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The impact of crime on trust in institutions in Mexico



Luisa R. Blanco*

School of Public Policy, Pepperdine University, 24255 Pacific Coast Highway, Malibu, CA 90263, United States
Center for Latin American Social Policy, RAND Corporation, Santa Monica, CA, United States

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ABSTRACT

Using survey data from the Latin American Public Opinion Project (LAPOP) and *Encuesta Nacional Sobre la Inseguridad (ENSI)* from Mexico during the period of 2004–2010, this paper analyses the impact of insecurity and crime victimization on support and satisfaction with democracy and trust in institutions. The analysis shows that perceptions of higher insecurity decrease support and satisfaction with democracy. We also find that perceptions of insecurity and crime victimization reduce trust in institutions, particularly in those that directly deal with crime (police and judicial system). There is regional variation in relation to trust in institutions that are associated with drug-trafficking activity.

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1. Introduction

Crime in Latin America is higher than in other regions of the world and has increased in the last two decades, making insecurity one of the most important issues in the region. While unemployment has been the main problem concerning people in Latin America (since 1995 when the Latinobarometro survey started), crime has been a growing concern in recent years. The percent of the population who believe that crime is the most important problem has risen from 9% in 2004 to 27% in 2010 (Latinobarometro, 2010).

Insecurity in Mexico has risen since President Calderon took office in late 2006 due to his efforts to fight drug cartels and reduce drug trafficking in the country (Beittel, 2009). Drug turf wars have also contributed to the increase on crime (Escalante Gonzalbo, 2011). The intentional homicide rate in Mexico increased from 11 per 100,000 habitants in 2006 to 18 in 2010. The total number of homicides related to organized crime (including drug-trafficking) increased 440 percent between 2007 and 2010. According to Molzahn et al. (2012), there were around 50,000 homicides related to organized crime between 2006 and 2011. The annual number of such deaths, 8333, is about one-third the number of annual combat deaths suffered during the Mexican Revolution of the early 20th century (Krauze and Heifetz, 1998), illustrating the magnitude of the problem and the need to deal with it.

Crime has consequences for both a nation's economy and its institutional stability (Soares and Naritomi, 2010). Trust in institutions is related to social capital, and social capital is considered an engine for economic growth and development (Knack and Keefer, 1997).

* School of Public Policy, Pepperdine University, 24255 Pacific Coast Highway, Malibu, CA 90263, United States. Tel.: +1 310 506 7466; fax: +1 310 506 7494.
E-mail address: lblanco@pepperdine.edu.

Higher trust in institutions is likely to increase institutional quality, and institutional quality is associated with greater economic growth (Efendic et al., 2011).

This paper provides a better understanding of the connection between violence and social capital for the case of Mexico by studying the impact of insecurity on trust in institutions. This analysis expands on previous work by using a framework of repeated cross sections of surveys before (2004 and 2006) and after (2008 and 2010) periods of high levels of violence in Mexico and by incorporating techniques related to complex survey design. This paper also differs from previous work by analyzing the *Encuesta Nacional Sobre la Inseguridad (ENSI)*, a nationally representative Mexican survey.

We find that perceptions of insecurity have a robust significant negative effect on support and satisfaction with democracy. We also show that perceptions of insecurity and crime victimization have a robust significant negative effect on trust in institutions, and particularly on trust in the police and the judicial system. We find that in trust in institutions decreases as drug trade activity increases, and it has particularly done so over time in the northwest and northeast states.

In Section 2 of this paper we provide a brief overview of insecurity in Mexico in the past decade and other research on the link between insecurity and trust in institutions. In Section 3 we present our data and methods, and our results are presented in Section 4. Sections 5 and 6 present a sensitivity analysis and discussion. Section 7 concludes.

2. Literature review

Official statistics for Mexico show that crime has risen significantly since 2006, with those states that have more illegal drug trade activity having larger increases in crime. Fighting organized crime has been a top priority for the government since Calderon took office in December 2006, with the government significantly increasing security spending and mobilizing military forces to the Mexican Border States (Beittel, 2009). These government actions have been associated with a significant increase in crime. Table 1

Table 1
Official crime statistics 2006–2010 (selected years).

State	Region ^b	Intentional homicides ^a			Intentional homicides ^a			Org. crime homicides ^c		
		(per100,000)			(per100,000)			(Total)		
		2001	2005	%change	2006	2010	%change	2007	2010	%change
Aguascalientes	North-Central	2	2	0	2	6	200	37	46	24
Baja California	Northwest	18	19	6	17	27	59	209	540	158
Baja Calif. Sur	Northwest	6	7	17	4	8	100	6	10	67
Campeche	Southeastern	7	7	0	4	7	75	11	14	27
Chiapas	Southwestern	5	6	20	8	10	25	57	77	35
Chihuahua	Northwest	10	8	−20	18	103	472	244	4427	1714
Coahuila	Northeast	31	10	−68	4	14	250	18	384	2033
Colima	West	16	17	6	5	15	200	2	101	4950
Distrito Federal	South-Central	9	8	−11	7	9	29	182	191	5
Durango	Northwest	22	12	−45	13	66	408	108	834	672
Guanajuato	North-Central	5	4	−20	5	9	80	51	152	198
Guerrero	Southwestern	40	24	−40	27	48	78	299	1137	280
Hidalgo	East	6	5	−17	4	6	50	43	52	21
Jalisco	West	8	6	−25	6	12	100	70	593	747
México	South-Central	22	17	−23	19	8	−58	111	623	461
Michoacán	West	12	11	−8	17	18	6	328	520	59
Morelos	South-Central	12	10	−17	10	33	230	32	335	947
Nayarit	West	13	10	−23	10	38	280	11	377	3327
Nuevo León	Northeast	4	3	−25	4	18	350	130	620	377
Oaxaca	Southwestern	37	30	−19	30	14	−53	62	167	169
Puebla	East	10	6	−40	8	7	−13	6	51	750
Querétaro	North-Central	6	4	−33	3	3	0	5	13	160
Quintana Roo	Southeastern	27	11	−59	10	22	120	26	64	146
San Luis Potosí	North-Central	8	7	−13	5	12	140	10	135	1250
Sinaloa	Northwest	21	23	10	23	85	270	426	1815	326
Sonora	Northwest	8	11	38	10	26	160	141	495	251
Tabasco	Southeastern	9	4	−56	8	7	−13	27	73	170
Tamaulipas	Northeast	6	12	100	11	22	100	80	1209	1411
Tlaxcala	East	35	33	−6	15	4	−73	0	4	−
Veracruz	East	7	6	−14	6	5	−17	75	179	139
Yucatán	Southeastern	1	1	0	1	2	100	4	2	−50
Zacatecas	North-Central	7	4	−43	4	7	75	18	37	106
National		14	11	−21	11	18	64	2829	15,277	440

^a Homicides related to organized crime, total number (collection of these statistics started in 2006). Homicides considered for this category are based on the characteristics of the execution based on place, sex, age, and message. Deaths considered for this category also include deaths that resulted from attacks and confrontation between the authorities and criminal organizations, and between criminal organizations (without the presence of authority). Source: *Presidencia de la Republica (2011)*.

^b Intentional Homicides per 100,000 habitants (rounded up, official statistics). Source: *Instituto Ciudadano de Estudio Sobre la Inseguridad (ICESI, 2011)*. A homicide in which the death of a person is caused intentionally is considered intentional homicide.

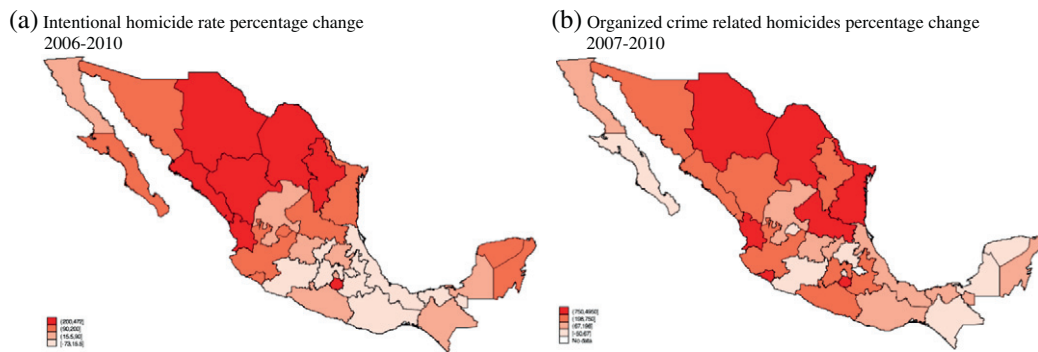


Fig. 1. Intentional homicide rates and organized crime related homicides, percentage change.

shows the intentional homicide rates (homicides per 100,000 habitants) in recent years by state. Between 2006 and 2010, rates increased most in the border states of Chihuahua (472% increase in homicide rate), Nuevo Leon (350% increase), Coahuila (250 percent increase), Sonora (160% increase), Tamaulipas (100% increase), and Baja California (59 percent increase). Across Mexico, the intentional homicide rate increased 64 percent in these years. In contrast to the years 2006 to 2010, Table 1 shows homicide rates across Mexico decreased from 2001 to 2005.

Fig. 1 shows states by quartiles for percentage increase of intentional homicide rates (Panel A) and organized crime related homicides (Panel B). Increases appear to be greater in the Northwest (Baja California, Baja California Sur, Chihuahua, Sonora, Durango, Sinaloa) and Northeast (Coahuila, Nuevo Leon, Tamaulipas). Some states in the Occident region, such as Nayarit and Colima, also had high increases in their homicide rates. Altogether, these maps show that the increase in violence was concentrated in certain regions that are strategic for drug trafficking activity.

This analysis focuses on how insecurity and crime affect democracy and trust in institutions necessary for building strong political and institutional systems that increase social capital. Social capital, as defined by Paldman and Svendsen (2000, p.342), is “the density of trust existing within a group” and “it determines how easily people work together”. Therefore, social capital has been associated with greater economic growth (Beugelsdijk and van Schaik, 2005; Dearmon and Grier, 2009; Dincer and Uslaner, 2010) and greater capital accumulation (Dearmon and Grier, 2011). Social capital is also associated with better governance outcomes (Bjørnskov, 2006, 2010) and greater political accountability (Jottier and Heydels, 2012). In fact, social capital seems to have a larger effect on economic growth in those countries where institutions are weak (Ahlerup et al., 2009), and in specific in those countries with weak rule of law (Horvath, in press). Furthermore, political institutions that pertain to an anti-authoritarian culture with extensive checks and balances have also been associated with greater economic growth (Jellema and Roland, 2011).

High levels of perceived insecurity and crime victimization might reduce support for democracy and trust in institutions, leading to lower social capital and consequently lower economic growth. The effect of insecurity and crime on support and satisfaction with democracy may be ambiguous in Latin America. Chinchilla (2002) argues that an erosion of legitimacy might justify an authoritarian government (i.e. “mano dura”). Thus, increased insecurity can lead individuals to be less satisfied with democracy. At the same time, other individuals may view democracy as preferable to authoritarianism regardless, and not necessarily attribute increased crime to it.

Easton (1975) notes that, given longstanding discontent with institutions, individuals may eventually distrust the system entirely. Because the police are regarded as the authority responsible to ensure order, high crime rates and perceptions of insecurity will especially affect individual levels of trust in them (Weyland, 2003). For democracy to consolidate, society must regard as legitimate the political system and its institutions of authority, including the police, the judicial system, and the government (Diamond, 1993; Lipset, 1994; Cheibub et al., 1996). High levels of insecurity and violence would lead individuals to instead see the system as inefficient, and trust in its authorities would diminish, reducing social capital as well (Paras, 2007).

Several empirical studies, summarized in Table 2, have assessed the impact of insecurity and crime on democracy and trust in institutions for Latin American countries.¹ Many of these have shown that perceptions of insecurity have adversely affected support for democracy (Cruz, 2008; Fernandez and Kuenzi, 2010; Salinas and Booth, 2011). Many have also shown that high levels of crime victimization adversely affect satisfaction with democracy (Fernandez and Kuenzi, 2010; Cenabou's et al., 2011; Bateson, 2010). In fact, Bateson (2012) finds that victims of crime are less likely to participate in politics. Some have specifically focused on how high levels of insecurity have adversely affected levels of trust in institutions in Central America (Perez, 2003; Cruz, 2006; and Malone, 2010). Within Mexico, Paras Garcia et al. (2008) and Paras Garcia et al. (2011) found that perceptions of insecurity negatively affect support for democracy and trust in institutions. Paras Garcia et al. (2006) found that perceptions of insecurity and crime victimization adversely affected trust in institutions.

This paper adds to previous work by using available surveys between 2004 and 2010 for a repeated cross-sectional analysis and applying statistical models for complex survey data. This allows us to determine whether there are aggregate trends and

¹ There are other studies that focus on a single Latin American country published by LAPOP, but not included for purpose of space.

Table 2

Empirical analysis on the relationship between perceptions of insecurity and crime victimization on support and satisfaction with democracy and trust in institutions.

Author	Data	Sample	Findings
Fernandez and Kuenzi (2010)	Latinobarometro 2003	17 LAC & 14 AC	PI → (–) on support and satisfaction for democracy in LAC, CV → (–) satisfaction with democracy
Cenabou et al. (2011)	LAPOP 2006	10 LAC	CV → (–) effect on satisfaction with democracy (no effect on support)
Cruz (2008)	LAPOP 2006	21 LAC	PI → (–) effect on support for democracy PI & CV → (–) effect on rule of law
Bateson (2010)	LAPOP 2008	18 LAC	CV → (–) effect on support and trust for democracy
Bateson (2012)	LAPOP 2010	24 LAC	CV → (–) effect on support and trust for democracy
Salinas and Booth (2011)	LAPOP 2008	18 LAC	PI → (–) effect on support for democracy CV → no effect
Maldonado (2010)	LAPOP 2010	23 LAC	PI → (+) effect on government overthrow CV → no effect on government overthrow
Ahmad et al. (2011)	LAPOP 2010	26 LAC	PI & CV → trust in the police
Perez (2003)	Latinobarometro 1996 & 1998	2 CAC	PI → (–) effect on trust in the police and democracy (ELS & GTM) CV → support for military coup (ELS)
Cruz (2006)	LAPOP 1999	3 CAC	CV → (–) effect on support to the political system in all cases, PI → (–) effect only for GTM & ELS (NIC no effect)
Malone (2010)	LAPOP 2008	6 CAC	PI & CV → (–) effect in support for judicial system
García-Sánchez (2011)	LAPOP 2005	COL	People in areas with more drug production have less trust in institutions
Buendía et al. (2004)	LAPOP 2004	MEX	Corruption → (–) effect on democracy
Paras García et al. (2006)	LAPOP 2006	MEX	PI & CV → (–) effect on trust in institutions
Malone (2009)	LAPOP 2008	MEX	PI → (–) effect in support for democracy and rule of law, CV → (–) effect on the rule of law
Paras García et al. (2008)	LAPOP 2008	MEX	PI & CV → (–) effect on trust in institutions
Paras García et al. (2011)	LAPOP 2010	MEX	PI & CV → (–) effect on support for democracy PI & CV → NS effect on rule of law

LAC = Latin American countries, CAC = Central American countries, AC = African countries

PI = Perception of Insecurity, CV = Crime Victimization

group differences in trends, test for changing effects, and capture the net effect of social change. We use data from the Latin American Public Opinion Project (LAPOP) and ENSI, which complement each other.

3. Data and methodology

3.1. Data

We constructed two repeated cross sections of surveys to estimate the models in this analysis. The main datasets we used are 1) LAPOP surveys for 2004, 2006, 2008 and 2010, and 2) ENSI surveys collected in 2005 (ENSI-3), 2008 (ENSI-5), 2009 (ENSI-6), and 2010 (ENSI-7).² We describe below these surveys and their different designs and variables.

LAPOP surveys are representative at the national level for voting-age adults (18 years and older, survey covers 29 states out of 32). They have a complex sample design which includes stratification and clustering. The sample size for each wave is around 1500 observations and is unweighted with no oversample.³ The main variables of interest from the LAPOP survey are the following.

- 1) Perceptions of insecurity index. – Question: in relation to your neighborhood and the probability of being victim of a crime, how secure/insecure do you feel? Scale: 1–4; Very insecure = 4, very secure = 1.
- 2) Crime victimization. – Question: in the last 12 months, have you been a victim of crime? Values: 0, 1; victim of crime = 1, 0 otherwise.
- 3) Support for democracy (democracy index). – Question: democracy has problems, but it is the best form of government. Scale: 1–7; strongly disagree = 1, strongly agree = 7.
- 4) Support for democracy (democracy as the best political system). – Question: with which of the following sentences do you identify yourself, 1) it is the same to have a democratic system than to not have it, 2) democracy is preferable to any other form of government, and 3) in some circumstances an authoritarian government is preferable to a democratic one. This indicator is used with values 1–3 to evaluate the probability of choosing one answer over the most common answer (multinomial logit estimation is used with this dependent variable).

² We did not use ENSI-4, which makes reference to 2006, data because they are not representative at the national level. The reference years for ENSI surveys, which tend to be collected in the first six months of a year, are usually the year prior to data collection. For example, ENSI-3 collected data in 2005 and asked individuals whether they were a victim of crime in 2004.

³ For more discussion on the design of the LAPOP surveys please refer to LAPOP's website (<http://www.vanderbilt.edu/lapop/core-surveys.php>). Note that information about the survey design for LAPOP is underdocumented.

- 5) Satisfaction with democracy. – Question: in general, how satisfied or unsatisfied are you with the form in which democracy functions in Mexico. Rescaled: 1–4; highly satisfied = 4, highly unsatisfied = 1.⁴
- 6) Variables related to trust in institutions such as the political system, electoral system, congress, government, courts system, judicial system, police, and army. – Question: to which degree do you trust the following institution? Scale: 1–7, not at all = 1, a lot = 7.

The control variables we use in estimations including the LAPOP data are gender (female = 1, male = 0), civil status (relationship – married or in common law marriage = 1, single, separated, divorced, widow/widower = 0), have kids (have kids = 1, 0 otherwise), race (two dummies: white = 1 if individual identifies as white, zero otherwise; mestiza = 1 if individual identifies as mestiza/o, zero otherwise), size of city (1–5, very large-capital = 1, rural area = 5), education (years of education completed), income level (0–10, no income = 0, highest income range = 10), age (number of years).⁵

ENSI surveys use complex sample design (stratification and clustering).⁶ Because ENSI surveys use probability sampling for the target population of individuals 18 years or older, they provide weights for the different waves at the household and individual level.⁷ The number of observations for each wave ranges between 30,000 and 60,000. The ENSI variables we use are similar to those we use from the LAPOP data. The ENSI data lacks questions on support and satisfaction with democracy hence we are not able to test how perceptions of insecurity and crime affect them. We also use slightly different control variables in ENSI analysis owing to a differing structure of the survey. The ENSI data do provide more information than the LAPOP data on trust in institutions, including police. The ENSI variables we use are the following.

- 1) Perceptions of insecurity. – Question: do you feel insecure in your state? Values: 0, 1; Feel insecure – 1, 0 otherwise.
- 2) Crime victimization. – Question: in the year of ... (year before the survey is taken), have you been a victim of crime in this state or another state? Values: 0, 1; victim of crime = 1, 0 otherwise.
- 3) Variables related to trust in institutions such as local police, transit police, state police (judicial), federal investigation agency (Agencia Federal de Investigacion, AFI), preventive federal police, federal police, public ministry (ministerio publico), army, and political parties.⁸ Rescaled: 1–4; a lot = 4, some = 3, a little = 2, none = 1; Rescaled 1–3, a lot = 3, a little = 2, none = 1.⁹

The control variables we use for ENSI estimations are gender (female = 1, male = 0), age (number of years), age squared, urban (equal to 1 if live in urban area, 0 otherwise), education dummies (primary, secondary and high school, and high school more), and employment status dummies (employed and unemployed); the reference group includes those individuals not in the labor force).¹⁰

Variables included to control for state characteristics are GDP per capita, life expectancy, and state-level dummies.¹¹ We also use other state-level data to explore regional variation in the outcome variables. The use of an indicator of proximity to the border was to account for regions most affected by drug trafficking. Similar to Dube et al. (2012) and Garcia-Sanchez (2011), we calculated distance between Mexican states and U.S. border cities with most activity by using latitudes and longitudes, with distance to the closest border used as an indicator of proximity to the United States.¹²

⁴ Rescaled variables are those with an inverse conversion to keep consistency across the analysis. For example, for the index of satisfaction with democracy in the LAPOP survey, the data is structured as highly satisfied equals 1 and highly unsatisfied equals 4. We inversely rescale this to have an indicator that will show higher values when there is higher satisfaction with democracy.

⁵ We explored but did not choose other model specifications because the fit of the model was maximized with the variables chosen. Other variables we explored were education dummies (primary, secondary, higher), urban dummy, income dummies (high level income/medium level income), and civil status dummies (separated, divorced, widow/widower). It is also common to include age squared in this type of regressions, but when the squared term was included the linear and squared term were both insignificant.

⁶ For more discussion on the design of the ENSI surveys please refer to ICESI's website (http://www.icesi.org.mx/estadisticas/estadisticas_encuestasNacionales.asp).

⁷ ENSI surveys are representative at the national and state level for the population 18 years and older, and in some waves they are representative at the city level.

⁸ For the variable related to trust in AFI, the data was adjusted for the last wave because AFI became the ministerial federal police in 2009. This survey specifically asks individuals if they are familiar with the institution/authority for which they need to provide their level of trust. If the individual does not know the institution/authority, then there is no indicator of trust. This explains why the number of observations varies significantly in the estimations that use trust in institutions as dependent variable.

⁹ When looking at trust in institutions, ENSI data uses different scales for different institutions. The scale 1–3 is typically used for authorities related to the police forces.

¹⁰ For the education dummies, primary dummy is equal to 1 if the individual completed primary education, secondary and high school dummy is equal to one if the individual completed secondary or high school, and high school or more dummy is equal to one if the individual attended school at higher levels. These education dummies are not ideal because they do not distinguish between graduating from secondary and high school and attaining a higher degree. We constructed education dummies this way because ENSI-5 had limited data on education. For the employment status dummies, we include retired, stay home, and incapacitated to work individuals for the not in the labor force category. Those that did not work (besides those not in the labor force) were considered unemployed for the unemployed category, regardless of whether they were actively looking for a job because the survey does not have information on job-seeking activity. ENSI-7 does not have data on income, hence we do not include dummies controlling for income. For robustness, the model will be estimated controlling for income with the remaining ENSI waves.

¹¹ We constructed GDP per capita at the state level using total real GDP (2003 constant prices, from Instituto Nacional de Estadística y Geografía, INEGI, 2011) and dividing it by total population (from Consejo Nacional de la Población, CONAPO, 2011). For 2010, in which GDP per capita is not available, we extrapolated GDP per capita. We obtained data from Consejo Nacional de la Población, CONAPO (2011) on life expectancy by state. We considered using other variables such as unemployment and infant mortality for controls but ultimately did not include them given their high correlations with GDP per capita and life expectancy.

¹² We obtained longitudes and latitudes of states from the Google maps distance calculator (<http://www.daftlogic.com/projects-google-maps-distance-calculator.htm>). We calculated distance to U.S. border cities with the most activity, as classified by Dube et al. (2012), using the great circle distance formula. Dube et al. (2012, p.13) define a major border city as one that "has an annual truck flow of at least 5000 per year during 2002–2006, and is at least 30 miles away from another major border crossing". Dube et al. (2012) identify 13 major border cities using these criteria, which we use in this analysis.

Another indicator we used is the number of criminal drug traffickers per 100,000 habitants (narco density) in the state between 1998 and 2001, as provided by Resa Nestares (2004).¹³ We also used data provided by Secretaria de la Defensa Nacional (SEDENA, 2011) on the number of hectares of marijuana confiscated at the state level to account for illegal drug trade activity.¹⁴ Table 3 provides summary statistics for LAPOP variables and Table 4 does so for ENSI variables.

3.2. Methodology

The model for the repeated cross-section of surveys is specified as

$$Y_{it} = \alpha + X\beta + T\gamma + \varepsilon_{it} \quad (1)$$

where $i = 1, 2, \dots, I$; $t = 1, 2, \dots, T$. Y_{it} represents the value of the dependent variable for the i_{th} person in the t_{th} survey, α is a vector of constants, X is a $1 \times q$ vector of variables presumed to affect the dependent variable, T is a $1 \times T$ vector of time dummies for the survey years, D is a $1 \times D$ vector of state dummies, and ε_{it} is a vector of error terms for the i_{th} person in the t_{th} survey.¹⁵ The methods of estimation used are ordered logit (ordered categorical dependent variable) for most estimations and multinomial logit (mutually exclusive categorical dependent variable). Time dummies allow us to control for time effects, while state dummies allow us to control for state characteristics that do not vary by time. We use cluster-robust standard errors with clustering by geographic areas that represent the primary sample units (PSUs, clusters) in most of the estimations. Cluster-robust standard errors allow us to deal with heteroskedasticity of the error term, where errors are correlated within clusters at the geographic level. The methodology used here is similar to Blanco and Ruiz's (2013) study for Colombia.

We also use statistical models for complex survey data when estimating the model with ENSI data. For the estimations that consider complex survey design in a repeated cross section framework, we consider the weight at the individual level and unique PSUs in each wave. We do not consider stratification because there is a problem of a stratum with a single PSU in the ENSI-3 wave. This is not a problem because using strata tends to decrease the standard errors. Thus, estimates without considering strata provide larger standard errors, resulting in a more conservative approach for evaluating significance.¹⁶

In the estimations using the model noted in Eq. 1, the dependent variable is an indicator related to support and satisfaction with democracy and trust in institutions. The dependent variables have higher values when there is higher support and satisfaction with democracy and higher trust in institutions. The independent variables of interest are those related to perceptions of insecurity and crime victimization. The independent variable related to perceptions of insecurity has higher values for individuals who feel more insecure in the LAPOP survey. The ENSI survey, as noted, asks individuals whether they feel insecure in their state or county, with those who feel insecure assigned a value of one. Another independent variable of interest is crime victimization, which takes a value of one if the individual has been victim of a crime. Because crime victimization and perceptions of insecurity may be highly correlated, their empirical effects should be assessed separately, and we enter them in the equation separately.¹⁷

Other independent variables of interest that we include in the estimation are those regarding regional variation in illegal drug trade activity (distance to border, narco density, and confiscated marijuana). We also use two dummies for states in the northeast and northwest to explore regional variation in drug trafficking.¹⁸ Including time dummies in the estimation allows us to determine whether there is variation over time in the dependent variables, and specifically whether there was a significant increase in crime and insecurity after 2006, when Calderon took office. We also use a year trend variable and interact this variable with dummies for the northern regions to test group difference in trends.¹⁹ We only use ENSI data to test for regional and time variation because only the ENSI surveys are representative at the state level.

4. Results

Table 5 shows LAPOP estimates for the impact of perceptions of insecurity and crime victimization on support for and satisfaction with democracy. We use an ordered logit estimator for the coefficients in columns 1–4 because the dependent variables are ordered categorical variables. Columns 1 and 2 show that the index of perception of insecurity has a robust significant negative effect at the 1 percent level on support for and satisfaction with democracy. Columns 3 and 4 shows that crime victimization does not have a

¹³ Resa Nestares (2004) provides an indicator of "narco density" which is equal to the number of individuals that were incriminated for the production, possession, and, traffic of drugs (and other acts related to drug trafficking) per 100,000 persons who resided between 1998 and 2001 in a specific state.

¹⁴ Secretaria de la Defensa Nacional (SEDENA) (2011) provides data on the number of hectares of marijuana located, confiscated, and destroyed by the Mexican army and the air force.

¹⁵ Note that it is not a panel data approach where individuals are followed over time. There is no data on crime victimization in Mexico that takes a dynamic panel approach.

¹⁶ For more discussion on how to apply statistical models for complex survey designs in a repeated cross section refer to <http://www.stata.com/statalist/archive/2008-10/msg00521.html>. More discussion on repeated cross section is also provided by Firebaugh (1997).

¹⁷ In the LAPOP data, the correlation coefficient between the insecurity index and a victimization dummy variable (equal to 1 if a person is victim of crime, equal to zero otherwise) is 0.20 and is statistically significant at the 1 percent level. In the ENSI data, the correlation coefficient between the insecurity dummy variable and the victimization dummy variable is 0.14 and statistically significant at the 1 percent level as well. We will discuss these variables further in the next section of the paper.

¹⁸ As noted early in the paper, some states have been affected by organized crime significantly and have experienced increased crime rates, while other states have not been affected as much. Ashby and Ramos (2013), in their study on the impact of crime on sectoral foreign direct investment in Mexico, emphasize that some states have been affected more by organized crime than other states.

¹⁹ This is similar to the approach proposed by Firebaugh (1997) to detect aggregate social trends with repeated surveys.

Table 3

Summary statistics – LAPOP data for 2004, 2006, 2008, and 2010.

Variable	2004			2006			2008			2010			All years	
	Obs	Mean	S.D.	Obs	Mean	S.D.	Obs	Mean	S.D.	Obs	Mean	S.D.	Min	Max
Insecurity index	1545	2.22	0.88	1536	2.36	0.93	1557	2.20	0.89	1553	2.32	0.92	1	4
Victim	1545	0.17	0.38	1545	0.20	0.40	1557	0.16	0.37	1562	0.26	0.44	0	1
Support democracy index	1451	5.19	1.58	1466	5.15	1.66	1488	5.11	1.74	1477	5.01	1.64	1	7
Satisfaction democracy index	1498	2.52	0.65	1479	2.47	0.68	1497	2.53	0.68	1503	2.35	0.74	1	4
Support democracy 2	1424	1.95	0.51	1357	2.00	0.52	1459	2.00	0.50	1438	2.05	0.53	1	3
Trust in the political system	1506	4.79	1.71	1504	5.15	1.68	1527	4.96	1.79	1522	4.96	1.78	1	7
Trust in the electoral system	1527	4.28	1.91	1498	5.04	1.74	1532	4.70	1.91	1532	4.44	1.95	1	7
Trust in the congress	1455	4.11	1.70	1444	4.53	1.66	1457	4.33	1.75	1461	4.24	1.71	1	7
Trust in the government	1510	4.28	1.74	1490	4.53	1.76	1530	4.59	1.79	1530	4.54	1.77	1	7
Trust in the courts system	1438	4.19	1.71	1473	4.12	1.70	1406	4.00	1.75	1452	3.80	1.62	1	7
Trust in the judicial system	1523	4.01	1.69	1512	4.04	1.75	1525	4.05	1.81	1536	3.88	1.70	1	7
Trust in the police	1530	3.55	1.88	1523	3.26	1.86	1554	3.62	1.83	1552	3.18	1.77	1	7
Trust in the army	1501	5.06	1.67	1495	5.35	1.66	1518	5.25	1.78	1513	5.33	1.68	1	7
Female	1556	0.50	0.50	1560	0.51	0.50	1560	0.51	0.50	1562	0.50	0.50	0	1
Relationship	1554	0.70	0.46	1549	0.69	0.46	1546	0.67	0.47	1559	0.63	0.48	0	1
Kids	1556	0.77	0.42	1552	0.76	0.43	1556	0.74	0.44	1547	0.72	0.45	0	1
White	1483	0.19	0.40	1465	0.23	0.42	1458	0.26	0.44	1458	0.17	0.38	0	1
Mestiza	1483	0.69	0.46	1465	0.66	0.47	1458	0.61	0.49	1458	0.73	0.44	0	1
City Size	1556	3.04	1.49	1560	3.05	1.49	1560	3.05	1.49	1562	2.93	1.43	1	5
Education	1555	8.22	4.42	1559	8.57	4.30	1560	8.27	4.47	1559	8.95	4.44	0	18
Income level	1436	4.42	2.28	1283	4.56	2.35	1346	4.58	2.31	1393	4.28	2.48	0	10
Age	1556	39.22	14.97	1558	37.61	14.31	1558	40.84	16.67	1558	39.42	15.78	18	90
GDP per capita	1556	70.43	35.61	1560	75.46	38.36	1560	77.93	39.77	1562	67.76	34.10	31.45	172.48
Life expectancy	1556	74.31	0.73	1560	74.88	0.73	1560	75.18	0.70	1562	75.46	0.70	72.58	76.50
Bribe	1524	0.24	0.42	1550	0.26	0.44	1558	0.21	0.41	1548	0.28	0.45	0	1

All variables at the individual level obtained from LAPOP (2011). GDP per capita at the state level constructed using total real GDP (2003 constant prices, from Instituto Nacional de Estadística y Geografía, INEGI, 2011) and dividing it by total population (from Consejo Nacional de la Población, CONAPO, 2011). GDP per capita not available for 2010, but it was filled in with linear extrapolation. Life expectancy at the state level obtained from CONAPO (2011).

statistically significant effect on support for democracy but does have a robust significant negative effect at the 1% level on satisfaction with democracy.

The LAPOP survey has a question that allows us to explore whether individuals are indifferent to democracy (value equal to 1), see democracy as the best system (value equal to 2), or will justify an authoritarian government in special circumstances (value equal to 3). We use multinomial logit to estimate a model for this dependent variable. In Table 5, columns 5 and 6 show the estimates for the model using the insecurity index as independent variable, and columns 7 and 8 show the estimates for the model using the victim dummy as the independent variable. These show that perceptions of insecurity have a positive effect on support for an authoritarian government. In other words, the people in Mexico might view an authoritarian government as more effective in dealing with crime. This relationship might be specific to Mexico's experience with democratization in the past decade and in recent years with high levels of violence and individuals feeling a need to a different approach to fighting crime. Our estimates also show that those individuals who were victim of a crime are more likely to be indifferent with democracy.

To estimate the impact of insecurity and crime victimization on trust in institutions, we use an ordered logit equation. This shows a robust negative effect of insecurity on trust in institutions. Specifically, Table 6 shows that as insecurity increases, trust in the political system, electoral system, congress, government, courts system, judicial system, police, and army all decrease. The largest negative effect appears to be on trust in the judicial system and the police. In other words, as people feel more insecure, they are particularly less likely to trust those institutions responsible for fighting crime. In fact, it is expected that less trust in the police and the criminal justice system is also reflected in lower crime reporting.²⁰

Estimates in Table 7, which include the victim dummy, are very similar to those in Table 6. Table 7 shows that being a victim of crime has a significant negative effect on all institutions mentioned above, and particularly on trust in the judicial system and the police. The effects of victimization appear to be larger than those for perceptions of insecurity on trust in the political, electoral, judicial, and courts systems, and in congress. Individuals who are victims of a crime are more likely to go through the judicial and courts systems, and perhaps they are disappointed with the system based on their experience. Because a large number of crimes go unreported in Mexico, the lower trust in the courts and judicial system can be reflected on victims' perception that these systems are corrupted and inefficient and that reporting a crime to the authorities is futile.

To further understand the impact of insecurity on trust in institution, we use data from the ENSI surveys because this survey provides more detailed information about perceptions of insecurity, crime victimization, and trust in institutions. We use ordered logit estimators in assessing ENSI data because these data have a complex design with clusters and weights. Table 8 presents estimates of the effect of perceived insecurity in the state on trust in several institutions. Insecurity has a statistically significant

²⁰ Soares (2004) presents a good analysis on the relationship between crime reporting and trust in institutions.

Table 4
Summary Statistics – ENSI data for 2004, 2007, 2008, and 2009.

Variable	2004			2007			2008			2009			All years	
	Obs	Mean	S.D.	Obs	Mean	S.D.	Obs	Mean	S.D.	Obs	Mean	S.D.	Min	Max
Victim	57,398	0.11	0.32	30,670	0.09	0.28	56,172	0.11	0.32	60,461	0.10	0.30	0	1
Insecure	55,610	0.52	0.50	29,534	0.57	0.49	54,571	0.66	0.47	59,456	0.67	0.47	0	1
Trust local police	48,310	2.02	0.69	23,817	1.98	0.62	37,675	1.93	0.62	45,133	1.87	0.56	1	3
Trust transit police	39,836	1.97	0.69	22,887	1.91	0.64	37,584	1.88	0.64	44,870	1.85	0.58	1	3
Trust state police (jud)	30,526	1.96	0.74	18,394	1.96	0.64	25,553	1.94	0.66	12,941	1.94	0.61	1	3
Trust AFI	14,466	2.28	0.72	14,713	2.18	0.67	19,363	2.15	0.68	8600	2.07	0.62	1	3
Trust fed police (prev)	19,964	2.32	0.69	15,466	2.16	0.65	21,635	2.15	0.66	29,246	2.10	0.62	1	3
Trust federal police				28,413	2.33	1.06	51,312	2.26	1.10	57,091	2.12	0.98	1	4
Trust public ministry				27,796	1.99	0.95	50,215	1.97	0.97	56,492	2.02	0.93	1	4
Trust army				28,726	2.81	1.09	52,867	2.94	1.13	58,070	2.78	1.11	1	4
Trust political parties				29,671	1.59	0.82	54,156	1.59	0.84	59,473	1.64	0.80	1	4
Urban	57,398	0.76	0.43	31,088	0.83	0.38	56,175	0.76	0.42	60,461	0.76	0.42	0	1
Female	57,398	0.55	0.50	31,088	0.57	0.49	56,175	0.55	0.50	60,461	0.54	0.50	0	1
Age	57,289	40.95	16.12	30,780	41.58	16.71	55,940	41.73	16.38	60,145	41.85	16.62	18	97
Primary	57,189	0.22	0.41	30,536	0.44	0.50	56,175	0.40	0.49	56,144	0.22	0.41	0	1
Sec. and high school	57,189	0.30	0.46	30,536	0.38	0.48	56,175	0.38	0.49	56,144	0.24	0.43	0	1
High school more	57,189	0.22	0.41	30,536	0.18	0.39	56,175	0.22	0.41	56,144	0.39	0.49	0	1
No educ	57,189	0.26	0.44	30,536	0.00	0.00	56,175	0.00	0.00	56,144	0.15	0.36	0	1
Employed	57,378	0.57	0.49	30,691	0.54	0.50	56,114	0.64	0.48	60,456	0.57	0.50	0	1
Unemployed	57,378	0.05	0.21	30,691	0.01	0.10	56,114	0.01	0.11	60,456	0.07	0.25	0	1
Not labor force	57,378	0.38	0.49	30,691	0.45	0.50	56,114	0.35	0.48	60,456	0.37	0.48	0	1
GDP per capita	57,398	78.36	63.42	31,088	79.53	56.99	56,175	80.84	55.47	60,461	75.83	48.91	32.88	467.60
Life expectancy	57,398	74.35	0.73	31,088	75.01	0.66	56,175	75.26	0.71	60,461	75.36	0.67	72.58	76.37
Distance border	57,398	750.42	362.12	31,088	813.77	323.58	56,175	772.67	354.31	60,461	761.28	348.04	167.87	1370.17
Narco density (98-01)	57,398	53.08	44.03	31,088	40.71	37.44	56,175	51.61	44.73	60,461	50.20	42.98	4.26	143.57
Marihuana (hec)	57,398	1.01	1.62	31,088	0.77	1.49	56,175	1.19	2.01	60,461	0.87	1.83	0	8.09
Northwest	57,398	0.26	0.44	31,088	0.15	0.36	56,175	0.25	0.43	60,461	0.23	0.42	0	1
Northeast	57,398	0.09	0.28	31,088	0.10	0.29	56,175	0.06	0.24	60,461	0.09	0.29	0	1
Year trend	57,398	0.00	0.00	31,088	1.00	0.00	56,175	2.00	0.00	60,461	3.00	0.00	0	3
Bribe local police	48,735	0.08	0.28	23,931	0.09	0.28	37,825	0.11	0.31	45,246	0.11	0.31	0	1
Bribe state police	30,969	0.05	0.22	18,652	0.05	0.21	25,765	0.06	0.24	23,046	0.06	0.24	0	1
Bribe federal police	20,250	0.05	0.22	15,797	0.03	0.16	21,820	0.04	0.20	29,396	0.06	0.24	0	1

All variables at the individual level obtained from [ENSI \(2010\)](#). GDP per capita at the state level constructed using total real GDP (2003 constant prices, [INEGI, 2011](#)) and dividing it by total population (from [CONAPO, 2011](#)). Life expectancy at the state level obtained from [CONAPO \(2011\)](#). Distance to the border calculated as the distance to the closest major border city, narco density represents the number of criminals involved in drug trafficking with residency in the state, and marijuana is the number of hectares (per 1000) confiscated in the state. Year trend ranges from 0 to 3 for each survey wave (for 2004 equal to 0, for 2009 equal to 3).

negative effect on all the institutions shown, with its largest effect on trust in the local police. [Table 9](#) shows the effects of victimization on trust in varying institutions. Being the victim of a crime has a significant negative effect at the 1% level on trust in all institutions but the army. Again, the greatest effect of criminal victimization is on trust in the local police.

In relation to the impact of insecurity and crime on trust in democracy, this analysis shows similar effects as those shown by [Fernandez and Kuenzi \(2010\)](#) and [Cenabou et al. \(2011\)](#) for the entire Latin American region. [Fernandez and Kuenzi \(2010\)](#) show that perceptions of insecurity have a negative effect on support and satisfaction with democracy, while crime victimization only affects negatively satisfaction with democracy. [Cenabou et al. \(2011\)](#) also show that crime victimization has a negative effect on satisfaction with democracy, but has no effect on support for democracy for 10 Latin American countries. In the Mexican context, our results are different to [Paras Garcia et al. \(2008\)](#), but similar to [Paras Garcia et al. \(2011\)](#). Using data for 2008, they find that perceptions of insecurity and crime victimization have no negative effect on support for democracy. Nonetheless, when using data for 2010, [Paras Garcia et al. \(2011\)](#) find that perceptions of insecurity and crime victimization have a negative effect on support for democracy.

In relation to the impact of insecurity and crime on trust in other institutions our findings relate to previous work, such as the work of [Ahmad et al. \(2011\)](#). They find in a sample of 26 Latin American countries that perceptions of insecurity and crime victimization have a significant negative effect on trust in the police. [Malone \(2010\)](#), in a sample of 6 Central American countries, finds that perceptions of insecurity and crime victimization have a significant negative effect on trust in the judicial system, which is similar to our findings.

The findings in this analysis differ from [Blanco and Ruiz's \(2013\)](#) analysis for Colombia, which takes a similar empirical approach and uses LAPOP data between 2004 and 2010, in the following ways. The victim dummy has a positive significant effect on support for democracy in the Colombian case. The victim dummy also has no negative effect on trust in the political system and the armed forces, which is different in this analysis when using LAPOP data. The differential effects found for the victim dummy on support for democracy and trust in the political system might be related to the fact that Colombia is one of the oldest democracies in the region, while Mexico can be considered a young democracy.²¹

²¹ According to ([Haber et al., 2008](#)), political transformation and electoral democratization took place with the elections of 2000 in Mexico.

Table 5
Impact of insecurity and crime victimization on democracy—LAPOP data.

	Dem.supp. index	Dem.sat. index	Dem.suppindex	Dem.sat. index	Indiff. model 1	Author. model1	Indiff. model2	Author. model 2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Insecurity ind.	−0.1242*** (0.0353)	−0.3187*** (0.0401)			0.0279 (0.0593)	0.1152** (0.0533)		
Victim			−0.0556 (0.0741)	−0.2319*** (0.0725)			0.3863*** (0.1125)	−0.0762 (0.1219)
Female	0.0637 (0.0511)	0.0855 (0.0557)	0.0436 (0.0512)	0.0259 (0.0551)	0.1068 (0.0878)	−0.1755** (0.0882)	0.1433 (0.0898)	−0.1802** (0.0881)
Relationship	−0.0448 (0.0714)	−0.1381 (0.0848)	−0.0553 (0.0708)	−0.1794** (0.0847)	0.0742 (0.1345)	−0.2692** (0.1247)	0.0765 (0.1343)	−0.2519** (0.1248)
Kids	0.0371 (0.0838)	−0.0261 (0.0955)	0.0371 (0.0839)	−0.026 (0.0943)	−0.1165 (0.1584)	0.1525 (0.1460)	−0.1176 (0.1574)	0.1551 (0.1477)
White	−0.0326 (0.1167)	0.0831 (0.1249)	−0.0335 (0.1168)	0.0476 (0.1215)	−0.1113 (0.1649)	0.038 (0.1961)	−0.0938 (0.1657)	0.0488 (0.1962)
Mestizo	0.0507 (0.1005)	0.0714 (0.1094)	0.056 (0.1010)	0.051 (0.1058)	−0.2865** (0.1448)	−0.2095 (0.1652)	−0.2797* (0.1447)	−0.2124 (0.1651)
City size	0.021 (0.0322)	0.0618* (0.0360)	0.0412 (0.0319)	0.0940*** (0.0348)	0.0487 (0.0514)	−0.002 (0.0520)	0.047 (0.0510)	−0.0266 (0.0522)
Education	0.0297*** (0.0087)	−0.0347*** (0.0094)	0.0327*** (0.0087)	−0.0329*** (0.0094)	−0.0245* (0.0139)	−0.0588*** (0.0135)	−0.0285** (0.0139)	−0.0596*** (0.0135)
Income	0.0918*** (0.0156)	0.0307* (0.0164)	0.0926*** (0.0155)	0.0379** (0.0161)	−0.0438* (0.0239)	−0.0102 (0.0262)	−0.0475** (0.0237)	−0.0149 (0.0263)
Age	0.0122*** (0.0024)	0.0004 (0.0023)	0.0130*** (0.0024)	0.0011 (0.0023)	−0.0100*** (0.0037)	−0.0166*** (0.0034)	−0.0097** (0.0038)	−0.0177*** (0.0034)
GDP per capita	−0.0067 (0.0116)	0.0091 (0.0111)	−0.0086 (0.0115)	0.0076 (0.0109)	−0.0376** (0.0168)	−0.0215* (0.0128)	−0.0369** (0.0169)	−0.0199 (0.0128)
Life expect.	−0.4298 (0.5171)	−1.4763** (0.5939)	−0.2672 (0.5196)	−1.1894** (0.5996)	−0.5799 (0.8010)	−0.3636 (0.8668)	−0.6538 (0.7972)	−0.49 (0.8757)
Year 2004	−0.2723 (0.6286)	−1.3536* (0.7099)	−0.0695 (0.6294)	−1.0143 (0.7173)	−0.2897 (0.9624)	−0.8765 (1.0225)	−0.3409 (0.9555)	−1.0617 (1.0316)
Year 2006	−0.005 (0.3532)	−0.553 (0.3953)	0.0907 (0.3542)	−0.3817 (0.3983)	0.0579 (0.5413)	−0.3639 (0.5562)	0.0315 (0.5373)	−0.4557 (0.5610)
Year 2008	0.0625 (0.2221)	−0.1495 (0.2478)	0.139 (0.2213)	−0.0449 (0.2489)	0.2877 (0.3508)	−0.1995 (0.3363)	0.3053 (0.3482)	−0.2806 (0.3391)
Observations	4896	4950	4900	4958	4747	4747	4749	4749
Log-likelihood	−8490	−4977	−8503	−5029	−3476	−3476	−3470	−3470
Wald Chisq	211	217	190	177	246	246	257	257
R-sq(pseudo)	0.02	0.03	0.02	0.03	0.03	0.03	0.03	0.03

Coefficients with cluster-robust standard errors in parenthesis. Significance notated at * $p < .1$; ** $p < .05$; *** $p < .01$. Estimates for cut-off estimates and state dummies and not included for purpose of space. Ordered logit estimates in columns 1–5, and multinomial logit estimates in columns 5–8. Reference group: male, no relationship (single, separated, divorced, widow/widower), no kids, indigenous or other race, and year 2010.

While we observe a significant negative effect of the crime dummy on trust in armed forces when using LAPOP data for Mexico (which is different from the Colombian case), this dummy is insignificant when using the ENSI data. Thus, there is no robust effect of crime victimization on trust in the armed forces, which can be related to the fact that individuals might not perceive the army as the institution who is directly in charge of controlling and deterring crime. For the case of Mexico, it will be interesting to see whether this relationship would change as more armed forces have been mobilized to the northern states.

It is important to note that no previous analysis in the Mexican context has included a large number of institutions and introduced the data from the ENSI survey. For example, [Paras Garcia et al. \(2011\)](#) only look at the impact on the rule of law, but do not study the direct effect of crime on trust in the police and the criminal justice system. Our analysis also expands on previous work by exploring regional and time variation, which is discussed in the following section.

5. Sensitivity analysis

Our results are robust to several alternative estimations using LAPOP and ENSI data.²² First, when entering the index of perception of insecurity and victim dummy together in the estimation, we achieve results similar to those earlier noted. In these estimations, the insecurity index and the victim dummy keep their significance at least at the 5% level in most cases. The only difference is that the victim dummy no longer has a significant effect on trust in the army in both LAPOP and ENSI models. Second, we estimated all models without state dummies, and previous results are robust in these estimations.

We used other estimations to check for robustness in ENSI data models. First, we included dummy variables that control for income and achieved similar results, albeit with lower sample size because there is no income data for ENSI-7. Second, we

²² Some of the estimates discussed in this robustness section were not included for purpose of space, but are available upon request.

Table 6
Impact of insecurity on trust on institutions – LAPOP data.

	Political system	Electoral system	Congress	Government	Courts system	Judicial system	Police	Army
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Insec. index	−0.1082*** (0.0383)	−0.1843*** (0.0360)	−0.2225*** (0.0330)	−0.2434*** (0.0346)	−0.2192*** (0.0323)	−0.3146*** (0.0361)	−0.3371*** (0.0347)	−0.2088*** (0.0345)
Female	0.1168** (0.0525)	0.0295 (0.0522)	−0.0232 (0.0533)	0.0714 (0.0497)	−0.0466 (0.0542)	0.0364 (0.0510)	0.0887* (0.0484)	−0.2689*** (0.0540)
Relationship	−0.0075 (0.0729)	0.1028 (0.0771)	−0.1007 (0.0690)	−0.0406 (0.0693)	0.0648 (0.0748)	0.0249 (0.0713)	−0.0471 (0.0710)	−0.0548 (0.0738)
Kids	0.0221 (0.0891)	−0.1204 (0.0837)	0.1856** (0.0788)	0.0765 (0.0817)	−0.1446* (0.0856)	0.0292 (0.0829)	0.1029 (0.0824)	0.1597* (0.0908)
White	0.0618 (0.1093)	0.1423 (0.1122)	0.1696 (0.1211)	0.1762 (0.1258)	0.2792** (0.1149)	0.2195* (0.1277)	0.1851 (0.1244)	−0.1575 (0.1192)
Mestizo	−0.0611 (0.0878)	0.0686 (0.0966)	0.1962* (0.1064)	0.0935 (0.1088)	0.0483 (0.0923)	0.1534 (0.1055)	0.1247 (0.1011)	−0.1121 (0.0990)
City size	0.0713* (0.0368)	0.0475 (0.0312)	0.0293 (0.0296)	0.0761** (0.0321)	0.0316 (0.0331)	0.044 (0.0375)	0.1056*** (0.0397)	−0.0108 (0.0307)
Education	0.013 (0.0086)	−0.0192** (0.0085)	−0.0169* (0.0086)	−0.0204** (0.0086)	−0.0264*** (0.0088)	−0.0075 (0.0087)	−0.0111 (0.0085)	−0.0069 (0.0087)
Income	−0.0321** (0.0149)	0.0122 (0.0154)	0.011 (0.0152)	−0.0093 (0.0145)	0.0276* (0.0153)	−0.0138 (0.0150)	0.0002 (0.0157)	0.0121 (0.0146)
Age	0.0076*** (0.0023)	−0.0082*** (0.0022)	−0.0052** (0.0023)	0.0013 (0.0023)	−0.0013 (0.0024)	0.0002 (0.0023)	−0.0018 (0.0022)	−0.0025 (0.0022)
GDP per cap.	−0.0017 (0.0087)	−0.0275*** (0.0093)	−0.0026 (0.0084)	−0.0083 (0.0082)	−0.0015 (0.0093)	−0.0017 (0.0084)	0.0034 (0.0104)	−0.0307*** (0.0079)
Life expect.	−0.2105 (0.4895)	−1.1596** (0.5125)	−0.483 (0.4490)	−1.1779** (0.4924)	−1.3859*** (0.5170)	−0.6109 (0.4955)	−1.0180* (0.5671)	−1.2328*** (0.4358)
Year 2004	−0.4918 (0.5824)	−1.5007** (0.6371)	−0.77 (0.5368)	−1.7254*** (0.5833)	−1.2476** (0.6363)	−0.6392 (0.5928)	−0.8942 (0.6861)	−1.7821*** (0.5205)
Year 2006	0.0978 (0.3177)	0.1365 (0.3479)	−0.1353 (0.2931)	−0.5767* (0.3296)	−0.4537 (0.3445)	−0.1926 (0.3305)	−0.6087 (0.3740)	−0.4664 (0.2909)
Year 2008	−0.1125 (0.2041)	0.1233 (0.2237)	−0.0792 (0.1950)	−0.3213 (0.2212)	−0.2568 (0.2170)	−0.1002 (0.2296)	0.0194 (0.2397)	−0.1925 (0.1961)
Observations	5016	5030	4856	5015	4786	5043	5075	4998
Log-lik.	−8936	−9278	−8924	−9192	−8782	−9307	−9276	−8480
Wald Chi sq	203.2	288.1	247.6	284.4	272.3	257.5	351.5	224.2
R-sq(pseudo)	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02

Ordered logit coefficients with cluster-robust standard errors in parenthesis. Significance notated at * $p < .1$; ** $p < .05$; *** $p < .01$. Estimates for cut-off estimates and state dummies and not included for purpose of space. Reference group: male, no relationship (single, separated, divorced, widow/widower), no kids, indigenous or other race, and year 2010.

estimated the models using an insecurity dummy at the county level (how insecure do you feel in your county) and found similar results, albeit with larger coefficients for the insecurity dummy at the county level. Third, when using a household victimization dummy variable, we found results similar to those for individual victimization. In these estimations, the coefficients for the effects of household victimization were smaller than those found for individual victimization, which is as expected since the victim is likely to be directly affected and more traumatized from the experience. Fourth, we also estimated the model with an indicator that distinguishes whether the individual was a victim in the state of residency, again finding results similar to those discussed earlier.

The illegal drug trade and associated violence and insecurity may affect some regions in Mexico more than others over time. Accordingly, this paper seeks to determine whether the effect of drug trafficking on trust in institutions has changed over time. We use three different indicators of state-level drug trafficking activity: proximity to the United States border, number of individuals working on illegal drug trade (i.e. narco-density) that resided in the state between 1998 and 2001, and number of hectares of marijuana confiscated in the year before the reference year of the survey.

Table 10 shows the estimates including distance to the border and narco density separately in the right hand side, and their effects on trust in different police forces.²³ Distance to the border, as shown in columns 1 through 3 has a significant positive effect on trust in local, state, and federal police, with those closer to the border having lowest trust in these police forces. Narco density, as shown in columns 4 through 6, also has a significant negative effect on trust in the local, state, and federal police. From these estimates, we can infer that greater drug trade activity is associated with lower levels of trust in the police, particularly the local police.

Confiscation of marijuana on trust in institutions positively affects trust in local, state, and preventive federal police, as shown in columns 1 through 3 of Table 11. This finding is somewhat surprising, given that more drug trade activity might lead to less

²³ In all these estimations the state dummies are not included to avoid issues of multicollinearity. Note that the index of trust in the AFI is not included in this part of the analysis since this institution changed name in the last ENSI survey. A question that distinguishes federal police from the preventive federal police starts in the second wave used in this analysis (ENSI-5).

Table 7
Impact of crime victimization on trust on institutions – LAPOP data.

	Political system	Electoral system	Congress	Government	Courts system	Judicial system	Police	Army
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Victim	−0.2314*** (0.0690)	−0.2709*** (0.0655)	−0.2369*** (0.0624)	−0.2110*** (0.0695)	−0.3143*** (0.0707)	−0.4259*** (0.0642)	−0.3160*** (0.0658)	−0.1803*** (0.0671)
Female	0.0862 (0.0526)	−0.0128 (0.0519)	−0.0672 (0.0535)	0.0258 (0.0497)	−0.0998* (0.0539)	−0.0275 (0.0507)	0.0288 (0.0486)	−0.3027*** (0.0542)
Relationship	−0.0346 (0.0730)	0.0757 (0.0772)	−0.1211* (0.0686)	−0.0706 (0.0694)	0.0316 (0.0750)	−0.0221 (0.0720)	−0.0958 (0.0726)	−0.0815 (0.0738)
Kids	0.0338 (0.0888)	−0.1132 (0.0844)	0.1803** (0.0779)	0.0709 (0.0815)	−0.1459* (0.0850)	0.0384 (0.0847)	0.1162 (0.0844)	0.1545* (0.0912)
White	0.0578 (0.1090)	0.1274 (0.1121)	0.1373 (0.1201)	0.1617 (0.1255)	0.2562** (0.1163)	0.1922 (0.1296)	0.1694 (0.1262)	−0.1586 (0.1204)
Mestizo	−0.0596 (0.0880)	0.0596 (0.0973)	0.1785* (0.1049)	0.0836 (0.1076)	0.0386 (0.0923)	0.1399 (0.1071)	0.1198 (0.1008)	−0.1052 (0.0992)
City size	0.0817** (0.0361)	0.0630** (0.0313)	0.0514* (0.0302)	0.1029*** (0.0323)	0.0513 (0.0335)	0.0737* (0.0377)	0.1384*** (0.0402)	0.0126 (0.0310)
Education	0.0150* (0.0085)	−0.0172** (0.0085)	−0.0136 (0.0086)	−0.0185** (0.0087)	−0.0230** (0.0089)	−0.0028 (0.0088)	−0.0073 (0.0084)	−0.0039 (0.0087)
Income	−0.0293** (0.0147)	0.0181 (0.0151)	0.0135 (0.0150)	−0.005 (0.0143)	0.0323** (0.0153)	−0.007 (0.0149)	0.0077 (0.0157)	0.0146 (0.0145)
Age	0.0076*** (0.0023)	−0.0080*** (0.0022)	−0.0044** (0.0022)	0.0021 (0.0023)	−0.0007 (0.0024)	0.0009 (0.0023)	−0.0009 (0.0022)	−0.0015 (0.0022)
GDP per cap.	−0.0026 (0.0088)	−0.0294*** (0.0092)	−0.0043 (0.0084)	−0.0096 (0.0082)	−0.0038 (0.0095)	−0.0041 (0.0085)	0.0011 (0.0106)	−0.0313*** (0.0079)
Life expect.	−0.0359 (0.4968)	−0.9946** (0.5049)	−0.2946 (0.4558)	−0.9796** (0.4937)	−1.1526** (0.5185)	−0.3405 (0.4998)	−0.658 (0.5637)	−0.9508** (0.4378)
Year 2004	−0.2985 (0.5896)	−1.3005** (0.6227)	−0.5408 (0.5433)	−1.4751** (0.5831)	−0.9832 (0.6372)	−0.3414 (0.5944)	−0.4653 (0.6807)	−1.4459*** (0.5220)
Year 2006	0.2084 (0.3225)	0.2366 (0.3422)	0.234 (0.2997)	−0.4531 (0.3323)	−0.3149 (0.3468)	−0.0426 (0.3353)	−0.3993 (0.3744)	−0.3166 (0.2935)
Year 2008	−0.0576 (0.2059)	0.1894 (0.2194)	0.0038 (0.1995)	−0.2376 (0.2215)	−0.1821 (0.2176)	−0.0098 (0.2307)	0.1581 (0.2408)	−0.0929 (0.1967)
Observations	5022	5035	4865	5024	4794	5051	5083	5002
Log-lik.	−8950	−9298	−8964	−9233	−8811	−9362	−9342	−8519
Wald Chi sq	209.6	284.1	219.4	249.2	245.3	229.3	267.2	195.4
R-sq(pseudo)	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.01

Ordered logit coefficients with cluster-robust standard errors in parenthesis. Significance notated at * $p < .1$; ** $p < .05$; *** $p < .01$. Estimates for cut-off estimates and state dummies and not included for purpose of space. Reference group: male, no relationship (single, separated, divorced, widow/widower), no kids, indigenous or other race, and year 2010.

trust in institutions, as in the previous equations discussed. At the same time, as the amount of marijuana confiscated increases at the state level, then trust in institutions may increase as people perceive that authorities are being effective dealing with drug trafficking.

Using repeated cross-section surveys can help us better understand variation across time. A simple way to look at time variation is to look at the significance of the time dummies. In all the estimations mentioned above, we include time dummies. In the LAPOP data, there does not seem to be a clear trend; time dummies are not significant in most cases. In the ENSI data, trust in several institutions appears to have deteriorated over time. In most cases we also observe that time dummies are positive indicating that trust was higher in previous years.

To further explore regional and time variation, we include in the estimations two dummies for those states in the northeast and northwest region, a year-trend variable, and an interaction of the year-trend variable with the regional dummies. We include these estimates in Table 11. States in the northwest region have higher levels of trust in local police, as shown in Table 11, column 6. In this estimation, the year trend and the interaction terms are negative and statistically significant at least at the 5% level. The significance and sign of the interaction terms indicate that trust in the local police has been deteriorating over time for all states, but has been deteriorating at a higher rate in the northeast and northwest states. When using state and preventive federal police as dependent variables, the interaction terms are negative and statistically significant. This indicates that trust in the state and preventive federal police is deteriorating at a higher rate in the northwest and northeast regions. Results are very similar when a border dummy is included in the model (instead of the two regional dummies) and interacted with the time trend.²⁴ Further discussion of the marginal effect of the region dummies and interaction term with the year trend will be provided in the next section.

²⁴ We also estimated a model that includes a dummy for all regions, but not the northeast and northwest (making the northern regions the reference group). While there is not a clear pattern of which regions have higher or lower trust, results show that trust in institutions have deteriorated faster in the northern regions since the interaction term of all the other region dummies and year trend are either significantly positive or not statistically significant. Results for these alternative models not included for purpose of space but are available upon request.

Table 8
Impact of insecurity on trust in institutions – ENSI data.

	Local pol	Transit pol.	State pol	AFI	Fed pol prev	Fed police	Public minist	Army	Pol parties
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Insecurity index	−0.6714*** (0.0208)	−0.5624*** (0.0215)	−0.5415*** (0.0270)	−0.3731*** (0.0335)	−0.4357*** (0.0268)	−0.4380*** (0.0201)	−0.5718*** (0.0203)	−0.2771*** (0.0204)	−0.4995*** (0.0206)
Urban	−0.4638*** (0.0296)	−0.2609*** (0.0304)	−0.3270*** (0.0372)	−0.2590*** (0.0487)	−0.1894*** (0.0375)	−0.1102*** (0.0303)	−0.2215*** (0.0301)	−0.0296 (0.0310)	−0.1844*** (0.0306)
Female	0.0269 (0.0224)	0.0686*** (0.0233)	0.0253 (0.0306)	−0.1353*** (0.0500)	−0.2028*** (0.0406)	−0.1636*** (0.0224)	0.0076 (0.0222)	−0.3114*** (0.0252)	0.005 (0.0252)
Age	−0.0033 (0.0031)	−0.0057* (0.0034)	−0.0343*** (0.0044)	−0.0349*** (0.0057)	−0.0255*** (0.0045)	−0.0208*** (0.0029)	−0.0219*** (0.0029)	0.004 (0.0029)	−0.0122*** (0.0030)
Age squared	0.0001*** (0.0000)	0.0001*** (0.0000)	0.0003*** (0.0000)	0.0002*** (0.0001)	0.0002*** (0.0001)	0.0002*** (0.0000)	0.0002*** (0.0000)	−0.0001* (0.0000)	0.0001*** (0.0000)
Primary	−0.1627*** (0.0382)	−0.0969** (0.0418)	−0.2490*** (0.0613)	−0.2062** (0.0920)	−0.0525 (0.0569)	0.052 (0.0380)	0.0946** (0.0407)	0.0289 (0.0386)	−0.0454 (0.0400)
Sec and high	−0.1990*** (0.0399)	−0.2026*** (0.0439)	−0.4718*** (0.0621)	−0.2521*** (0.0947)	−0.062 (0.0591)	0.0789* (0.0403)	0.0329 (0.0422)	0.1532*** (0.0407)	−0.0946** (0.0426)
More than high	−0.2442*** (0.0398)	−0.2585*** (0.0428)	−0.6757*** (0.0618)	−0.4154*** (0.0897)	−0.1890*** (0.0541)	0.1199*** (0.0390)	0.0153 (0.0416)	0.2262*** (0.0391)	−0.0589 (0.0410)
Work	−0.0577** (0.0241)	−0.0433* (0.0250)	−0.0523 (0.0328)	−0.1030* (0.0536)	−0.0583 (0.0433)	−0.0137 (0.0236)	0.0071 (0.0230)	−0.0712*** (0.0270)	−0.0024 (0.0275)
No work	−0.1965*** (0.0526)	−0.0783 (0.0546)	−0.0739 (0.0799)	−0.0943 (0.0985)	−0.0425 (0.0740)	−0.0165 (0.0487)	−0.0549 (0.0513)	−0.0359 (0.0508)	−0.0023 (0.0524)
GDP per capita	0.0018 (0.0016)	0.0046*** (0.0018)	0.0002 (0.0021)	0.0023 (0.0031)	0.0035 (0.0022)	0.0031 (0.0026)	0.0032 (0.0027)	−0.0086*** (0.0028)	0.0111*** (0.0030)
Life expect.	0.6462*** (0.1695)	0.9910*** (0.1712)	1.0411*** (0.2161)	0.2987 (0.2842)	0.7772*** (0.2354)	0.1496 (0.8597)	0.341 (0.8955)	−1.9825** (0.9331)	−1.1413 (1.0216)
Year 2004	0.9880*** (0.1710)	1.1382*** (0.1716)	0.8247*** (0.2112)	0.9688*** (0.2788)	1.4073*** (0.2297)				
Year 2007	0.3704*** (0.0597)	0.2597*** (0.0601)	0.1752** (0.0741)	0.3002*** (0.0959)	0.3302*** (0.0836)	0.2812 (0.2626)	−0.0876 (0.2726)	−0.5740** (0.2863)	−0.5343* (0.3084)
Year 2008	0.2508*** (0.0374)	0.0770** (0.0369)	0.068 (0.0496)	0.2473*** (0.0620)	0.2081*** (0.0501)	0.1714 (0.1363)	−0.1184 (0.1409)	0.0258 (0.1467)	−0.4009** (0.1616)
Observations	148,000	139,460	84,659	55,431	83,426	129,371	127,212	131,749	134,916
F value	75.66	77.53	46.51	22.85	42.7	54.77	66.35	63.49	42.74

Coefficients with standard errors in parenthesis. Significance notated at * $p < .1$; ** $p < .05$; *** $p < .01$. Estimates for state dummies not included for purpose of space. Ordered logit estimates considering clusters and weights (no stratification; svy Stata command). Reference group: no education, not in labor force, and year 2009.

To further analyze the impact of crime on trust in democracy and institutions, we explore a model where we include a dummy that relates to bribing. Bribing represents another form of crime and it is closely related to the behavior of public institutions. The coefficients and standard errors for the bribe dummy are shown in Table 12. When using the LAPOP data, the variable bribe is a dummy variable equal to 1 if a member of the police forces or a public employee asked the individual for a bribe. We estimate the model shown in Table 5, and replaced the insecurity dummy for a bribe dummy. Estimates show that while the bribe dummy is negatively and statistically significant for the model that uses satisfaction with democracy as dependent variable, this dummy is not statistically significant when using support for democracy as dependent variable.

When using ENSI data, there is the possibility to be more specific in relation to which authority has asked an individual for a bribe, which is not possible with the LAPOP data. We include the bribe dummy in relation to the specific authority that we consider as dependent variable and estimate the models using trust in local, state, and federal police as dependent variables.²⁵ We find that the bribe dummy is negative and statistically significant in all cases, and the size of the coefficient tends to be larger than for the victim dummy. These findings are similar to Blanco and Ruiz's (2013) findings for the Colombia.

6. Discussion

To determine the magnitude of the effect of insecurity and crime victimization on satisfaction with democracy and trust in institutions, we estimated the marginal effect of the variables of interest (insecurity index and victim dummy) using the derivative calculation for some of the estimations discussed above.²⁶ For the marginal effect we calculate the average of the probability among actual persons in the data.

²⁵ The bribe dummy included in the model that uses trust in the local police as dependent variable is equal to 1 if the individual was asked for a bribe by the local police, and equal to zero otherwise (same applies for the other models that use trust in state and federal police as dependent variables, where the bribe dummies in each model are related to that specific authority).

²⁶ For the purpose of brevity, we focus our discussion on the marginal effect of the victim dummy using the derivative calculation. The discrete calculation of the marginal effect of the victim dummy is also possible in Stata and provides similar results (available upon request).

Table 9
Impact of crime victimization on trust in institutions – ENSI data.

	Local pol	Transit pol.	State pol	AFI	Fed pol prev	Fed police	Public minist	Army	Pol parties
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Victim	−0.5107*** (0.0307)	−0.4350*** (0.0299)	−0.4253*** (0.0384)	−0.3502*** (0.0475)	−0.2843*** (0.0389)	−0.2384*** (0.0300)	−0.4278*** (0.0293)	−0.0498 (0.0314)	−0.2794*** (0.0316)
Urban	−0.4812*** (0.0296)	−0.2760*** (0.0300)	−0.3264*** (0.0367)	−0.2646*** (0.0481)	−0.2045*** (0.0373)	−0.1256*** (0.0302)	−0.2410*** (0.0300)	−0.0463 (0.0308)	−0.2011*** (0.0309)
Female	−0.0171 (0.0215)	0.0294 (0.0223)	−0.0106 (0.0292)	−0.1633*** (0.0479)	−0.2312*** (0.0392)	−0.1933*** (0.0215)	−0.0291 (0.0210)	−0.3271*** (0.0245)	−0.0268 (0.0240)
Age	−0.0074** (0.0031)	−0.0092*** (0.0033)	−0.0363*** (0.0044)	−0.0367*** (0.0056)	−0.0272*** (0.0044)	−0.0233*** (0.0028)	−0.0237*** (0.0028)	0.0029 (0.0028)	−0.0151*** (0.0029)
Age squared	0.0001*** (0.0000)	0.0001*** (0.0000)	0.0003*** (0.0000)	0.0002*** (0.0001)	0.0002*** (0.0000)	0.0002*** (0.0000)	0.0002*** (0.0000)	0.00001 (0.0000)	0.0002*** (0.0000)
Primary	−0.1876*** (0.0378)	−0.0998** (0.0416)	−0.2435*** (0.0611)	−0.1935** (0.0909)	−0.0561 (0.0562)	0.0338 (0.0372)	0.0744* (0.0396)	0.0224 (0.0380)	−0.0711* (0.0390)
Sec and high	−0.2160*** (0.0393)	−0.1972*** (0.0434)	−0.4524*** (0.0614)	−0.2343** (0.0931)	−0.067 (0.0579)	0.0644 (0.0393)	0.0234 (0.0412)	0.1423*** (0.0398)	−0.1197*** (0.0416)
More than high	−0.2386*** (0.0394)	−0.2334*** (0.0426)	−0.6427*** (0.0614)	−0.3929*** (0.0891)	−0.1848*** (0.0540)	0.1174*** (0.0384)	0.0273 (0.0409)	0.2165*** (0.0386)	−0.0702* (0.0404)
Work	−0.0411* (0.0232)	−0.0307 (0.0242)	−0.0439 (0.0313)	−0.0950* (0.0511)	−0.0515 (0.0413)	−0.0033 (0.0226)	0.0184 (0.0219)	−0.0666** (0.0262)	0.008 (0.0260)
No work	−0.1800*** (0.0520)	−0.0656 (0.0541)	−0.056 (0.0798)	−0.1051 (0.0966)	−0.045 (0.0726)	−0.0166 (0.0482)	−0.0461 (0.0504)	−0.0356 (0.0504)	−0.002 (0.0514)
GDP per capita	0.0017 (0.0016)	0.0045*** (0.0017)	0.0005 (0.0021)	0.003 (0.0030)	0.003 (0.0022)	0.0032 (0.0026)	0.0025 (0.0027)	−0.0085*** (0.0027)	0.0109*** (0.0030)
Life expect.	0.7821*** (0.1690)	1.0991*** (0.1709)	1.1459*** (0.2149)	0.3497 (0.2823)	0.8653*** (0.2339)	0.3412 (0.8381)	0.8573 (0.8742)	−1.9135** (0.9053)	−0.7996 (1.0100)
Year 2004	1.2090*** (0.1706)	1.3162*** (0.1713)	1.0011*** (0.2097)	1.0586*** (0.2764)	1.5444*** (0.2287)				
Year 2007	0.4676*** (0.0595)	0.3373*** (0.0597)	0.2365*** (0.0738)	0.3184*** (0.0947)	0.3887*** (0.0819)	0.3678 (0.2554)	0.1092 (0.2649)	−0.5363* (0.2773)	−0.406 (0.3031)
Year 2008	0.2891*** (0.0374)	0.1038*** (0.0368)	0.0927* (0.0490)	0.2487*** (0.0616)	0.2344*** (0.0494)	0.2005 (0.1330)	−0.0323 (0.1375)	0.0331 (0.1424)	−0.3409** (0.1596)
Observations	151,453	142,271	86,329	56,420	84,796	132,014	129,799	134,630	138,048
F value	58.62	65.9	41.78	22.53	39.09	43.1	49.21	60.25	31.44

Coefficients with standard errors in parenthesis. Significance notated at * p < .1; ** p < .05; *** p < .01. Estimates for state dummies not included for purpose of space. Ordered logit estimates considering clusters and weights (no stratification; svy Stata command). Reference group: no education, no labor force, and year 2009.

Using the estimates from Table 5 (columns 2 and 4), Table 13 presents the marginal effect of perceptions of insecurity and being a victim of crime on satisfaction with democracy. As individuals feel more insecure (the insecurity index increases by one unit), the probability that an individual responds that he/she is unsatisfied with democracy increases (index equal to 1 and 2,

Table 10
Impact of insecurity on trust in institutions, regional and time variation (distance to border and narco density) ENSI data.

	Local pol	State pol	Fed pol prev	Local pol	State pol	Fed pol prev
	(1)	(2)	(3)	(4)	(5)	(6)
Insecurity ind.	−0.6714*** (0.0208)	−0.5415*** (0.0270)	−0.4357*** (0.0268)	−0.6714*** (0.0208)	−0.5415*** (0.0270)	−0.4357*** (0.0268)
Dist. border	0.0015*** (0.0002)	0.0008*** (0.0003)	0.0007** (0.0003)			
Narco density				−0.0989*** (0.0163)	−0.0525*** (0.0202)	−0.0435** (0.0212)
Year 2004	0.9880*** (0.1710)	0.8247*** (0.2112)	1.4073*** (0.2297)	0.9880*** (0.1710)	0.8247*** (0.2112)	1.4073*** (0.2297)
Year 2007	0.3704*** (0.0597)	0.1752** (0.0741)	0.3302*** (0.0836)	0.3704*** (0.0597)	0.1752** (0.0741)	0.3302*** (0.0836)
Year 2008	0.2508*** (0.0374)	0.068 (0.0496)	0.2081*** (0.0501)	0.2508*** (0.0374)	0.068 (0.0496)	0.2081*** (0.0501)
Observations	148,000	84,659	83,426	148,000	84,659	83,426
Population	1.94E + 08	1.13E + 08	1.13E + 08	1.94E + 08	1.13E + 08	1.13E + 08
F value	75.66	46.51	42.7	75.66	46.51	42.7

Coefficients with standard errors in parenthesis. Significance notated at * p < .1; ** p < .05; *** p < .01. Estimates for control variables (urban, female, age, age squared, primary, sec and high, more than high, work, no work, GDP per capita, and life expectancy) and state dummies not included for purpose of space. Ordered logit estimates considering clusters and weights (no stratification; svy Stata command). Reference group: no education, no labor force, and year 2009.

Table 11

Impact of insecurity on trust in institutions, regional and time variation (marijuana, region, and time trend) ENSI data.

	Local pol	State pol	Fed pol prev	Local pol	State pol	Fed pol prev
	(1)	(2)	(3)	(4)	(5)	(6)
Insecurity ind.	−0.6699*** (0.0208)	−0.5413*** (0.0270)	−0.4333*** (0.0268)	−0.6681*** (0.0207)	−0.5405*** (0.0270)	−0.4357*** (0.0267)
Marijuana	0.0630*** (0.0171)	0.023 (0.0214)	0.1444*** (0.0216)			
Northeast				0.0438 (0.1384)	0.3438** (0.1592)	−0.0904 (0.1687)
Northwest				0.2998*** (0.1061)	0.1852 (0.1309)	−0.1826 (0.1334)
Year trend			−0.0781***	0.042 (0.0285)	0.0465 (0.0356)	0.0393 (0.0393)
Northeast*year trend			−0.1264***	−0.1421*** (0.0296)	−0.1029*** (0.0337)	0.0354 (0.0354)
Northwest*year trend		−0.0455**	−0.0669**	−0.1416*** (0.0201)	0.0268 (0.0268)	0.0264 (0.0264)
Year 2004	1.0513*** (0.1733)	0.8567*** (0.2138)	1.6006*** (0.2317)			
Year 2007	0.3811*** (0.0599)	0.1824** (0.0745)	0.3682*** (0.0836)			
Year 2008	0.2485*** (0.0373)	0.0696 (0.0496)	0.2098*** (0.0499)			
Observations	148,000	84,659	83,426	148,000	84,659	83,426
Population	1.9E + 08	1.1E + 08	1.1E + 08	1.9E + 08	1.1E + 08	1.1E + 08
F value	74.2	45.55	44.88	76.06	46.33	42.83

Coefficients with standard errors in parenthesis. Significance notated at * $p < .1$; ** $p < .05$; *** $p < .01$. Estimates for control variables (urban, female, age, age squared, primary, sec and high, more than high, work, no work, GDP per capita, and life expectancy) and state dummies not included for purpose of space. Ordered logit estimates considering clusters and weights (no stratification; svy Stata command). Reference group: no education, no labor force, and year 2009.

Table 12

Adding a variable accounting for bribing.

Variable of interest	Bribe
<i>Panel a: democracy as dependent variable</i>	
Democracy	−0.2849***
Satisfaction	(0.0743)
Democracy	−0.0254
Support	(0.0697)
<i>Panel B: trust in institutions as dependent variable</i>	
Local	−1.1735***
Police	(0.0332)
State	−1.3453***
Police	(0.0602)
Federal preventive	−1.2700***
Police	(0.0593)
Coefficients with standard errors in parenthesis Significance:	
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$	

Estimates for democracy model are the same as those in Table 5 (replacing the insecurity dummy for the bribe dummy). Estimates for trust in institutions model are the same as those in Table 8 (replacing the insecurity dummy for the bribe dummy).

Table 13

Marginal effect of insecurity and crime victimization on satisfaction with democracy and trust in the police.

dy/dx	Pr (y = 1)	Pr (y = 2)	Pr (y = 3)	Pr (y = 4)
Satisfaction with democracy	Pr (y = 1)	Pr (y = 2)	Pr (y = 3)	Pr (y = 4)
Insecurity index (T5, C2)	0.0235	0.0513	−0.0642	−0.0106
Victim dummy (T5, C4)	0.0173	0.038	−0.0476	−0.0077
Trust on local police	Pr (y = 1)	Pr (y = 2)	Pr (y = 3)	
Insecurity index (T8, C1)	0.1104	−0.0233	−0.0871	
Victim dummy (T9, C1)	0.0844	−0.0168	−0.0677	

Table 14

Marginal effect of region dummies, time trend and interaction terms on trust in the police.

dy/dx	Pr (y = 1)	Pr (y = 2)	Pr (y = 3)
Trust on local police			
Northeast	−0.0072	0.0015	0.0057
Northwest	−0.0493	0.0104	0.0389
Year trend	0.0128	−0.0027	−0.0101
Northeast*year trend	0.0208	−0.0044	−0.0164
Northwest*year trend	0.0075	−0.0016	−0.0059
Trust on state police			
Northeast	−0.0627	0.0126	0.0501
Northwest	−0.0338	0.0068	0.0270
Year trend	−0.0077	0.0015	0.0061
Northeast*year trend	0.0259	−0.0052	−0.0207
Northwest*year trend	0.0122	−0.0024	−0.0098
Trust on federal police			
Northeast	0.0106	0.0077	−0.0183
Northwest	0.0214	0.0156	−0.0370
Year trend	−0.0055	−0.0040	0.0094
Northeast*year trend	0.0121	0.0088	−0.0209
Northwest*year trend	0.0166	0.0121	−0.0287

Marginal effect estimated using estimates from [Table 11](#), columns 4–6.

highly unsatisfied and unsatisfied) by 0.05 and 0.02. On the other hand, feeling more insecure reduces the probability that people are satisfied with democracy (index equal to 4 and 3, highly satisfied and satisfied) by 0.06 and 0.01%. The marginal effect of the victim dummy behaves in a similar way as the insecurity index, where being a victim of crime increases the probability that an individual is unsatisfied with democracy by 0.02 and 0.04, but decreases the probability that the individual is satisfied with democracy by 0.05 and 0.01.

The marginal effect of insecurity and crime victimization is also estimated for the trust in the local police and shown in [Table 13](#) (using the coefficients shown in [Tables 8 and 9](#), column 1). The probability that people trust a lot the local police decreases by 0.09 when people feel more insecure, and by 0.07 when people are victims of crime. The probability that the individual has no trust on the police force increases by 0.11 when people feel more insecure, and by 0.08 when people are victims of crime. It is important to note that the marginal effect of being a victim of crime does not seem to be of a greater magnitude than the impact of the perceptions of insecurity, which is surprising. One would expect that being a victim of crime would have higher negative effect on trust in institutions.

We also explore the marginal effect of the region dummies and the interaction terms with the year trends using the estimates in [Table 11](#), columns 4–6. [Table 14](#) shows the marginal effects for these variables when using trust in the local, state, and federal police as dependent variables. When adding the coefficients of the region dummies and the interaction term, the probability that people trust a lot the local police decreases for the northeast region, but increases for the northwest region over time. Doing the same with the marginal effects for the state police, the probability that people trust a lot the state police increases for the northeast and northwest region over time. On the other hand, the probability that people trust a lot the federal police decreases for both regions over time.

Our analysis contributes to the literature by providing evidence that the effect of crime and insecurity is different for the different measures of trust. These heterogeneous effects of crime and insecurity in trust in institutions can be related to the literature on the differential effect of social capital on economic growth. For example, in relation to the different dimensions of social capital and culture, [Gorodnichenko and Roland \(2011a, b\)](#) find that individualism is the only dimension that matters for long run economic growth. In our analysis, we find that perceptions of insecurity have the largest negative effect in trust in the police. Consequently, it would be interesting to determine the indirect effect that high perceptions of insecurity have on economic growth through its effects on trust in specific institutions such as the police and the criminal justice system.

Another issue to discuss is the causal relation between trust in institutions and insecurity. One could argue that there could be a two-way causality issue, where low trust in institutions can lead to higher crime. We address for this issue in a similar way as it is done in [Bateson's \(2012\)](#) study. It could also be argued that individual and neighborhood characteristics might affect the probability of being a victim of crime ([Blattman, 2009](#)).

We control for neighborhood effects in relation to crime by adding the organized crime and homicide rates at the state level in the previous year in the models that use satisfaction with democracy and trust in the local police as dependent variables (those models discussed in this section). We find that these additional variables are insignificant, and the size and significance of the coefficients of the insecurity and victim dummy are the same as those shown previously.²⁷

Another factor to control for is the level of trust in institutions at the state level in the previous year. We include in the models shown in [Tables 5](#), columns 2 and 4, the average of the satisfaction with democracy index at the state level in the previous year calculated from the survey data. Coefficients of interest are shown in [Table 15](#) in columns 1 and 2. The insecurity index and victim dummy continue to have a negative significant effect on satisfaction with democracy. Interestingly, the level of satisfaction with democracy at the state level in the previous year has a significant negative effect, which is surprising.

²⁷ We also explore using the organized crime and homicide rates for the year of the survey and found that the coefficients of the insecurity index and victim dummy still significant. Results not included for purpose of space, but available upon request.

Table 15

Adding average of satisfaction with democracy and trust in the local police at the state level in previous year.

Dependent variable	Satisfaction with democracy		Trust local police	
	(1)	(2)	(3)	(4)
Insecurity index	−0.2921*** (0.0470)		−0.6178*** (0.0252)	
Victim dummy		−0.2269*** (0.0819)		−0.4993*** (0.0359)
Avg. Democ. Satis. Lag	−0.8894*** (0.3207)	−0.8480*** (0.3168)		
Avg. Trust Local Pol. Lag			−0.2265 (0.2969)	−0.1952 (0.3032)
Observations	3630	3642	101,204	103,404

Coefficients with standard errors in parenthesis. Significance notated at * $p < .1$; ** $p < .05$; *** $p < .01$. Estimations in columns 1 and 2 are the same as those shown in Table 5, columns 2 and 4, with additional variable. Estimations in columns 3 and 4 are the same as those shown in Tables 8 and 9, column 1, with additional variable.

We also control for the level of trust in the local police in the previous year at the state level. Estimates in Table 15, columns 3 and 4, show that our previous results are robust to the inclusion of trust in the local police in the previous year, and this additional variable has a negative coefficient, but it is not statistically significant.

It is important to note that there is a limitation when addressing for the causal relation between trust in institutions and insecurity in this analysis. Due to the nature of the data, where we use repeated cross sections of surveys, we lack the ability to have a dynamic panel that follows individuals over time. Furthermore, we are unable to find an adequate instrument for crime and perceptions of insecurity at the individual level that would not be endogenously determined in our model. We would have liked to address the issue of endogeneity in a more rigorous way, but we were limited by the nature of the data.

7. Conclusion

This analysis shows that perceptions of insecurity have a negative effect on support for democracy and trust in institutions in Mexico. Crime victimization seems to have a robust negative effect on trust in institutions, but its effect on democracy is not as robust. The detrimental effect of insecurity and crime victimization on trust in institutions appears to be greatest for those institutions that are closely related to security, such as the judicial system and the police. These findings are similar to those found by Blanco and Ruiz (2013) for Colombia. This analysis also shows that trust in several institutions which deal with crime has deteriorated over time, particularly in states with more drug trafficking activity.

Such analysis helps illustrate the importance of designing adequate policies to deal with the consequences of crime. Because crime seems to have a large negative effect on trust in institutions responsible for dealing with crime (police and judicial system), the lack of trust in these institutions might complicate dealing with crime in the future. If distrust in the judicial system and the police increases with insecurity, this can lead to fewer crimes being officially reported to the authorities. If crime is not reported because of distrust in institutions, then reducing crime will become more difficult.

Policy makers must understand the effects that crime and insecurity have on support and trust in institutions. To do so, they should continue to rely on victimization surveys in order to have a better understanding of crime. They should allocate resources to gather data on perceptions of insecurity, crime victimization, and experience with institutions that deal with crime appropriately and in a timely manner. A longitudinal study that provides information about individual experiences with the police and judicial system will be very valuable in determining appropriate policies for reducing crime in Mexico and improving trust in institutions.

From this analysis it is also evident that trust in the local police has deteriorated significantly over time, and that the impact of insecurity has a larger negative effect on trust in this institution. This presents a significant challenge to authorities because local police are usually the first to deal with crime. Policymakers should make special efforts to improve the efficiency and reliability of local police forces.

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