

# Determinants of extortion compliance: Empirical evidence from a victimisation survey

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## Abstract

This article focuses on the situational-, victim-, and area-level determinants of extortion compliance. Extortion, a quintessential organised crime, is one of the most common crimes in Mexico. However, compliance with extortion demands is relatively rare. Previous research suggests that compliance with extortion depends on the perceived risk of punishment for non-compliance. However, most research has been theoretical or experimental. The article offers empirical evidence of patterns of extortion compliance based on data from a large commercial victimisation survey conducted in Mexico. Findings suggest that situational factors (extortion type, presence of weapons and number of offenders) are the main determinants of extortion compliance. Victim-, and area-level variables have comparatively smaller effects. Implications for research and practice are discussed.

Keywords: extortion, organised crime, decision theory, Mexico

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In the early afternoon on August 25, 2011, close to a dozen gunmen torched a casino in the northern Mexican city of Monterrey. The attack on the Casino Royale—as the business was called—killed 52 people, making it one of the deadliest single criminal incidents in Mexico's recent history (Corcoran, 2012). Over the next few days, as the country remained in deep mourning, it emerged that the attack had been ordered as a punishment after the casino refused to pay extortion demands made by the Zetas, a notoriously ruthless organised crime group.

After petty theft and robbery, extortion—understood here as the use of intimidation to demand money and other goods from business-owners (Savona and Sarno, 2014; Elsenbroich and Badham, 2016)—is the third most common crime against businesses in Mexico, with a prevalence rate of around 802 victims per 10,000 businesses (INEGI, 2014a). Alongside homicide and kidnapping, extortion is considered one of the most harmful crimes besieging the Mexican population, though extortion is far more common. In the context of a seemingly unassailable crime wave that has rocked the country since 2005 (see Aburto, Riffe and Canudas-Romo, 2018; Heinle, Ferreira and Shirk, 2016; Aburto and Beltrán-Sánchez, 2019), extortion is routinely described as a pervasive, 'booming industry' (Malkin, 2011) fuelled by the 'war on drugs' (Locks, 2015).

However, despite its high prevalence rate, statistics suggest that compliance with extortion demands is relatively rare. According to Mexico's 2014 commercial victimisation survey (the *Encuesta Nacional de Victimización de Empresas*, INEGI, 2014c), victims complied with extortion demands in only about 13% of incidents.

The relatively low compliance rate contrasts with the public perception of extortion in the country as a 'feudal regime' (Perez, 2018) with gangs dominating large swathes of territory and extorting all businesses within them. Evidence from Italy (Frazzica, La Spina and Scaglione, 2013; Savona and Sarno, 2014) suggests that compliance with extortion demands is common where organised crime groups exert a strong territorial control, which would give grounds to assume that extortion compliance was widespread in Mexico.

Similarly, given anecdotal evidence of the dramatic consequences faced by those who refuse to comply with extortion demands, such as the episode described above and the cases described by Guerrero-Gutiérrez (2011) and Hale (2016), one would expect refusals to comply to be the exception, rather than the norm.

Nonetheless, the relative rarity of extortion compliance does not diminish the gravity of the extortion phenomenon; using data from a different survey, Locks (2015) estimated that illicit revenues from extortion in Mexico ranged between \$2.2 and \$7.4 billion USD in 2012. However, it does raise a relevant question of academic and practical importance: Why are most extortion incidents in Mexico not complied with?

The literature on organised crime—particularly on Italian mafias—suggests that, in addition to avoiding fear of reprisals, compliance with extortion can be attributed to social and cultural factors related to the vulnerability of particular regions to mafia control (e.g. La Spina *et al.*, 2016, 2014). Some communities see paying protection money as 'normal' or 'natural' due to long-standing organised crime governance arrangements (La Spina *et al.*, 2016). However, such research is mostly focused on sustained compliance in the context of systematic extortion rackets,<sup>1</sup> and does not explore the *situational* characteristics that explain why some incidents in the same context lead to compliance while others do not.

In contrast, research on coercion and decision theory (e.g. Luckenbill, 1982; Nacci and Tedeschi, 1973; Tedeschi and Felson, 1994; Gambetta, 1994; Smith and Varese, 2001) provides a suitable framework to understand the situational determinants of extortion compliance. From this perspective target compliance is the result of a rational choice: victims choose to comply when the costs of doing so are lower than of not complying. Thus,

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<sup>1</sup> Elsenbroich and Badham (2016) defines extortion rackets as 'the continuous, regular and systematic extortion of several victims.' Researchers use various terms to refer to similar phenomena: racketeering (McIntosh, 1973), extortion racketeering (Savona and Zanella, 2010; Savona and Sarno, 2014), extortion racket systems (Frazzica, La Spina and Scaglione, 2013; La Spina *et al.*, 2014), private protection (Gambetta, 1993; Varese, 2001), and violent entrepreneurship (Volkov, 2002), among others.

this literature points towards the situational characteristics that help participants in the extortion interaction weigh the costs and benefits of compliance. However, as most research concerning extortive interactions from this perspective has been theoretical or based on experimental data (e.g. Elsenbroich and Badham, 2016; Konrad and Skaperdas, 1997; Smith and Varese, 2001), there is a need for studies that assess extortion compliance empirically using real-world interactions.

From a practical perspective, identifying the situational determinants of extortion compliance can provide more nuanced characterisations of extortion incidents—a crucial step to design more effective crime prevention interventions (Clarke, 2009). Furthermore, being more crime specific not only helps improve the targeting of such interventions, but it can also reveal 'pinch-points' (Read and Tilley, 2000; Bullock, Clarke and Tilley, 2010) in the sequence of events involved in extortions—i.e. the crime script (Cornish, 1994)—which can point to the mechanisms that could underpin successful interventions.

Thus, using novel incident-level data from Mexico's 2014 commercial victimisation survey—one of the largest victimisation surveys of its kind—this study aims to identify the situational determinants of victim compliance in extortion incidents. The article proceeds as follows: In the next section I review the literature to inform the hypotheses to be tested in the study. Then I describe the data and analytical approach used. This is followed by the results and discussion.

## **Factors affecting extortion compliance**

As noted above, it is generally assumed that victims choose to comply with an extortion demand when doing so is less costly than not complying. However, as the true costs of noncompliance are uncertain—threats may not materialise—game theoretical models of extortion note that the main determinant of compliance is the victim's estimation of the likelihood of punishment for noncompliance (e.g. Konrad and Skaperdas, 1997, 1998; Gambetta, 1994; Smith and Varese, 2001). Given that this likelihood is unknown, Konrad and Skaperdas (1997) argue that victims consider threat credibility (the rate at which the

extortionists punished noncompliant victims in the past) (see also Konrad and Skaperdas, 1998). On the other hand, Gambetta (1994), and Smith and Varese (2001) broaden this to include more subjective perceptions, and consider that it is the reputation groups have for their willingness to use violence, rather than actual retaliations for noncompliance, which matters most in influencing the likelihood of compliance. However, this allows 'pirates' (Gambetta, 1994) and 'fakers' (Smith and Varese, 2001) to exploit someone else's reputation spuriously, e.g. by pretending to be a member of an organised crime group (an example of Felson's 'mimicry' principle, 2006).

One of the central issues determining the victim's perception of the likelihood of punishment for noncompliance—and hence of their decision to comply—is the offender's ability to convince the victim of the authenticity of the threat. Gambetta (1994) argues that extortionists establish their 'authenticity' using symbols and signals that communicate their belonging to a particular organised crime group. However, as actors in an extortive strategic interaction (Goffman, 1970; Best, 1982) have implicit incentives to deceive their opponents, explicit signals and symbols can still be mimicked. Therefore, victims may be forced to rely on additional cues gleaned from the interaction to determine whether the threats should be believed (Luckenbill, 1982).

In a communicative interaction, the medium used is itself a source of information that can deeply influence how the message being exchanged is interpreted (McLuhan, 1964). Thus, in the context of extortion, the communication medium or channel used by the threat's sender (the extorter) to convey the message (the actual avowed threat) to the receiver (the extorted) can have a strong bearing in believability. As O'Hair, Bernard and Roper (2011) note, 'those who threaten others have a number of communication channels available to them... Channel selection is sometimes a spontaneous and convenient choice, whereas in cases of predation the choice of channel can be quite strategic' (p. 57).

According to media richness theory (Daft and Lengel, 1986; Lengel and Daft, 1989), communication channels can be classified based on the amount of information (verbal,

non-verbal, visual, etc.) they can convey. Lengel and Daft (1989) classify face-to-face interactions as the richest form of media, while other interactive media, such as telephone and other technology-mediated channels, are considered relatively leaner, as they 'lack the element of "being there"' (p. 226). Senders strategically select rich media when they aim to reduce uncertainty and equivocality (the possibility of deriving several meanings) (Daft and Lengel, 1986, p. 555).

## Types of extortion and communication channels

According to the media richness of the channels used to convey threats, extortion incidents in Mexico can be classified into 'remote' (lean media) and 'in-person' (rich media) extortion. Remote extortion relies on the use of technology mediated channels to convey the threat. In the most common type of remote extortion, threats are communicated over the telephone. According to ONC (2014), there are several variations of how telephone extortion is carried out. Incidents generally begin by offenders cold-calling victims and attempting to convince them to pay an amount into a bank account or mobile phone number. To achieve this, offenders use advanced-fee scams,<sup>2</sup> 'virtual kidnappings',<sup>3</sup> or claim to be a member of an organised crime group<sup>4</sup> and threaten to carry out severe punishments if victims do not comply with the demands (ONC, 2014, p. 30). Particularly for the last two types, offenders use personal details obtained on social media, through data breaches or in previous calls, to convince victims of the authenticity of the threats (ONC, 2014).

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<sup>2</sup> An advanced-fee scam is 'a form of fraud ... in which the victim is invited to pay financial fees in the hope of sharing in a much greater reward' (Daintith and Wright, 2008). For example, the extortionist claims the victim has won a prize from a contest or raffle, but requires the victim to pay a sum before receiving the reward. Sometimes, the scams are used to obtain personal details that will be used in subsequent calls for virtual kidnappings or threatening calls (ONC, 2014, p. 30).

<sup>3</sup> In a virtual kidnapping, offenders pretend to have kidnapped a family member and request a ransom payment. Offenders sometimes use stand-ins for kidnapping 'victims' pleading for help and mount abuse situations while the extortion victim is on the phone, hoping to convince them that a real kidnapping has taken place (Moor and Remijnse, 2008, p. 8).

<sup>4</sup> A variation of this scheme is for offenders to pretend they are government officials and 'blackmail' victims by threatening to arrest an acquaintance or family member who has been supposedly detained at an airport, customs office or similar facilities (ONC, 2014, p. 30).

The internet is another common channel used in remote extortion. Internet extortion incidents rely on the same tactics as telephone extortion, the difference being that offenders contact victims via email, social media, or electronic means other than a telephone (ONC, 2014, p. 32). An exception is 'ransomware' extortion, which relies on malware—a computer virus—that encrypts the victim's computer or infrastructure until a ransom is paid, usually using a cryptocurrency such as bitcoin (Darrel, 2013, 'ransomware'). Whereas in ransomware incidents the threats are levelled against digital assets (the data or applications under ransom), the threats in internet extortion incidents are usually aimed at the victims' personal safety.

On the other hand, in-person extortion incidents rely on face-to-face communication to convey threats. In-person incidents are also known as *cobro de piso*,<sup>5</sup> and are thought to be carried out by 'authentic' members of an organised crime group. In these incidents, offenders threaten victims with damage, assault, death, or other harms if they refuse to pay a fee (or provide some requested service) (Mugellini, 2013b; ONC, 2014). Mugellini (2013b) notes that offenders can also offer 'protection' from other criminal groups in these types of incident (p. 34). Furthermore, ONC (2014) considers that *cobro de piso* extortions involve periodic payments at a set frequency—e.g. monthly, weekly. However, in-person extortion incidents can also be committed by non-organised criminals who demand one-off payments.

Thus, given that use of leaner media has been associated with a higher likelihood of engaging in deceptive behaviour, and that receivers are less likely to trust messages sent using leaner media (Rockmann and Northcraft, 2008), it is reasonable to expect that victims would be more likely to believe in-person extortion threats are authentic, when

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<sup>5</sup> A literal translation for *cobro de piso* is a 'fee for the floor', and refers to a form of illicit tax that organised crime groups levy on businesses operating in their territories (Díaz-Cayeros, Magaloni and Romero, 2015).

compared to remote extortion threats, and would therefore be more likely to comply with the former than the latter. The first hypothesis in this study is:

- **H1:** The likelihood of compliance with an extortion threat is higher in cases of in-person extortion incidents, when compared to remote extortion incidents.

### Other factors affecting extortion compliance

In addition to threat believability, Luckenbill (1982) suggests that threat compliance is also affected by the severity of the potential punishment, the offender's capacity to inflict such punishment, and the victim's capacity to oppose or resist the threat (p. 811-812).

Anecdotal accounts of punishments inflicted on noncompliant victims—which include homicide, assault, arson and other extensive criminal damage (e.g. Guerrero-Gutiérrez, 2011; Wilkinson, 2011; Hale, 2016)—suggest that the punishments promised in an extortion interaction are probably quite severe. However, as the incident-level dataset used in this study does not contain precise information on the severity of punishment for noncompliance, it is not possible to ascertain its effect on compliance patterns.

The effect of the offender's capacity to inflict punishment on the likelihood of compliance cannot be understood in isolation, but must also be considered with respect to the victim's capacity to resist such punishment. As compliance is assumed to be the result of a rational calculus, victims are more likely to comply if they perceive that the offender's capacity to punish is greater than their own capacity to resist, i.e. when there is a perceived power asymmetry in favour of the offender (Michener, Lawler and Bacharach, 1973; Bacharach and Lawler, 1976; Luckenbill, 1982).

However, as Bacharach and Lawler (1976) note, 'power capabilities are typically ambiguous; hence conflicting parties must use situational cues to form subjective power estimates' (p. 3). Common situational factors that clearly signal power asymmetry in favour of the offender are the presence of lethal resources (i.e. weapons, Luckenbill, 1982, p. 814) or of multiple offenders. Thus, the second set of hypotheses is:



- **H2.a:** The likelihood of compliance with an extortion demand is higher when offenders use weapons.
- **H2.b:** The likelihood of compliance with an extortion demand is higher when there is more than one offender involved.

Furthermore, research on organised crime suggests that contextual factors can also have an effect in determining the likelihood of extortion compliance (Gambetta, 1994; Smith and Varese, 2001; La Spina *et al.*, 2014, 2016). Such contextual factors are not unique to each incident and instead represent area-level characteristics related to the perceived costs of using violence and the reputation of organised crime groups in a victim's area. The perceived costs of violence can be captured using a general measure, such as the strength of the rule of law. On the other hand, the reputation of organised crime groups can be captured by their readiness to use violence (e.g. the amount of crimes involving weapons), and by the type of illicit markets they are involved in (e.g. groups involved in drug-trafficking are usually less likely to be involved in extortion) (Estévez-Soto, Johnson and Tilley, 2020). Thus, the third set of hypotheses is:

- **H3.a:** The likelihood of compliance with an extortion demand is higher in areas where the rule of law is weaker.
- **H3.b:** The likelihood of compliance with an extortion demand is higher in areas with more weapon-related crimes.
- **H3.c:** The likelihood of compliance with an extortion demand is higher in areas with fewer drug crimes.

Victim vulnerability can similarly be classified into situational and contextual measures. At the situational level, victim characteristics may have a part to play. For example, research suggests that some business types are inherently more susceptible to intimidation (e.g. restaurants, Schelling, 1971, p. 646), and empirical studies confirm that some business types are more likely to comply with extortion demands (Chin, Fagan and Kelly, 1992, p. 641; Estévez-Soto, Johnson and Tilley, 2020). Business size could also be indicative, as smaller businesses are inherently more vulnerable than larger businesses. Lastly, the

number of years that a business has been in operation could be negatively associated with compliance, as older businesses can be expected to have more social capital—a source of power to resist extortion demands (Anzola, 2016).

- **H4.a:** The likelihood of compliance with an extortion demand is associated with business type.
- **H4.b:** Small businesses are more likely to comply with extortion demand, when compared to larger businesses.
- **H4.c:** Newer businesses are more likely to comply with an extortion demand, when compared to older businesses.

The literature on repeat victimisation suggests that, in some crimes, the probability of suffering a repeat is associated with how the victim responds to a previous offence (Farrell, Phillips and Pease, 1995, p. 396). In particular, a study on repeat extortion victimisation found that the number of repeated extortions suffered is not likely to be explained by victim or area characteristics, suggesting that event dependence may play an important role in determining future risk (Estévez-Soto, Johnson and Tilley, 2020), meaning that an initial event could entice further attempts, as the victim is known to be acquiescent. Thus, in the case of extortion, it is reasonable to expect an association between the likelihood of compliance and the amount of extortion incidents suffered by a business.

Furthermore, Estévez-Soto, Johnson and Tilley (2020) also found strong associations between corruption victimisation and extortion. While it is not yet clear why this association exists, it is possible that businesses that suffer more corruption victimisation are inherently more vulnerable to extortion. Thus, it is reasonable to expect an association between business-level experiences of corruption and the likelihood of compliance with extortion.

- **H5.a:** The likelihood of compliance with an extortion demand is positively associated with the amount of extortion demands a victim receives.

- **H5.b:** The likelihood of compliance with an extortion demand is positively associated with the amount of bribes victims are asked to pay.

## Data and measures

The study uses the 2014 sweep of Mexico's nationally representative commercial victimisation survey, ENVE. The survey is conducted biennially, sampling all business sectors—except those in agriculture and the public sector. As is common in other victimisation surveys (e.g. UNODC/UNECE, 2010), the instrument is divided in two parts. First, a screening questionnaire records prevalence (whether a respondent was victimised) and incidence (how many crimes victims experienced) measures for crimes that took place during the previous calendar year (in this case 2013), as well as gathering business characteristics. The second section—the victim form—is used for victimised businesses only, capturing details on each crime incident reported in the screening questionnaire—however, there is a cap of 7 incidents per crime type per business (INEGI, 2014c). As compliance with extortion demands is captured at the incident level, the study uses information primarily from the victim forms, with business-level data coming from the screening questionnaire (for a detailed review of the ENVE, see Jaimes Bello and Vielma Orozco, 2013), and area-level data from other sources (detailed in the following sections).

The survey has nationwide coverage and is representative at the national and subnational scale (state level). In 2014, a stratified sample of 33,479 premises<sup>6</sup> was drawn from a sampling frame comprising 3.8 million units (INEGI, 2014a, 2014b). Interviews were conducted through face-to-face interviews, with computer-assisted telephone interviews to follow up (Jaimes Bello and Vielma Orozco, 2013). The response rate was around 85% (INEGI, 2014b).

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<sup>6</sup> The sampling unit for all business types except mining, transport and construction was premises; in the exceptions, the unit was the business (INEGI, 2014b).

To protect anonymity, access to the disaggregated incident-level responses is restricted by the data provider. Thus, analyses were carried out remotely, using custom-written R scripts<sup>7</sup> (R Core Development Team, 2015) processed by INEGI staff in Mexico City.

## Dependent variable

The dependent variable, compliance with extortion, is captured in the victim forms after businesses have indicated that they suffered at least one extortion incident in 2013.<sup>8</sup> For each incident, compliance was coded as '1' when respondents responded 'yes' to the question 'did you comply with the extortionist's demands?' (*¿Entregó lo que le exigió el extorsionador?*, INEGI, 2014c), and '0' if otherwise. The survey captured 3,369 extortion incidents (among 2,259 victimised businesses). Compliance was observed in only 425 incidents (12.6%), whereas compliance was not observed in the remaining 2,944 incidents (87.4%).

## Independent variables

This section describes the independent variables selected to test hypotheses. Incident-level variables are presented first, followed by victim- and area-level measures respectively.

Categories with very small number of observations were recategorised to avoid complete and quasi complete separation, which occur when a categorical variable perfectly (or almost perfectly) predicts the value of the dependent variable (i.e. when all or nearly all observations of a particular category have the same value in the dependent variable). The presence of complete and quasi complete separation means that estimations using maximum-likelihood estimation will be unreliable (see Zeng and Zeng, 2019).

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<sup>7</sup> Available upon request.

<sup>8</sup> The specific question in the screening questionnaire is did the business suffer in 2013 'any kind of threat or coercion committed against the local unit's owner or staff for the purpose of obtaining money, goods or forcing them to do or stop doing something'? (Jaimes Bello and Vielma Orozco, 2013, p. 172).

*Extortion type* (H1) was recorded as 'telephone extortion', 'by internet/email', 'on the street', 'on the premises', '*cobro de piso*', and 'other'. Incidents categorised as 'telephone' and 'internet' extortion were recategorised as 'remote' extortion, while incidents classified as 'other' were dropped from the analysis.<sup>9</sup> According to INEGI (2014a), 'on the street', 'on the premises', and '*cobro de piso*' incidents are considered to be 'in-person' extortion incidents, though there is no precise distinction provided for *cobro de piso* and other in-person extortions. Nonetheless, the distinct categories were retained to explore if they are associated to different patterns of compliance.

*Weapon use* (H2.a) was determined based on responses to the question 'Did offenders have weapons?', with possible 'no', 'yes', and 'dk/da' options.<sup>10</sup> The *number of offenders* involved in an incident (H2.b) was recorded using the following categories: '1', '2', '3', '4', '5', '6 or more', and a dk/da option. However, as '5' and '6 or more' exhibited complete and quasi complete separation, these categories were combined with '4' into a '4 or more' category.

Moving on to business-level variables, *business type* (H4.a) was captured by the survey according to the North American Industrial Classification System (SCIAN, INEGI, 2007). However, using this classification system, there were some categories with few or no observations. Thus only the following<sup>11</sup> categories were kept in a compromise between avoiding separation and maintaining theoretical relevance: 'Retail', 'Wholesale', 'Hotels, restaurants and bars', 'Transport', 'Other services', and 'Industry'. *Business size* (H4.b) categories were defined by the survey according to the number of employees.<sup>12</sup> The *business age* (H4.c) category was calculated by subtracting the year respondents reported

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<sup>9</sup> There were only 8 (0.2%) incidents of internet extortion and 9 (0.3%) incidents categorised as 'other'.

<sup>10</sup> Unless otherwise noted, missing values for independent variables were classified as 'dk/da'.

<sup>11</sup> Categories with few observations were aggregated into the higher-order classification offered by the SCIAN.

<sup>12</sup> There are four categories: Micro businesses have 10 employees or fewer; small businesses have between 11 to 50 employees (11 to 30 in the commerce sector); medium businesses in industry employ between 51 to 250 people, 31 to 100 in commerce, and 51 to 100 in services; large businesses are those with 101 or more employees (251 or more in industry).

that their business started operations from the survey reference year (2013). Then, businesses were grouped in quintiles from the 20% youngest to the 20% oldest.

The number of extortion incidents (H5.a) suffered by businesses—henceforth *extortion concentration*—was taken from the uncapped extortion victimisation experiences reported in the screening questionnaire. Similarly, the amount of bribes (H5.b) demanded from businesses—henceforth *corruption incidence*—was taken from the uncapped figure captured in the screening questionnaire in response to the question:<sup>13</sup> 'In total, how many separate acts of corruption did you suffer during 2013?' (INEGI, 2014d). As the estimates for these variables were overdispersed, a log transformation was used.<sup>14</sup>

State-level variables measure variation at the state-level.<sup>15</sup> The strength of the *rule-of-law* (H3.a) was measured using a revised index calculated by IMCO (2016); a composite 100 point score composed of kidnapping incidence, vehicle theft, costs of crime, total personal and household crime incidence, the crime underreporting rate, fear of crime, availability of notaries, and contract enforcement (higher scores represent a stronger rule of law). For this study, homicide rates were excluded from the index, as these were collinear with other crime covariates used. Measures for *weapon-related crimes* and *drug-related crimes* (H3.b and H3.c) were taken from the Executive Secretariat of the National System for Public Security (*Secretariado Ejecutivo del Sistema Nacional de Seguridad Pública*, SESNSP, 2015) as reported in 2013 by the Attorney General's Office (*Procuraduría General de la República*,

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<sup>13</sup> An act of corruption refers to a situation where a public servant—or a third party acting on their behalf—directly asked for, suggested, or set the conditions for the payment of a bribe by the business. (Jaimes Bello and Vielma Orozco, 2013; INEGI, 2014d)

<sup>14</sup> As corruption incidence includes 0, the function  $\log(x + 1)$  was used for this variable.

<sup>15</sup> Mexico is divided into 32 autonomous states.

PGR). Lastly, the area-level *corruption prevalence*, an *economic competitiveness* index,<sup>16</sup> the *population*, and the *number of businesses* surveyed in each state were used as controls.

The state-level variables weapon crimes, drug crimes, corruption prevalence, population, and the number of surveyed businesses were log-transformed to reduce overdispersion. All state-level variables were centred around the national mean<sup>17</sup> to facilitate interpretation.

Descriptive statistics for the data used are presented in the Appendix.

## Analytical method

In order to mitigate confounding variables and to estimate the partial effect of each variable, the relationship between compliance and the selected independent variables must be evaluated using a multiple regression method. As the study is concerned with testing the effects of several independent variables on the likelihood of compliance—a dichotomous dependent variable with responses taking either 0 or 1 values—a multiple logistic regression was used. However, while this model controls for different extortion types, it ignores the fact that other predictors may operate differently in remote versus in-person extortions.

As the cross-tabulations in Table 1 indicate, compliance varies dramatically according to extortion type. While 12.6% of all incidents led to compliance, only 5.4% of remote extortion incidents led to compliance. For in-person extortion incidents, compliance was observed in between 49.6% and 66.7% of events. Moreover, a Pearson's  $\chi^2$  test of independence indicated that the differences in compliance rates according to the type of incident were statistically significant ( $p < 0.001$ ). Furthermore, considering the

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<sup>16</sup> The index used was a slight revision of IMCO's competitiveness index (2016), based on 9 subindices measuring sustainable development, social development and health, political stability, government effectiveness, labour productivity, economic stability, infrastructure, and international connections,

<sup>17</sup> Log transformed variables were centred around the log of the national mean ( $\log(x) - \log(\bar{x})$ ).

differences in modus operandi between remote and in-person extortion, it is reasonable to expect that some predictors may play a bigger role in one type of extortion when compared with the other. Thus, two additional models were estimated, one restricting incidents to remote extortion, while the other used in-person extortions only.

Table 1 about here

However, an additional complication is that the data have a hierarchical structure, as some businesses suffered more than one incident and businesses are grouped within states (see Table 2). This is a violation of the assumption of independence for logistic regressions. To mitigate this violation, clustered standard errors (Zeileis, 2006; Berger, Graham and Zeileis, 2017) with victim- and state-level clusters were used.

Table 2 about here

## Results

Results of the models estimated can be found in Table 3. The 'All incidents' model estimates the conditional odds of complying with an extortion demand for all the incidents in the data, whereas the 'Remote' and 'In person' models estimate the conditional odds for subsets of incidents where the extortion attempts took place remotely or in person, respectively. Wald  $X^2$  goodness-of-fit statistics suggest that the three models are significantly different from a null specification. Generalised variance-inflation factors (Fox and Monette, 1992) indicated that multicollinearity was not present.

Table 3 about here

As coefficient estimates are in the log-odds scale, interpretation of the exponentiated coefficients ( $e^B$ ), also known as odds-ratios, is more straightforward (see OR columns). The odds-ratio is interpreted as the multiplicative effect on the odds of observing 1 in the dependent variable, for a one-unit increase in the independent-variable. For categorical



independent variables, the odds-ratio is the multiplicative change in the odds in reference to a base category.

In what follows, I describe the partial effect of each variable, thus the effect sizes refer to the expected change in the dependent variable after controlling for all other variables. In the 'All incidents' model, the odds-ratios for extortion type categories were significant at the 99.9% confidence level and greater than 1, suggesting that in-person extortion incidents are more likely to involve compliance than remote extortion (the reference category). In this model, street and in-premises extortion incidents were 7.67 and 8.33 times more likely to involve compliance than remote extortion incidents. Similarly, *cobro de piso* incidents were 16 times more likely to lead to compliance than remote extortion incidents.

The estimates from the 'In person' model further characterise the relationship between compliance and extortion type. According to this model, the likelihood of compliance with an extortion incident in a business's premises is not significantly different from the likelihood of compliance with an extortion incident that takes place on the street (the reference category for this model). In contrast, the odds-ratio for *cobro de piso* incidents was greater than 1 and significant at the 95% confidence level, meaning that these type of incidents were associated with greater rates of compliance than street extortion incidents. Specifically, *cobro de piso* incidents were 2.48 times more likely to lead to compliance than street extortion, when considering in-person incidents only.

The effect of most other independent variables appears to be more muted; however, the models fitted to different subset of extortion incidents suggest that the partial effects on compliance of these independent variables are different for remote and in-person extortion.

The number of offenders involved in an extortion incident appear to be significant and positive in the 'All incidents' model, however, the estimates from the 'Remote' and 'In

person' models suggest that the relationship is only significant for remote extortion incidents, as the coefficients for the number of offenders are not significant in the 'In person' model. For remote extortion, incidents with 2, 3 and 4 or more offenders are 2.95 ( $p > 0.05$ ), 4.51 ( $p > 0.05$ ) and 4.54 ( $p < 0.01$ ) times more likely to lead to compliance than incidents with only one offender, respectively.

In contrast, weapon use was significant ( $p < 0.001$ ) and positive in all three models, which suggests that incidents in which a weapon was used are more likely to lead to compliance for all extortion types. However, the magnitude of the coefficient was different for remote and in-person extortion incidents. The use of a weapon in a remote extortion incident was associated with a 12.7 times greater odds of compliance, whereas for in-person incidents weapon use was associated with 2.96 times greater odds of compliance.

Regarding business-level variables, only extortion concentration, corruption incidence and business type had a significant effect on compliance, though again the effects varied by extortion type.

Extortion concentration was negative and significant ( $p < 0.001$ ) for all incidents, however, the 'Remote' and 'In person' models suggest that the relationship was only significant ( $p < 0.001$ ) for in-person incidents. A 10% increase<sup>18</sup> in the number of extortion incidents suffered by a business was associated with an 8% decrease in the odds of compliance with an in-person extortion incident.<sup>19</sup>

Similarly, corruption incidence was significant ( $p < 0.001$ ) and positive for all incidents, but the secondary models suggested that the relationship was only significant ( $p < 0.01$ )

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<sup>18</sup> When the independent variable has been log-transformed, exponentiating the coefficient would give the change in the odds of observing the outcome for a 2.72 change in the independent variable. Thus, to facilitate interpretation, the odds-ratios for log-transformed variables can be instead calculated for a more familiar change, such as 10%. This is given by  $1.10^B$ .

<sup>19</sup> Percentage change on the odds of observing the outcome can be calculated from odds-ratios by subtracting 1 and multiplying by 100 ( $(OR - 1) * 100\%$ )

for in-person incidents. According to the 'In person' estimates, a 10% increase in the number of bribes experienced by a business was associated with a 10% increase in the odds of complying with an in-person extortion incident.

Most business types coefficients were not significantly associated with higher odds of compliance. The only exceptions are the 'Other services' and 'Industry' categories, which were significant at the 95% confidence level in the 'All incidents' model. However, the estimates from the 'Remote' and 'In person' models suggest that only the coefficient for 'Industry' is robust, and only in the case of remote extortions. The estimates suggest that businesses in the industrial sector are 77% less likely to comply with a remote extortion incident, when compared with retailers (the reference category). In contrast, the estimates for the 'In person' model suggest that all business types are as likely to comply with in-person extortion demands.

Business size and age were insignificant in all models, meaning that the likelihood of compliance was not affected by these variables in either remote or in-person extortion.

Area-level variables were mostly insignificant. Only the amount of weapon-related crimes showed a significant and positive association with extortion compliance ( $p < 0.05$ ) in the 'All incidents' model; however, the coefficients for weapon-related crimes in the 'Remote' and 'In person' secondary models were not statistically significant, albeit both were positive.

## Discussion and conclusions

This study sought to answer why—despite a very high prevalence rate, and associations with violent punishments—extortion compliance is relatively rare in Mexico. Using incident-level data from Mexico's commercial victimisation survey—one of the largest exercises of its kind—the study tested whether situational-, victim-, and area-level factors influenced victims' decision to comply, using multiple logistic regression.

The first hypothesis tested was that the likelihood of compliance with extortion demands would be higher in cases of in-person extortion, when compared to remote extortion incidents, as it was assumed that threats conveyed by richer media channels (in-person extortion) would be more believable than those conveyed via leaner channels (remote extortion). The findings strongly support this hypothesis, as all in-person extortion categories (street, in-premises and *cobro de piso*) were associated with substantially higher likelihoods of compliance when compared with cases of remote extortion. It is unclear what specific characteristics distinguish *cobro de piso* incidents from other in-person incidents, as the survey does not provide a precise definition. However, the fact that the odds of compliance in *cobro de piso* incidents were significantly higher than the odds of compliance in street extortion incidents (in the 'In person' model), suggests that the distinction is relevant and should be considered further.

Hypotheses 2.a and 2.b tested whether power asymmetry in favour of the offender—operationalised as the presence of weapons and multiple offenders—increased the likelihood of observing compliance. The findings strongly supported hypothesis 2.a, as the presence of a weapon was significantly associated with higher odds of compliance in remote and in-person incidents. The marginal effect was much larger in the case of remote extortion, though this disparity can be explained by the much smaller baseline odds for this extortion type. In practice, the presence of a weapon increases the predicted probabilities for remote and in-person incidents to a similar level (57% for remote extortion and 52% for in-person extortion). In contrast, the findings supported hypothesis 2.b only in remote extortion, as incidents with more than one offender had consistently higher odds of compliance. This was not the case for in-person incidents, where the number of offenders had no effect on compliance. The findings suggest that after controlling for threat believability as captured by the in-person/remote distinction, additional markers of power asymmetry can have a substantive effect on a victim's decision to comply with an extortion demand, especially for remote extortion. However, further research—particularly of a qualitative nature—is needed to better understand how victims infer the presence of weapons or the number of offenders involved in remote extortion incidents.

Hypotheses 3.a, 3.b, and 3.c tested contextual factors that speak to the perceived costs of violence in the area where extortion incidents took place—the assumption being that compliance would be more likely in areas where the costs of violence are lower. The findings did not support hypotheses 3.a and 3.c: I failed to find any relationship between extortion compliance and the strength of the rule of law (H3.a), or the amount of drug crimes in the state where businesses operate (H3.c). In contrast, the findings partly supported hypothesis 3.b: incidents in areas with more weapon-related crimes, and hence organised crime groups with more demonstrated readiness to use violence, were more likely to lead to compliance. However, this relationship was not significant in the secondary models, which weakens the evidence supporting hypothesis 3.b. It is unclear why the relationship between weapon crimes and compliance was not significant in the secondary models, however, a potential explanation may be the reduced statistical power of the 'Remote' and 'In person' models, as they use smaller samples than the 'All incidents' model.

Hypotheses 4.a, 4.b, and 4.c related to whether business characteristics were associated with extortion compliance, under the assumption that some businesses are more inherently vulnerable to intimidation. The findings suggested that most business types (4.a) have the same likelihood of complying with extortion demands for all extortion types. The main exception was businesses in the industrial sector, which were less likely to comply with remote extortion incidents. Furthermore, there was no evidence of a relationship between extortion compliance and business size (H4.b) or business age (H4.c).

On the other hand, hypotheses 5.a and 5.b related to whether dynamic characteristics that speak to business vulnerability—extortion concentration and corruption incidence—had an effect on extortion compliance. In contrast to what was predicted, the more extortion incidents a victim experienced, the less likely they were to comply, though this was only significant for in-person extortion. Given the cross-sectional nature of the data, it is not possible to establish the direction of the causal effect; it may be that suffering more extortion incidents helps victims properly assess risks and avoid complying, or it could reflect repeated attempts by offenders to harass victims into compliance after being

refused. However, establishing the direction of the effect would require longitudinal data that are not available. On the other hand, the relationship between corruption incidence and compliance was consistent with what was expected: the amount of bribes that victims were asked to pay was positively associated with the likelihood of compliance, though only for in-person incidents.

There are limitations to the findings reported here. Extortion against businesses is notoriously difficult to measure: on the one hand statistics based on crimes reported to the police rarely disaggregate crimes by victim type; on the other, extortion incidents are usually underreported, as victims fear reprisals. While, commercial victimisation surveys can overcome such limitations to an extent (for a review, see Mugellini, 2013c), the estimates and patterns captured by surveys suffer from well-known limitations involving memory decay, telescoping effects and victims' reticence to report certain experiences (Skogan, 1986; UNODC/UNECE, 2010; Mugellini, 2013a). Due to these limitations, Mugellini (2013a) notes that victimisation estimates tend to underestimate the 'true' prevalence and incidence of crimes, though they do represent an improvement over other crime statistics. However, such underestimates notwithstanding, the large sample size and high response rate help assuage fears of any systematic biases affecting the reliability of the patterns observed.

The study has important academic implications. It contributes to the literature on organised crime by highlighting the role of situational characteristics of extortion incidents in determining compliance and suggesting that contextual factors play a less relevant role, in contrast with existing research (see La Spina *et al.*, 2016, 2014).

The research also contributes to the literature on decision theory (e.g. Konrad and Skaperdas, 1997, 1998; Luckenbill, 1982; Gambetta, 1994; Smith and Varese, 2001) by empirically testing theoretical predictions and experimental findings regarding the role of threat believability. Furthermore, the study introduces the role of the medium through which extortion threats are conveyed as an important factor affecting threat believability,

using the theoretical framework of media richness theory (Daft and Lengel, 1986; Lengel and Daft, 1989).

Lastly, the research contributes to the literature on victimisation, specifically the research on repeat extortion victimisation (see Estévez-Soto, Johnson and Tilley, 2020). The different compliance patterns observed for remote and in-person incidents suggest that these are quite distinct types of offences. Thus, future studies on extortion victimisation should analyse the patterns of concentration by extortion type, as they may be associated to different opportunity structures. To facilitate this, crime surveys should measure remote and in-person extortion as different crimes, rather than as categories of the same crime type. Doing so would allow capturing uncapped measures of extortion victimisation per type, and would allow capturing more meaningful follow-up questions in the victim forms that take into account the distinct modus operandi associated with each extortion type. Such data could then be used to deepen our understanding of the risk factors associated with extortion victimisation and compliance, and inform more effective interventions to control these crime types.

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*Table 1: Extortion compliance rates according to the type of extortion suffered. Differences in compliance rate according to type of extortion are statistically significant ( $p < 0.001$ ), according to a  $\chi^2$  test of independence.*

	No	Yes	Total
All incidents	2944 (87.4%)	425 (12.6%)	3369 (100%)
<i>Extortion type</i>			
Remote	2700 (94.6%)	153 (5.4%)	2853 (100%)
Street	27 (50.0%)	27 (50.0%)	54 (100%)
Premises	186 (50.4%)	183 (49.6%)	369 (100%)
Cobro de piso	31 (33.3%)	62 (66.7%)	93 (100%)

*Table 2: Descriptive statistics illustrating the nesting in the data.*

	Incidents	Businesses	States
Incidents	3369		
Businesses	avg: 1.49 [1-7]	2259	
States	avg: 105 [27-257]	avg: 70.6 [19-179]	32

Table 3: Estimates from multiple logistic models of extortion compliance.

	All incidents			Remote			In person		
	B	(SE)	OR	B	(SE)	OR	B	(SE)	OR
Intercept	-2.49	(0.39)***	0.08	-2.26	(0.52)***	0.10	-1.02	(0.66)	0.36
<i>Extortion type</i> <sup>‡</sup>									
Street	1.98	(0.35)***	7.23						
Premises	2.09	(0.23)***	8.11				0.25	(0.44)	1.28
Cobro de piso	2.77	(0.25)***	16.00				0.91	(0.39)*	2.48
<i>Num. offenders (I)</i>									
2	0.73	(0.27)**	2.08	1.08	(0.49)*	2.95	0.33	(0.24)	1.39
3	0.61	(0.45)	1.85	1.51	(0.60)*	4.51	-0.22	(0.32)	0.80
4+	0.65	(0.23)**	1.91	1.51	(0.54)**	4.54	0.34	(0.31)	1.41
Unknown	-0.22	(0.30)	0.81	-0.06	(0.36)	0.94	-0.30	(0.59)	0.74
<i>Weapon used (no)</i>									
Yes	1.00	(0.20)***	2.72	2.54	(0.48)***	12.74	1.09	(0.31)***	2.96
Unkown	0.25	(0.23)	1.28	-0.15	(0.34)	0.86	0.77	(0.46)	2.16
log(Extortions)	-0.56	(0.16)***	0.95	-0.44	(0.22)	0.96	-0.93	(0.19)***	0.92
log(Bribes) <sup>†</sup>	0.53	(0.13)***	1.05	0.27	(0.16)	1.03	0.99	(0.34)**	1.10
<i>Business type (retail)</i>									
Wholesale	-0.09	(0.27)	0.92	-0.43	(0.34)	0.65	0.50	(0.36)	1.64
Hotel, restaurant or bar	-0.26	(0.25)	0.77	-0.50	(0.39)	0.60	-0.02	(0.36)	0.98
Transport	0.83	(0.47)	2.28	0.69	(0.54)	1.99	1.14	(0.60)	3.12
Other services	-0.46	(0.19)*	0.63	-0.39	(0.23)	0.68	-0.56	(0.29)	0.57
Industry	-0.46	(0.21)*	0.63	-1.12	(0.33)***	0.33	0.12	(0.37)	1.13
<i>Size (large)</i>									
Medium	-0.24	(0.34)	0.79	-0.24	(0.41)	0.79	-0.04	(0.47)	0.96
Small	-0.04	(0.33)	0.96	-0.39	(0.44)	0.67	0.66	(0.46)	1.94
Micro	-0.13	(0.27)	0.88	-0.38	(0.36)	0.69	0.48	(0.46)	1.62
<i>Age (0-5)</i>									
6-9	0.03	(0.18)	1.03	0.00	(0.29)	1.00	0.05	(0.39)	1.05
10-14	0.12	(0.30)	1.13	0.10	(0.38)	1.10	0.28	(0.32)	1.32
15-23	-0.29	(0.23)	0.75	-0.25	(0.22)	0.78	-0.08	(0.44)	0.93
24+	0.12	(0.24)	1.13	0.38	(0.30)	1.46	-0.07	(0.44)	0.93
<i>State-level</i>									
Rule of law	-0.01	(0.01)	0.99	-0.01	(0.01)	0.99	-0.01	(0.01)	0.99
log(Weapon crimes)	0.37	(0.18)*	1.04	0.36	(0.20)	1.04	0.15	(0.23)	1.01
log(Drug crimes)	-0.13	(0.13)	0.99	0.00	(0.15)	1.00	-0.10	(0.17)	0.99
log(Corruption preval.)	-0.34	(0.22)	0.97	-0.53	(0.22)	0.95	-0.20	(0.32)	0.98
log(Population)	0.07	(0.19)	1.01	-0.35	(0.19)	0.97	0.47	(0.22)	1.05
log(N businesses)	0.22	(0.41)	1.02	0.35	(0.37)	1.03	0.54	(0.73)*	1.05
Competitiveness	0.01	(0.01)	1.01	0.00	(0.01)	1.00	0.01	(0.01)	1.01
Wald $\chi^2$		36199.00***			1956.30***			1411.10***	
$\chi^2$ df		30			27			29	
Observations		3369			2853			516	

Notes: \*\*\*p < 0.001; \*\*p < 0.01; \*p < 0.05; <sup>†</sup>log(x+1) was used. Odds-ratios (OR) were calculated by exponentiating the coefficient estimates ( $e^B$ ). However, odds-ratios for log-transformed variables were calculated for a 10% change in the predictor ( $1.10^B$ ). Standard errors were calculated using a robust variance-covariance matrix with business and state clusters. <sup>‡</sup>Extortion type reference category for All incidents model is *remote*, whereas for In person model the reference category is *street*. Reference categories for all other nominal variables are shown in parentheses.

## Appendix

Table 4: Descriptive statistics of variables used in the study.

	No (N=2944)	Yes (N=425)	Total (N=3369)
<b>Extortion type</b>			
Remote	2700 (91.7%)	153 (36.0%)	2853 (84.7%)
Street	27 (0.9%)	27 (6.4%)	54 (1.6%)
Premises	186 (6.3%)	183 (43.1%)	369 (11.0%)
Cobro de piso	31 (1.1%)	62 (14.6%)	93 (2.8%)
<b>Num. offenders</b>			
1	918 (31.2%)	104 (24.5%)	1022 (30.3%)
2	157 (5.3%)	99 (23.3%)	256 (7.6%)
3	54 (1.8%)	43 (10.1%)	97 (2.9%)
4+	37 (1.3%)	52 (12.2%)	89 (2.6%)
DK/DA	1778 (60.4%)	127 (29.9%)	1905 (56.5%)
<b>Weapon used</b>			
No	817 (27.8%)	128 (30.1%)	945 (28.0%)
Yes	73 (2.5%)	127 (29.9%)	200 (5.9%)
DK/DA	2054 (69.8%)	170 (40.0%)	2224 (66.0%)
<b>Extortion concentration</b>			
Mean (SD)	2.965 (4.054)	1.951 (2.347)	2.837 (3.894)
Range	1 - 40	1 - 24	1 - 40
<b>Corruption incidence</b>			
Mean (SD)	0.452 (3.179)	0.482 (1.053)	0.456 (2.995)
Range	0 - 98	0 - 6	0 - 98
<b>Business type</b>			
Retail	863 (29.3%)	164 (38.6%)	1027 (30.5%)
Wholesale	248 (8.4%)	41 (9.6%)	289 (8.6%)
Hotel, Rest. Bar	464 (15.8%)	49 (11.5%)	513 (15.2%)
Transport	90 (3.1%)	37 (8.7%)	127 (3.8%)
Other services	779 (26.5%)	78 (18.4%)	857 (25.4%)
Industry	500 (17.0%)	56 (13.2%)	556 (16.5%)
<b>Business size</b>			
Large	374 (12.7%)	54 (12.7%)	428 (12.7%)
Medium	565 (19.2%)	59 (13.9%)	624 (18.5%)
Small	911 (30.9%)	118 (27.8%)	1029 (30.5%)
Micro	1094 (37.2%)	194 (45.6%)	1288 (38.2%)
<b>Age (quintiles)</b>			
[0,5]	439 (14.9%)	78 (18.4%)	517 (15.3%)
[6,9]	594 (20.2%)	100 (23.5%)	694 (20.6%)
[10,14]	555 (18.9%)	88 (20.7%)	643 (19.1%)
[15,23]	711 (24.2%)	66 (15.5%)	777 (23.1%)
[24,212]	645 (21.9%)	93 (21.9%)	738 (21.9%)

*Table 5: Descriptive statistics of state-level variables used in the study.*

<b>State-level variables (N=32)</b>	Mean (SD)	Range
Rule of Law	54.39 (13.29)	21.37 – 78.70
Weapon crimes	559.62 (451.57)	31 – 1632
Drug crimes	526.91 (871.69)	37 – 3738
Corruption prevalence	40.12 (18.44)	14 – 101
Population in millions	3.70 (3.15)	0.70 – 16.37
N businesses	880.59 (236.42)	534 – 1657
Competitiveness	47.66 (8.51)	25.26 – 67.85