

Vilalta, Carlos J.

Working Paper

Determinant factors in the perception of crime-related insecurity in Mexico

IDB Working Paper Series, No. IDB-WP-381

Provided in Cooperation with:

Inter-American Development Bank (IDB), Washington, DC

Suggested Citation: Vilalta, Carlos J. (2013) : Determinant factors in the perception of crime-related insecurity in Mexico, IDB Working Paper Series, No. IDB-WP-381, Inter-American Development Bank (IDB), Washington, DC

This Version is available at:

<https://hdl.handle.net/10419/89048>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



IDB WORKING PAPER SERIES No. IDB-WP-381

Determinant Factors in the Perception of Crime- Related Insecurity in Mexico

Carlos J. Vilalta

March 2013

Inter-American Development Bank
Institutions for Development

Determinant Factors in the Perception of Crime-Related Insecurity in Mexico

Carlos J. Vilalta



Inter-American Development Bank

2013

Cataloging-in-Publication data provided by the
Inter-American Development Bank
Felipe Herrera Library

Vilalta, Carlos J.

Determinant Factors in the Perception of Crime-Related Insecurity in Mexico / Carlos J. Vilalta.
p. cm. (IDB working paper series; 381)

Includes bibliographical references.

1. Public safety—Public opinion—Mexico. 2. Crime prevention surveys—Mexico. I. Inter-American Development Bank. Institutional Capacity of State Division. II. Title. III. Series.
IDB-WP-381

<http://www.iadb.org>

The opinions expressed in this publication are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank, its Board of Directors, or the countries they represent.

The unauthorized commercial use of Bank documents is prohibited and may be punishable under the Bank's policies and/or applicable laws.

Copyright © 2013 Inter-American Development Bank. This working paper may be reproduced for any non-commercial purpose. It may also be reproduced in any academic journal indexed by the American Economic Association's EconLit, with previous consent by the Inter-American Development Bank (IDB), provided that the IDB is credited and that the author(s) receive no income from the publication.

Carlos J. Vilalta

Abstract*

What determines the feeling of insecurity with respect to crime and what can be done about it? This study proposes and tests a correlational model that combines different theoretical determinants of insecurity and the fear of crime. The test was carried out both in the country as a whole and in the Mexico City Metropolitan Area. The sources of information are the National Victimization Survey and Perception on Public Security (ENVIPE) of 2011 and the Victimization Survey and Institutional Effectiveness (ENVEI) of August 2010 and January 2011. The findings suggest that actions to promote civility in neighborhoods and towns and efforts to develop a relationship of trust with the local police should be implemented in order to significantly reduce the feeling of insecurity.

JEL Code: Y9

Keywords: Citizen security, crime, violence, victimization, police, perception of insecurity

* The author, Carlos Vilalta, works at the Center for Research and Teaching in Economics (Centro de Investigación y Docencia Económicas, or CIDE) (carlos.vilalta@cide.edu). He greatly appreciates the comments and suggestions of three arbiters, who substantively improved this working paper. Any error or omission is the author's sole responsibility.

Contents

Executive Summary	3
Introduction	7
1. Theories and Evidence in Previous Studies	10
2. Information Sources and Methodology	19
2.1. Sources of Information	19
2.2. Variables.....	20
2.3. Analytical Strategy	25
3. Results	26
3.1. Evidence at the National Level: Insecurity in Neighborhoods and Towns in the Country	26
3.2. Evidence in the Local Setting: Insecurity in the Neighborhoods and Housing Units of the Mexico City Metropolitan Area	35
4. Discussion and Conclusions	47
References	53

Executive Summary

This study was conducted to detect the **determinants of the feeling of insecurity** in social spaces close to where people live—towns (in rural areas), neighborhoods, and housing units (in urban areas). The study was carried out in two spatial settings of Mexico: nationally and in the Mexico City Metropolitan Area (MCMA). The analytical strategy focused on a multivariate and simultaneous test of five theories in this area.

With respect to the magnitude and severity of the problem, the paper presents the following facts:

- In 2011, 38.7 percent of the adult population throughout Mexico reported feeling unsafe in their town or neighborhood (ENVIPE, 2011). This amounts to 31.6 million adults living in a state of insecurity because of crime.
- In the same year and in the MCMA alone, this proportion was almost the same, 37.8 percent.¹ This is equivalent to 5.7 million people living in a state of insecurity in their neighborhoods or housing units.
- In 2010, the proportion of direct adult victims of crime in Mexico was estimated at 24 percent. This translates into 19.6 million adult direct victims of crime in that year alone.
- Also in 2010, 32.8 percent of adults in the MCMA, or 4.9 million, were directly victimized.

The results of the statistical analysis show that the determinants that significantly increased the feeling of insecurity independently and in both the country as a whole and the MCMA, were the following:

- Local signs of incivility, defined as the presence of antisocial behavior (e.g., fights between neighbors, alcohol consumption in the street, the presence of gangs).
- Cooperation among neighbors to protect themselves from delinquency.
- Low confidence in the local police.
- Having been a direct and/or indirect victim of crime.
- Being female.

¹ Reported feeling “unsafe” or “not safe at all” in their neighborhood or housing unit. Source: ENVEI of August 2010 and January 2011.

Based on the view that the solution to any problem is preventing it from occurring, or, if it is already present, addressing the determinant factors, the findings of this study point to the need to prioritize the following actions:

- Develop policies to address the perception of insecurity (or fear of crime) together with traditional crime control policies. These include:
 - Conciliatory (rather than oppressive) policing, and intelligent management and direction of police actions against incivility and public disorder at the local or neighborhood levels (e.g., alcohol consumption in the street, presence of gangs, fights between neighbors). The idea is to develop a community police force that acts more as a mediator in resolving local social conflicts rather than having a police force whose only role is to enforce the law, without losing sight of the potential need to use force as a last resort.
 - Implementation of a specific plan to improve the public image of the municipal police based on the dissemination of exemplary police behaviors. Building trust in the local police force is essential.
 - Implementation of open channels of communication between the police and citizens at the local or neighborhood level. This includes continuous reporting on the security situation in the area together with actions implemented by the local police.² Such communication should be regulated and not be dependent on the will of the authorities or the initiative or spontaneous leadership of civil society.
 - All of the preceding policies should be carried out especially, but not exclusively, in neighborhoods and housing units characterized by high population density and low levels of education.
- Voluntary and free long-term psychological counseling services to direct and indirect (i.e., families) victims of crime.³ Such services should be made available particularly in the case of crimes involving physical or sexual violence and when the direct victim is a

² The Secretariat of Public Security of the Federal District (SSPDF) or Mexico City has a Citizen Participation and Crime Prevention Department which implements a large number of different actions; however, its results have low impact or are simply invisible to the majority of the residents of the city. This Department needs to be more visible in the media and its actions made more widely known. It also requires a larger budget and publicity regarding its key role in recovering public spaces. This program is, for lack of evidence and a favorable evaluation, flawed in its current formulation.

³ The “support” currently provided by the SSPDF to victims during the legal reporting process is insufficient.

minor. This can help crime victims regain the feeling of safety with respect to crime in a rapid, effective, and, ideally, a permanent way.

In legal and institutional terms, the abovementioned actions have already been articulated. However, they remain to be effectively implemented, which normally depends on political will and prioritization. For example, since January 2012, Mexico has had a law to prevent violence and crime (LPSVD).⁴ It provides for the participation of the National Center for Crime Prevention and Citizen Participation in the preparation of the national program for social prevention of violence and crime (Art. 15, LPSVD). Moreover, among the responsibilities of this center is “to support, within institutions of public safety, the establishment of consultative bodies to facilitate citizen participation” (Art. 130, LGSNSP).⁵ These bodies should ideally operate at the municipal and, if possible, the neighborhood level.

With respect to the need for political will, recently the new president of Mexico, Ernesto Peña Nieto, presented the five pillars of his administration and his first 13 actions. The first pillar is to “bring peace to Mexico.”⁶ His first action is “the creation of the National Crime Prevention Program,” and the second action is “to end the constitutional controversy over the General Law of Victims so that it may be published as approved by Congress.”⁷ In addition to these pillars, the incoming president also put forth the so-called Contract for Mexico, which was signed by the country’s three main political parties.⁸ The Contract includes a broad list of commitments, three of which are highlighted because of their relationships to the findings of this study and their public policy implications. They are: a national community prevention and participation plan focused on the most violent municipalities, the alignment of all crime prevention budgets, and the reform of the police forces, with the aim of (among other things) transforming the municipal police into a community police force.⁹

⁴ Published in the Official Gazette of the Federation of January 24, 2012. See: http://www.shcp.gob.mx/LASHCP/MarcoJuridico/MarcoJuridicoGlobal/Leyes/370_lgpsvd.pdf

⁵ General Law of the National Public Security System (LGSNSP).

⁶ First week of December 2012.

⁷ As of this writing, this action has already been implemented.

⁸ These are the National Action Party (PAN), the Democratic Revolution Party (PRD), and the Institutional Revolutionary Party (PRI).

⁹ Document available at: <http://www.presidencia.gob.mx/wp-content/uploads/2012/12/Pacto-For-M percentC3 percentA9xico-TODOS-los-acuerdos.pdf>

Based on the results of this study and on the empirical evidence both nationwide and in the MCMA, the proposed actions not only have a theoretical basis but are also directly related to the commitments outlined in the Contract. With the exception of assistance to crime victims, all of the other proposed actions are preventive in nature.

Introduction

Since the first Mexican scientific surveys on insecurity and crime were conducted in the 1990s, there has been growing interest in measuring both the perception and the facts related to this social problem.¹⁰ This interest has been increasing, particularly since the end of 2006, when the president of the Republic declared war against organized crime. He argued that this effort was essential, and announced that the role of the armed forces in combating crime would be enhanced.¹¹ From that moment on, insecurity and crime became priorities for both the federal and state governments.

Since then, the focus of the surveys has routinely centered on gathering information on two aspects: the magnitude of criminal victimization and the feeling of insecurity—that is, both factual and perceptual aspects. Despite the growing interest and the prominent place of this social problem on the political agenda, only rarely have the determinants of the perception of insecurity been empirically investigated.

It is important to clarify that the lack of empirical studies on this subject is not exclusive to Mexico. In Mexico, as in other Latin American countries, this dearth is the result of three restrictions common to the region: (1) the still incipient popularity of empirical research in the social sciences, especially criminology and sociology; (2) the scarcity of accurate statistical information,¹² although it has been rapidly expanding and becoming more sophisticated; and (3) the limited number of technicians trained to substantiate hypotheses using statistics, although their number is also increasing in the region. In this regard, the good news is that the statistical revolution underway in the area of public safety greatly facilitates the feasibility of carrying out

¹⁰An example is the survey on the Previous Report to the sixth Government Report of October 1994. Interestingly, the questionnaire did not contain a module or a specific response option with regard to insecurity or crime, but was rather regarded as a generic response under the "other issues" option that should be addressed by the president of the republic and/or as one of the principal problems of the country (an open-ended response). In this last case, 8.9 percent of the respondents regarded it as the principal problem, behind the economic crisis (18.7 percent) and unemployment (13.1 percent).

¹¹ December 11, 2006. See page 187 of the speech, specifically:

http://www.presidencia.gob.mx/felipecalderon/cronica_mensual/01_el_gobierno_mexicano_2006_12.pdf

¹² For example, in comparison with the information available on economic matters, for which we have well established statistical information systems. In the area of public safety we do not have either the quantity or the variety of timely information that is available on the economy.

empirical studies with more precise results, to the extent allowed by the sampling error.¹³ However, this statistical revolution is yet to be reflected in public policy actions.

Although the region has been implementing policies aimed at reducing criminal activity for a long time, the same cannot be said with regard to policies to reduce the feeling of insecurity. Despite its importance as a measure of quality of life, fear of crime is one of the least addressed areas among policies aimed at combating criminality (Vilalta, 2010). This area of crime policy is important because it significantly affects the well-being of individuals in general, whether or not they are crime victims. Fear of crime has a negative impact on routines or habits, discouraging or limiting activities that people should be able to carry out freely (Vilalta, 2012b). It also affects people's freedom to move about from one place to another and, in general, fear adversely affects state of mind. Thus, fear reduction policies should have the same importance as crime prevention and reduction policies.

That is the reason why information derived from victimization and insecurity surveys has a central role in policy making against insecurity. This type of information offers several advantages: it may be obtained at any time; it may vary in content; it may originate and/or be financed by the government, civil society, or a combination; it provides freedom in the use of theoretical approaches; and, if in addition it is publicized and massively disseminated, it may be more effective in engaging civil society in the public debate.

Based on the above, this study focused on detecting the determinant factors of the feeling of insecurity in Mexico. It was carried out in two different settings: nationwide and in the Mexico City Metropolitan Area (MCMA). The nationwide study made use of the National Victimization and Perception on Public Security Survey (ENVIPE) of 2011, which was developed by the National Subsystem on Governmental Information, Public Safety, and Administration of Justice of the National Statistics and Geography Institute (INEGI). The MCMA study was based on the Victimization and Institutional Effectiveness Survey (ENVEI) prepared by the Center for Research and Teaching in Economics (Centro de Investigacion y Docencia Economicas, or CIDE). In this case and for the purpose of temporarily reconciling the two sources of information—ENVIPE and ENVEI—the results of the ENVEI surveys of August

¹³ For example, at the regional level, with the creation in 2011 of the Center of Excellence in Government Information, Public Safety, Victimization, and Justice, and in Mexico with the creation of the National Subsystem of Information on Government, Public Safety, and Administration of Justice at the National Statistics and Geography Institute (INEGI).

2010 and January 2011 were analyzed.¹⁴ The feeling of insecurity was studied at the town,¹⁵ neighborhood, and housing unit levels.

The study tested a theoretical model based on five contemporary criminological theories. The model was mathematically formulated in a multivariate equation containing the different theoretical determinants of the feeling of insecurity. Based on the statistical significance criterion, the model simultaneously tested the independent predictive capacity of each determinant, progressively excluding those that did not meet the pre-established statistical significance requirement of 1 percent.¹⁶ It was assumed from the start that testing a model that simultaneously includes several competing theories in different spatial areas and based on different information sources would produce more rigorous and scientifically valuable results.¹⁷

The study is divided into four sections. The first section presents a review of the theories and empirical evidence that provide the basis for the insecurity model subsequently tested. The second section contains a description of the information sources and the methodology. This section is divided into three subsections: information sources, variables, and analytical strategy. The third section presents the results of the different tests that will constitute the empirical evidence of the insecurity determinants. This section is divided into two subsections: evidence in the national setting and local evidence in the MCMA setting. The fourth section presents a summary of the findings and continues on with a discussion and the conclusions. This section also includes some policy recommendations based on the evidence presented.

¹⁴ This survey has been carried out semiannually since August 2005.

¹⁵ The town in the case of residents in rural areas surveyed in the ENVIPE and the neighborhood or housing unit in the case of residents surveyed in the ENVEI. It should be noted that there are other areas where the individuals feel significantly differentiated levels of insecurity and where the feeling of insecurity has been specifically measured, such as the state of residence, the city, the municipality, the home when living alone, transportation, etc. See: Vilalta (2011a, 2011b).

¹⁶ That is, the five theories were tested at the same time with a type I margin of error, which is low compared to prior studies and other disciplines in the social sciences.

¹⁷ The test of a theoretical model has its own distribution of errors due to simple randomness in the repetition of the test.

1. Theories and Evidence in Previous Studies

There are five theories regarding insecurity and fear of crime (Vilalta, 2011a; Bissler, 2003). These theories approach insecurity and crime from the standpoint of incivility, victimization, physical vulnerability, social vulnerability, and social networks. Although some of these theories partially overlap both in their causal mechanisms and in the indicators used to test them, all have distinctive elements that will be explained below. The explanation of each theory cites references to previous studies that wholly or partially support or contradict it.

Figure 1. Theories of Insecurity and Fear of Crime

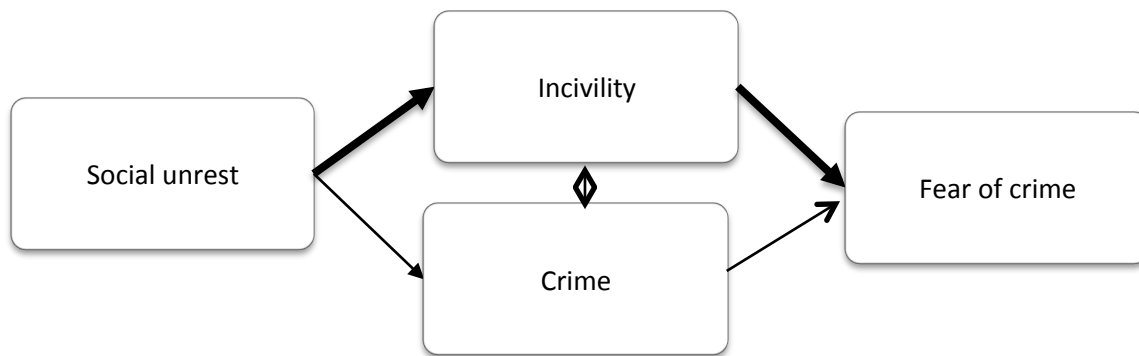


Source: Author’s elaboration.

The first theory proposed in this area was the incivility theory (Hunter, 1978), also known as the social unrest theory. Taking its inspiration from social disorganization theory, which from its beginnings focused on studying the geographic variation of criminal activity within cities (Shaw and McKay, 1942), the incivility theory posits that people who live in areas with signs of social disorder and/or physical deterioration will report a greater perception of insecurity. The causal mechanism at work in this case is that signs of incivility or social unrest project a

widespread perception of lack of control, low levels of social cohesion, and political neglect, which in turn induces a greater sense of vulnerability with respect to crime, finally resulting in a greater feeling of insecurity (Vilalta, 2010; Moore and Sheperd, 2007; Williamson, Ashby, and Webber, 2006; Doran and Lees, 2005; Miceli, Roccato, and Rosato, 2004; Kanan and Pruitt, 2002; Pantazis 2000; Taylor, 1999; Clement and Kleinman, 1977; Akers et al., 1987; Kennedy and Silverman, 1985).

Figure 2. Incivility Theory: Causal Mechanisms *



Source: Hunter, 1978

* The bold arrows indicate the strength of the relationship.

Among the factors considered as indicators of incivility and that have been correlated with levels of insecurity are the following:

- Physical conditions in the area (e.g., graffiti, littered sidewalks, abandoned buildings and/or broken windows, vacant or dilapidated dwellings, etc.)¹⁸
- The presence of antisocial and/or criminal behaviors (e.g., prostitution, alcohol consumption in the street, consumption and sale of drugs, etc.)
- Rapid demographic change, both in number and in socioeconomic and ethnic composition
- The reputation as a “tough neighborhood” that a neighborhood may have in its respective city.

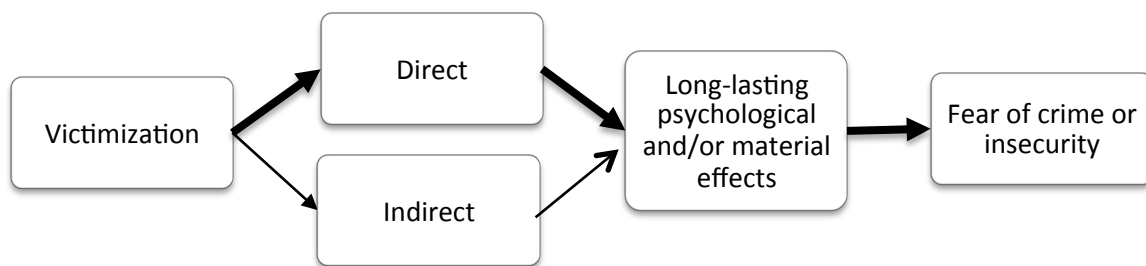
These indicators were not initially integrated into a unified theory, but rather were progressively developed and fine-tuned. For example, Hunter (1978) originally emphasized the physical signs of incivility (e.g., litter) and the relationship between the community and public

¹⁸ The theory of broken windows of Wilson and Kelling (1982) may be a product of Hunter’s incivility theory.

service delivery (e.g., street cleaning, policing). Subsequently, Skogan (1990) proceeded to distinguish between physical disorder and social unrest. By physical disorder, Skogan meant the presence of vacant lots, abandoned dwellings, and graffiti. By social unrest, he meant a combination of behavioral elements, such as the consumption of alcoholic beverages in public, harassment of pedestrians—especially women—and the presence of, in his words, “tough youngsters” on the streets without adult supervision. Skogan (1990) predicted that these elements indicated a breakdown of the social order and accordingly a greater fear of crime. Since then, tests of this theory have emphasized the conceptual need to distinguish between incivility or local unrest and criminal activity (Carvalho and Lewis, 2003).

The victimization theory (Garofalo, 1979) and the physical vulnerability theory (Riger, 1978) followed the incivility theory. The victimization theory posits that victims of crime feel less safe than those who have not been victimized (Vilalta, 2010; Bissler, 2003; Hale, 1996; Skogan, 1990; Garofalo, 1979). Victimization can be direct or indirect (Lavrakas and Lewis, 1980). Direct victimization is that suffered by the person in question, while indirect victimization is that suffered because of what has happened to acquaintances. The causal mechanism of this theory is the idea that the experience of victimization has long-lasting psychological and/or material consequences, increasing the proclivity to feel less safe, in contrast to the reverse situation of non-victimization (Rader et al., 2007; Schafer et al., 2006; Taub et al., 1984).

Figure 3. Victimization Theory: Causal Mechanisms *



Source: Author’s elaboration.

* The bold arrows indicate the strength of the relationship.

There is ample evidence to support this theory in different countries, including the United States (Liska et al., 1988; Friedman et al., 1982), the United Kingdom (Maguire and Corbett, 1987), Australia (Mawby and Gill, 1987), and Mexico (Vilalta, 2010). However, the theory is not

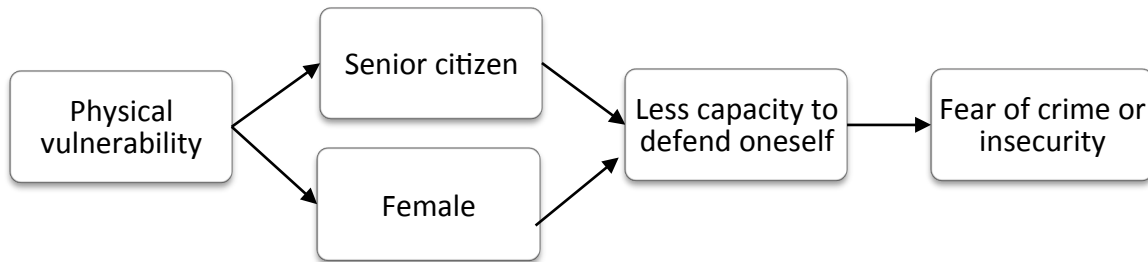
free of controversy, as some studies do not support it (Box et al., 1988). Some studies report no independent, statistically significant correlation between victimization and fear of crime (Dull and Wint, 1997; Carcach et al., 1995; Skogan and Maxfield, 1981). The study by Graham and Chaparro (2011) discuss a mediating effect influencing this absence of statistical correlation and the apparent resulting conflict, given that evidence of a relationship between the two circumstances should intuitively be present.¹⁹ The mediation that should be included in a more detailed analysis of the relationship between victimization and fear of crime would consider support networks of friends and relatives for the individuals as a mediator variable in the relationship, particularly affecting those who are more vulnerable to the detrimental effects of crime. In other words, in the presence of friendships and stronger family networks, it would be expected that direct or indirect victimization would have a lower or perhaps zero impact on individual levels of fear of crime. In any case, the discussion would focus on the need for a triple relationship analysis.

Contemporary to the victimization theory is the physical vulnerability theory. The physical vulnerability theory predicts that fear of crime will be greater among individuals who are less able to defend themselves from an attack (Bissler, 2003; Pantazis, 2000). The correlative factors that have been considered in testing this theory are age and gender. The evidence in favor of this theory is considerable. Many previous studies coincide in that older individuals feel less safe than younger people (Moeller, 1989; Ortega and Myles, 1987; Lewis and Salem, 1986; Mullen and Donnermeyer, 1985; Warr, 1984; Hough and Mayhew, 1983; Clarke and Lewis, 1982; Lindquist and Duke, 1982; Lee, 1982; Ollenburger, 1981; Yin, 1980).

Likewise, there are reports indicating higher levels of insecurity among women than men (Rader et al., 2007; Fetchenhauer and Buunk, 2005; Fisher and Sloan, 2003; Scott, 2003; Warr, 2000; Gilchrist et al., 1998; Hale, 1996; Killias, 1990; Chadee and Ditton, 2003; Ditton et al., 1999; Ferraro, 1995; Ferraro and LaGrange, 1992). This finding was affirmed in Mexico in the 1990s (Lira and Andrade, 1993). However, in more recent years, this finding has not been corroborated for the feeling of insecurity in the neighborhood of residence (Vilalta, 2010), although the female-insecurity correlation has been corroborated for the feeling of insecurity when at home alone (Vilalta, 2011a) and among users of public transportation in Mexico City (Vilalta, 2011b).

¹⁹ The author thanks one of the arbiters for this observation and the bibliographic reference.

Figure 4. Physical Vulnerability Theory: Causal Mechanisms



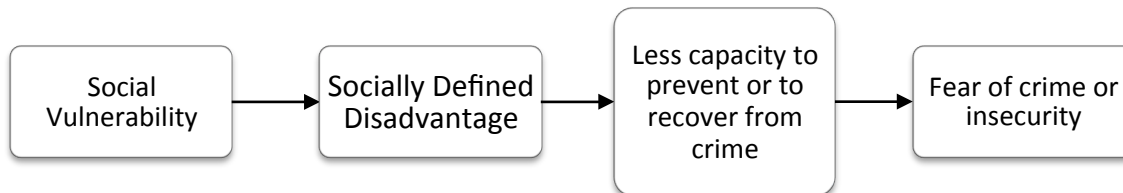
Source: Author's elaboration.

A significant difference between the victimization theory, the physical vulnerability theory, and the incivility theory is that in the first one, the experience of direct victimization is based on a fact, that is, on the experience of victimization, whereas the other two theories are based on subjective or perceptual factors. It is for this reason that the physical vulnerability theory is considered paradoxical. The paradox, or apparent paradox, is that older adults and women report higher levels of insecurity, when in fact these populations suffer from lower victimization rates compared to the young and the male populations (Hale, 1996). It may be that, while the elderly and women are more physically vulnerable, this does not translate into a greater risk or likelihood of victimization.

Within the area of vulnerability is the social vulnerability theory. This theory stems from the idea that the feeling of insecurity can be predicted according to the degree of vulnerability or disadvantage with respect to crime that some sectors of the population share due to their lower capacity for crime prevention and/or recovery from the consequences of crime. Social vulnerability refers to the actual and shared inability of a socioeconomic stratum to prevent or recover from victimization (Skogan and Maxfield, 1981). This situation of vulnerability or of less ability to prevent and/or recover from crime would increase the feeling of insecurity in large population groups. The causal mechanism operating in this case is that the more vulnerable social strata, such as the low-income population or those without regular income, do not have the same capacity as the high-income population to prevent crime or to recover once they have been victimized (Bissler, 2003). In order to prove this theory, social class indicators, such as years of

formal schooling, earnings, unemployment, and occupation, have traditionally been used (McGarrell et al., 1997; Will and McGrath, 1995; Covington and Taylor, 1991).

Figure 5. Social Vulnerability Theory: Causal Mechanisms



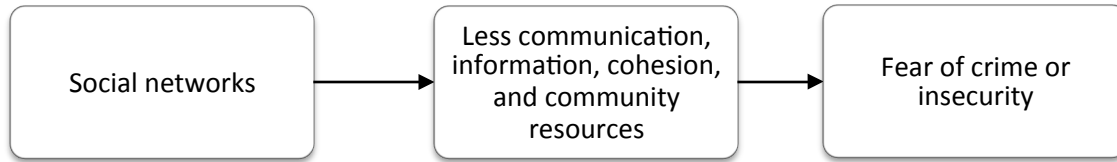
Source: Author's elaboration.

Following on all of the previous theories is the social network theory. This theory is related to the idea of social capital. It posits that involvement in social support networks generates higher levels of communication, community cohesion, and available resources to prevent and combat crime and the fear of crime, creating a feeling of greater security among members of the network. In other words, theoretically, belonging to a social network provides the benefit of greater security with respect to crime (Ferguson and Mindel, 2007).

Although this theory has been less studied and tested than the previous theories (Bissler, 2003), it is not exempt from controversy. Some authors argue that greater involvement in the community also supposes greater access to information on the presence of delinquency, which can translate into a greater sense of insecurity (Sacco, 1993). This would happen analogously or complementarily to the prediction of the indirect victimization theory.

In any case, the underlying logic of the theory, by which it could intuitively be considered a good theory, is that individuals who are more informed and more involved in community affairs—for example, through participation in neighborhood crime-prevention efforts—are in fact better informed with regard to criminal activity in their communities as well as other local problems. Hypothetically, they would have a more realistic view of the situation, greater psychological support, and greater empathy from participants in the network. This should result in a higher level of collective effectiveness, confidence in other citizens, confidence in the local police and, finally, a feeling of greater security.

Figure 6. Social Network Theory: Causal Mechanisms



Source: Author's elaboration.

Interestingly, in communication sciences, this theory and its relationship to insecurity have also been articulated, and it is known as the cultivation theory (Romer, Hall Jamieson, and Aday, 2003). This theory predicts that the mass media, especially television, “cultivate” a fear of crime in television viewers. The premise is that the communications media are part of the “social network” of individuals. Moreover, for some individuals the mass media are the only or the main source of information with regard to insecurity and delinquency in their community. In this regard, there is said to be an economic incentive to massively disseminate crime-related news, resulting in increased levels of personal insecurity (Romer, Hall Jamieson, and Aday, 2003; Chiricos et al., 2000; Hamilton, 1998) and a reduction in popular support of the criminal justice system (Kort-Butler and Hartshorn, 2011). Nevertheless, there are also reports of an absence of correlation with the consumption of news focused on reporting crimes (Chadee and Ditton, 2003) and of a negative correlation with individuals who use the mass media as their main source of information on crime (Vilalta, 2010a). From the foregoing, the evidence is not conclusive and requires more analysis.

To complete this summary of theories, it is important to consider the following two aspects. First, the concepts of insecurity with respect to crime and the fear of crime have been discussed per se. For example, it has been argued that the fear of crime has not been defined with sufficient clarity (Gabriel and Greve, 2003). It can vary by the type of crime in mind when reporting on the level of fear (Kershaw et al., 2001; Jackson, 2004), and it can also be attributable to other reasons not necessarily related to crime (Lupton and Tulloch, 1999). The second aspect is that this conceptual discussion has an impact on the measurement of the dependent variable, on which there is also debate. It is not scientifically or intellectually clear if

insecurity or fear of crime can be effectively measured with a single question in a survey (Moore and Shepherd, 2007; Rogerson and Christmann, 2007). Methodologically speaking, there may be a need to factorize the results of several related questions, with different degrees of detail, or that have been proposed, formulated, exemplified, or expressed differently. This discussion is productive both in theoretical and practical terms. Although these debates are beyond the scope of this study, it is important to take into account that poor measurement of the feeling of insecurity or fear of crime can have a negative impact on the quality of the public policy debate (Vilalta, 2010).

Table 1. Synthesis of Indicators and their Relationship to Insecurity

Author and Year	Determinants	Effect
Brunton-Smith and Sturgi (2011)	Socioeconomic status	(+/-)
Brunton-Smith and Sturgi (2011) Vilalta (2010) Moore and Sheperd (2007) Williamson et al. (2006) Blobaum and Hunecke (2005) Gild and Lees (2005) Miceli, Roccato, and Rosato (2004) Kanan and Pruitt (2002) Taylor (1999)	Poor material conditions (graffiti, condition of dwellings, trash, etc.)	(+) (n.s.) (+) (+) (+) (+) (+) (+) (+)
Vilalta (2010a) Rodrigues (2006) Bissler (2003) Lewis and Salem (1986) Kennedy and Silverman (1985)	Opinion on the police	(-) (-) (-) (-) (-)
Kort-Butler and Hartshorn (2011) Vilalta (2010a) Chadee and Ditton (2005) Chiricos et al. (2000) O'Connell (1999) O'Connell and Whelan (1996)	Local newscasts	(n.s.) (-) (n.s.) (+) (+) (+)
Vilalta (2010a) Moore and Sheperd (2007) Rader et al (2007) Blobaum and Hunecke (2005) Scott (2003) Warr (2000) Pantazis (2000) Gilchrist et al. (1998) Hale (1996) Killias (1990) Kennedy and Silverman (1985) Clemente and Kleinman (1977)	Female	(n.s.) (+) (+) (+) (+) (+) (+) (+) (+) (+) (+) (+)
Moore and Sheperd (2007) Chadee and Ditton (2003) Ditton et al. (1999) Ferraro and LaGrange (1992) Akers et al. (1987) Kennedy and Silverman (1985)	Age	Curvilinear (+) (+) (+) (n.s.) (+)
Vilalta (2010a) Covington and Taylor (1991)	Education level	(n.s.) (-)
Moore and Sheperd (2007) Kanan and Pruitt (2002) Pantazis (2000) McGarrell et al. (1997) Will and McGrath (1995)	Income level	(+) (-) (-) (-)
Vilalta (2010a) Moore and Sheperd (2007) Rader et al. (2007) Schafer et al. (2006) Miceli, Roccato, and Rosato (2004) Kanan and Pruitt (2002) Liska et al. (1988) Maguire and Corbett (1987) Friedman et al. 1982	Previous victimization	(+) (+) (+) (+) (+) (+) (+) (+)

Source: Author's elaboration.

2. Information Sources and Methodology

This part of the study is divided into three parts: information sources, variables, and analytical strategy. Some tables are included to provide more details on the different aspects mentioned in the section on prior theories and studies concerning the measurement of the concepts.

2.1. Sources of Information

Two sources of information were used for this study. The first was the National Victimization and Perception on Public Security Survey (ENVIPE) of 2011, prepared by the National Information Subsystem on Government, Public Safety, and Administration of Justice of the National Statistics and Geography Institute (INEGI). The second was the Victimization and Institutional Effectiveness Survey (ENVEI) prepared by the Center of Economic Research and Education (ICED) in August 2010 and January 2011. Both are probability-sampling surveys.

There are two nuances in the scope of these information sources. The first nuance is that the information in the ENVIPE is national in scope,²⁰ while the information gathered in the ENVEI covers only the MCMA. The second nuance is the spatial area of the respondent. In the case of the ENVIPE, which was conducted in both urban and rural areas, it investigates the level of insecurity in the neighborhood or town,²¹ while the ENVEI, conducted in the metropolitan area, looks at the feeling of insecurity in the neighborhood or housing unit.²² With respect to the time period, the ENVIPE collected information on insecurity in 2011, while the ENVEI collected the respective information semiannually, between August 2005 and March 2012 (see Table 2).

²⁰ It includes representative information for the 32 states and 17 metropolitan areas of the country.

²¹ In this regard it asks about the municipality and the state of residence of the respondent. It also contains more specific questions on the feeling of security at home, in the street, etc.

²² It also asks about the feeling of insecurity while alone at home or when using public transportation.

Table 2. Dates of the Surveys and Size of Samples *

	Survey date	** Sample
<i>Nationwide:</i>		
ENVIPE 2011	March 14 to April 22	66,865
<i>Local area of the MCMA:</i>		
ENVEI 2010-2	July 23 to August 8	1,555
ENVEI 2011-1	January 21 to February 12	1,556
ENVEI -Total		3,111

Source: Author's elaboration.

* Recorded with a response (including DK, NA, and NC) in the dependent variable.

** Without considering the expansion factor.

In the ENVIPE, the target (and eligible) population and unit of information are people 18 years of age and older. The target population and unit of information of the ENVEI are people age 15 and above. Both populations provide information on their households, including demographic information on the members of the household, income, education, and experiences of victimization. In both surveys, the sampling unit is the household, and the survey is conducted in person.

2.2. Variables

In this study, the dependent variable (DV) was the feeling of insecurity in the neighborhood, housing unit, or town—that is, the area of greatest physical proximity to the respondent.²³ The DV focused on the concept of “feeling of insecurity” by the respondent and not on the “expected risk of being a crime victim,” although both concepts are intellectually chained and statistically correlated. Both concepts have been widely used, and most have used the first approach in studies in this field (Liska et al., 1982; Taylor and Covington, 1993).

Although both sources of information measure the same concept of “feeling of insecurity,” there are different measurements of the DV in the ENVIPE and the ENVEI. In the first case, the DV was measured at a dichotomous level, while in the second the DV was ordinally measured. The corresponding questions and the response options are shown in Table 3.

²³Compared with the municipality or the state of residence.

Table 3. Measurements of the Dependent Variable According to Information Source

	Question	Response Options
ENVIPE	Do you consider that living in the “neighborhood/town” is...?	Safe? (1) Unsafe? (2) No response (8) Does not know (9)
ENVEI	How safe do you feel living in this neighborhood/housing unit?	Very safe(1) Somewhat safe(2) Unsafe (3) Not at all safe(4) Does not know (98) Did not Answer (99)

Source: Author’s elaboration.

For both sources, the information on the feeling of insecurity is current or present, that is, at the time the survey was performed. Other questions are posed based on other time frames or depend on the memory of the respondent; for example, the questions on victimization, which in the case of the ENVIPE relate to experiences that took place in time intervals before or during 2011, that is, at the time the information was collected. In the case of the ENVEI, a semiannual survey, the questions on victimization refer to events that occurred in the six months prior to the time the survey was conducted.

With regard to independent or determining variables, a set of indicators representative of each theory subject to the test are included in the surveys and, in the majority of the cases, are also statistical correlatives used in previous studies (see Tables 4 and 5 with regard to Table 1). Since the ENVIPE and the ENVEI are two different sources of information, the measurements are not exactly equivalent, but are representative of the same theoretical concepts. For example, although the questions in the surveys and the response options are somewhat different, the direct or indirect victimization concepts (victimization theory), together with the questions on the sex and age of the respondent (physical vulnerability) and number of years of formal education (social vulnerability theory) are the same.

Table 4. ENVIPE: Measurements of Independent or Determining Variables *

Theory	Measurement/question	Response options
Victimization	<p>Direct: During 2010, did you suffer the situation (code of incidence) of the card?</p> <p>Indirect: During 2010, did anyone who lives or lived in this household experience any of the situations in the list?</p>	<p>Yes (1) No (2) No response (8) Does not know (9)</p>
Physical vulnerability	<p>Sex</p> <p>How old are you?</p>	<p>Male (1) Female (2)</p> <p>18 to 97</p>
Social vulnerability	<p>What was the last school grade you completed?</p> <p>Last week ...</p>	<p>None (0) Preschool (1) Primary (2) Secondary (3) Technical or commercial career with primary school completed (4) Technical or commercial career with secondary school completed (5) High school education (6) Technical or commercial career with high school completed (7) Normal school (8) University (9) Graduate-level (10)</p> <p>Did you work? (1) Were you employed but did not work? (2) Looked for a job? (3) Are you a student? (4) Are you a homemaker (5) Are you a retiree or a pensioner? (6) Are you permanently disabled? (7) Did not work? (8)</p>
Incivility	<p>Do you know or have you heard in the vicinity of your household if any of the following situations took place?</p>	<p>Alcohol consumption in the street (1) There are gangs (2) There are fights between neighbors (3) None (18) No response (88) Does not know (99)</p>
Social networks and communication	<p>During 2010, to protect yourself from delinquency were any measures taken in this household such as carrying out joint activities with your neighbors?</p> <p>What is your level of trust in the police?</p>	<p>Yes (1) No (2) No response (8) Does not know (9)</p> <p>High (1) Some (2) Little (3) None (4) No response (5) Does not know (6)</p>

* The variables were re-coded to perform the tests in order to simplify the interpretation of the results.

** The analyses calculated the average of both variables to obtain a single measurement on the use of mass media.

In order to achieve greater simplicity and tidiness in the interpretation of the results, some of the determinants were re-coded to conduct the tests. For example, in the case of the determinant on the use of mass media by the respondent (how often he/she watches or listens to newscasts and how often he/she reads newspapers in print or through the Internet), both were combined into a single measurement calculating the average (arithmetic mean) in the response to both questions by the same respondent. This avoided conceptual and statistical redundancy.

Table 5. ENVEI: Measurements of Independent or Determining Variables

Theory	Measurement/question	Response options
Victimization	<p>Direct or indirect: Have you or any person who lives here suffered a robbery of ... a vehicle, car parts, home burglary, objects? Do you have a business or company where a robbery or an assault has been committed? Were you or anyone living in this house deprived of freedom or held against your will in order to demand something in return? Were you or anyone living here attacked by someone, threatened with weapons, sticks, stones, etc., or was force used against you (such as punches or blows)? Were you or any of the persons living in the home victims of telephone extortion, that is, been told by telephone that a member of your family had been kidnapped and it was not true?</p>	<p>Yes (1) No (2) Does not know (98) Did not answer (99)</p>
Physical Vulnerability	<p>Sex How old are you?</p>	<p>Male (1) Female (2) This variable was re-coded to large age groups</p>
Social Vulnerability	<p>What is the highest grade that you completed? Are you currently employed?</p>	<p>None (1) Incomplete primary (2) Completed primary (3) Incomplete secondary (4) Completed secondary (5) Commercial career (6) Technical (7) Incomplete high school (8) Completed high school (9) Incomplete university (10) Completed university (11)</p>

		Master's/Graduate (12) Doctorate (13) DK (98) NA (99) Yes (1) No (2) NA (99)
Incivility	How frequently do the following occur near your house? Fights between neighbors (1) Vandalism against houses and establishments (2) Alcohol or drug consumption in the streets (5)	Very frequently (1) Somewhat frequently (2) Infrequently (3) Not frequently (4)
Social networks and communication	Does the house where the interview was carried out have an informal arrangement with neighbors to look after each other's homes? Please indicate, in general how much confidence you have in the police in your town.	Yes (1) No (2) Could not identify (99) Very much (1) Somewhat (2) Little (3) Not at all (4) Does not know (98) Did not Answer (99)

* The variables were recoded to perform the tests in order to simplify the interpretation of the results.

Although the victimization, physical and social vulnerability theories are easily representable through direct and factual measurements, the incivility and social networks theories both contain factual and opinion elements, and thus are not easily or directly measurable, based on existing information. In this regard, it is important to clarify that in this study the incivility theory was represented by measuring behaviors constituting signs of local social unrest, rather than criminal activities or crime. Thus, an attempt was made to be faithful to the theory, both according to the original formulation by Hunter (1978) and according to previous studies that make use of correlatives of that nature, which in many countries do not constitute crimes, but are rather considered misdemeanors punishable by fines or occasionally arrest for a very short period (e.g., 24 or 36 hours). Similarly, to represent the action of social network theory, two variables were included: agreements among neighbors to join forces to protect each other against crime and degree of trust in the police. Trust in the police was thought to follow a social process similar to any other event involving measuring public opinion, such as the popularity of a government, electoral preferences, or others.

2.3. *Analytical Strategy*

In the nationwide analysis (ENVIPE 2011), the frequency and proportion of feelings of insecurity in the neighborhood or town were first observed in the reports, while seeking to detect significant statistical differences among the respondents. Differences or comparisons among groups of respondents were sought for each of the aforementioned theoretical determinants. To do so, the following differences test techniques were used: Pearson's statistical Chi-square (χ^2) and *t* Student test. Due to the large size of the sample, the degree of significance was set at 1 percent ($p < 0.01$) for all of the tests.

Once descriptive statistics and differences tests were performed, the multivariate test of the theoretical model was performed. Since the DV had a dichotomous measurement level, the data were modeled using the binary logistic regression technique.²⁴ A conditional-advanced procedure was used to select the determinants that would remain in the resulting model, and the inclusion criterion was equally a *p* value less than 0.01. The model considered all the determinants simultaneously, even those that had not shown statistical significance in the differences tests previously carried out.²⁵ In this way, the best model was achieved. The test of the theoretical model included an analysis of the residuals.

The analysis of the local area of the MCMA was also initiated with the description of the data in each survey (ENVEI, August 2010 and January 2011) and the tests of the respective differences. Once this was done, the multivariate test of the model was carried out, in this case using the ordinal logistic regression technique. The procedure for the inclusion or exclusion of the determinants was carried out manually, considering the statistical significance of each determinant and of the model as a whole, until the most parsimonious model was achieved. As in the case of the test in the national setting, the inclusion criterion was the strict statistical significance with an error probability of less than 1 percent. The resulting test of the model (semiannual) included an analysis of residuals and other diagnoses on the linearity of the model. This was carried out equally, or with two equations, for the two available semiannual surveys. That is, an equation was obtained for the population surveyed in August 2010 and another for the

²⁴ The results shown in the tables corresponding to the regressions refer to the marginal or partial effects that the model has in each individual.

²⁵ The only case was the situation of having worked during the week previous to the survey, which did not make a statistically significant distinction.

population surveyed in 2011. The “no response” (NR), “does not know” (DK) and “did not answer” (NC) were not considered in the descriptive statistics, in the differences tests, or in the regression analyses, nor were attributions made to missing values.

3. Results

This part is divided into two sections: evidence at the national level and evidence at the MCMA level. Both sections are developed in the same order: each starts with a description of the data, followed by various inferential tests, particularly of the differences or comparative data, and concludes with the test of the multivariate theoretical model through several regression analyses for discrete dependent variables. The following section discusses these results and the conclusions derived from the evidence presented.

3.1. Evidence at the National Level: Insecurity in Neighborhoods and Towns in the Country

At the national level, in 2011 most of the population (61.3 percent) considered that it was safe to live in their neighborhood or town ($p < 0.001$). As this was the first survey carried out, there was no previous measurement to compare it with, making it difficult to put this number in context.²⁶ That is, it is not possible to say whether this is a better or worse number with regard to something else, whether similar or different. However, some arithmetical operations together with some circumstantial elements can provide an initial contextual idea or distribution of the event. For example, a first contextual and simply arithmetical element is the relationship observed between the population that felt secure and the population that feels insecure, which is 1.6 secure people per each insecure person. This tells us, in simple arithmetical terms, that the feeling of safety, although felt by the majority, was not a very widespread feeling that year.

²⁶ The second survey was performed between March and April 2012, but had not been published at the time of this study.

Table 6. General: Do you consider that living in this neighborhood/town is ...?

	Frequency and percentages *
Safe	40,479 (61.3)
Unsafe	25,557 (38.7)
<i>Differences test**</i>	$\chi^2 = 3,371,889, p < 0.001$

Source: Author's calculations based on ENVIPE, 2011

* Percentages in parenthesis.

** Statistical chi-square and significance value (*p*).

Another contextual element is the important geographical variations. Insecurity is not distributed consistently throughout the national territory. Table 7 below shows the security and insecurity levels by metropolitan area and outside of them. Here, significant statistical differences are detected among metropolitan areas, where greater proportions of the population report a feeling of insecurity with respect to crime in their neighborhoods in the Mexico City Metropolitan Area in the State of Mexico, Ciudad Juárez, Cancun, Cuernavaca, Toluca, and Villahermosa, respectively. In all these areas, the proportion of population that feels unsafe is greater than 50 percent. Conversely, the areas where a lower proportion of the population reports feeling unsafe in their neighborhoods are Culiacán, Mexicali, Tijuana, and Nuevo Laredo. Given these regional differences, it was decided to include the area of residence of the respondent as a control in the multivariate model.

Table 7. Metropolitan areas and outside of them: Do you think that living in this neighborhood/town is ...? *

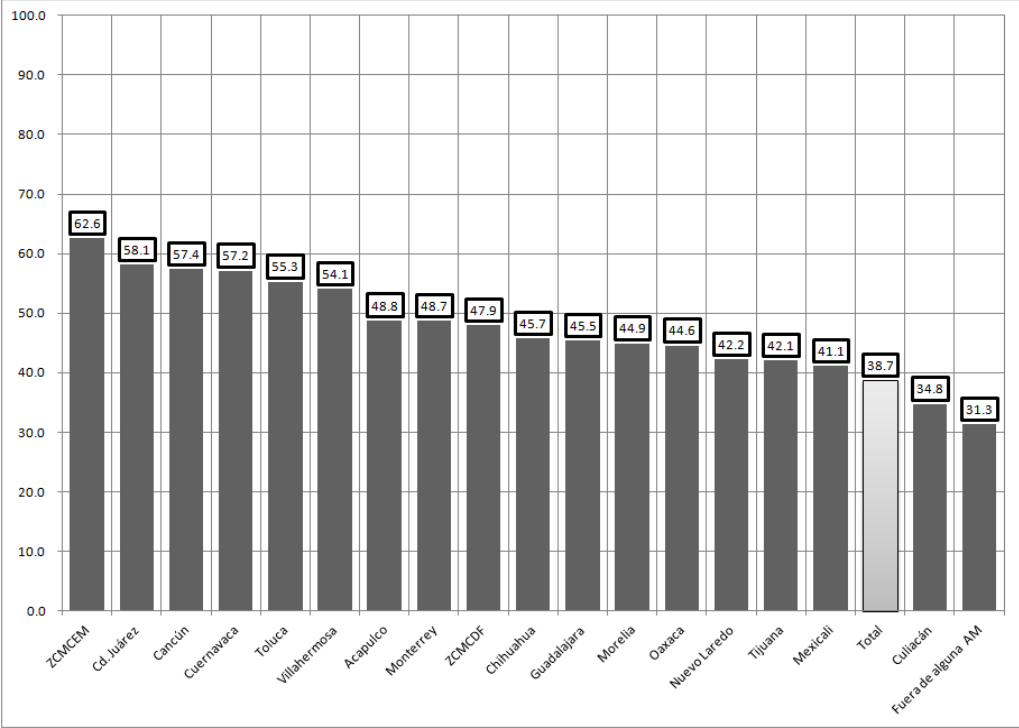
	Secure	Insecure
Mexico City Metropolitan Area in the State of Mexico (ZMCMEM)	644 (37.4)	1,079 (62.6)
Ciudad Juárez	609 (41.9)	846 (58.1)
Cancun	607 (42.6)	818 (57.4)
Cuernavaca	695 (42.9)	927 (57.1)
Toluca	793 (44.8)	980 (55.2)
Villahermosa	746 (45.9)	879 (54.1)
Acapulco	803 (51.3)	765 (48.7)
Monterrey	782 (51.4)	741 (48.6)
Mexico City Metropolitan Area in the Federal District (ZMCMDF)	933 (52.1)	859 (47.9)
Chihuahua	843 (54.3)	710 (45.7)
Guadalajara	900 (54.6)	750 (45.4)
Morelia	937 (55.1)	764 (44.9)
Oaxaca	1,012 (55.5)	814 (44.5)
Nuevo Laredo	938 (57.8)	685 (42.2)
Tijuana	959 (57.9)	696 (42.1)
Mexicali	972 (58.9)	678 (41.1)
Culiacán	1,488 (65.3)	793 (34.7)
<i>Metropolitan areas:</i>	<i>14,661 (51.5)</i>	<i>13,784 (48.5)</i>
<i>Outside the metropolitan areas:</i>	<i>25,818 (68.6)</i>	<i>11,773 (31.3)</i>
Total	40,479 (61.2)	25,557 (38.7)
<i>Differences test:**</i>	<i>$\chi^2 = 2,760,046, p < 0,001$</i>	

Source: Author's calculations based on ENVIPE, 2011.

* Percentages in parenthesis and shown from greater insecurity to lower insecurity. Percentages may not add up to 100 percent in all cases due to rounding.

** Statistical Chi-square and significance value (*p*). The test or comparison was carried out among all the territorial demarcations.

Figure 7. Percentage of Population that Feel that Living in their Neighborhood or Town is Unsafe, by Metropolitan Area



Source: Author’s calculations based on ENVIPE, 2011.

The largest proportion of respondents (60.3 percent) who reported feeling unsafe in their neighborhoods or towns are found among those that point out the presence of social unrest behaviors or incivility (alcohol consumption in the street, the presence of gangs, and/or fights between neighbors) (60.3 percent), those who had been direct victims of a crime in 2010 (49.4 percent), indirect victims (48.2 percent), those who had no confidence in the police (47.4 percent), and those who reported having organized some joint activities with their neighbors to protect themselves from crime (44.2 percent). Conversely, the highest proportion of respondents who reported feeling safe were those who had confidence in the police (79.5 percent), were more frequent users of mass media for obtaining information (71.8 percent), and had some level of confidence in the police (70.6 percent), respectively. In all these situations or characteristics of the respondents, the difference was statistically significant. What did not make a difference in the feeling of security was reporting having worked during the week previous to the survey (61.0 percent) in contrast to not working (61.7 percent); employment status did not make any difference in respondents’ perception of safety ($p = 0.094$).

Table 8. Determinants: Differences Tests in the Levels of Insecurity in Neighborhoods or Towns *

	Secure	Insecure	Differences test**
Indirect victim	51.8%	48.2%	$c^2 = 1.435.545 p < 0.001$
Not indirect victim	66.8%	33.2%	
Direct victim	50.6%	49.4%	$c^2 = 1.071.537 p < 0.001$
Not direct victim	64.9%	35.1%	
Men	63.9%	36.1%	$c^2 = 96.484 p < 0.001$
Women	59.9%	40.1%	
18 to 34 years old	61.8%	38.2%	$c^2 = 52.245 p < 0.001$
35 to 49 years old	59.4%	40.6%	
50+ years old	62.7%	37.3%	
Preschool	57.9%	42.1%	$c^2 = 85.734 p < 0.001$
Primary	61.8%	38.2%	
Secondary	59.5%	40.5%	
Technical	57.1%	42.9%	
High school	59.7%	40.3%	
University	63.0%	37.0%	
Graduate	67.3%	32.7%	
Worked	61.0%	39.0%	$c^2 = 2.803 p = 0.094$
Did not work	61.7%	38.3%	
Signs of incivility***	39.7%	60.3%	$c^2 = 1.709.904 p < 0.001$
No signs of incivility	64.1%	35.9%	
Does not perform neighborhood actions****	61.9%	38.1%	$c^2 = 85.822 p < 0.001$
Performs neighborhood actions****	55.8%	44.2%	
High confidence in the police	79.5%	20.5%	$c^2 = 1.724.460. p < 0.001$
Some confidence in the police	70.6%	29.4%	
Little confidence in the police	63.1%	36.9%	
No confidence in the police	52.6%	47.4%	

Source: Author's calculations based on ENVIPE, 2011.

* Statistical chi-square and significance value (p).

** Statistical t of arithmetical differences means and significance value (p). The test or comparison was carried out between arithmetic averages of use of information media between groups of secure and insecure respondents, but for illustration simplicity, the percentages of respondents according to their security and insecurity in each category in the use of media, are shown. The greater the average value in the use of media, the greater its usefulness.

*** Coded as the report of at least one type of incivility or disorder sign out of three possible (alcohol consumption in the street, presence of gangs or bands, and/or fights between neighbors).

**** For purposes of protecting oneself from crime.

Moving on to the multivariate test of the theoretical model, the results of the regression analysis support all the theories considered, even controlling for (or maintaining constant) the covariation present in the metropolitan location of the respondent, which in this case was used as a control variable.²⁷

In the nationwide study, the determinants that increased the most individual proclivity to report a feeling of insecurity among the respondents in 2011 were signs of incivility in the neighborhood or town, low level of schooling, indirect victimization, direct victimization, and an average age between 35 and 49 years old. Particularly noteworthy are the first two determinants: signs of incivility, which basically triple the individual proclivity to report a feeling of insecurity in the neighborhood or town of residence, and low schooling, especially those who have completed only primary education or less.

Table 9. Results of the Binary Logistic Regression grouped by Insecurity Theory

Theory	Determinant *	Coefficient	Standard error	Wald statistics	Statistical significance	Individual proclivity to report insecurity **
Victimization	Indirect victim	0.306	0.023	177.770	0.000	35.8%
	Direct victim	0.256	0.025	106.786	0.000	29.2%
Physical vulnerability	Men	-0.171	0.019	82.949	0.000	-15.7%
		-	-	17.932	0.000	-
	18 to 34 years	-0.008	0.024	0.111	0.739	n.s.
	35 to 49 years	0.070	0.023	9.594	0.002	7.2%
Social vulnerability		-	-	182.969	0.000	-
	Preschool	0.773	0.187	17.040	0.000	116.5%
	Primary	0.562	0.084	45.069	0.000	75.4%
	Secondary	0.507	0.084	36.566	0.000	66.1%
	Technical	0.473	0.088	28.827	0.000	60.5%
	High School	0.415	0.085	23.648	0.000	51.5%
	University	0.229	0.085	7.312	0.007	25.7%
Incivility	Sign of incivility	0.855	0.027	997.691	0.000	135.2%
Social networks	Neighborhood actions	0.156	0.030	27.980	0.000	16.9%
		-	-	939.193	0.000	-
	High confidence in the police	-0.999	0.047	447.922	0.000	-63.2%
	Some confidence in the police	-0.624	0.026	557.829	0.000	-46.4%
	Little confidence in the police	-0.366	0.020	349.003	0.000	-30.6%

²⁷ It was explained in the methodology section that the metropolitan location of the respondent was included as a control in the model because of its high statistical significance.

** Control variables				1527.542	0.000	
	ZMCMDF	0.522	0.052	100.724	0.000	68.6%
	ZMCMEDOMEX	1.117	0.054	426.222	0.000	205.4%
	Guadalajara	0.398	0.054	53.897	0.000	49.0%
	Monterrey	0.593	0.056	113.600	0.000	80.9%
	Chihuahua	0.516	0.056	86.206	0.000	67.5%
	Acapulco	0.618	0.056	119.790	0.000	85.5%
	Morelia	0.516	0.054	93.115	0.000	67.6%
	Toluca	0.948	0.052	331.947	0.000	158.1%
	Villahermosa	0.814	0.055	221.906	0.000	125.6%
	Ciudad Juárez	0.840	0.058	213.418	0.000	131.7%
	Tijuana	0.390	0.054	51.624	0.000	47.6%
	Nuevo Laredo	0.419	0.055	57.906	0.000	52.0%
	Culiacán	0.084	0.048	3.050	0.081	n.s.
	Cuernavaca	0.881	0.055	251.977	0.000	141.3%
	Oaxaca	0.427	0.052	68.114	0.000	53.3%
Cancun	0.910	0.059	239.264	0.000	148.5%	
Mexicali	0.386	0.055	48.956	0.000	47.2%	
	Constant	-3.073	0.103	886.289	0.000	-
Assessments: Pearson chi-Square test of significance of the model = 5,661.728, $p < 0.001$ Hosmer-Lemeshow Chi-square test of classifications: = 28,579, $p < 0.001$ Correctly performed classifications = 65.5 percent Nagelkerke pseudo $R^2 = 0.121$ Kolmogorov-Smirnov test of normalcy on the residuals = 59,130, $p < 0.001$ Sample size: 60,287 (91.3 percent of the total)						

Source: Author's calculations based on ENVIPE, 2011.

* In contrast to the reference or comparison category which is the last one in each variable.

** NA: Not applicable due to statistical insignificance.

Two determinants that reduce the sense of insecurity were detected among respondents: confidence in the police and being male. In the first case, greater confidence in the police also corresponded to higher security level; and in the second, lower levels of insecurity were reported among men versus women.

There were two variables of the initial model that following the conditional-advanced procedure of selection of variables were excluded from the resulting model due to their null statistical significance. These were employment status during the previous week and the degree to which respondents used mass media for information. In the presence of the other determinants, these did not show a probabilistically independent relationship with a report of feeling safe in the respondent's neighborhood or town.

It is noteworthy that all of the controls for urban or metropolitan location, except one, were statistically significant and thus an independent predictive capacity in reporting insecurity.

The exception was among the respondents in the city of Culiacán, who, all constant, did not appear to be significantly different from respondents outside such cities or metropolitan areas. Respondents living in the Mexico City Metropolitan Area in the State of Mexico (ZMCMEM), Toluca, Cancun, Cuernavaca, Villahermosa, and Ciudad Juárez are highlighted because of their high proclivity to report feeling unsafe in their neighborhoods or towns, even considering the co-variation from the theoretical determinants. What this represents, initially, is that some contextual elements beyond those considered in the model seem also to affect the perception of insecurity of the population.

Statistically speaking, the resulting model was highly significant, offering acceptable explanatory capacity and an acceptable number of correctly classified observations. However, the analysis of the residuals suggests that the resulting model can be improved. The Hosmer-Lemeshow statistic indicates that the data do not provide a good adjustment to the model in its current formulation.²⁸ However, it is important to consider that with such large samples as the one used in the regression analysis ($n = 60,287$), even the smallest divergences of the data will be detected and reported in the assessments with the model as statistically significant differences. Normally, the model tests with large samples make it difficult to find results that, in addition to being parsimonious, adjust to the data below a level of significance established within the conventional terms.²⁹ This does not imply that the model could be conceptually improved and that other measurements could be used. In this case, the interest was the simultaneous test of the five insecurity theories.

Table 10. Reference or Comparison Categories by Determinant

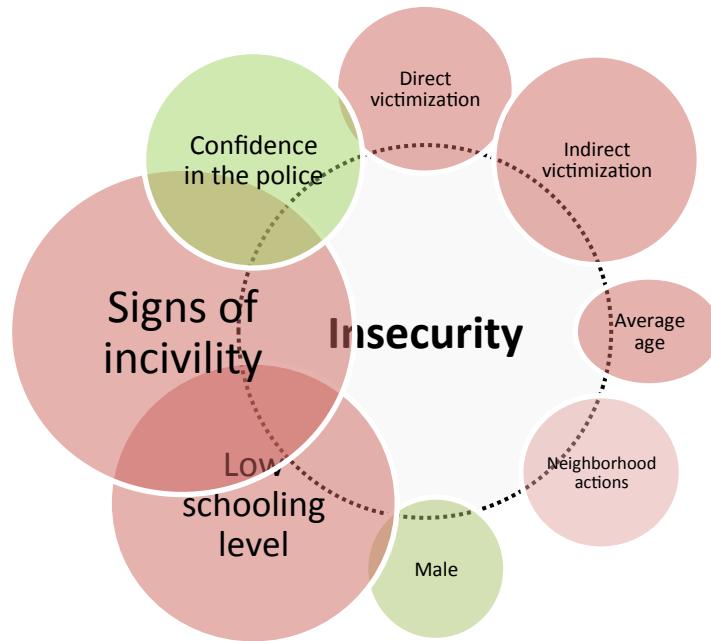
Determinant	Reference category
Sex	Male
Age	50+ years old
Education	Graduate
Confidence in the police	No confidence at all
Neighborhood actions	Does not perform neighborhood actions to protect himself from crime
Indirect victimization	Is not an indirect victim
Direct victimization	Is not a direct victim
Location	Resident outside some selected metropolitan areas

Source: Author's elaboration based on ENVIPE 2011.

²⁸ The Hosmer-Lemeshow statistic is an indicator of the quality of the adjustment of the data to the model.

²⁹ Multiple tests were carried out with different models in different combinations of determinants, and the quality of the adjustment of the model could not be improved or achieve the normalcy of the residuals. At the end it was decided to maintain the results of the originally conceived multi-theoretical model.

Figure 8. National Setting: Theoretical Determinants that Increase or Decrease the Feeling of Insecurity in the Neighborhood or Town * **

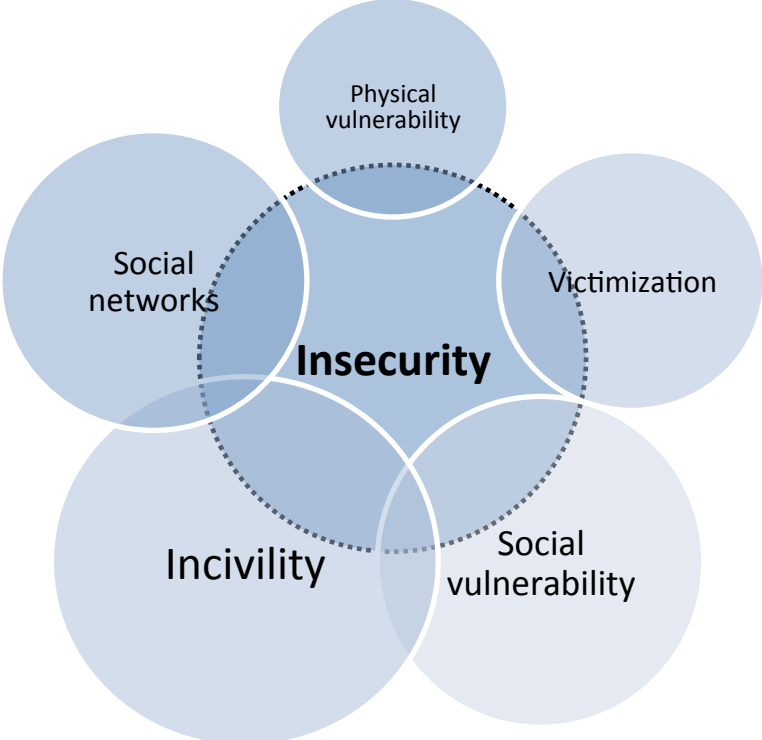


Source: Author's elaboration based on ENVIPE 2011.

* The determinants that increase insecurity are in red and those that reduce it are in green. The size of the circle corresponds to its importance.

** Control variables were not included.

Figure 9. National Setting: Relative Importance of Each Insecurity Theory to Predict the Feeling of Insecurity in the Neighborhood or Town * **



Source: Author’s elaboration.

* The size of the circle corresponds to the importance of each theory.

** Control variables were not included.

3.2. Evidence in the Local Setting: Insecurity in the Neighborhoods and Housing Units of the Mexico City Metropolitan Area

Between August 2010 and January 2011, the proportion of respondents who reported feeling very secure in their neighborhood or housing unit rose from 16.2 percent to 26.7 percent. Nevertheless, the proportion of those reporting not feeling secure (or complete insecurity) remained almost constant at 9.1 percent and 9.3 percent, respectively. Another observation is that in the measurement taken in the last six-month period, the opinion was more, although not totally, uniform.³⁰

³⁰ This can be observed by a smaller value in the Pearson statistical chi-square in the month of January 2011 against the month of August 2010.

Table 11. Local Setting of the MCMA in August 2010: How secure do you feel living in this neighborhood/housing unit?

	Frequency and percentages *
Very secure	890 (16.2)
Somewhat secure	2,243 (40.9)
Insecure	1,844 (33.6)
Not at all secure	498 (9.1)
<i>Differences test**</i>	$\chi^2 = 1,444.809, p < 0.001$

Source: Author's elaboration based on the ENVEI of August 2010.

* Percentages in parenthesis. The sum may not be 100 percent due to centesimal rounding.

** Statistical chi-square and significance value (p).

Table 12. Local Setting of the MCMA in January 2011: How secure do you feel living in this neighborhood/housing unit?

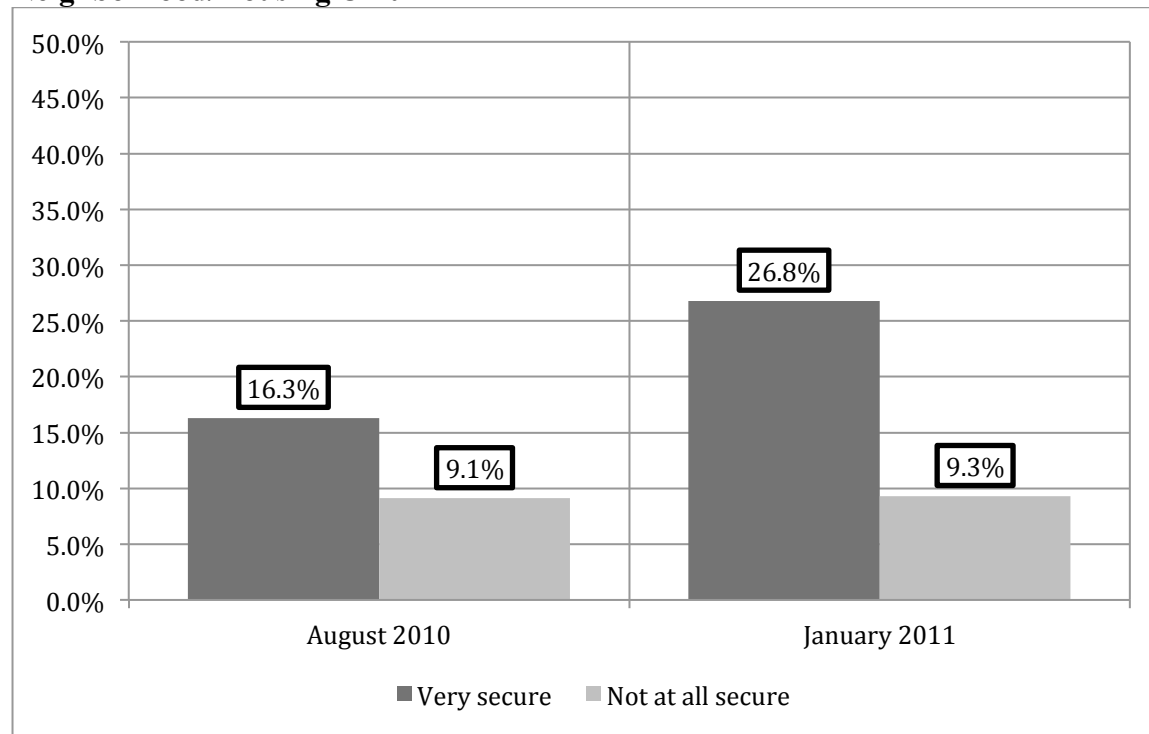
	Frequency and percentages *
Very secure	1,474 (26.7)
Somewhat secure	2,226 (40.5)
Insecure	1,295 (23.5)
Not at all secure	513 (9.3)
<i>Differences test**</i>	$\chi^2 = 1,077.291 p < 0.001$

Source: Author's elaboration based on the ENVEI of January 2011.

* Percentages in parenthesis. The sum may not be 100 percent due to centesimal rounding.

** Statistical chi-square and significance value (p).

Figure 10. Proportion of Respondents Feeling Very Secure or not at all Secure in their Neighborhood/Housing Unit



Source: Author's elaboration based on the ENVEI of August 2010 and January 2011.

Unlike the ENVIPE, the ENVEI does not have a specific geographic representativeness design within the MCMA. However, because of the large sample size, an attempt was made with certain reservations to compare the levels of insecurity among the respondents living in the area of the Federal District versus the residents in the suburbs of the State of Mexico. With reservations, a statistically significant difference was detected in the levels of insecurity among residents of the Federal District and the State of Mexico in August 2010, but not in January 2011 ($p < 0,001$). In the first measurement, the reported levels of insecurity in the neighborhood or housing unit were greater for the respondents who lived in the suburbs of the State of Mexico. This coincides with what is reported in the ENVIPE 2011. However, six months later, the levels of insecurity were (probabilistically) similar in both demarcations ($p = 0,963$). In this respect, the most notable change that largely explains the disappearance in the statistical differences between the two demarcations in January 2011 was that the number of *mexiquenses* reporting high levels of security in their neighborhoods and housing units doubled from 12.8 percent to 27.6 percent.³¹ Although interesting, the results of the tests between the two demarcations should be taken with considerable reservation and be considered initial and unresolved.

Table 13. Local Setting of the MCMA in August 2010: How secure do you feel living in this neighborhood/housing unit?

	Federal District	State of Mexico
Very secure	486 (21.2)	412 (12.8)
Somewhat secure	906 (39.6)	1,359 (42.2)
Insecure	756 (33.1)	1093 (33.9)
Not at all secure	145 (6.1)	360 (11.1)
<i>Differences test**</i>	$Z_{MW} = -7.531$ $p < 0.001$	

Source: Author's elaboration based on the ENVEI of August 2010.

* Percentages in parenthesis.

** Mann-Whitney Statistical Z and value of significance (p). This test is performed on the average ranges of the ordinal variable between the two demarcations.

³¹ Name given to the people born or living in the State of Mexico.

Table 14. Local Setting of the MCMA in January 2011: How secure do you feel living in this neighborhood/housing unit? *

	Federal District	State of Mexico
Very secure	598 (26.1)	891 (27.6)
Somewhat secure	961 (41.8)	1,264 (39.2)
Insecure	545 (23.8)	751 (23.3)
Not at all secure	190 (8.3)	321 (9.9)
<i>Differences test**</i>	$Z_{MW}=-0.047$ $p0.963$	

Source: Author's elaboration based on the ENVEI 12 January 2011.

* Percentages in parenthesis.

** Mann-Whitney Statistical Z and value of significance (*p*). Please note that this test is performed on the average ranges of the ordinal variable between the two demarcations.

With regard to the determinants, for the six-month period from January to August 2010, it was found that indirect victims, women, respondents with fewer years of schooling, the employed, and those who reported the presence of signs of incivility near their homes reported feeling significantly less safe in their neighborhoods or housing units than those with different characteristics or circumstances. Conversely, direct victims of a crime during that period did not report different (higher) levels of insecurity than direct non-victims of crime. It did not seem to make a difference, in contrast with the findings for the nation as a whole, whether the neighbors had any type of informal arrangement to protect their homes. Finally, the age of the respondent did not seem to affect the perceived level of insecurity.

Table 15. Local Setting of the MCMA in August 2010: Differences Tests in the Levels of Insecurity in the Neighborhood or Town for Each Determinant *

	Very secure	Somewhat secure	Insecure	Not at all secure	Differences test **
Indirect victim	7.9%	16.7%	19.3%	17.4%	$Z_{MW} = -6.240 p < 0.001$
Not indirect victim	92.1%	83.3%	80.7%	82.6%	
Direct victim	34.4%	31.1%	26.3%	47.7%	$Z_{MW} = -0.260 p = 0.795$
Not direct victim	65.6%	68.9%	73.7%	52.3%	
Male	53.3%	45.4%	46.6%	33.5%	$Z_{MW} = -5.444 p < 0.001$
Female	46.7%	54.6%	53.4%	66.5%	
18 to 34 years old	46.3%	49.6%	50.0%	48.3%	$c^2 = 2.47. p = 0.291 ***$
35 to 49 years old	31.8%	25.7%	30.4%	26.3%	
50+ years old	21.8%	24.7%	19.6%	25.3%	
Preschool	10.8%	15.3%	18.3%	19.3%	$c^2 = 101.188 p < 0.001 ***$
Primary	31.1%	20.3%	29.4%	31.0%	
Secondary	8.8%	8.6%	9.8%	8.6%	
Technical	29.4%	38.7%	33.3%	31.8%	
High School	19.3%	16.3%	9.3%	9.4%	
University	0.6%	0.8%	0.1%	0.0%	
Graduate	10.8%	15.3%	18.3%	19.3%	
Worked	43.3%	35.9%	45.2%	42.3%	$Z_{MW} = -2.918 p = 0.004$
Did not work	56.7%	64.1%	54.8%	57.7%	
Signs of incivility	91.1%	95.9%	96.2%	99.6%	$Z_{MW} = -6.761 p < 0.001$
No signs of incivility	8.9%	4.1%	3.8%	0.4%	
Agreement among neighbors	7.6%	7.1%	9.8%	6.9%	$Z_{MW} = -1.547 p = 0.122$
No agreement among neighbors	92.4%	92.9%	90.2%	93.1%	
High confidence in the police	11.3%	3.8%	3.1%	3.6%	$c^2 = 628.475 p < 0.001 ***$
Some confidence in the police	44.3%	40.3%	14.7%	8.7%	
Little confidence in the police	35.2%	36.9%	57.8%	36.9%	
No confidence in the police	9.2%	19.0%	24.4%	50.8%	

Source: Author's elaboration based on the ENVEI of August 2010.

* Percentages in parenthesis.

** Mann-Whitney Statistical Z and value of significance (p). Please note that this test is performed on the average ranges of the ordinal variable between two groups.

*** Kruskal-Wallis Statistical chi-square and value of significance (p). Please note that this test is performed on the average ranges of the ordinal variable between two or more groups.

For the next six-month period, between August 2010 and January 2011, the determinants that showed a bivariate correlation (or that made a difference) with high levels of insecurity were direct victimization, indirect victimization, being female, schooling (particularly secondary, high school, and university education), living in neighborhoods or housing units with signs of incivility, and having little confidence in the local police. Two determinants did not show indirect significance in this bivariate stage of the analysis: age and employment status. In this regard, the results found in the six-month period ending January 2011 contrasted with those of

the previous six-month period, in which direct victimization was statistically significant, but having worked the previous week was not statistically significant. Everything else is coincidental.

Table 16. Local Setting of the MCMA in January 2011: Differences Tests of Levels of Insecurity in the Neighborhood or Town for each Determinant *

	Very secure	Somewhat secure	Insecure	Not at all secure	Differences test **
Indirect victim	9.1%	13.4%	18.2%	22.5%	$Z_{MW} = -8.934 p < 0.001$
Not indirect victim	90.9%	86.6%	81.8%	77.5%	
Direct victim	23.0%	35.5%	44.5%	38.0%	$Z_{MW} = -11.205 p < 0.001$
Not direct victim	77.0%	64.5%	55.5%	62.0%	
Male	46.4%	44.5%	40.6%	28.4%	$Z_{MW} = -6.283 p < 0.001$
Female	53.6%	55.5%	59.4%	71.6%	
18 to 34 years old	35.9%	44.2%	38.6%	28.0%	$c^2 = 6.558 p = 0.038^{***}$
35 to 49 years old	27.3%	31.3%	33.6%	28.4%	
50+ years old	36.8%	24.5%	27.8%	43.5%	
Preschool	27.9%	17.9%	17.5%	28.0%	$c^2 = 37.108 p < 0.001^{***}$
Primary	30.1%	30.7%	37.8%	34.3%	
Secondary	9.5%	11.7%	7.6%	5.3%	
Technical	19.5%	23.5%	24.7%	16.1%	
High School	11.6%	15.4%	11.5%	15.5%	
University	1.5%	0.8%	0.9%	0.8%	
Graduate	27.9%	17.9%	17.5%	28.0%	
Worked	42.8%	45.4%	43.5%	33.7%	$Z_{MW} = -2.071 p = 0.038$
Did not work	57.2%	54.6%	56.5%	66.3%	
Signs of incivility	84.6%	91.6%	92.8%	96.5%	$Z_{MW} = -8.534 p < 0.001$
No signs of incivility	15.4%	8.4%	7.2%	3.5%	
Agreement among neighbors	9.2%	14.6%	16.6%	16.7%	$Z_{MW} = -6.135 p < 0.001$
No agreement among neighbors	90.8%	85.4%	83.4%	83.3%	
High confidence in the police	14.6%	5.9%	3.7%	0.0%	$c^2 = 314.527 p < 0.001^{***}$
Some confidence in the police	36.2%	40.2%	23.2%	25.7%	
Little confidence in the police	30.2%	38.3%	47.0%	25.5%	
No confidence in the police	19.0%	15.6%	26.1%	48.8%	

Source: Author's elaboration based on the ENVEI of January 2011.

* Percentages in parenthesis.

** Mann-Whitney Statistical Z and value of significance (p). See that this test is carried out on the average ranges of the ordinal variable between two groups.

***Statistical chi-square of Kruskal-Wallis and value of significance (p). Please note that this test is performed on the average ranges of the ordinal variable between two or more groups.

These results do not consider the simultaneous test of all of the insecurity theories. The regression analysis below carries out this test. Since the survey was conducted in August 2010, there has been support for the following four insecurity theories: victimization, physical vulnerability, incivility, and social networks. The four determinants detected were as follows. First, indirect victims reported greater levels of insecurity than their counterparts. Second, women also reported greater levels of insecurity than men. Third, residents in neighborhoods and housing units with signs of incivilities (e.g., fights between neighbors, vandalism, and/or alcohol or drug consumption in the streets) also reported greater levels of insecurity than their counterparts living in safer neighborhoods. Finally, those who reported to have little confidence in the police also reported greater levels of insecurity.

It is important to consider that the aforementioned determinants are only significant for those respondents who reported feeling “very secure” and those who reported feeling “insecure,” compared to those who reported feeling “not secure at all.” This latter group served as the reference group of the dependent variable. In the case of respondents who felt “somewhat secure,” the model did not show any difference with respect to the reference group (those who felt “not secure at all” in their neighborhoods or housing units); that is, because they were all constant, these determinants did not mark a distinction between the two groups of respondents.

Table 17. Local Setting of the MCMA in August 2010: Results of the Ordinal Logistic Regression Grouped by Insecurity Theory

Theory	Determinant *	Coefficient	Standard error	Wald statistics	Statistical significance
Dependent variable	Very secure	-2.165	0.142	232.976	0.001
	Somewhat secure	-0.016	0.139	0.014	0.096
	Insecure	2.134	0.143	224.226	0.001
Victimization	Indirect victim	0.431	0.069	39.560	0.001
Physical vulnerability	Male	-0.210	0.051	17.023	0.001
Incivility	Signs of incivility	0.542	0.125	18.728	0.001
Social networks	High confidence in the police	-1.689	0.131	167.098	0.001
	Some confidence in the police	-1.627	0.075	471.301	0.001
	Little confidence in the police	-0.491	0.066	55.440	0.001
Control variable	Federal District	-0.149	0.052	8.225	0.004
Assessments: Pearson Chi-Square test of significance of the model (logit function)= 1,064.141, $p > 0.001$ Chi-square test of parallel lines: = 285.153, $p < 0.001$ Nagelkerke pseudo R^2 = 0.141 Sample size: 5,508 (99.5 percent of the total)					

Source: Author’s calculations based on the ENVEI, 11 August 2010.

* In contrast to the reference or comparison category, which is the last one in each variable.

Table 18. Local Setting of the MCMA in August 2010: Reference or Comparison Categories by Determinant

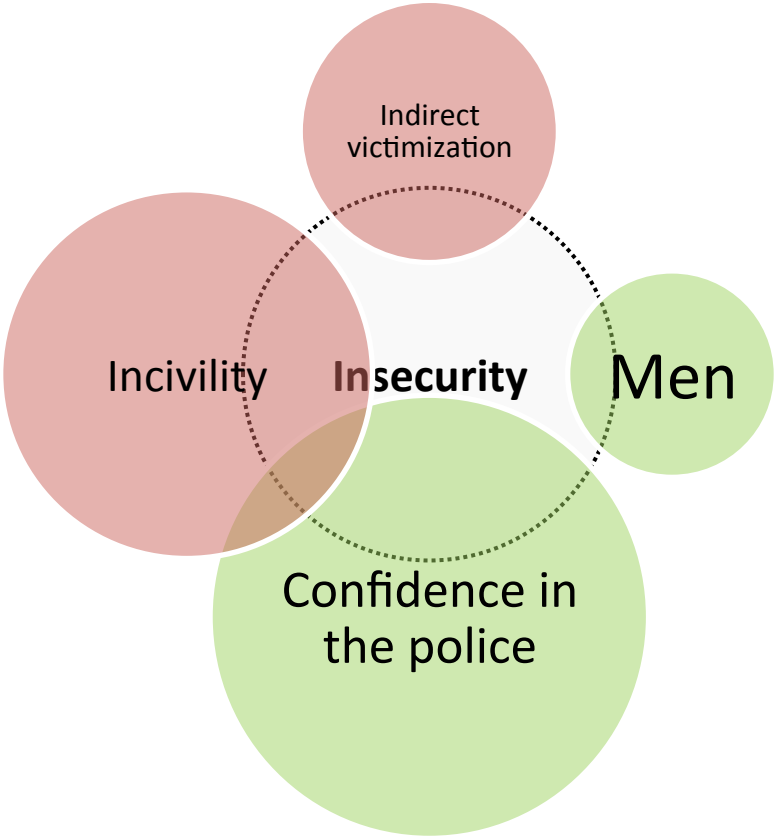
Determinant	Category
Sex	Female
Confidence in the police	Absolutely no confidence
Incivility	No signs of incivility
Indirect victimization	Not indirect victim
Location	Suburbs of the State of Mexico

Source: Author's elaboration based on ENVEI of August 2010.

The statistically detected correlations in the model are those predicted for each theory; no contradictions were found. However, no evidence was found supporting the social vulnerability theory. In the case of the two indicators used to prove this theory, neither schooling nor employment status showed an independent correlation with levels of insecurity, once the other indicative determinants of the other theories were considered. The control variable, which in this case was residence in the Federal District or in the suburbs of the State of Mexico, made an independent difference from the other theoretical determinants in the levels of insecurity, in this case specifically showing that people living in the suburbs felt less safe than residents in the Federal District.

The most important theoretical determinant in predicting the perception of insecurity during the six-month period ending in August 2010 was confidence in the police, followed by the presence of signs of incivility in the neighborhood or housing unit, indirect victimization, and, finally, the gender of the respondent. Men reported feeling safer than women.

Figure 11. Local Setting of the MCMA in August 2010: Theoretical Determinants that Increased or Decreased the Feeling of Insecurity in the Neighborhood or Housing Unit * **

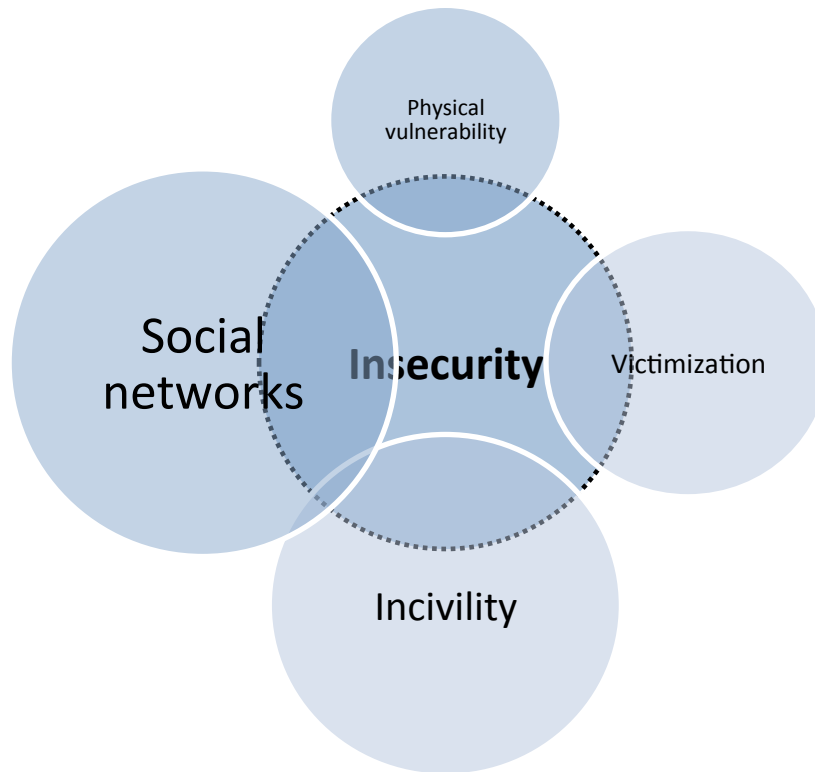


Source: Author’s elaboration.

* The determinants that increase insecurity are shown in red and those that reduce it are shown in green. The size of the circle corresponds to the importance of each.

** The control variables were not included.

Figure 12. Local Setting of the MCMA in August 2010: Relative Importance of each Insecurity Theory in Predicting the Perception of Insecurity in Neighborhoods or Towns *
**



Source: Author's elaboration.

* The size of the circle corresponds to the importance of each theory.

** The control variables were not included.

The model was highly significant ($p < 0.001$) and provided a relatively good explanatory capacity (Pseudo $R^2 = 0.141$). Nevertheless, the results of the parallel lines test indicate that the coefficients may not have the same effect in each category of the dependent variable (level of insecurity), which means that the results should be taken with a degree of caution, and more tests with different samples should be carried out.³²

In this respect, and now moving on to the second test of the theories as a whole, the results of the regression model applied to the data from the sample of January 2011 confirm the support to the theories of victimization, physical vulnerability, incivility, and social networks. Specifically, the determinants that increased the feeling of insecurity in the neighborhood or housing unit were indirect victimization, direct victimization, being female, living in

³² Different combinations of determinants and relationship functions among the different categories of the DV and the determinants were sought. The *logit* function offered the model with the lower Chi-square value of the parallel lines test; or smaller deviation from the parallelism hypothesis. Based on the foregoing, this was the model selected.

neighborhoods with signs of incivility and, finally, little confidence in the police. Consistent with the findings of the previous six-month period, the indicators used to prove the social vulnerability theory did not show having an independent effect on the levels of insecurity. The differences in the results between the two six-month periods were the experience of direct victimization and the agreements arranged among neighbors to safeguard their houses (a proxy of social networks); in the six-month period ending January 2011, both determinants were statistically significant.

Table 19. Local Setting of the MCMA in January 2011: Results of the Binary Logistic Regression Grouped by Insecurity Theory

Theory	Determinant *	Coefficient	Standard error	Wald statistics	Statistical significance
Dependent variable	Very secure	-1.105	0.108	105.700	0.001
	Somewhat secure	0.718	0.107	45.283	0.001
	Insecure	2.322	0.113	424.158	0.001
Victimization	Indirect victim	0.452	0.076	34.905	0.001
	Direct victim	0.284	0.057	25.123	0.001
Physical vulnerability	Men	-0.358	0.053	45.532	0.001
Incivility	Signs of incivility	0.505	0.094	29.052	0.001
Social networks	Neighborhood actions	0.311	0.076	16.677	0.001
	High confidence in the police	-1.612	0.117	188.433	0.001
	Some confidence in the police	-0.749	0.072	109.167	0.001
	Little confidence in the police	-0.471	0.070	45.822	0.001
Assessments: Pearson Chi-Square test of significance of the model (<i>logit</i> function)= 820.744, $p>0.001$ Chi-square parallel lines test:= 247.509, $p< 0.001$ Nagelkerke pseudo $R^2= 0.096$ Sample size: 5,024 (90.8 percent of the total)					

Source: Author's elaboration based on the ENVEI of 12 January 2011.

* In contrast to the reference or comparison category, this is the last one in each variable.

Another difference among the findings in the models of both six-month periods can be found in the control variable. In the second six-month period, the location of the respondent—either within the Federal District or in the suburbs of the MCMA—made no difference once the theoretical determinants were considered.

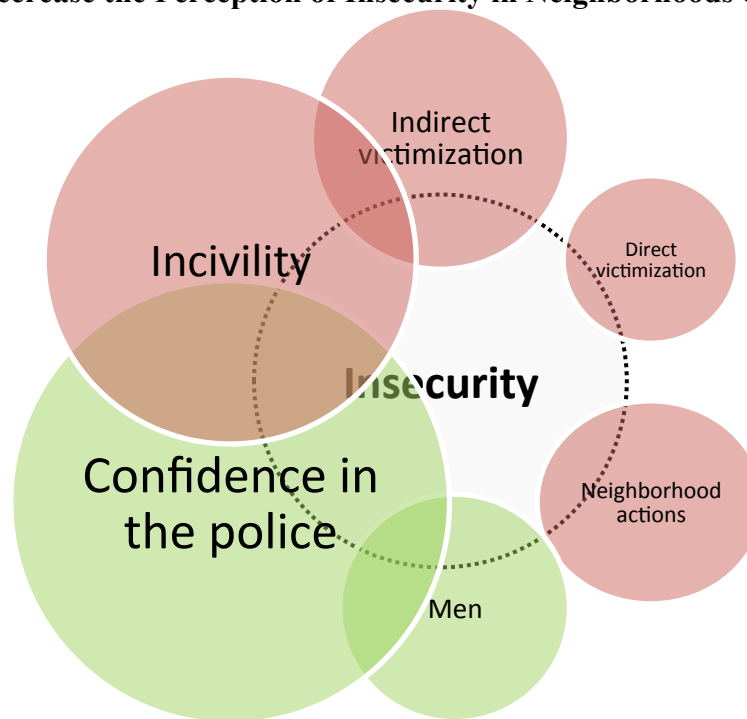
Table 20. Local Setting of the MCMA in January 2011: Reference or Comparison Categories by Determinant

Determinant	Reference category
Sex	Female
Signs of incivility	No signs of incivility
Agreement among neighbors	No agreement among neighbors
Confidence in the police	Absolutely no confidence
Indirect victimization	Not indirect victim
Direct victimization	Not direct victim

Source: Author's elaboration based on ENVEI of January 2011.

The most important determinants in predicting the rise in the levels of insecurity were, again, confidence in the police, followed by the presence of signs of incivility in the area of residence, indirect victimization, agreement among neighbors, and direct victimization. Conversely, confidence in the police and being male reduced the feeling of insecurity.

Figure 13. Local Setting of the MCMA in January 2011: Theoretical Determinants that Increase or Decrease the Perception of Insecurity in Neighborhoods or Housing Units * **

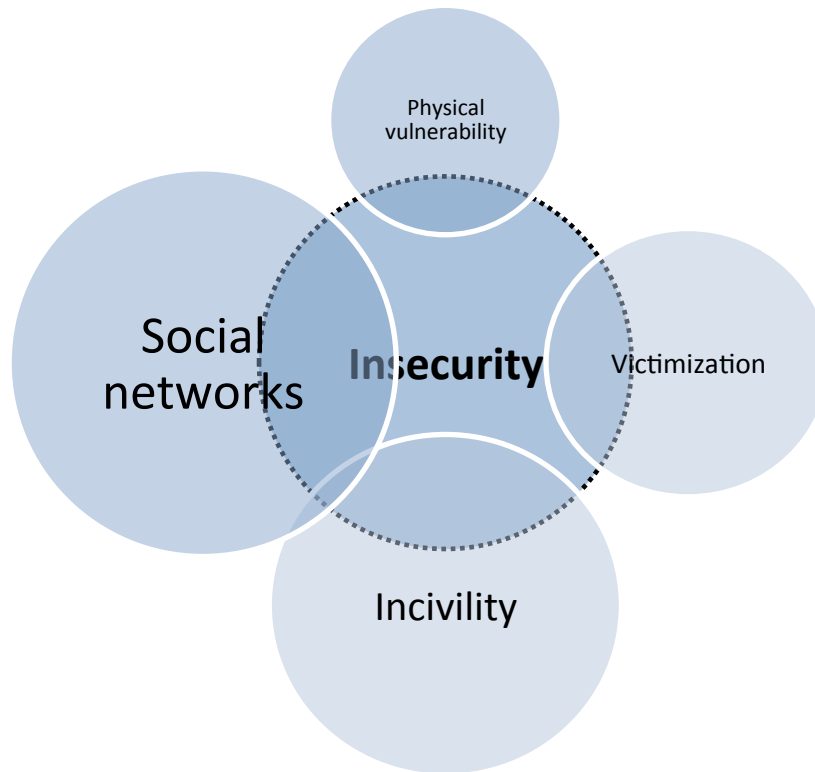


Source: Author's elaboration.

* The determinants that increase insecurity are in red and the ones that reduce it are in green. The size of the circle corresponds to the importance of each.

** The control variables were not included.

Figure 14. Local Setting of the MCMA in January 2011: Relative Importance of Each Theory of Insecurity in Predicting the Perception of Insecurity in Neighborhoods or Towns
* **



Source: Author's elaboration.

* The size of the circle corresponds to the importance of each theory.

** The control variables were not included.

4. Discussion and Conclusions

A realistic response to a question is that one that tests many possible responses and that reaches an empirical conclusion with the least possible probability of error given the available information. In this study, an insecurity model with respect to crime based on five current theories was tested in Mexico as a whole and in the Mexico City Metropolitan Area.³³

The results of the model are consistent and primarily coincidental in their different parts. For example, both nationwide and in the MCMA, they highlighted the predictive capacity of the determinants of incivility and confidence in the police. Although it had lower predictive capacity but was equally consistent, the victimization experience (direct and indirect) plays an important role in the perception of insecurity. The presence of social networks in a neighborhood action to

³³There is no complete and final model on any human phenomenon.

prevent crime bore a positive relationship to the feeling of insecurity. Finally, physical vulnerability, in this case associated with gender and age, was also found to have an effect on the feeling of insecurity. Interestingly, no empirical proof was found for the theory of social vulnerability, at least with the measurements used in this study (schooling and employment status). In this case, neither a high school education nor the fact of having a job, indicators of lower levels of vulnerability and dependency, had an independent impact in the perception of safety of the respondents either nationwide or in the MCMA.

Table 21. Summary of Results: Insecurity Theories with Empirical Basis in this Study Ranked in Descending Order of Importance, by Source of Information

Nationwide	MCMA	
ENVIPE -2011	ENVEI--August 2010	ENVEI--January 2011
Incivility	Social networks	Social networks
Social vulnerability	Incivility	Incivility
Social networks	Victimization	Victimization
Victimization	Physical vulnerability	Physical vulnerability
Physical vulnerability		

Source: Author's elaboration.

Table 22. Summary of Results: Determinants of Insecurity Ranked in Descending Order of Importance, by Level and Source of Information*

Nationwide	MCMA	
ENVIPE, 2011	ENVEI, August 2010	ENVEI, January 2011
Signs of incivility (+)	Confidence in the police (-)	Confidence in the police (-)
Low schooling level (+)	Signs of incivility (+)	Signs of incivility (+)
Confidence in the police (-)	Indirect victimization (+)	Indirect victimization (+)
Indirect victimization (+)	Men (-)	Neighborhood actions (+)
Direct victimization (+)		Direct victimization (+)
Neighborhood actions (+)		Men (-)
Men (-)		Young age (-)
Middle Age (+)		

Source: Author's elaboration.

* The expected effect in terms of insecurity is shown in parenthesis.

Although no contradictions were found in the results of the model when applied in the two different areas of study, there are several special features that should be listed and specified. The first has to do with the predictive capacity of the age group of the respondents. The study conducted at the national level found that the middle-aged population (35 to 49 years old) was more likely to report feeling unsafe in their neighborhoods or towns compared to the group of respondents age 50 or older. By contrast, in the MCMA, analyzed only for the second six-month

period, the difference was a reduced propensity to feel insecure in the group of younger respondents with respect to the reference group, that is, respondents age 50 or older. This result is coincidental with the physical vulnerability theory, which predicts that the elderly are more likely to feel insecure against crime. This dissimilarity in the findings can be attributed to a random variation of results from an involuntary sampling error. That is, it may be detecting a correlation between variables that is atypical or that is in an extreme or border of the probability distribution of the correlation.³⁴ In any case, the findings related to age cannot be regarded at this time as conclusive.

Another special feature is the predictive capacity of direct victimization. Although indirect victimization was, in all cases, an important determinant of insecurity, this was not the case in the MCMA study conducted in the six-month period ending in August 2010. In addition to the possible explanations previously given with regard to the age variable, it is also possible that in certain areas of the country with high levels of insecurity and crime, victimization has been internalized, and for this reason does not significantly produce these same levels of insecurity, taking other circumstances into account. This explanation is speculative and would require more evidence.

Based on the foregoing, what can be done? The findings have important public policy implications because they highlight actions that can be implemented (see Table 23). For example, the incivility theory, for which very strong empirical evidence was found in this study, points to some necessary actions for reducing signs of incivility, such as preventive patrolling and community surveillance. It is possible to partially control or prevent problems such as vandalism, graffiti, street assaults, discharging of firearms, sale and consumption of alcohol and illegal drugs in the street, piracy, and prostitution using strategic police patrolling and raids, particularly against nightclubs where illicit activity is taking place. In the case of nocturnal activity, another possible action is the improvement of public lighting.

³⁴ The correlations between variables are a variable per se with their own randomization.

Table 23. Correlatives and Policy Guidance

Evidence at the national and the MCMA levels	Public policy guidance
Signs of incivility	Improvement of neighborhood patrols + community organization with respect to antisocial conducts
Low formal schooling	This is not an independent variable or matter of public security policy. However, the less educated population may be the targets of a more effective communication policy against the fear of crime
Confidence in the police	Campaign to improve the image and reputation
Neighborhood actions	Collaboration with neighborhood associations and follow-up to reduce the fear of crime
Indirect victimization	Social and situational prevention
Direct victimization	Social and situational prevention
Male	Gender is not an independent variable in the sense that it cannot be manipulated. However, women can also be a target group in a policy aimed at more effective communication against the fear of crime.
Middle age	This is not an independent variable in the sense that it cannot be manipulated. However, women can also be a target group in a policy aimed at more effective communication against the fear of crime.

Source: Author's elaboration.

Other problems, such as home break-ins and theft of parked vehicles, can be curtailed, and in some cases prevented, through the use of security mechanisms and the promotion of active community surveillance. This implies an investment of money and time on the part of the citizens. The authorities have a responsibility to organize and facilitate the resources.

These actions are not exhaustive or completely effective against all criminal events that may occur in a town. However, they are viable and can be organized and promoted by the local authorities in close collaboration with the community, especially within well-defined boundaries, such as neighborhoods and housing units. This requires the creation of social capital, that is, the promotion of collective effectiveness against disorder and crime. The role of the local authorities is important as the promoter such collective effectiveness.

Other elements of incivility, such as extortion or payment of protection fees, require investigative actions by the police against organized crime. The role of the community, particularly the victims, ends with reporting the facts. Only federal, state or local authorities can thwart and ultimately prevent or eradicate extortion.

With respect to confidence in the police, the results of this study clearly show that citizen perception of the police needs to be improved. Policies designed to improve the image of the police would have a positive effect in reducing the perception of insecurity in towns, neighborhoods, and housing units throughout the country, particularly in the MCMA. Normally,

negative events are disseminated in the communications media and from person to person. However, exemplary behavior should also be disseminated and rewarded.

A crucial action to strengthen confidence in the police would be a policy of rapprochement between the police and the community at the neighborhood level. In this regard, the findings highlighted the fact that neighborhoods joining together to protect themselves against crime increased the feeling of insecurity. This may mean that the proclivity to belong to a neighborhood social network against crime is an effect or reaction to the fear of crime, more than a preventive action that the community takes. While this correlation has not been studied in sufficient depth, this finding may also imply that in some places the basis for communities to organize themselves against crime already exists and can be promoted in coordination with the local police (Vilalta, 2012b).

Another important determinant of the feeling of insecurity is the experience of criminal victimization. The study detected that both direct and indirect victimization have long-lasting effects on the population, particularly a greater sense of insecurity or vulnerability with respect to crime. The level of attention paid to crime victims in Mexico is far from optimal. Not only is it slow and difficult to access, but many of those in charge do not seem to be genuinely interested in the physical or psychological well-being of the victim, nor are they trained or motivated to counsel or to take charge in these types of situations.³⁵ Although it is commonly said that penitentiary policy is one of the Achilles heels of Mexico's criminal justice system, the policies governing care to crime victims is without a doubt the other heel.

The strengths of this study are the multi-theoretical basis of the insecurity model, the number of levels (2) in which it was tested, the number of times (3) that the model was tested, and the scientific quality of the surveys that were used, together with their broad sample sizes. An additional strength is the type of statistical tests used, which consider the odds of estimating the individual proclivities to feel unsafe (given the presence of the determinants) and the capacity to predict the hypothetical relationships between the various levels of the dependent and the independent variables (all discrete variables). These factors enable a better understanding of the probability, magnitude, and directionality of the correlations.

The study also has limitations, which can be partially resolved in further studies using different sources of information and/or representative population samples. In theoretical terms,

³⁵ This is obvious to those who have been victims of crime at some point in time.

the most interesting limitation is the location of the respondent, which in this study was used as a control variable. This also has public policy implications. On this point, the location should probably be a determinant and not a control of the model; that is, the location variable is concealing the existence of a substantive contextual effect. Perhaps the feeling of insecurity in certain places is greater because of a larger presence of distinct criminal behaviors, beliefs, stereotypes, or local customs.

Another type of methodological limitation is the possibility that the relationship among the determinants and the level of insecurity are neither direct nor additive, which at this time is an unknown. It is possible that some relationships remain hidden due to the existence of a mediation or moderation between different determinants or theoretical correlatives. For example, there may be an interaction between age and victimization, since the probability of both is associated. Together with the previous observation concerning the importance of the local context, it is also possible that the relationships are mediated or moderated by the place of residence of the respondent. This was not the objective of this study and it was not investigated, but a next step should be the study of the functional forms of the relationships among the theoretical determinants detected in this study.

In conclusion, it can be said that reducing signs of incivility in towns, neighborhoods, and housing units, together with reinforcing confidence in the police, are the two most important factors in the development of future policies against the feeling of insecurity. Combating the perception of insecurity, together with the fight against crime and its prevention per se, are equally important in improving the quality of life in urban as well as rural areas of Mexico.

References

- Akers, R. L., A. J. La Greca, C. Sellers, and J. Cochrane. 1987. "Fear of Crime and Victimization among the Elderly in Different Types of Communities." *Criminology* 25: 487–506.
- Bissler, D. 2003. "Fear of Crime and Social Networks: A Community Study of Two Local Public Housing Complexes." Ph.D. dissertation. North Carolina State University.
- Box, S., C. Hale, and G. Andrews. 1988. "Explaining Fear of Crime." *British Journal of Criminology* 28: 340–56.
- Blobaum, A. and M. Hunecke. 2005. "Perceived Danger in Urban Public Space: The Impacts of Physical Features and Personal Factors." *Environment and Behavior* 37(4): 465–86.
- Brunton-Smith, I. and P. Sturgis. 2011. "Do Neighborhoods Generate Fear of Crime? An Empirical Test Using the British Crime Survey." *Criminology* 49(2): 331–69.
- Carcach, C., P. Frampton, T. Kaye, and M. Cranich. 1995. "Explaining Fear of Crime in Queensland." *Journal of Quantitative Criminology* 11: 271–87.
- Carvalho, I. and D. Lewis. 2003. "Beyond Community: Reactions to Crime and Disorder among Inner-City Residents." *Criminology* 41(3): 779–812.
- Chadee, D. and J. Ditton. 2003. "Are Older People Most Afraid of Crime?" *British Journal of Criminology* 43(2): 417–33.
- Chiricos, T., K. Padgett, and M. Gertz. 2000. "Fear, TV News, and the Reality of Crime." *Criminology* 38(2): 755–85.
- Clarke, A. and M. Lewis. 1982. "Fear of Crime among the Elderly." *British Journal of Criminology* 22(1): 49–62.
- Clemente, F. and M. Kleiman. 1977. "Fear of Crime in the United States: A Multivariate Analysis." *Social Forces* 56(2): 519–31.
- Covington, J. and R. Taylor. 1991. "Fear of Crime in Urban Residential Neighborhoods: Implication of between- and within-Neighborhood Sources for Current Models." *Sociological Quarterly* 32(2): 231–49.
- Ditton, J. et al. 1999. "Afraid or Angry? Recalibrating the 'Fear' of Crime," *International Review of Victimology* 6(2): 83–99.
- Doran, B. and B. Lees. 2005. "Investigating the Spatio-Temporal Links between Disorder, Crime and the Fear of Crime." *The Professional Geographer* 57(1): 1–12.

- Dull, T. and A. Wint. 1997. "Criminal Victimization and its Effect on Fear of Crime and Justice Attitudes." *Journal of Interpersonal Violence* 12(5): 749–58.
- Ferguson, K. and C. Mindel. 2007. "Modeling Fear of Crime in Dallas Neighborhoods: A Test of Social Capital Theory." *Crime & Delinquency* 53(2): 322–49.
- Ferraro, K. 1995. *Fear of Crime: Interpreting Victimization Risk*. Albany, United States: State University of New York Press.
- Ferraro, Kenneth and Randy LaGrange. 1992. "Are Older People Most Afraid of Crime? Reconsidering Age Differences in Fear of Victimization." *Journal of Gerontology* 47(5): 233–44.
- Fetchenhauer, D. and B. Buunk. 2005. "How to Explain Gender Differences in Fear of Crime: Towards an Evolutionary Approach." *Sexualities, Evolution and Gender*, 7(2): 95–113.
- Fisher, B. and J. Sloan III. 2003. "Unraveling the Fear of Victimization among University Women: Is the Shadow of Sexual Assault Hypothesis Supported?" *Justice Quarterly* 20(3): 633–59.
- Friedman, K., H. Bischoff, R. Davis, and A. Person. 1982. *Victims and Helpers: Reactions to Crime*. Victims Services Agency.
- Gabriel, U. and W. Greve. 2003. The Psychology of Fear of Crime: Conceptual and Methodological Perspectives. *British Journal of Criminology* 43(3): 600–14.
- Garofalo, J. 1979. Victimization and the Fear of Crime. *Journal of Research in Crime and Delinquency* 16: 80–97.
- Gilchrist, E., et al. 1998. "Women and the Fear of Crime: Challenging the Accepted Stereotype." *British Journal of Criminology* 38(2): 283–98.
- Graham, C. and J. C. Chaparro. 2011. *Insecurity, Health, and Well-Being: An Initial Exploration Based On Happiness Surveys*. Washington, DC, United States: Inter-American Development Bank.
- Hale, C. 1996. "Fear of Crime: A Review of the Literature," *International Review of Victimology* 4(2): 79–150.
- Hough, M. and P. Mayhew. 1983. *The British Crime Survey: First Report*. Home Office Research Study No.76, London, England: HMSO.
- Hunter, A. 1978. *Symbols of Incivility: Social Disorder and Fear of Crime in Urban Neighborhoods. Reactions to Crime Project*. Washington, DC, United States: U.S. Department of Justice, National Criminal Justice Reference Service.

- Jackson, J. 2004. "Experience and Expression: Social and Cultural Significance in the Fear of Crime." *British Journal of Criminology* 44(6): 946–66.
- Kanan, J. and M. Pruitt. 2002. "Modeling Fear of Crime and Perceived Victimization Risk: The (In)Significance of Neighborhood Integration." *Sociological Inquiry* 72(4): 527–48.
- Kennedy, L. and R. Silverman. 1985. "Perception of Social Diversity and Fear of Crime." *Environment and Behavior* 17(3): 275–95.
- Kershaw, C. et al. 2001. "The 2001 British Crime Survey: First Results, England and Wales." *Statistical Bulletin* 18/01, London, England: Home Office.
- Killias, M. 1990. "Vulnerability: Towards a Better Understanding of a Key Variable in the Genesis of Fear of Crime." *Violence and Victims* 5(2): 97–108.
- Kort–Butler, L. A. and K. J. Sittner Hartshorn. 2011. "Watching the Detectives: Crime Programming, Fear of Crime, and Attitudes about the Criminal Justice System." *The Sociological Quarterly* 52: 36–55.
- Lavrakas, P. and D. Lewis. 1980. "The Conceptualization and Measurement of Citizens' Crime Prevention Behaviors." *Journal of Research in Crime and Delinquency* 17(2): 254–72.
- Lee, G. 1982. "Residential Location and Fear of Crime among the Elderly." *Rural Sociology* 47(4): 655–69.
- Lewis, D. and G. Salem. 1986. *Fear of Crime: Incivility and the Production of a Social Problem*. New Brunswick, United States: Transaction Books.
- Lindquist, J. and J. Duke. 1982. "The Elderly Victim at Risk: Explaining the Fear– Victimization Paradox." *Criminology* 20: 115–26.
- Lira, L. R. and P. Andrade–Palos. 1993. "Fear of Victimization in Mexico." *Journal of Community and Applied Social Psychology* 3: 41–51.
- Liska, A., J. Lawrence, and A. Sanchirico. 1982. "Fear of Crime as a Social Fact." *Social Forces* 60: 760–70.
- Liska, A., A. Sanchirico, and M. Reed. 1988. "Fear of Crime and Constrained Behavior: Specifying and Estimating a Reciprocal Effects Model." *Social Forces* 66: 827–37.
- Lupton, D. and J. Tulloch. 1999. "Theorizing Fear of Crime: Beyond the Rational/Irrational Opposition." *Journal of Sociology* 50(3): 507–23.
- Maguire, M. and Corbett, C. 1987. *The Effects of Crime and the Work of Victims Support Schemes*. Aldershot, England: Gower.

- Mawby, R. and M. Gill. 1987. *Crime Victims: Needs, Services and the Voluntary Sector*. London, England: Tavistock.
- McGarrell, E., A. Giacomazzi, and Q. Thurman. 1997. "Neighborhood Disorder, Integration, and the Fear of Crime." *Justice Quarterly* 14(3): 479–500.
- Miceli, R., M. Roccato, and R. Rosato. 2004. "Fear of Crime in Italy: Spread and Determinants." *Environment and Behavior* 36(6): 776–89.
- Moeller, G. 1989. "Fear of Criminal Victimization: The Effect of Neighborhood Racial Composition." *Sociological Inquiry* 59(2): 208–21.
- Moore, S. and J. Shepherd. 2007. "The Elements and Prevalence of Fear." *The British Journal of Criminology* 47(1): 154–62.
- Mullen, R. and J. Donnermeyer. 1985. "Age, Trust, and Perceived Security from Crime in Rural Areas." *The Gerontologist* 25: 237–42.
- O'Connell, M. and A. Whelan. 1996. "Public Perception of Crime Prevalence, Newspaper Readership and Mean World Attitudes." *Legal and Criminological Psychology*, 1(2): 179–95.
- Ollenburger, J. 1981. "Criminal Victimization and Fear of Crime." *Research on Aging* 3(1): 101–18.
- Ortega, S. and J. Myles. 1987. "Race and Gender Effects on Fear of Crime." *Criminology* 25:139–52.
- Pantazis, C. 2000. "Fear of Crime, Vulnerability and Poverty." *British Journal of Criminology* 40: 414–36.
- Rader, N., D. May, and S. Goodrum. 2007. "An Empirical Assessment of the Threat of Victimization: Considering Fear of Crime, Perceived Risk, Avoidance, and Defensive Behaviors" *Sociological Spectrum* 27(5): 475–505.
- Riger, G. 1978. "Women's Fear of Crime: From Blaming to Restricting the Victim." *Victimology* 3: 274–84.
- Rodrigues, C. 2006. "Civil Democracy, Perceived Risk and Insecurity in Brazil: An Extension of the Systemic Social Control Model." *The Annals of the American Academy of Political and Social Science* 605(1): 242–63.
- Rogerson, M. and K. Christmann. 2007. "Burglars or Wardrobe Monsters: Practical and Ethical Problems in the Reduction of Crime Fear." *British Journal of Community Justice* 5(1): 79–94.

- Romer, D., K. Hall Jamieson, and S. Aday. 2003. "Television News and the Cultivation of Fear of Crime." *Journal of Communication* 88–104.
- Sacco, V. 1993. "Social Support and the Fear of Crime." *Canadian Journal of Criminology* 35(2): 187–96.
- Schafer, J., B. Huebner, and T. Bynum. 2006. "Fear of Crime and Criminal Victimization: Gender-based Contrasts." *Journal of Criminal Justice* 34(3): 285–301.
- Shaw, C. and H. McKay. 1942. *Juvenile Delinquency and Urban Areas*. Chicago, United States: University of Chicago Press.
- Skogan, W. G. 1990. *Disorder and Decline: Crime and the Spiral Decay in American Neighborhoods*. Los Angeles, United States: University of California Press.
- Skogan, W. and M. Maxfield. 1981. *Coping with Crime*. Beverly Hills, United States: Sage.
- Taub, R. D., G. Taylor, and J. Dunham. 1984. *Paths of Neighborhood Change*. Chicago, United States: University of Chicago Press.
- Taylor, I. 1999. *Crime in Context: A Critical Criminology of Market Societies*. Cambridge, United States: Polity Press.
- Taylor, R. and J. Covington. 1993. "Community Structural Change and Fear of Crime." *Social Problems* 40: 374–39.
- Vilalta, C. 2010. "El miedo al crimen: estructura lógica, bases empíricas y recomendaciones iniciales de política local." *Gestión y Política Pública* 19(1): 3–36.
- . 2011a. "Fear of Crime in Public Transport: Research in Mexico City." *Crime Prevention & Community Security* 13(3): 171–86.
- . 2011b. "Fear of Crime in Gated Communities and Apartment Buildings: A Comparison of Housing Types and a Test of Theories." *Journal of Housing and the Built Environment* 26(2): 107–21.
- . 2012a. "El Impacto del Miedo al Delito en las Rutinas." Presentation at the workshop "Human Development, Violence, and Security in Latin America," organized by the IDRC, UNDP, and PEC. September 10–21, 2012. Cocoyoc, Mexico.
- . 2012b. "Towards an Understanding of Community Organization against Crime: The Case of Ciudad Juarez, Mexico." Presentation in the workshop "Surviving Violence, Comparative Perspectives," organized by The Centre for Foreign Policy Studies (CFPS), Dalhousie University, September 28–29, 2012. Halifax, Nova Scotia, Canada.

- Warr, M. 1984. "Fear of Victimization: Why are Women and the Elderly more Afraid?" *Social Science Quarterly* 65: 681–702.
- .2000. "Fear of Crime in the United States: Avenues for Research and Policy." In D. Duffee (ed.), *Criminal Justice 2000, vol. 4: Measurement and Analysis of Crime and Justice*. Washington, DC: National Institute of Justice.
- Wilson, J. Q. and G. Kelling. 1982. "Broken Windows: The Police and Neighborhood Safety." *Atlantic Monthly* (March): 29–38.
- Will, J. and J. McGrath. 1995. "Neighborhood Perceptions and the Underclass: The Relationship between Fear of Crime and Class Position." *Journal of Criminal Justice* 23(2): 163–76.
- Williamson, T., D. Ashby, and R. Webber. 2006. "Classifying Neighborhoods for Reassurance Policing." *Policing and Society* 16(2): 189–218.
- Yin, P. 1980. "Fear of Crime among the Elderly: Some Issues and Suggestions." *Social Problems* 27(4): 492–504.