTICIPATION	1 IP1	Time spent with friend	75	72	.704	.674
	2 IP2	Time spent with colleagues outside work	75	72		
PERSONAL TRUST	1 PT1	People in my neighborhood	71	79	.683	.729
	2 PT2	Clerks of stores where I shop	75	83		
	3 PT3	People on the street	61	57		
	4 PT4	Family members	**32**	**38**		
CIVIC CLIMATE	1 RC2	When in need, neighbors have helped me	68	69	.703	.670
	2 CV1	The neighborhood is united	78	75		
	3 CV2	Neighborhood is organized to prevent crime	54	49		
RECIPROCITY	1 RC1	Most people help (each) others	**36**	**22**	**.345**	**.280**
	2 RC3	Helping others I help myself	**21**	**27**		
	3 CV3	Easiness of organizing for a common cause	**35**	57		
	4 CV4	Given the chance most people would take advantage of me	46	**18**		
INSTITUTIONAL TRUST	1 IT1	Church	**32**	**27**	.834	.829
	2 IT2	Army	49	49		
	3 IT3	Mass media (TV)	51	55		
	4 IT4	Political Parties	61	69		
	5 IT5	Big business	54	65		
	6 IT6	Federal government	69	67		
	7 IT7	Congress	70	73		
	8 IT8	Public officials	69	76		
	9 IT10	Police	59	54		
PERSONAL HEALTH	1 HC1	Frequent headaches	55	59	.760	.808
	2 HC2	Easily get scare	61	59		
	3 HC3	Feel nervous frequently	68	71		
	4 HC4	Difficult performing daily activities	52	67		
	5 HC5	Feel tired most of the time	67	74		
	6 HC6	Self reported state of personal health	50	56		
LESS ACTIVE	1 LA1	Visit friend/family	57	71	.767	.853
	2 LA2	Go out at night	70	72		
	3 LA3	Go out early in the morning	66	76		
	4 LA4	Use taxis	67	76		
	5 LA5	Use public transportation	56	71		
FEAR	1 F1	At Home	40	56	.772	.838
	2 F2	At Work	56	65		
	3 F3	In the Street	78	78		
	4 F4	In a Public place (market)	80	83		
	5 F5	Driving / public transportation	67	76		
EXPERIENCE CRIME	1 CR1	Victim anytime during life	59	63	.651	.669
	2 CR2	How many times victim past year	45	54		
	3 CR3	Victim other household member past year	62	65		
	4 CR4	Victim other close relative past year	60	51		
PERCEPTION CRIME	1 CR5	Risk of being a victim on the future	73	65	.543	.470
	2 CR8	In one year public safety in city/state will be better or worse	**38**	**31**		
	3 CR9	How threatened by local crime and violence	52	50		
PERCEPTION CORRUPTION	1 CO1	How grave is the problem of corruption in city/state	50	60	.360	.448
	2 CO3	In one year corruption in city/state will be better or worse	**34**	50		
	3 CO9	Most Mexicans are honest or corrupt	**37**	**32**		
EXPERIENCE CORRUPTION	1 CO4	Bribe (*mordida*) anytime during life	42	47	.743	.774
	2 CO5	Bribe (*mordida*) past six months	42	49		
	3 CO6	Frequency bribes transit agents	64	72		
	4 CO7	Frequency bribes avoid red tape	80	76		
	5 CO8	Frequency bribes obtain permits	77	76		

Annex 3. Model respecifications by group

+ Respecifications D.F.

- Respecification 1: correlated errors for the following pair of observed errors: e10-e11, e11-e12, and e12-e13.

  Causal link on the following variables: age → ForP, Edu → InfP, Edu → Health, Gender → Health, SEL → InfP, SEL → Health, Gender → InfP, **ExpCrime → InfP**, Age → Health, and **ExpCorr → Fear**.

- Respecification 2: correlated errors for the following pair of observed errors/variables: e1-e4, e9-e10, Gender – Edu, e8-e11, e9-e14, and e8-e10.

  Causal link on the following variables: Edu → ExpCrime, Gender → LessActv, Edu → PerCrime, Gender → Fear, Edu → Fear, SEL → ForP, and **ExpCrime → LeassActv**.

+ Respecifications Guanajuato

- Respecification 1: correlated errors for the following pair of observed errors: e11-e12, e10-e11, e2-e4, e1-e4, e12-e13, and e10-e13.

  Causal link on the following variables: Gender → InfP, Edu → Health, Age → Health, Age → InfP, Gender → Health, Edu → InfP, SEL → Helath, Edu → ExpCrime, Edu → PerCrime, **ExpCrime → ForP**, Age → ExpCorr, **ExpCrime → Health**, **ExpCorr → Fear**, SEL → ExpCorr, Gender → LessActv, and **ExpCrime → InfP**.

- Respecification 2: correlated errors for the following pair of observed errors/variables: e9-e14, e10-e12, e8-e9, and Gender – Edu.

  Causal link on the following variables: **ExpCorr → Fear**, **ExpCrime → LeassActv**, Age → Fear, Gender → PerCrime, SEL → PerCorr, and Gender → PerCorr.

Model from were specifications were conducted is shown in next page.
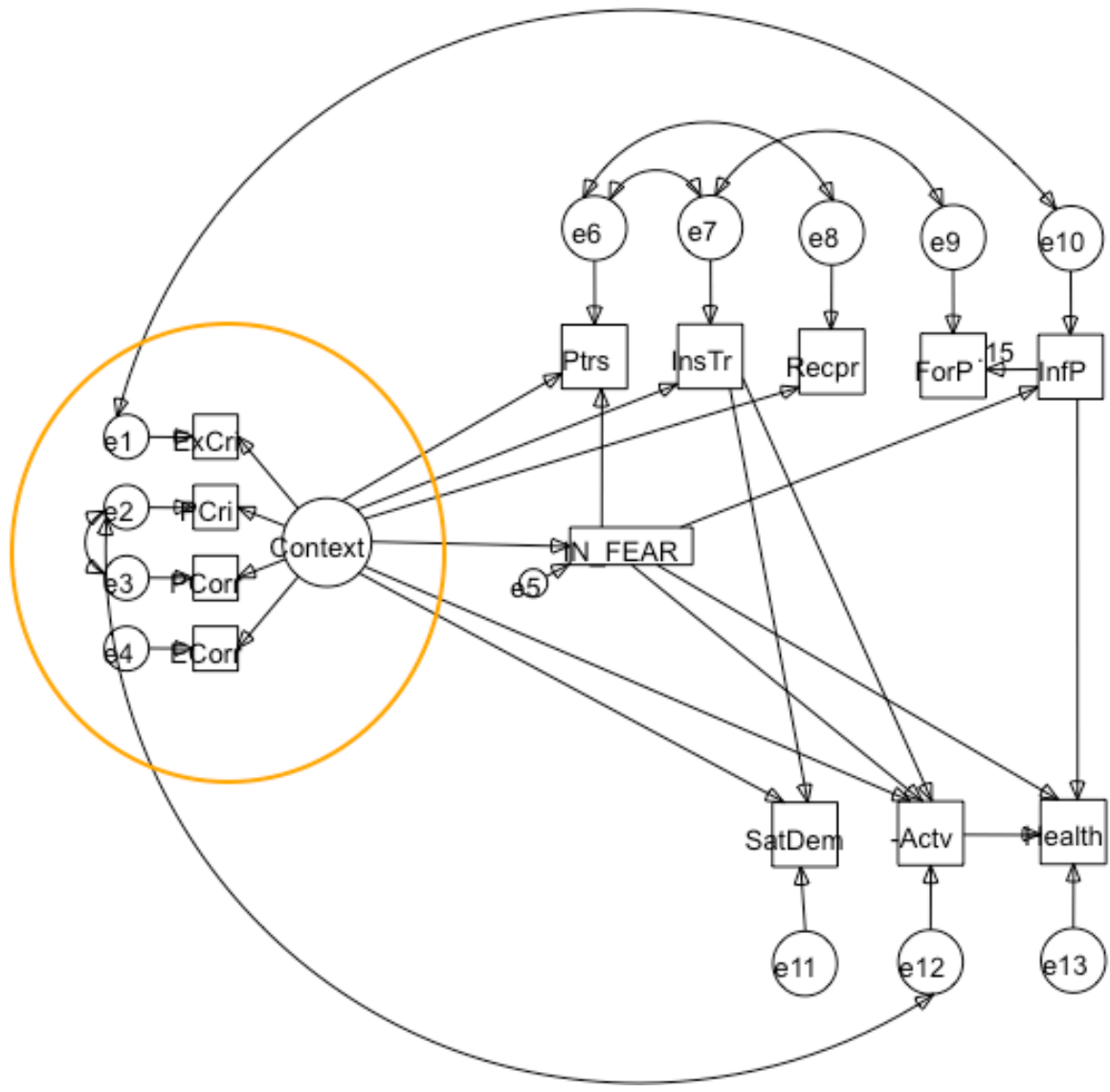
Annex 4. Regression results for Mexico using the Americas Barometer 2012 data for the cognitive and structural dimension of social capital

+ Regression model for Interpersonal trust

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Quintiles of Wealth, Perception of Corruption, Size of Place of Residence, Victimization by Corruption, Age, Woman, Perception of Insecurity, Crime Victimization, Educational Level[b]	.	Enter

a. Dependent Variable: Interpersonal Trust

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.298[a]	.089	.083	26.376

a. Predictors: (Constant), Quintiles of Wealth, Perception of Corruption, Size of Place of Residence, Victimization by Corruption, Age, Woman, Perception of Insecurity, Crime Victimization, Educational Level

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	95348.755	9	10594.306	15.228	.000[b]
	Residual	977745.439	1405	695.714		
	Total	1073094.19	1414			

a. Dependent Variable: Interpersonal Trust

b. Predictors: (Constant), Quintiles of Wealth, Perception of Corruption, Size of Place of Residence, Victimization by Corruption, Age, Woman, Perception of Insecurity, Crime Victimization, Educational Level

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	52.106	4.063		12.825	.000
	Crime Victimization	-.007	.017	-.011	-.404	.686
	Perception of Insecurity	-.240	.026	-.242	-9.060	.000
	Perception of Corruption	.029	.029	.026	1.025	.305
	Victimization by Corruption	-.025	.016	-.042	-1.603	.109
	Woman	.969	1.442	.018	.672	.502
	Size of Place of Residence	-.717	.551	-.035	-1.302	.193
	Educational Level	2.615	1.150	.067	2.274	.023
	Age	1.318	.512	.073	2.577	.010
	Quintiles of Wealth	1.952	.544	.098	3.589	.000

a. Dependent Variable: Interpersonal Trust

+ Regression model for community participation

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Quintiles of Wealth, Perception of Corruption, Size of Place of Residence, Victimization by Corruption, Age, Woman, Perception of Insecurity, Crime Victimization, Educational Level[b]	.	Enter

a. Dependent Variable: Community Participation

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.265[a]	.070	.064	21.40184

a. Predictors: (Constant), Quintiles of Wealth, Perception of Corruption, Size of Place of Residence, Victimization by Corruption, Age, Woman, Perception of Insecurity, Crime Victimization, Educational Level

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48990.431	9	5443.381	11.884	.000[b]
	Residual	646803.751	1412	458.039		
	Total	695794.181	1421			

a. Dependent Variable: Community Participation

b. Predictors: (Constant), Quintiles of Wealth, Perception of Corruption, Size of Place of Residence, Victimization by Corruption, Age, Woman, Perception of Insecurity, Crime Victimization, Educational Level

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	14.178	3.281		4.321	.000
	Crime Victimization	.029	.014	.056	2.072	.038
	Perception of Insecurity	.022	.021	.028	1.023	.307
	Perception of Corruption	−.028	.023	−.032	−1.220	.223
	Victimization by Corruption	.037	.013	.079	2.961	.003
	Woman	9.092	1.167	.206	7.788	.000
	Size of Place of Residence	−2.458	.446	−.150	−5.510	.000
	Educational Level	2.185	.929	.070	2.351	.019
	Age	1.770	.413	.122	4.282	.000
	Quintiles of Wealth	.573	.440	.036	1.302	.193

a. Dependent Variable: Community Participation