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The Paths of Effectiveness, Fairness and Legitimacy for Eliciting Public Confidence in Policing and Cooperation with the Police in Monterrey Metropolitan Neighbourhoods

Luis Alberto Reyes Figueroa

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Abstract

The extant research on Procedural Justice (PJ) theory has consistently tested its normative underpinnings (i.e. trust in police fairness) against instrumental competing frameworks (i.e. trust in police effectiveness) in influencing public confidence in policing (PCP) and cooperation with the police (CP). This literature also points out the relevant role that public perceptions of police legitimacy play in mediating those relationships. If people trust that the police are fair and effective, they are more likely to perceive them as legitimate. In turn, police legitimacy could elicit PCP and CP. However, this evidence has been largely produced in consolidated democracies, where crime and social disadvantage are lower than in Mexico. The limited evidence for Mexico suggests that 'trust in police effectiveness' might be just as influential as 'trust in police fairness'. This thesis draws on data from the Monterrey Metropolitan Area (MMA) and employed mix-methods for analysing the contribution of both aspects of trust and police legitimacy, while accounting for the concentration of crime and social disadvantage across Neighbourhood Areas. The results lend support to PJ claims, since 'trust in police fairness' is a more important antecedent of 'police legitimacy' than 'trust in police effectiveness'. The combined effect of the normative aspect of trust and 'police legitimacy' is also considerably stronger than that of the latter with the instrumental aspect of trust in enhancing PCP and CP. Moreover, the joined influence of 'trust in police fairness' and police legitimacy seems to mitigate the negative influence of neighbourhood characteristics on the outcome variables. These findings have important implications for the mix of policing strategies in the MMA –currently in conflict– such as establishing close relationships with the citizens. A closer relationship could help the police fight crime more effectively. The results also strongly suggest that the residents living in the most vulnerable conditions could benefit the most from fair and legitimate police behaviour.

Lay Summary

Public confidence in policing (PCP) and cooperation with the police (CP) have been widely studied in western anglophone democratic countries. As many other jurisdictions around the globe face similar challenges to improve or even sustain their citizens' confidence in, and cooperation with, their police forces, it has become critical to better understand what factors could contribute to elicit PCP and CP. A body of research produced under the rubric of procedural justice (PJ) theory has emphasised that 'trust in police fairness' and 'police legitimacy' could elicit PCP and CP more strongly than 'trust in police effectiveness'. However, there is less clarity on the applicability of these concepts to countries at different stages of economic and democratic development –such as Mexico. Therefore, this thesis examines whether 'trust in police fairness' is more influential than 'trust in police effectiveness' in enhancing police legitimacy, and if the combined effect of the latter and 'trust in police fairness' on PCP and CP is the strongest, taking into account individual and neighbourhood characteristics

The Monterrey Metropolitan Area (MMA) is a suitable context for this study since it is embedded in a jurisdiction with less democratic maturity. Its trajectory has also been different from other cities in Mexico and Latin America, and the uneven concentrations of violent crime and social hardship across neighbourhoods are worse than in most researched contexts in consolidated democracies. In addition, a dominant policing approach has mainly focused on the effectiveness of police strategies, encouraging law enforcement at the expense of the citizens, who often experience police abuse and corruption. This city thus provides a useful site for analysing how applicable the underpinnings of PJ theory are in a context whose characteristics are considerably distinct from those in anglophone democratic jurisdictions, such as the United Kingdom and the United States.

The analysis in this thesis used data from '*Así Vamos* 2018' survey and interviews with representatives of ten local organisations. Statistical analysis and hierarchical categorisation of qualitative data allowed us to explore the degree of applicability of PJ theory; and to analyse the interplay of 'trust in police fairness' and police legitimacy, to elucidate if these aspects weigh in more importantly than 'trust in police effectiveness' and other results-oriented strategies in influencing PCP and CP.

This analysis also explored the mediating role of ‘police legitimacy’ in the relationship between the aspects of trust and the outcome variables, as well as the role of PCP in mediating the relationship between ‘police legitimacy’ and CP. The analysis also considered whether ‘contact with the police’ could shape people’s perceptions on PCP and CP; and whether these contact-based perceptions may be more (or less) relevant than general perceptions. All these considerations were analysed, taking into account of neighbourhood-based crime and social hardship.

The results show that, even in a context with conditions different than those in previously researched settings in anglophone democratic countries, the underpinnings of PJ theory could enhance PCP and CP. Police legitimacy combines with ‘trust in police fairness’ more strongly than with ‘trust in police effectiveness’ for enhancing the outcome variables. These results lend support to the mediating role of ‘police legitimacy’, meaning that, if people trust that the police treat them fairly, they are more likely to consider them legitimate. In turn, this favours PCP and CP. The findings also support the role of PCP in mediating the relationship between ‘police legitimacy’ and CP. Police legitimacy and PCP work together for triggering in the citizens normative motivations for collaborating with the police. As the people perceive that the police share their interests and care about their needs, they express more willingness of CP for solving problems that affect them.

According to these results, having had recent ‘contact with the police’ is not significant. It seems that general perceptions are more important. However, the findings indicate that a procedurally fair police behaviour could contribute to improve the opinions of victimised individuals, who are more likely to contact the police. The findings also show ‘neighbourhood effects’ of crime and social hardship, as they vary across neighbourhood areas (NAs), although just some of those characteristics have significant negative effects on the outcome variables. A portion of their negative influence seems to be mitigated by ‘trust in police fairness’ and ‘police legitimacy’.

It is worth noting that most understandings of these key concepts of PJ theory match those documented in previous research in consolidated democracies. Even so, there are distinctive understandings. First, a sense of ‘closeness’ between the police and the citizens stands out. This is a form of ‘normative alignment’ –a key notion of police legitimacy–, which conveys to the people that the police are on their side and share the same ‘sense of right and wrong’. Second, police abuse and corruption

appear to be implicated in people's perceptions of 'trust in police fairness' and 'police legitimacy', which expands the understandings about these theoretical concepts.

Overall, these findings have implications for policing in the MMA, and possibly in settings with similar conditions and policing regimes. The last three federal administrations in Mexico have pushed through police reform to implement a 'social proximity' policing approach, aimed at establishing closer relationships between the police and the people. However, this reform and everyday operational activities of police forces lack specific roadmaps based on evidence. The analysis of this thesis strongly suggests that policing must place greater emphasis on the key aspects of PJ theory. Therefore, police officers must strive to behave fairly and provide clear explanations of their decisions and proceedings to the citizens, for encouraging closer relationships with them and, by extension, meeting the expectations of 'social proximity' policing.

Declaration

I declare that this thesis has been composed solely by myself (Luis Alberto Reyes Figueroa), that the work presented is entirely my own, and that this thesis has not been submitted for any other degree or professional qualification.

Luis Alberto Reyes Figueroa

Signed _ ____ On _31 December 2021_

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List of Abbreviations

AIC	Akaike Information Criteria
AGEB	Basic Geostatistical Area
BIC	Bayesian Information Criteria
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CONDIS	Concentrated Disadvantage
CP	Cooperation with the Police
EFA	Exploratory Factor Analysis
FACDYC	School of Law and Criminology
GIS	Geographic Information System
INEGI	Institute of Statistics and Geography
ICC	Intra-class Correlation Coefficient
ISES	Index of Social and Economic Stress
MAR	Missingness at Random
MLR	Maximum Likelihood with Robust Standard Errors
ML	Multi-Level
ML-SEM	Multi-Level Structural Equation Modelling
MMA	Monterrey Metropolitan Area
MAUP	Modifiable Aerial Unit Problem
NA	Neighbourhood Area
NL	Nuevo León
PA	Path Analysis
PCA	Principal Component Analysis
PCP	Public Confidence in Policing
PGIS	Participatory Geographic Information System
PJ	Procedural Justice
RAM	Reticular Action Model
REIC	Research Ethics and Integrity Committee
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modelling
SES	Socio-Economic Status
SPA	Spatial Autocorrelation
SR	Structural Regression
TLI	Tucker-Lewis Index
UANL	Autonomous University of Nuevo León

UK	United Kingdom
U.S.	United States
WLSMV	Weighted Least Squares Means and Variance

Chapter 1. Introduction

The concept of 'policing by consent' is deeply rooted in the hypothesis that people will cooperate with the police when they have confidence in them. It is a fundamental principle of policing that emerged in the 19th Century and has come to be recognised by law enforcement organisations across the globe. Since the 1980s, a plethora of academic researchers have explored and examined the specific factors that underpin public confidence in policing (PCP) and cooperation with the police (CP), under the umbrella of 'procedural justice' (PJ) theory. This framework places greater emphasis on which normative factors (related to the social values that the police ought to represent), rather than instrumental considerations (based on rational choice and results-oriented), shape people's attitudes towards them (Tyler and Jackson, 2013). Thus, PJ scholars consider 'trust in police fairness' to be more important than 'trust in police effectiveness' to strengthen public perceptions of 'police legitimacy' and, in turn, elicit PCP and CP. The empirical evidence produced so far, has consistently rendered results in support of PJ foundations (e.g. Jackson *et. al.*, 2013; Mazerolle *et. al.*, 2013). However, this body of research has tended to concentrate on democratic jurisdictions within the Global North, especially the United States and the United Kingdom.

While slower to emerge, PJ research has gradually gained prominence and relevance in Global-South jurisdictions (e.g. Sun *et. al.*, 2017; Tankebe, 2009). However, there is far less clarity within such jurisdictions about which attributes of police work people perceive to be most influential in terms of increasing their confidence in, and cooperation with, the police. There is a scarcity of research in Latin American contexts, but that which does exist suggests that there are contextual particularities which may play a role in shaping citizens' orientations towards the police differently, compared to what occurs in Global-North settings where the majority of PJ studies have been conducted (e.g. Bergman and Flom, 2012; Jackson *et. al.*, 2020).

For the purposes of this thesis, the Monterrey Metropolitan Area (MMA) of Mexico was identified as a relevant and suitable locus to conduct a study on PCP and CP, drawing on the PJ framework. On one hand, it is more similar to urban settings of the Global North than what might be expected within a Mexican context. For example, it is a prosperous city which did not experience the economic downturns and increases in crime rates that affected other urban centres in Mexico and Latin America during the 1990s. Until the early 2000s, violent crime levels were considerably lower than similar

metropolitan cities in Mexico and the national average. On the other hand, violent crime escalated at the end of the first decade and has not gone back to previous levels. It is unevenly distributed across the city, as it tends to concentrate in socially deprived neighbourhoods. Importantly, violent crime and social hardship are worse in this setting than in most researched contexts in Global-North jurisdictions. In addition, the influence of an authoritarian past explains the predominance of an instrumental policing approach, which adds to an already complex environment. This approach has prioritised '*mano dura*' (iron fist) for ensuring effectiveness in crime-fighting strategies. As a result, it has encouraged police abuse and corruption, which has strained their relationship with the citizens to a large extent –especially in worse-off neighbourhoods.

However, it is not evident that these factors have substantially altered people's views of the police. For example, it is discussed in this thesis that the data available for the MMA suggests a limited impact of effectiveness of police performance in enhancing PCP and CP. Therefore, other considerations, possibly normative aspects of police work, must be taken into account. Overall, these considerations make the MMA a useful site for analysing the applicability of the PJ framework, and whether it may require to be nuanced in contexts with similar characteristics and policing regimes.

This thesis provides one of the first empirical studies of PCP and CP, grounded in PJ theory, in a Mexican context. It draws on survey data and interviews from the MMA to examine the relative weight of 'trust in police fairness' and 'trust in police effectiveness' in eliciting 'police legitimacy' and, by extension, PCP and CP, taking account of the concentration of crime and social hardship across Neighbourhood Areas (NAs). The results support the foundations of PJ scholars, that 'trust in police fairness' is a more important antecedent of 'police legitimacy' than 'trust in police effectiveness'. The findings support the view that 'police legitimacy' mediates the relationships of 'trust in police fairness' and 'trust in police effectiveness' with PCP and CP. In addition, the combined effect of 'police legitimacy' and 'trust in police fairness' on the outcome variables is the strongest. This means that, when the people trust that the police treat them in fair and respectful ways, they are also more likely to perceive them as legitimate, net of instrumental considerations –such as police effectiveness in delivering visible presence– individual and neighbourhood characteristics. The most important notion which nurtures police legitimacy is 'moral alignment', in the form of 'closeness' between the people and the police. Therefore, even in neighbourhoods with high concentrations of crime and social hardship, where the police are usually

distrusted due to abusive conduct and corruption, the residents express their desire of having closer relationships with them –if they are treated with fairness and dignity. These findings show that policing in the MMA must place greater emphasis on procedurally just behaviours; rather than limiting the scope of police work to their effectiveness in patrolling, responding promptly to people's emergencies, or preventing and tackling crime. A process-based approach could strengthen police legitimacy in the eyes of the citizens and, in turn, improve PCP and CP.

1.1. PCP and CP in the criminological literature

There is a wide body of research in the Global North on people's attitudes towards the police (see: Mazerolle *et. al.*, 2013), especially in anglophone countries such as the United States (US) and the United Kingdom (UK). This literature provides an important distinction between 'trust' and 'confidence' in the police. The former entails normative and instrumental aspects, which work as antecedents of the latter. Such aspects of trust also shape people's perceptions on police legitimacy. In this literature, PJ theory has emerged as the most consistently tested and conceptually robust framework for understanding the interplay of the aspects of trust and police legitimacy with PCP and CP.

1.1.1. Trust and confidence

A detailed description of these two concepts is provided in Chapter 2. However, it is important for the purposes of this thesis to note a key distinction between them. According to Cao (2015), 'trust' implies personal expectations about police behaviour. It depends on the conduct that police officers present to people in interpersonal relationships. Thus, trust consists of individual judgements on whether the police fulfil their role as expected. On the other hand, confidence refers to the citizens' evaluations of the police as an institution, based on previous experiences. Several studies (i.e. Jackson and Bradford, 2010; Jackson and Sunshine, 2007) have identified instrumental and normative aspects of trust which are antecedents of confidence. For instance, the citizens' opinions about the performance and proceedings of police officers might influence the extent to which they have confidence in the police as an institution. Therefore, this distinction between trust and confidence provides

conceptual clarity, which is helpful for understanding that individual judgements that shape trust in police officers could impact PCP.

1.1.2. Macroscopic and empirical accounts of police legitimacy

The policing literature highlights the role of police legitimacy in shaping both PCP and CP. However, there are two distinct bodies of literature which grapple with the topic of police legitimacy. The first consists of macroscopic accounts, which are concerned with "disciplined theorizing on the ideals (and alternatives) that should inform the governance of crime" –more generally– and of policing –more specifically (Loader and Sparks, 2011: 21). It is within this broader normative discussion that such accounts have addressed 'police legitimacy', with special interest in the weakening of the police legitimation project in mature democracies (Reiner, 2010) due to social and economic transformations in 'late modernity' (Garland, 2000). This approach has been concerned with the conceptualisation of 'police legitimacy' according to democratic principles (Loader and Sparks, 2013). In this sense, any claim to the exercise of power by State institutions must be founded on the notion of 'justified authority' (Sparks, 1994). Hence, these accounts have provided objective criteria for pursuing police legitimacy in democratic terms. However, they have barely narrowed-down their macro-scale framework to a micro-scale level for studying specific contexts and, thus, have not produced sufficient evidence based on their theoretical underpinnings.

The second body of literature has empirically researched the potential of informal policing strategies –as opposed to formal enforcement– as a way of contributing to public peace and law-abiding conduct of the citizens (McCluskey *et. al.*, 1999). This work has documented how policing approaches of this type (i.e. neighbourhood and community policing) are useful in favouring close relationships with the citizens. PJ theory has been of great importance in developing a conceptual framework, according to which the quality of treatment and the quality of decision-making by the police, shapes people's perceptions about them (Tyler and Huo, 2002). PJ studies have shown that such aspects –fair and clear proceedings of police officers–, not only affect people's perceptions of police legitimacy in considerable and positive ways, but they could also outweigh instrumental concerns. In turn, positive evaluations of PJ aspects and police legitimacy seem to work together in favouring

PCP and CP (Jackson *et. al.*, 2012; 2013). The evidence consistently rendered in the Global North speaks to the robustness of PJ theory for analysing such conceptual relationships.

More recently, macroscopic voices (see: Loader and Sparks, 2003) have called on PJ scholars to address two particular limitations of their work. First, PJ must incorporate democratic standards to the conceptualisation of police legitimacy. The latter must be understood as both empirical and normative. Therefore, the most recent studies have expanded the conceptualisation of police legitimacy. To the idea of 'feelings of obedience' involved in the recognition of police power, PJ theory adopted the 'appropriateness' criterion, which refers to people's perceptions of the lawfulness of police actions and their moral affinity with them. This conceptualisation encapsulates a broader notion of justified power. Thus, the exercise of police authority depends on whether the citizens perceive that they have the right to do so. Second, researchers must test whether the PJ framework 'travels well' to other contexts. As mentioned above, PJ theory has been barely studied in Latin America, where the levels of violent crime and social hardship tend to be significantly worse than Global-North jurisdictions. Therefore, it is unknown the extent to which the characteristics of these settings might influence people's views about PCP and CP.

1.1.3. Studying PJ theory in the MMA

The considerations about the PJ framework mentioned above are of significant relevance in the MMA. Despite its economic prosperity, the MMA provides a more unequal context than in anglophone settings in the Global North where most PJ research has been produced. Violent crime tends to concentrate in most socially disadvantaged neighbourhoods; and both of these characteristics are considerably worse in the MMA than in countries such as the U.S. and the UK. This inequality also extends to policing, which is embedded within an institutional regime that reflects reminiscences of an authoritarian political culture. The police tend to target people with less favourable living conditions. These are usually the object of disproportionate exercise of police authority, associated to instrumentally oriented strategies that predominate in the MMA –such as preventing and tackling crime.

As in other less mature democracies, an authoritarian legacy could alter people's orientations towards the police. For example, normative commitments of people to the

police may be weaker than in jurisdictions of the Global North. The citizens might thus place higher expectations on police performance for controlling crime, than in consolidated democracies (Karakus, 2017). It could be that “during times of strife and difficulty, people become more focused on effectiveness of police performance and less concerned about issues of process and rights” (Sunshine and Tyler, 2003: 522). It could also be that police abuse and corruption drive people’s motivations. For example, they may acquiesce “out of fear and desperation, rather than respect and duty” (Kochel *et. al.*, 2013: 896).

These matters deserve attention. However, data sources that provide measures to compare the underpinnings of PJ theory with performance-based police strategies are scarce. The few official datasets focus, almost entirely, on police effectiveness in crime fighting. Even so, there is data available for the MMA, which allow us to evaluate the applicability of the PJ framework in a Mexican (and Latin American) context. The MMA has been an important pioneer place for recent developments in public safety, in Mexico. Some key policies, such as the creation of a new state police (*Fuerza Civil*), have been piloted in this city before rolling them out in other cities and states. In addition, the last two administrations of the State Government of Nuevo Leon have expressed their concern about improving PCP and CP, which speaks to the ongoing impulse that the Mexican government has given to police reform. This is of particular importance with respect to normative aspects of policing –concerned with closer relationships with the citizens– as outlined in the next section.

1.2. Policy context

Over the last fifteen years, a large-scale set of reforms in Mexico has aimed to modernise and professionalise criminal justice institutions, so that they respond more effectively to violent crime and, at the same time, improve their public image (see: Asch, Burger and Manqinq, 2011; Carbonell, 2012; Meyer, 2014). In this reform process, the federal government has placed the police at the central stage. The two former federal administrations (2006-2018) have sought to standardise the skills and protocols across all the police corporations (Rosas, 2012; SEGOB, 2018). This standardisation is important, due to the existence of several police forces in Mexico across the three levels of government –Municipal, State and Federal–, which share public security tasks, but have been characterised by a variety of policing approaches.

More recently, in 2019, the current federal administration came up with two milestone decisions: 1) the creation of the 'National Guard' –the national police body which replaced the former federal police–, and 2) a new "National Police Model" (NPSS, 2019). Both of these changes were inspired by a desire to implement a new policing approach founded on 'social proximity', which has been promoted across all police bodies, especially municipal forces. It draws on a normative philosophy in which the police ought to serve the citizens and take their needs into account (i.e. policing by consent). However, this implicitly requires the public to collaborate with the police in the co-production of security. This makes it necessary to improve public communication with, and perceptions of, the police (Guillén, 2016).

This policy reflects the government's understanding that the traditional policing approach in Mexico has limitations for improving public opinion of the police. The old model was centred on law enforcement and maintenance of public order, in which people's confidence was premised on increasing effectiveness in preventing and fighting crime and responding promptly to emergencies. In contrast, the social proximity model favours positive interactions with the citizens, to improve confidence in the police. This amelioration, in turn, could generate closer and more collaborative relationships between both sides. Even so, this shift in political support from instrumental priorities to a model concerned with PCP and CP risks falling short in practice, due to the paucity of research in Mexico for informing the effective implementation of such a policy.

1.3. Research context

There are few studies on PCP and CP in Mexico, and those that exist focus primarily on general individual characteristics (i.e. socioeconomic, age, gender). There is not enough research on the mechanisms and principles underlying the two different policing approaches outlined above, nor their potential role in shaping people's perceptions about the police. It is, thus, unclear whether the main attribute (social proximity) of the new police model could be more influential than instrumentally driven strategies for improving PCP and CP. The analysis of these two different policing approaches is, therefore, central to this thesis.

In addition, recent developments in criminological research in the Global North (i.e. Sampson, 2012) have noted the importance of accounting for the immediate

context in which individuals are embedded. In particular, the neighbourhoods where they live have been found to be relevant in moulding their attitudes towards the police (Brunton-Smith and Sturgis, 2011). However, the studies conducted so far in Mexico have failed to acknowledge that individuals might "draw on cues from their everyday experience of living in particular neighbourhoods" when forming their judgements about the police" (Norris, 2009: 2).

To understand the relevance that neighbourhood characteristics may have on people's perceptions, it is necessary to separate their potential effects from those associated with individual characteristics. This is crucial in a city such as the MMA, which offers a socially unequal context, where a proportion of its population lives in neighbourhoods with higher levels of violence and social disadvantage (e.g. poverty and marginalisation) than those in the Global North. It is unknown if neighbourhood characteristics in such worse social conditions might considerably weaken –and perhaps hinder– PCP and CP. Analysing these potential consequences can be useful for informing policing in similar contexts, and for guiding the police on the aspects related to their work that most influence PCP and CP.

1.4. Aim, objectives and research questions

The aim of this thesis is to examine whether 'trust in police fairness' is more influential than 'trust in police effectiveness' in enhancing police legitimacy and if, in turn, the combined effect of such normative elements generates the strongest association with PCP and CP in the MMA, accounting for individual and neighbourhood characteristics. At the heart of this aim, there are two broad objectives:

- Explore the extent to which the application of PJ theory in the MMA yields results that are consistent with most evidence produced in the Global North, to understand if such a framework fits within this context
- Analyse the interplay of 'trust in police fairness' and 'police legitimacy', to elucidate if these normative considerations are relatively more important in influencing PCP and CP than 'trust in police effectiveness', which is instrumentally oriented.

The general aim and the broad objectives are achieved by answering five specific research questions:

1. How consistent are the understandings of central concepts of PJ in the MMA with those of the Global North?
2. Does 'police legitimacy' work together with 'trust in police fairness' more strongly than with 'trust in police effectiveness' for influencing PCP and CP?
3. How does PCP affect the relationship of 'police legitimacy' with CP?
4. How does recent 'contact with the police' affects PCP and CP?
5. Do concentrations of structural factors (i.e. concentrated disadvantage, ethnic diversity and residential instability) and crime have a negative influence on PCP and CP across neighbourhood areas?

1.5. Research design: data and methods

This thesis adopts a multi-strategy approach, which includes a number of qualitative and quantitative methods for answering the research questions outlined above. This is fully elaborated in Chapter 4, but it is important to note here that the qualitative component complements and enhances the results obtained through the quantitative strategy when the latter presents limitations at certain stages of this research (Robson and McCartan, 2016). This complementarity allows triangulation (Denzin, 1978), whereby the findings produced through one method supports those obtained by the other method. The quantitative analysis in this thesis will draw on secondary data, mainly from the *'Así Vamos'* 2018 (This is how we are doing) survey, conducted by a privately financed NGO based in Monterrey known as *'Cómo Vamos, Nuevo León'* (How are we doing Nuevo Leon?). This is representative at the municipal and metropolitan levels. In contrast to other surveys available, funded by governmental agencies, '*Así Vamos'* 2018 includes a range of items which are relevant and useful for this thesis. This data is also georeferenced to specific neighbourhoods according to identification numbers. These match those of the 2010 National Census, which offers complementary data about socioeconomic characteristics. On the other hand, the qualitative analysis will be based on data collected from in-depth interviews with representatives of ten local organisations of the MMA. These organisations were part

of a longer list recommended by *'Cómo Vamos Nuevo León'* and the School of Law and Criminology (FACDYC) at the Autonomous University of Nuevo Leon (UANL). The ten organisations chosen for the interviews were suitable due to their considerable knowledge of social dynamics in different neighbourhoods. Altogether, the representatives interviewed had worked at that level in circa 500 neighbourhoods.

The quantitative methods employed in this thesis consists of two main statistical techniques. One is Confirmatory Factor Analysis (CFA), for assessing the discriminant validity (distinctiveness) of the measures used for operationalising the key PJ concepts used in this study, as well as for evaluating other latent concepts pertaining to individual and neighbourhood characteristics. CFA is useful for evaluating how well a set of observed variables touches on a particular latent (unobserved) construct. The other technique is Structural Equation Modelling (SEM), for analysing the interplay of 'trust in police fairness' and 'trust in police effectiveness' with 'police legitimacy' for shaping PCP and CP. SEM is a useful technique for analysing indirect relationships, as in this study. As will be further detail in Chapter 5, a Multi-Level Structural Equation Model (ML-SEM) will also be used to account for the separate contribution of neighbourhood characteristics in the analysis of such relationships. As mentioned above, perceptions about the police must be anchored to a particular context. ML-SEM allows us to estimate the extent to which variation in PCP and CP is related to different concentrations of disadvantage and crime across neighbourhoods.

The qualitative methods rely on in-depth interviews, as mentioned above, which have three purposes. First, this data provides the main references, such as physical and territorial barriers, according to which the MMA residents define their neighbourhood boundaries. A Geographic Information System (GIS) is used to map and superimpose those elements over a quantitative measure (Marginalisation Index). Together with other considerations, they constitute the criteria used in this thesis for the creation of the NAs. Second, the qualitative data is useful for clarifying whether the citizens in the MMA understand the key PJ concepts in similar ways to those documented in the Global North. In turn, this supports the validity of the measures chosen for the quantitative analysis. Third, the qualitative findings about the interplay of these concepts also contribute to illustrate and complement the quantitative results.

1.6. Overview of the argument

The MMA provides a prosperous setting, but at a different stage of development compared to Global-North contexts. It is embedded in a less democratic jurisdiction, with reminiscences of an authoritarian political culture, as well as higher and more unequally distributed levels of crime and social hardship across neighbourhoods. In this scenario, instrumental considerations related with police effectiveness in ensuring public safety –such as police visibility, responsiveness to people's requests and preventing and tackling crime– are well valued.

The central argument of this thesis is that, even in this context where people expect the police to meet a minimum level of effectiveness, the foundations of PJ theory, rooted in social values, could contribute to favour closer relationships between both parties. Thus, 'trust in police fairness', can be more influential than 'trust in police effectiveness' to enhance 'police legitimacy' and, in turn, elicit PCP and CP.

Importantly, police misconduct, such as 'police abuse' and 'police corruption', have been overlooked in most PJ studies in the Global North. These negative forms of police behaviour provide a better understanding of normative considerations that can undermine people's perceptions of 'trust in police fairness' and 'police legitimacy'. If police corruption and abuse occur, people are more likely to be instrumentally driven in deferring to police authority; or individuals may acquiesce for non-normative reasons, namely their powerless position in their relationship with the police (Kochel *et. al.*, 2013).

The analysis presented in this thesis supports the argument that 'trust in police fairness' is more likely than 'trust in police effectiveness' to improve people's perceptions of police legitimacy. This generates a close relationship between both parties which, in turn, elicits PCP and CP. Interestingly, despite the lower relevance of instrumental and non-normative considerations, their weight is non-negligible. This has two possible interpretations. First, it could be due to a higher power distance between the government and society, than in consolidated democracies of the Global North (Karakus, 2017). In hierarchically organised institutional regimes, the citizens are more prone to accept orders from the governmental power than holding it accountable and participating in decision-making.

Second, it is important to distinguish between people's intentions contingent to procedurally fair police conduct, and their actual attitudes towards the police, according

to the type of ongoing relationship that prevails between both parties (Kochel *et. al.*, 2013). For instance, the MMA residents living in more vulnerable conditions, who usually have worse opinions of the police, also rely on them for protection. This does not imply ambivalent orientations towards the police, as suggested in other Latin American contexts (see: Jackson *et. al.*, 2020). Rather, people face a dilemma between not receiving police help or receiving it even if this involves mistreatment. However, they expect to have a different type of relationship with the police. This speaks to the notion of normative (moral) alignment with them, a form of commitment with the police which has been found to be a salient element of police legitimacy in the Global North. Hence, the people in the MMA "express a wish not for the police to go away entirely, but rather, to change their approach" (Gau, 2014: 203).

This thesis contributes to the discussion on the foundations of the PJ framework that 'travel well' to the Global South. The analysis presented is a steppingstone to expand the understanding of the normative notions involved in 'trust in police fairness' and 'police legitimacy', and by extension, to adequately analyse the key PJ concepts in Mexican contexts. This study thus provides a more complete understanding, than previous research, of the specific relevance of normative and instrumental considerations for policing in the MMA and –possibly– other Mexican settings.

1.7. Thesis structure

Chapter 2 includes a discussion about the ways in which the key concepts considered in this thesis –trust in the police, police legitimacy, PCP and CP– have been developed in the literature. In this regard, PJ stands out as a solid framework which has informed numerous studies and has produced considerable empirical evidence. According to PJ, normative aspects –such as 'fairness of procedures' and 'shared values and interests'– could be more relevant than instrumental concerns –such as 'police effectiveness' and 'perceived risk of sanction'– in eliciting PCP and CP. This chapter also discusses how PJ must be situated to a particular context. In this sense, it has considered the ecological aspects involved in moulding people's view about the police, attributable to uneven geographical concentrations of crime and social disadvantage. However, PJ must be tested in contexts with different conditions than those of the Global North, where most research has been produced.

Precisely, Chapter 3 explores the MMA as the research context. As evidenced in several PJ studies, policing in a particular political and social setting could improve or worsen the citizens' attitudes towards the police. This chapter elaborates how the MMA, compared to settings in the Global North, presents an uneven and thus socially fractured context characterised by worse social hardship, higher crime rates, a recent past of state authoritarianism and poor views of the police. It is also discussed that the evolution of these conditions has been different in the MMA, compared to other cities in Mexico and Latin America. These challenges have triggered a reforming process to the police. In turn, these reforms have led to two main opposite policing approaches, which seem to have shaped the relationship between the police and citizens in different ways. As this chapter highlights, some evidence suggests that policing led by instrumental concerns have limited potential to boost and even maintain PCP and CP.

Based on the gaps discussed in Chapters 2 and 3, Chapter 4 describes the rationale adopted in this thesis. It first outlines the aim, major objectives and the research questions that guide the analysis in this study. Since this thesis draws on a mixed-method approach, some of those questions are appropriate for setting out research hypotheses. Then, this chapter presents the research design employed to achieve the aim of this thesis. This is useful, not just for addressing the gaps noted above, but also for informing policy and offering methodological value that could contribute to monitor PCP and CP in the MMA. This chapter then describes the operationalisation of the key PJ concepts, and how additional categories which are not possible to operationalise using quantitative data will be explored in a qualitative way. The last section discusses ethical considerations about the data sources and the types of analysis used in this study.

Chapter 5 outlines the quantitative and qualitative methods used to fulfil the aim of this thesis. It also discusses the strengths and limitations of these methods, as well as the reasons for choosing them over other alternatives. The first section describes CFA and SEM, which are two suitable statistical techniques for assessing the key concepts of PJ and analysing their interplay for influencing PCP and CP. The second section refers to the methods –GIS and in-depth interviews– involved in creating NAs in the MMA, as well as the process followed for matching the three datasets used in this thesis. The third section explains the multilevel modelling technique and its ML-SEM version, suitable for estimating the respective contributions of individual and neighbourhood levels of analysis to the variation of PCP and CP. This chapter

concludes by describing how in-depth interviews are also used for exploring the understandings of the key PJ concepts, through vicarious experiences of the participants.

Chapter 6 undertakes two intermediate steps in the analysis, before presenting the results in subsequent chapters. Accordingly, it outlines the CFA models estimated for two latent constructs considered in the analysis. One is Socio-Economic Status (SES) –an individual characteristic– and the other is Concentrated Disadvantage (CONDIS) –a neighbourhood characteristic. While the indicators used for measuring the former converged into a single and robust construct, those used for measuring the latter failed to converge or were not robust. Therefore, these had to be considered as separate neighbourhood-level indicators in subsequent ML-SEM analysis. This chapter also explains how the NAs were defined, using qualitative data from in-depth interviews and two complementary GIS systems to account for changes in the urban landscape from 2010 to 2018. As mentioned above, NAs are crucial for creating and analysing neighbourhood-level variables. Based on such criteria, 337 NAs were created.

Chapter 7 addresses whether the understandings about the central concepts of PJ among the MMA residents are similar to those documented in the Global North. The psychometric properties of the PJ concepts cannot be tested, due to the limited set of indicators available in the *'Así Vamos'* 2018 dataset. However, it is possible to evaluate if such indicators reflect (or not) a same latent variable, to ensure discriminant validity among them. This chapter also draws on qualitative data from in-depth interviews to explore how consistent the meanings of key PJ concepts among the MMA residents are with the notions captured by the quantitative measures. The main findings presented in this chapter indicate that the PJ indicators used are distinct from each other, that feelings of obedience constitute an outcome which could be motivated by instrumental and non-normative concerns, that such obedience does not seem to be a component of police legitimacy, and the latter involves an important notion of justification of police power. In this regard, 'appropriateness of the police' seems to be a key normative notion in shaping perceptions of police legitimacy.

Chapter 8 is mainly focused on assessing whether 'police legitimacy' could work together with 'trust in police fairness' more strongly than with 'trust in police effectiveness' for improving PCP and CP. The findings are consistent to a great extent with the evidence rendered in Global-North research. These support the view that

perceptions of ‘police legitimacy’ mediate the relationships between the competing aspects of trust and the outcome variables. The combined effect of ‘trust in police fairness’ with ‘police legitimacy’ is stronger than that of the latter with ‘trust in police effectiveness’. Nonetheless, the direct relationships indicate a stronger weigh of ‘trust in police effectiveness’ than ‘trust in police fairness’ on PCP and CP, as in other Global-South settings. Furthermore, the qualitative analysis points to a form of ‘normative alignment’ as the main attribute of ‘police legitimacy’ in people’s views, which seems to be propitiated more by perceptions touching on ‘quality of treatment’ and ‘quality of decision-making’ than by instrumental concerns. This chapter also discusses a negative interplay that appears to be between ‘contact with the police’ and ‘victimisation’. Victimised individuals are more likely to have contacted the police and, as a result, the least likely to express PCP and CP.

Despite the potential and consistency of the results presented in Chapter 8, these come with some caveats related with the ‘goodness of fit’ in the models estimated. This might be due to the omission of neighbourhood characteristics from the quantitative analysis. Therefore, concentrations of social disadvantage and crime are considered in the ML-SEM models estimated in Chapter 9. This chapter also complements the analysis with qualitative data obtained from in-depth interviews, which offers illustrations and examples about how ‘neighbourhood effects’ may influence people’s views of the police. The results presented in this chapter indicate that some neighbourhood characteristics have a negative influence on the outcome variables across NAs, although more strongly on PCP than on CP. A key finding is that the residents of worse-off NAs, who are more vulnerable to crime, are in greater need of the police to protect them. In addition, when people perceive that the police behave procedurally fair and they are legitimate, this could do much for mitigating the negative influence of neighbourhood characteristics on PCP and CP.

Finally, Chapter 10 draws together the analysis and results presented in previous chapters. It reflects about the implications of these findings in terms of the literature discussed and the policies undertaken in the MMA and Mexico in recent years. For instance, it seems that the two central elements of PJ theory –‘trust in police fairness’ and ‘police legitimacy’– could enhance PCP and CP, even more than ‘trust in police effectiveness’ and other instrumental concerns. The MMA appears to offer fertile soil for the study of the underlying aspects that influence PCP and CP, using the key concepts of PJ theory. This chapter also discusses that these findings could be useful

for informing policy, not just in the MMA, but also in other Mexican settings and perhaps other Latin American contexts with similar political culture, institutions and social characteristics. The last part of this chapter includes a discussion about the limitations of this thesis, before outlining its steppingstone results for guiding future research.

Chapter 2. Conceptual framework: a review of the literature on Trust, Legitimacy, Confidence and Cooperation

2.1. Introduction

The previous chapter introduced the argument and context for situating this research. As outlined, a set of police reforms has been pushed forward in Mexico during the last fifteen years for overcoming reactive policing centred on preventing and fighting crime and, instead, employ an approach based on social proximity. This is thought to favour positive relationships with the citizens which, in turn, could improve the citizens' perceptions about the police. However, it is unclear if such purposes could be better achieved by the key features of social proximity than by the instrumental policing strategies traditionally employed.

It was also outlined that there is a wide literature about trust, legitimacy, confidence and cooperation in relation to policing. In this regard, PJ stands out as a robust framework which has considerably contributed to the analysis of these concepts. According to PJ, the citizens' perceptions about fair and clear proceedings of police officers are more relevant than instrumental motivations, such as police effectiveness, for eliciting PCP and CP. The strength of PJ rests on its empirical approach to testing its theoretical underpinnings, the large bulk of evidence supporting its key claims, and the refinement of its key constructs over the last decade, which has further strengthened its foundations. These recent developments have also integrated democratic principles to the PJ framework for guiding the conceptualisations of police legitimacy more objectively.

Recent research has also documented other considerations which might influence PCP and CP. For instance, ecological aspects, such as the geographical concentration of crime and structural factors (e.g. concentrated disadvantage, ethnic diversity and residential instability), have been found to be relevant in shaping people's attitudes towards the police. However, it is unknown if such concentrations across NAs in the MMA, which are worse than in the Global North, might hinder PCP and CP.

Therefore, the aim of this chapter is to discuss the ways in which trust, legitimacy, confidence and cooperation have been conceptualised and analysed in the literature, for gaining a better understanding about them and thus inform the development of this project. For instance, this will be helpful for setting out relationships

involving the interplay of the aspects of ‘trust in the police’ with ‘police legitimacy’ for eliciting PCP and CP, while accounting for other considerations. This chapter begins by addressing the conceptual distinction between trust and confidence in the police. The macroscopic and empirical approaches to the study of legitimacy are then discussed, highlighting the valuable insights of PJ and its refined underpinnings. The last section of this chapter covers other individual considerations and neighbourhood characteristics that have been found to affect PCP and CP, setting out the relevance for studying PJ in the MMA.

2.2. Conceptual distinctions of trust and confidence in the police

The literature on the conceptual differences between trust and confidence in the police is vague. Most of the research has treated Public Confidence in Policing (PCP) in ways that condense a wide range of different, but interrelated, judgements that influence the trustworthiness that the citizens attribute to the Criminal Justice Institutions -including the police. A number of studies (i.e. Jackson, J. & Sunshine, J., 2007; Jackson & Bradford, 2010) have represented such judgements as aspects of trust that shape confidence. However, it is not uncommon to observe in this literature a lack of conceptual clarity between trust and confidence and it is more often to find the use of those concepts indistinctly, as synonyms. As Cao (2004) notes, this is problematic for academic work if the aim is to advance the development of criminological theory. He warns about intense debates among contending theories characterised by often underdeveloped arguments, due to imprecise conceptual definitions. This conceptual clarity is also necessary for appropriately testing the arguments of those theories. It is just after a certain degree of agreement about the understanding of key concepts that it is possible to operationalise them in measures to empirically advance the theory.

An overview of the literature about the conceptual distinctions of trust and confidence offers helpful insights. According to Hardin (1998), trust consists of cognitive evaluations that encapsulate interests and motivations in interpersonal interactions, which are psychologically oriented. In the same vein, Bradford, *et. al.* (2008: 1) point out the necessity of trust in situations of uncertainty that involve assessing the risks of potential consequences of making choices that depend on “the motives, intentions and future actions of others”. For this reason, Jackson *et. al.* (2013:

65, 66) point out that trust relies on expectations that stem from social relationships. Expectations enable predictability of the behaviours that one actor presents to the other, and both parties understand what is right and wrong. Similarly, Cao (2015) notes that trust involves expectations of the behaviours of the other individuals and, more importantly, that they will behave or act in predictable ways. This view of contingent relationships between individuals is reinforced by Tilly (2005), who argues that trust implies placing personal interests to the consideration of others, regardless of the reasons for doing so. Trust is, therefore, the product of a social connection between those involved in such relationship. Applied to relationships with the criminal justice institutions, Luhmann (1988) argues that trust is based on the active assessments that citizens make about their relationships with representatives of those institutions. Trust rests on experiences from their interpersonal interactions. It occurs when people expect those institutions to behave in certain ways during public encounters. Thus, in the relationship with police officers, trust implies, not only the expectations that citizens forge about them, but also the beliefs that they have about the processes that emerge in that relationship.

In comparison, confidence is based on assessments of the activities and processes that take place within the criminal justice institutions, beyond the personal level. It reflects passive evaluations about the performance of the criminal justice system, in general, rather than how it acts on a specific person. Therefore, confidence is an attitude at the system level. It is worth noting that, while active interactions have short-term effects on trust, confidence represents a long-term generalised support for the justice institutions, such as the police. Putnam (1993: 173-175) echoes these conceptual differences of trust and confidence by distinguishing between horizontal trust and vertical trust. The former is generated among citizens (interpersonal trust), whereas the latter is the obtained between citizens and institutions (institutional trust).

Cao (2015) notes that both, trust and confidence, connote beliefs that rest on incomplete and complete evidence –respectively. As with any of the representatives of the criminal justice system, trust in police officers relies on individuals' expectations stemming from these relationships. These expectations enable the predictability of the behaviours that the police present to the citizens. As this relationship implies risks and uncertainty about the citizens' welfare, trust works as partial evidence informing such relationship. In contrast, confidence is more stable. This is systematically earned as consequence of prior experiences implicating the police as an institution, that

consistently evaluates their conduct and establishes their reputation as reliable (Hardin, 1998). Due to the strong convictions that confidence represents, it rests on complete (substantial) evidence of generalised trust. It refers to full citizens' trust in the police. Hence, trust infuses confidence and the latter represents full institutional trust.

Considering the expectations that arise in the relationship between the police and the people, Hawdon (2008: 186) notes that the citizens will "not simply grant officers trust; instead, officers earn trust through their behaviours". These behaviours shape people's beliefs on whether the police will perform their role consistently as expected, that is, as it has been socially defined. Many studies (i.e. Jackson and Bradford, 2010; Jackson and Sunshine, 2007; Jackson *et. al.*, 2011; Reisig *et. al.*, 2007; Sunshine and Tyler, 2003) are consistent with that view, pointing to the interplay of different subjective judgements or aspects of trust that influence public confidence in policing (PCP). Such judgements refer to how people generate expectations on the performance and fair behaviour of the police that may influence confidence in them, but also the extent to which the police understand people's needs, and their commitment to these. Accordingly, PCP could be defined as the belief among a group of people that "the police are technically competent in the role assigned to them" and that they are fair and "have the right intentions" in their actions, by placing "the interests of others above their own" (Jackson *et. al.*, 2013: 64-65). In addition to trust, police legitimacy also has a role in shaping the citizens' attitudes towards them, as will be discussed in the next section.

2.3. Approaches to the study of legitimacy

The bulk of the literature on trust and legitimacy can be divided in two main bodies of work. One consists of a macroscopic approach that has included discussions about the principles that ought to guide the understanding of police legitimacy. It has dedicated special attention to the democratic concerns about the ways in which the legal institutions (e.g. police), exert their authority. The other has been focused on the generation of evidence by operationalising those concepts in the real world. This account has focused on testing, empirically, how the constitutive elements of legitimacy are intertwined in the generation of confidence in the police and cooperation with them. It has studied 'legitimacy' as closely related with 'trust in the police', as detailed below.

2.3.1. Macroscopic accounts: concerns about the police authority

The macroscopic approach has situated the study of legitimacy within broader social and economic changes that started between late 70's and early 80's, in what David Garland (2000) has called 'late modernity'. These transformations gave rise to an intense public debate of crime politics that, in turn, led to an increasing politicised role of the police. For instance, Reiner (2000) notes the undermining of important pillars of police legitimation in the UK, related with practical matters (e.g. professional police bureaucracy, effectiveness in preventing and tackling crime), as well as normative aspects (e.g. non-partisanship and accountability). Regarding the latter, tougher crime-control policies brought a punitive approach to penal policies and police practices, which tainted the political impartiality of the police. In addition, they face different social conditions (e.g. social diversity on ethnicity, gender and culture) that have weakened the 'mythical' link with those that they police. In consequence, their representativeness and right of enforcement have been questioned.

It is in this shifting scenario that the discussion of police legitimation and the decline of police legitimacy have taken place. Loader and Sparks (2013) note that one of the most discussed matters is the relationship between legitimacy and democracy. It has focused on the role of State institutions in governing policing according to democratic principles, such as accountability, transparency and equal distribution of services. For example, Smith (2007) notes that one of the challenges to police legitimacy is the necessity of a 'new interpretation' of police accountability. This must recognise the importance of nurturing close relationships with the citizens, rather than just prioritising results of crime-fighting.

In a broader discussion about the relevance of democratic principles, it is worth noting the always latent risk of State-sponsored practices that risk eroding civil rights. Loader and Walker (2007: 24) warn that, in the quest for delivering security, the State institutions could end up organising it "in ways that impose unjustifiable burdens of insecurity upon others". In order to prevent arbitrary, discriminatory and excessive exercise of force, the State's power must be subjected to legal scrutiny. In this view, the police must, therefore, satisfy democratic standards to be deemed legitimate. According to Loader (2007), this involves a democratic governance of policing, consisting of institutional arrangements for controlling and directing police power.

Sparks (1994) has, probably, offered the best analytical effort of the interface between legitimacy and democracy. Drawing on Beetham's (1991) work, he outlines the standards that the exercise of power by the police and other Criminal Justice Institutions must meet to be considered legitimate:

1. Institutional power must conform to the established rules
2. The rules must be justified according to shared beliefs between the citizens and the State institutions
3. The citizens consent their subjection to the institutional power

In these terms, legitimacy could be understood as "claims made by any government or dominant group within a distribution of power to justified authority" (Sparks, 1994: 14). Indeed, police legitimacy is not limited to a public service for protection against crime, disorder and anti-social behaviour (Reiner, 2010: 106). It also entails notions of what Loader (1997) calls 'symbolic power', that is, how legitimacy is shaped by social beliefs of representation and identity.

All in all, these macroscopic accounts are concerned with normative evaluations of legitimacy in power distributions between dominants and subordinates. Therefore, these approaches have contributed with objective criteria on how police legitimacy must be understood and pursued in democratic countries. Despite its valuable contribution for discussing those concerns, the macro-scale framework lacks an analytical approach focused on specific contexts. In fact, Garland (2001: 21), a salient macro level proponent, notes that this broader analysis does not substitute or downplays the importance of the micro scale level for analysing criminal justice problems. In addition, the macroscopic approaches have situated their analyses, to a large extent, in the U.S. and the UK. As a result, this body of work has not been able to generate a convincing bulk of evidence. Understanding the generation of police legitimacy must, therefore, be studied in specific contexts and in other jurisdictions.

2.3.2. Empirical accounts: public evaluations of police legitimacy

The empirical study of legitimacy has considered its interplay with trust in the police and largely draws on the extensive literature of procedural justice (see Mazerolle *et. al.*, 2013). Tyler's (1990) seminal study in the U.S. on why people obey the law

marked a milestone in the research about the legitimacy mechanisms that favour cooperation with the legal authorities and compliance with the law. Until that moment, the discussion had been focused on the rational reasons underpinning deterrence regulatory strategies that were thought to explain crime control. According to this approach, people's evaluations of whether the costs -being caught and punished- exceeded the benefits of breaking the law, guided the choices of cooperating and complying with the legal authorities. As such, this rational view was concerned with the instrumental motivations behind the outcomes (cooperation and compliance). In contrast, Tyler's approach draws on social-psychological foundations to advance the idea that an impartial decision-making (quality of decision-making) of the legal authorities and a fair treatment (quality of treatment) from these to the citizens moulds the overall quality of their relationships. The procedural justice framework englobed such features of fairness, respectfulness and impartiality, which were thought to contribute to the increase of citizens' perceived legitimacy of the police. According to the 'process-based model', individuals tend to regard the police as legitimate when these act in procedurally just ways, regardless of the fairness or favourability of the outcomes derived from their decisions. In turn, public perceptions of police legitimacy are key in fostering compliance and cooperation with them. People consider police decisions legitimate, when they feel obliged to follow them and to obey the police voluntarily, rather than accepting those decisions merely based on calculated punishments or rewards. Legitimacy is, thus, conceptualised in procedural justice in normative, rather than in instrumental terms. The police are entitled to obtain the individuals' obedience, and these feel obliged to defer to them.

The studies on this strand of the literature have focused on the ability of the police to be deemed legitimate by the public. As Hough *et. al.* (2010) note, the interest of this line of research is to shed light on the normative judgements that emerge in the relationship between the police and the policed. Such judgements are subjective, free of any objective considerations on what police legitimacy must entail. Hence, this strand of the literature is not concerned with a specific set of objective criteria governing the State institutions. Instead, it empirically approaches the normative nature of people's assessments of the police. In contrast with the macroscopic views, the empirical-driven approach to police legitimacy draws much of its strength from its promising results, as it will be discussed in the next section.

2.4. The importance of police procedures

The research following Tyler's approach has empirically studied the interplay of the constructs mentioned above, especially the way in which PJ and 'police legitimacy' work in tandem to favour compliance and cooperation. For instance, Mastrofski *et. al.* (1996) and McCluskey *et. al.* (1999) conducted observational studies in the U.S., in Virginia and Indiana, respectively, which examined public encounters between police officers and citizens. They found that the use of fair procedures, respectful treatment of the citizens and 'giving voice' to them for explaining incidents, was positively linked to compliance with the officers.

Most of the studies produced since then have employed quantitative analysis of survey data for gauging the interplay of PJ and 'police legitimacy' with outcome variables, such as confidence, cooperation and compliance. Some of these studies deserve special attention for two reasons. Firstly, they left landmarks in the literature, by comparing the influence of PJ and 'police legitimacy' with competing instrumental views, using more robust analyses (available at the time) than previous studies. Secondly, despite the contribution of their analyses, these studies exhibit inconsistencies in the ways that 'trust' and 'legitimacy' were operationalised, and how these concepts were related to PCP and CP.

For instance, Tyler and Huo (2002) used data from a sample of people that had recent contact with the police and courts in California (Los Angeles and Oakland) and Chicago for testing the social-psychological foundations of the process-based model. They advanced a conceptualisation of 'police legitimacy', according to which the citizens share "the belief that legal authorities are entitled to be obeyed and that the individuals ought to defer to their judgements" (Tyler and Huo, 2002: xiv). In addition to 'obligation to obey', they also considered 'trust in the police' in their operationalisation of legitimacy. They called it 'institutional trust', although the authors acknowledged that it is usually called 'confidence' in the literature. It can be defined as the belief that legal authorities treat people respectfully and fairly and show concern for their rights (Tyler and Huo, 2002: 110). A model that gauged for all the possible relationships among the constructs considered was estimated using the California's data, and showed that, from the two subconstructs of PJ, 'quality of treatment' had a heavier weight (β =0.51) than 'quality of decision-making' (β = 0.32). The results also indicated that PJ had a considerably greater (and significant) positive effect (β = 0.32)

than the favourability (β = 0.08) or fairness (β = 0.09) of outcomes on the 'voluntary acceptance' of the authorities' decisions (Tyler and Huo, 2002: 82-84). These findings further revealed that the perceived legitimacy of the police and courts had a significant influence on the citizens' willingness to accept the decisions of those authorities, after controlling for 'outcomes favourability'. In addition, a panel estimation of two waves of the Chicago survey revealed that people's expectations about the behaviour of police officers were influenced by their prior general trust in the police; and that legitimacy has a distinct effect throughout time in shaping people's compliance (Tyler and Huo, 2002: 106). This study thus supports the relevance of PJ and 'police legitimacy' in favouring compliance. However, it also shows two clear inconsistencies. First, the reason for which 'trust in the police' drew on the same conceptualisation of PCP, was left unexplained. This is problematic since it is unclear how 'trust in the police' is different from PJ. Both conceptualisations entail the idea that the police treat the citizens in fair and respectful ways. Second, operationalising 'trust in the police' as a component of 'police legitimacy' does not seem appropriate. The estimation of the authors' main model with all the relevant constructs yielded low loadings (between 0.27 and 0.36) of 'obligation to obey' on 'police legitimacy', compared to considerably high loadings (0.85 to 0.90) of 'trust in the police' (institutional trust). Therefore, these two subconstructs do not seem to be appropriate for representing 'police legitimacy'. This finding also suggests that 'trust in the police is closely related to 'police legitimacy' in a different way, perhaps as an outcome, although this is not clear-cut.

Similarly, Sunshine and Tyler (2003) used data from New York City for testing the PJ framework, although their analysis further expanded its considerations.. This study included, for the first time, CP as an additional outcome variable. They also tested whether the underpinnings of PJ could apply more generally, even when recent encounters with the police had not occurred. Their analysis also controlled for competing instrumental evaluations with an influence on legitimacy (i.e. police performance) and on compliance and cooperation (i.e. risk of getting caught, and fairness of outcome). The findings showed that PJ was the predominant antecedent of police legitimacy (β = 0.62), compared to evaluations of 'police performance' (β = 0.20). Interestingly, when 'police legitimacy' and PJ were included in the same model, the effect of PJ on CP was not direct but it was mediated by police legitimacy. These findings are relevant to this thesis, as they show that PJ and 'police legitimacy' could favour, not only that people comply with the law and the police, but also collaborate

proactively with them in fighting crime. In addition, these findings support the applicability of PJ beyond encounter-based opinions. As outlined in Chapter 1, this thesis is mainly concerned with how the citizens evaluate aspects of 'trust in the police' and 'police legitimacy' more generally.

Despite its results in support of PJ, Sunshine and Tyler's (2003) study omitted an assessment of the validity of 'police legitimacy'. It is thus unclear whether the latter is appropriately reflected by obedience and trust in the police. This concern was addressed in a subsequent study though (Tyler, 2006: 47). The results rendered a weak correlation (r = 0.26) between 'trust in the police' and 'obligation to obey'; which reinforces the view that these fail to combine well for measuring 'police legitimacy'. However, both studies left unexplained the extent to which 'trust in the police' and 'police legitimacy' are closely associated.

The PJ framework has been empirically studied in other anglophone countries. For example, Murphy and colleagues (Hinds and Murphy, 2007; Murphy *et. al.*, 2008) conducted research in Australia and found that 'police legitimacy' had a positive and significant association with 'satisfaction with the police' and 'willingness to cooperate' with them. They also found that PJ was more relevant than 'trust in police effectiveness in predicting police legitimacy. Moreover, 'trust in police effectiveness' had a negative association with police legitimacy. These findings are consistent with Tyler's arguments (Sunshine and Tyler, 2003: 520) on the greater weight of PJ on the outcome variables, the mediating role of 'police legitimacy' and the backlash effect of instrumental policing strategies, according to which the imposition of police power causes resentment among the citizens. This encourages the latter to challenge the police, rather than submitting to them. The instrumental model mainly resorts to the use of force and tactics of dominance in interactions with the public, for ensuring compliance and achieving results. This speaks to the traditional policing approach outlined in Chapter 1, which has prevailed thus far in Mexico for many years. Instrumentally led strategies have not only failed to improve the citizens' opinions about police forces, but have also strained their relationships, as will be further discussed in Chapter 3.

In the United Kingdom, Jackson and Sunshine (2007) examined the social-psychological processes that shaped PCP, among the residents of an English rural town. According to them, in Britain PCP encompasses trust and legitimacy, but also consent –a form of voluntary compliance. This study adopted a distinctive approach in

comparing evaluations of moral values embedded in daily life to assessments of the risk of falling victim of crime. From an instrumental perspective, higher feelings of anxiety about crime among a group of people will erode confidence in the police, as these would be deemed ineffective in protecting the citizens. In contrast, the authors proposed a Neo-Durkheimian perspective that entails normative evaluations about crime. These reflect a violation of the moral order of the community, rather than an indicator of police performance. Crime represents an affront to the shared social values and norms. This is a symbolic model in which the police ought to represent society's moral values, implying that they share a social identity with the citizens. If individuals perceive a deterioration of the social and moral order of their community, they will lose PCP. In addition, procedurally just behaviour of the police could contribute to enhance PCP, since a fair and respectful treatment to the people conveys that the police share their moral values and social identity. In turn, this 'social identification' entailed in PCP could favour consent and CP (Jackson and Sunshine, 2007: 221). In this study, PCP was operationalised in instrumental (dealing with crime effectively) and normative (engaging with the community) ways.

Its results were consistent with the arguments put forth. Normative evaluations ('perceptions of social cohesion') rather than instrumental assessments ('worries about falling victim of crime') were the main drivers of the two subconstructs of PCP ($\beta = 0.37$ and 0.25, respectively). In addition, the results of a second model showed that PJ (fair treatment by the police) had the largest effect ($\beta = 0.35$) on both subconstructs of PCP, followed by 'social identification' with the police ($\beta = 0.26$). PJ also had a considerable effect on 'social identification' ($\beta = 0.77$). These results offer deeper insights about how PJ influences PCP. A fair treatment shows to people that the police embody the same moral values which, in turn, seems to favour CP. This study is thus useful for clarifying how PJ could be linked to PCP and CP. Nonetheless, PCP was defined in a conceptually different way. Moreover, the analysis omitted 'police legitimacy', which was found in previous studies to also have a role in linking PJ with the outcome variables.

All the studies discussed hitherto empirically support many of Tyler's foundational arguments in favour of the PJ framework. However, these findings suggest that, in order to reflect its theoretical constructs, the measures used in empirical analyses must strive to prevent the inclusion of confounding variables that might lead to inaccurate results. For instance, 'social identification' (shared identify and

values) and ‘police legitimacy’ appear to mediate the relationship between PJ and the outcome variables, but it seems that ‘police legitimacy’ is not properly measured. Depending on how ‘trust in the police’ is defined, it could be deemed an antecedent (PJ) or an outcome (PCP) of ‘police legitimacy’. Therefore, a revision of the validity of this concept in PJ research is useful for clarifying what notions it entails, as will be discussed in the next section.

2.5. Revising the validity of procedural justice and police legitimacy

Reisig *et. al.* (2007) were the first ones in addressing the inconsistencies involved in measuring ‘police legitimacy’ and its relationship with PJ.. Prior PJ research, relied on the estimation of alpha coefficients for measuring the internal consistency of such constructs, that is, the extent to which a set of items are correlated. The authors (2007: 1010) warn that a main drawback of alpha coefficients is that these tend to be inflated when the number of items increases. Therefore, they assessed the construct validity of ‘police legitimacy’, by conducting a factor analysis to enhance the evaluation of its psychometric properties, including the separate effects of its subscales. They found that some items considered in previous studies failed to load on (or represent) the ‘police legitimacy’ construct. The results also indicated that the factor representing ‘**PJ**’ had a considerable amount of common variance ($0.60^2 = 0.36$) with the factor ‘**trust in the police**’. The latter had, surprisingly, less variance in common with ‘**obligation to obey**’ ($0.33^2 = 0.11$), despite their operationalisation together for measuring **‘police legitimacy’** in prior studies. These findings strongly suggested that **the three factors** pertained to different constructs. In addition, the refined scales rendered estimates that were more reliable than past scales. This analysis was complemented with multivariate regressions to test the influence of the ‘**PJ**’ subconstructs on ‘police legitimacy’, and the subconstructs of the latter on the outcome variables (CP and ‘compliance with the law’). The results indicated that ‘quality of treatment’ had a stronger effect ($\beta = 0.50$) than ‘quality of decision making’ ($\beta = 0.08$) on ‘police legitimacy’, consistently with previous research (i.e. Tyler and Huo, 2002). These results also indicated that ‘police legitimacy’ was a key factor in determining CP. When its two subconstructs were included in the regression as predictors, ‘trust in the police’ was significantly associated with CP and compliance, but ‘obligation to obey’ was insignificant. Thus, the main finding that stems from this

analysis is the distinctiveness of ‘trust in the police’. It must be considered apart from ‘police legitimacy’, and it has by its own a considerable effect on CP and compliance. Importantly, the items that made up ‘trust in the police’ touched on concerns, such as “the police can be trusted to make decisions that are right for your community”, which were distinct from notions of PJ, such as “the police treat citizens with respect” (Reisig *et. al.*, 2007: 1012-1013). Therefore, a strength of this study is that it conceptually operationalised ‘trust in the police’ in a different way than in previous Tyler’s research.

Subsequent studies in non-anglophone countries have also assessed the psychometric properties of ‘police legitimacy’ and yielded similar results. For example, in a study conducted for Ghana, Tankebe (2009) used Principal Components Analysis (PCA) for evaluating the construct validity of ‘police legitimacy’ and PJ, based on the same subconstructs used by Sunshine and Tyler’s (2003) –mentioned above. The study also analysed the association of those subconstructs with CP –the outcome variable. The findings showed a lack of convergent validity between ‘trust in the police’ and ‘obligation to obey’ and, thus, it was impossible to combine them into a single scale. Moreover, correlation and multivariate regression analyses showed that ‘trust in the police’ was significantly associated with CP, but ‘obligation to obey’ was not. It is also worth noting that, when trust and obligation were included in the same model, procedural fairness was insignificant, suggesting that ‘trust in the police’ captured its effect on CP.

According to these two studies, it is unclear that ‘obligation to obey’ is an appropriate antecedent of ‘police legitimacy’ or CP. Their findings also suggest an interplay between PJ and ‘trust in the police’ for eliciting CP, which might imply an indirect relationship. However, it is not quite clear how this occurs, that is, whether ‘trust in the police’ could be an antecedent of ‘police legitimacy’ or another outcome variable in the linkage between PJ and CP. A caveat to bear in mind about Tankebe’s (2009) study is, that it operationalised ‘trust in the police’ as Sunshine and Tyler (2003) did in their study. As mentioned above, this is problematic due to its conceptual similarity to PJ, which raises a concern that ‘trust in the police’ might not have been properly operationalised.

Such concerns were addressed by Gau (2011) in her study. She used confirmatory factor analysis (CFA) to test the convergent validity of the subconstructs ‘PJ’ and ‘police legitimacy’, but also the discriminant validity between those two. This study mimicked the items on PJ and ‘police legitimacy’ used by Reisig, *et. al.* (2007).

As in their study, the models that she tested also failed to display convergence validity between the 'police legitimacy' subconstructs (trust and obligation). Moreover, discriminant validity between 'police legitimacy' and PJ was not achieved. An additional data-driven model based on the results of the theoretically informed models, yielded a two-factor solution, wherein 'PJ' and 'trust in the police' constituted one factor, and 'obligation to obey' represented the other. These two refined constructs were used in multivariate regressions, in which 'obligation to obey' was considered an outcome variable, as were CP and compliance. The results indicated a significant influence of PJ on the three outcome variables, with an effect ($\beta = 0.282$) on 'obligation to obey'. When the latter was included as a predictor of CP and compliance, it explained just 6.8% and 7% of the variance, respectively. The results of this study support the view that 'obligation to obey' works better as an outcome of the interplay of normative antecedents. However, these findings favour the view that PJ and 'trust in the police' touch on the same underlying notion, which influences CP. This finding differs from the results of the two studies outlined above.

The extensive review of the evidence on PJ and 'police legitimacy' that Mazerolle *et. al.*, (2013) undertook lends support to the foundations and inconsistencies discussed above. They conducted a meta-analysis of 28 experimental or quasi-experimental studies about police-led interventions, implemented for directly or indirectly enhancing public perceptions of their legitimacy. This review evaluated the effects on outcome variables, such as satisfaction with the police, PCP, CP and compliance with the law. The findings revealed that the use of the principles of PJ in police-led interventions contributes to improve public perceptions of police legitimacy. The review also showed a strong and reliable influence of 'police legitimacy' on the outcome variables, with the highest effects on satisfaction and confidence. Police legitimacy exhibited a large effect as an outcome of the interventions, albeit with low statistical reliability due to large confidence intervals. In general, the interventions aimed at enhancing 'police legitimacy' rendered mixed results, with reliable effects on certain outcomes and dubious effects on others.

Overall, the body of work discussed above, shows that further theoretical and empirical developments are needed to better define 'police legitimacy'. The findings of this research strongly suggest that 'obligation to obey' seems to entail people's deference to the police and must be better understood as an outcome. These findings also suggest that 'trust in the police' and 'police legitimacy' are intertwined, but different

constructs. It is thus necessary to dissect 'trust in the police' to clarify the aspects that it entails. This need of clarification is relevant, since the measures used for operationalising 'trust in the police' in the analysis of this thesis (outlined in Chapter 4) must closely capture the notions that touch on this concept. Furthermore, clarifying its nature is useful to better understand whether its position in the analysis is one of antecedent or outcome. Therefore, a refined conceptualisation of this construct and its different aspects will be discussed in the next section.

2.6. Police legitimacy and the distinctiveness of trust

The research discussed above has established that trust represents aspects involved in the relationship between the citizens and police officers, while confidence characterises the relationship between the citizens and the police institution (Cao, 2015). Many influential studies (i.e. Tyler and Huo, 2002; Sunshine and Tyler, 2003), indeed, proposed definitions of 'trust in the police' which exhibit an institutional character. This same line of research has also rendered evidence on how the judgements that mould trust in police officers can impact confidence in policing (Bradford *et. al.*, 2008; Jackson and Sunshine, 2007). However, the research discussed above has not exactly studied the relationship between trust and confidence in those terms.

It was not until Jackson and Bradford (2010) conducted their study with data from Metropolitan London that the relationships among 'trust in the police', 'police legitimacy' and PCP started to be addressed differently in research. They proposed a conceptual model according to prior research, wherein a couple of key competing views of trust influence PCP: 1) police effectiveness and 2) police fairness. The findings from their statistical analysis confirmed a two-factor solution with 'effectiveness' and 'fairness' as two distinctive aspects of trust. The results also revealed significant effects of 'trust in police effectiveness' ($\beta = 0.14$) and 'trust in police fairness' ($\beta = 0.09$) on PCP, with an unexpected stronger influence of the former.

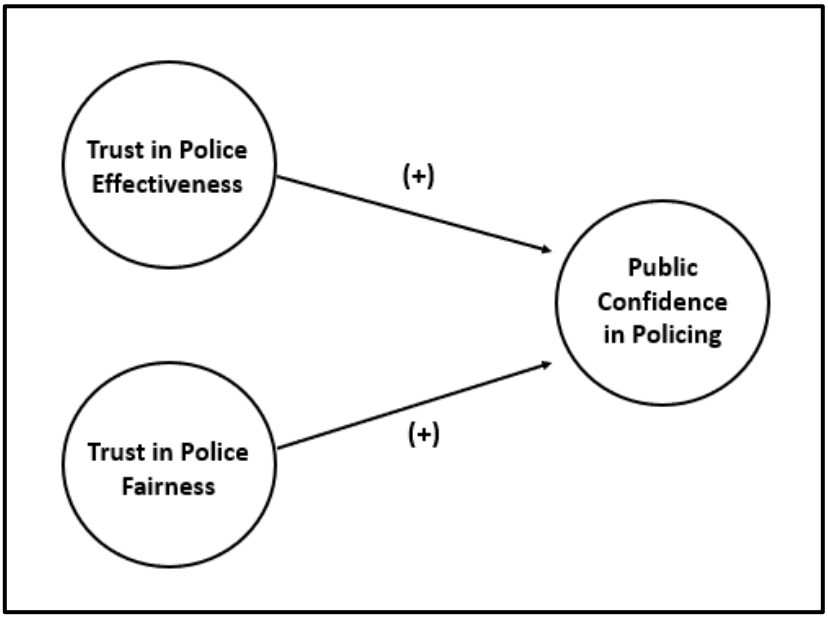
In a similar approach, Nix and colleagues (Nix *et. al.*, 2015; Wolfe *et. al.*, 2016) also tested the competing effects of instrumental and normative perceptions about the police on 'trust in the police', in their studies for a mid-sized city in the Southeast of the U.S. They used the same indicator included in past studies for measuring trust ('the police can be trusted to make decisions that are right for my community'), which

touches on the same notion considered in the conceptual definition of PCP. The instrumental indicator used to approach police effectiveness was ‘perceived disorder’ in one study, while ‘the police are doing a good job’ and ‘there are enough police in my neighbourhood’, in the other. The normative concerns about how strongly the people agreed that the police were fair, respectful and explained their decisions to them, were used for operationalising procedural justice. The results in both studies showed larger effects of procedural justice than effectiveness on ‘trust in the police’. For example, that a one-standard-deviation increase of perceived disorder reduced the probability in, roughly 15%, of trusting the police. In contrast, the probability increased almost 300% when procedural justice increased in one standard deviation, showing its overwhelming influence on overall trust (Nix *et. al.*, 2015). Similarly, the standardised effect of procedural justice was larger ($\beta = 0.284$) than that of effectiveness ($\beta = 0.284$) (Wolfe *et. al.*, 2016).

Considering how these studies set out the relationships between the aspects of ‘trust in the police’ and PCP, these could be conceptualised in the hypothetical model shown below, in Figure 1. In this model, ‘trust in police effectiveness’ and ‘trust in police fairness’ are key for gaining ‘public confidence in policing’. The former refers to evaluations that the police are technically competent in fighting crime and answering promptly to people’s emergencies (Hough *et. al.*, 2010). The motivations behind effectiveness are instrumental, such as the police performance and a results-driven approach. The latter draws on the extensive literature on ‘procedural justice’ discussed above, which refers to the fairness of the processes or procedures undertaken by the legal authorities in their relationships with the public (Bennet, *et. al.*, 2018; Sunshine and Tyler, 2003).

Fairness is about’ citizens’ assessments on whether the police treat them with respect and dignity during public encounters, are committed to their necessities and take the best decisions for them because they have people’s interests at heart. Smith and Somerville (2013) note that fairness is normative in nature, according to which the police are evaluated in terms of the quality of treatment and decision making that they are perceived to give to the citizens. Fairness aligns with ‘Peelian’ principles and the democratic premise of ‘policing by consent’, which is rooted in social norms, aimed at shortening the distance between the police and the people (Tilley, 2008: 373).

Figure 1. The relations of trust in the police with PCP



Source: conceptualisation proposed in this thesis.

The research discussed so far, largely produced in anglophone countries, shows that trust in police fairness is considerably more important in influencing PCP than trust in police effectiveness. However, those studies also indicate the critical role of 'police legitimacy' in the relationship between the police and the citizens –specially in face-to-face interactions. Thus, it is fundamental for understanding more accurately how trust in the police influences PCP and other desired outcomes (i.e. CP), as it will be further discussed in the next section.

2.7. A critical revision of police legitimacy

It was discussed above that, earlier elaborations in the PJ framework (i.e. Jackson and Sunshine, 2007; Tyler, 1990; Tyler and Huo, 2002), treated 'police legitimacy' as a value-oriented quality, concerned with notions of power and authority. These reflect an idea of authorisation, according to which, 'police legitimacy' takes place when two things happen. Firstly, the citizens authorise police authority, and secondly, they feel the voluntary obligation of deferring to them. In this view, to deem the police legitimate is to feel the duty to defer to them and to follow the rules that they establish. A moral obligation infuses people's belief that obeying the police is the right thing to do. Therefore, 'police legitimacy' emanates from obedience when individuals

authorise the police to determine appropriate conduct. In addition, ‘police legitimacy’ included ‘institutional trust’, which refers to individuals’ assessments of police motivations. This consideration reflects people’s perceptions on whether the police have sincere intentions and are concerned with the citizens’ welfare. Individuals must trust that, when the police undertake any actions, they place the citizens’ interests above their own. Despite this advancement that PJ brought to the study of police legitimacy, it has received criticism from the macroscopic accounts discussed above.

A body of work (i.e. Jefferson, 2013; Loader and Sparks, 2013) argues that the PJ model is ill-equipped to address the dimension of asymmetrical power in the relationships between the criminal justice institutions –including the police– and the citizens. For the critics, the relationships occur between power-holders and audiences and legitimacy is conceived in a different way. Rather than thinking about is as individual perceptions, it is lived through dynamic practices, such as people's actions. A perceptual approach reduces the complex dynamic logic of social life to 'pre-selected' and 'pre-interpreted' categories, which may cloud the understanding of what occurs in reality. Moreover, PJ risks using ‘police legitimacy’ as an administrative practice for measuring characteristics or properties of the police (i.e. PCP, CP), instead of a permanent process of mutual evaluation in the interactions between the power-holder (police) and the subjects (citizens). They claim that, instead, a better conception of ‘police legitimacy’ must be able to address more complex questions related with the 'continuing relationship' between power-holders and citizens, as well as how such relationships are created and sustained over time.

In addition, the macroscopic accounts on legitimacy emphasize the need of considering the concept as both normative and empirical (Loader and Sparks, 2013). The former outlines ‘objective’ criteria for judging the legitimacy of an institution’s authority. It describes if an institution satisfies desirable standards (i.e. accountability, justice rationality, transparency). The latter evaluates if the citizens deem an institution’s authority legitimate in those terms. In other words, it describes if, in the facts, the citizens grant legitimacy to such authority according to such standards. To have a more accurate picture of the legitimacy of an institution’s authority, the critical positions argue that both empirical and normative conceptualisations are necessary. One helps to inform, rather than validate, the other.

A third critique stems from the inconsistencies observed in the empirical tests of the ‘legitimacy’ construct. As discussed above, ‘trust in the police’ seems to tap into a

different notion, conceptually and empirically closer to PCP than to 'police legitimacy', whereas 'obligation to obey' does not appear to be one of its antecedents. Bottoms and Tankebe (2012) go further in arguing that the proponents of PJ have failed to accurately test the normative claim that people feel obliged to obey the police, according to which they have internalised their moral commitment to do so. They point out a couple of non-normative motivations that could lead an individual to express her intentions to obey the police: 1) instrumental reasoning of avoiding the risk of punishment derived from disobedience; and 2) dull compulsion, in which obedience is unquestioned due to a perceived powerless position and lack of alternatives in the relationship with the police. Therefore, it is necessary to disentangle the normative form of obligation to obey and to assess its distinct significance.

The fourth critique points to the paucity of empirical evidence in jurisdictions other than the U.S. where the PJ model was born. There could be a close relationship between normative assessments and empirical measurements of legitimacy, but the orientations of citizens towards the authority could vary across jurisdictions due to cultural and historical differences. Therefore, these analyses must be framed within the context of a political culture. As Kardstedt (2013) note, the empirical research on legitimacy must consider the specific context in which it is normatively embedded.

These critiques thus outline a set of theoretical and empirical concerns of how the PJ framework addresses to the notions that 'police legitimacy' entails. From a macroscopic viewpoint, these notions are dynamic, whereby both the police and the citizens evaluate each other. In addition, a distinction must be made between evaluations which adhere to democratic standards and those which are not, to ascertain whether people voluntarily defer to the police, of if there might be other (non-democratic) reasons for doing so. This distinction is crucial for testing the PJ framework in contexts with less mature democracies, such as Mexico. As will be further outlined in Chapter 3, its authoritarian background might influence the criteria that the MMA citizens used for evaluating 'police legitimacy'. Therefore, it is necessary to refine its conceptualisation, as will be outlined in the next section, before moving on to understand how it relates to PCP and CP, and how these relationships have been studied in different contexts.

2.8. Reconceptualising police legitimacy

The critiques outlined in the previous section point out that 'police legitimacy' involves understandings in the relationship between the police and the citizens, which are constantly in change. Thus, a reconceptualization of 'police legitimacy' is necessary. In addition, this refined version must be empirically evaluated according to objective normative criteria. However, understanding 'police legitimacy' on these terms necessarily requires identifying distinctive attributes which could be useful for addressing –in less subjective ways– what occurs in reality in the relationship between the citizens and the police.

In this regard, a more recent body of work, sympathetic to the PJ model, has further developed the 'police legitimacy' conception. For instance, Bottoms and Tankebe (2012; 2013) acknowledge that legitimacy is dialogic and relational in nature, rather than a one-sided single transaction. It is a dialectic process whereby the power-holders (the police) claim to exercise their authority legitimately and the audiences (the citizens) respond to this claim. In return, the power-holders might adapt their claim according to the response. As such, legitimacy is an 'ongoing dialogue', a feedback process that echoes the claim made by Loader and Sparks (2013) about the necessity of understanding legitimacy as an unfinished process, whereby police work affects the citizens' perceptions and, in return, these affect police work.

In this body of work, 'police legitimacy' has been expanded to consider how the citizens judge the **moral values** of police officers and the **lawfulness** of their actions. These distinctive features speak to the dialogic nature of police legitimacy as they are considered for evaluating whether the citizens recognise the "power-holder's moral right to exercise that power" (Bottoms and Tankebe, 2012: 125). In this way, this research has also sought to reconcile the empirical considerations with normative preconditions. For instance, Jackson and colleagues (Hough *et. al.*, 2013; Jackson *et. al.*, 2013) draw on Beetham's (1991) work, outlined in prior macroscopic elaborations (and mentioned above), to propose a refined conceptualisation of legitimacy, according to which an authority could be considered legitimate when:

1. The citizens subject to the power-holder consent to its authority
2. The power-holder exercises its authority according to established rules (legal standards)

3. The citizens share moral values with the power-holder that justifies the authority of the latter

Defined as such, legitimacy is rounded to the recognition and justification of police power and their authority as an institution. For this account, the right to exert power does not arise exclusively from the recognition of unquestioned authority of an institution over certain aspects of social life. Nor is it sufficient to argue that the citizens subject to that authority feel the voluntary 'obligation to obey' because they believe that it is the right thing to do, as Tyler (1990) originally proposed. Police legitimacy does entail notions of power and authority, but also of justification in the relationship between the police and the citizens. As such, legitimacy is bound up with the right of the police to exert their authority, just as it is to the recognition by the policed of such right (Jackson, *et. al.*, 2013). People grant the police the right to determine behaviour and exert power, not only because they feel the obligation to obey, but also because they believe that the police share the same principles. As Jackson *et. al.* (2012: 1054) note, "legitimacy may thus be instantiated not only in obedience as prerogative, but also in the belief that the police share the values of those they police".

This advanced elaboration of police legitimacy puts forth that people will confer the police the right to exert their authority if they believe that both parties share the same values and group membership. According to Tyler and Jackson (2013), individuals arrive to these beliefs of shared identity with the police through an internalised feeling of moral solidarity with them. The citizens internalise their social connection (identification) with the police when they perceive that the police purposes accord to the people's interests. As Walker (1996: 53-56) noted in earlier normative considerations, policing conveys social meanings, such as the moral message according to which the police are on the 'people's side' and place the citizens' interests above their own. This belief that the police share the same 'sense of right and wrong' is what Jackson and colleagues (Jackson, *et. al.*, 2013: 152; Jackson and Gau, 2016: 8) call 'moral (or normative) alignment' of the people. This attribute of legitimacy captures the concern about the justification of the exercise of power and authority.

Following that view, Jackson and colleagues (Jackson *et. al.,* 2012; Jackson *et. al.,* 2013) offer a refined definition of police legitimacy in their studies for the UK, understood as the combination of 'felt obligation to obey the police' with a 'moral alignment with them'. They note that the latter also encapsulates the precondition of

legality granted to the police, according to which the people belief that the police use their authority in a lawful way for the benefit of society. Bringing legality and moral alignment together entails a broader notion of justification. Jackson and Gau (2016: 10) call it “appropriateness of the police”, that is, the police exert their authority lawfully and in ways that signal shared values for the greater good.

With the latest developments of the process-based framework in mind, the most recent research (i.e. Cao, 2015; Jackson, *et. al.*, 2013; Jackson and Gau, 2016) has offered refined and better-equipped ways of empirically studying police legitimacy. It draws on earlier work (i.e. Sunshine and Tyler, 2003; Tyler and Huo, 2002), to stress the relevance of the normative features embodied in the notion of ‘appropriateness’ and the salience that it has in influencing PCP and CP. Tyler and Huo (2002: 62) referred to it as ‘motive-based trust’ in the U.S., which is different from ‘institutional trust’ and refers to individuals’ expectations that the intentions (motives) of the police will result in these acting out of goodwill for the people’s benefit. Believing in police goodwill does not require people to anticipate their actions because they assume that, regardless of what the police do, they will act in good faith. In their study for Australia, Murphy *et. al.* (2009: 19) found results consistent with that view, according to which a fair treatment conveys to people that they are appreciated in society, makes them more likely to agree with the belief that the law represent their own values, and that these are “appropriate, right and ethical”.

Jackson and Bradford (2010) drew on the same normative views and adapted motive-based trust in the form of ‘trust in police engagement and shared values’ for their study of England and Wales. They found that it significantly mediated ($\beta = 0.65$) the relationship of ‘trust in police effectiveness’ and ‘trust in police fairness’ with PCP. It showed that if the police represent the values of society, this could enhance confidence in them. Merry *et. al.* (2012: 132-133) obtained similar findings, also for the UK, that emphasized the importance of fair procedures in the engagement of the police with the public. Fairness not only demonstrates that the police understand peoples’ needs and share their values, but also contribute to enhance confidence in them. In a similar approach, Bradford (2014) tested whether the ‘social identity’ among a group of residents in London mediated the associations of police procedural fairness and effectiveness on CP. He found that ‘trust in police fairness’ had a stronger (and significant) effect than ‘trust in police effectiveness’ on ‘social identity’ among all the residents. In addition, social identity significantly mediated ($\beta = 0.15$) the link between

‘trust in police fairness’ and CP, among the non-UK residents (foreigners) that felt identified with the British identity.

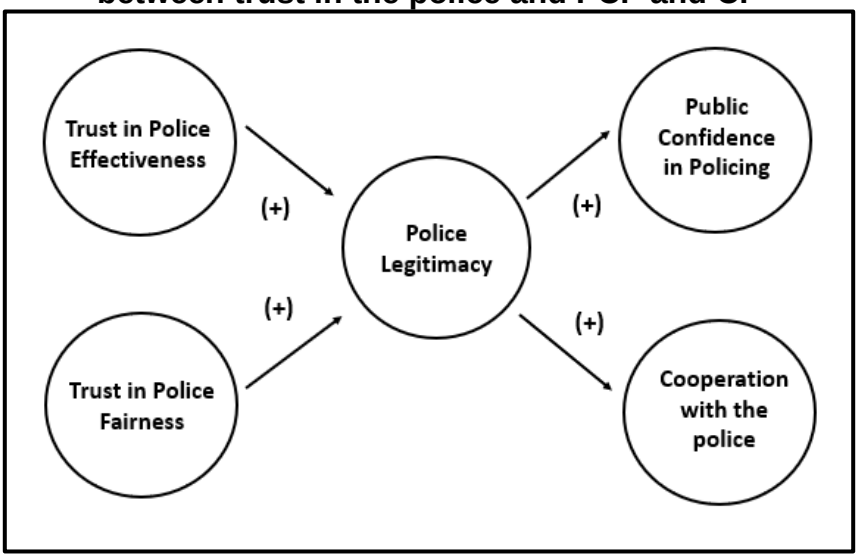
The research of Pósch *et. al.* (2020) is consistent in noting the relevance of the normative features that the ‘appropriateness of the police’ captures. They addressed the critique about the need for disentangling the normative feature that promotes ‘obligation to obey the law’ from the non-normative forms (Bottoms and Tankebe, 2012). Drawing on data from a randomised trial of traffic policing in Scotland (MacQueen and Bradford, 2015), their analysis confirmed that the scales related with the normative aspect loaded into a single factor. They also found that it was different from non-normative measures (i.e. instrumental or dull compulsion) and it constitutes an element of ‘police legitimacy’ reflecting ‘truly free consent’ with the police. A sophisticated mediation analysis revealed that the effects of ‘perceived fairness’ on ‘CP’ were significantly mediated by the normative attributes about ‘moral feelings of obedience’ more importantly than by non-normative features. Altogether, these studies highlighted the salience of fair procedures for promoting shared values and identity (moral alignment) in shaping ‘police legitimacy’, which could be partially defined as “the conferred authority to dictate appropriate behaviour” (Pósch *et. al.*, 2020: 3). In addition, this recent evidence shows that legitimacy acts as a mediating mechanism though which the aspects of trust -especially fairness- influence PCP and CP.

The findings of this research are important to this thesis, as they clarify the concerns mentioned above in a previous section, on how the aspects of 'trust in the police' interplay with 'police legitimacy' for eliciting the outcome variables. In addition, these studies offer a refined version of ‘police legitimacy’, entailing attributes (i.e. moral alignment and legality) which are distinct from the notions that ‘trust in the police’ involves. In this regard, Gau’s (2014) study reasserts the conceptual differences between ‘trust in the police and ‘police legitimacy’. She adapted the items from prior studies (Reisig *et. al.*; Gau 2011) and used data from a city in Florida for testing those constructs. She also gauged for differences between general perceptions about the treatment that the police gave to the citizens in public encounters (global procedural justice) and individuals’ evaluations on the treatment received from police officers in face-to-face interactions (specific PJ). The results indicated positive effects of both types of PJ on ‘trust in the police’, lending support to prior findings (i.e. Sunshine and Tyler, 2003) about the importance of PJ for the citizens, regardless of whether they had recent contact with the police or not. More importantly, the analysis revealed the

distinctiveness of ‘trust in the police’, especially in relation to specific PJ. Thus, PJ influenced ‘trust in the police’ which, in turn, led individuals to feel a moral obligation to obey the law. As Tyler and Jackson (2013: 94) point out, “legitimacy is the belief about the moral right of the police (institution) to possess and exercise power and influence, while trust is a belief about how police officers perform their roles”.

Based on these findings, Figure 2 below, shows a model which adds ‘police legitimacy’ and ‘cooperation with the police’ to the hypothetical relationships considered. It shows that ‘police legitimacy’ mediates the relationship of the aspects of trust with PCP and CP. Accordingly, if people trust that the police are fair and effective, it is more likely that they would perceive them as legitimate. In turn, as people feel obliged to obey the police, morally align with them and believe that they act lawfully, this generates a closer relation and the generation of confidence and cooperation between both parties.

Figure 2. The mediating role of police legitimacy between trust in the police and PCP and CP



Source: conceptualisation proposed in this thesis.

This research thus offers a more robust conceptualisation of ‘police legitimacy’, which entails attributes distinct from those considered in ‘trust in the police’. These distinctive features are useful for clarifying what concerns are at stake in the evaluations of ‘police legitimacy’ which occur in the dynamic relationship between the police and the citizens. Notwithstanding the changing nature of ‘police legitimacy’, this concept must still be subject to democratic criteria. As outlined above, notions of

justification of the police, such as 'moral alignment' and 'legality', seem to be akin to such prerequisites.

These studies also speak to the dialogic perspective on the generation of ‘police legitimacy’. Accordingly, the trust aspects that make up overall institutional trust (captured by PCP) are associated with ‘police legitimacy’ which, in turn, relates back to PCP –in addition to CP. In addition, this body of work shows that the separate aspects of ‘trust in the police’ which make up PCP also shape CP strongly suggesting that PCP propitiates CP. This role thus deserves attention, as will be further discussed in the next section.

2.9. Police legitimacy, PCP and CP

It was noted in a previous section that earlier studies (Gau, 2011, Reisig *et. al.*, 2007) suggested that ‘trust in the police’, which touched on notions of PCP, seemed to play a mediating role for eliciting CP. This view was reinforced by the findings of more recent research, as outlined above. However, the relationship between PCP and CP has not been empirically analysed, even though it has been sufficiently discussed in the literature.

On one hand, analysing whether PCP mediates the relationship between ‘police legitimacy’ and CP could inform the PJ framework. On the other hand, evidence of a mediated relationship by PCP could clarify if, in a setting with authoritarian reminiscences –such as the MMA–, CP could occur due to normative motivations entailed in 'police legitimacy' which are akin to democratic criteria. The evidence outlined in a previous section, shows that CP may happen for normative or non-normative reasons entailed in ‘police legitimacy’, but confidence is only normatively motivated. Therefore, failing to fulfil such normative expectations implies that PCP would moderate the influence of ‘police legitimacy’ on CP.

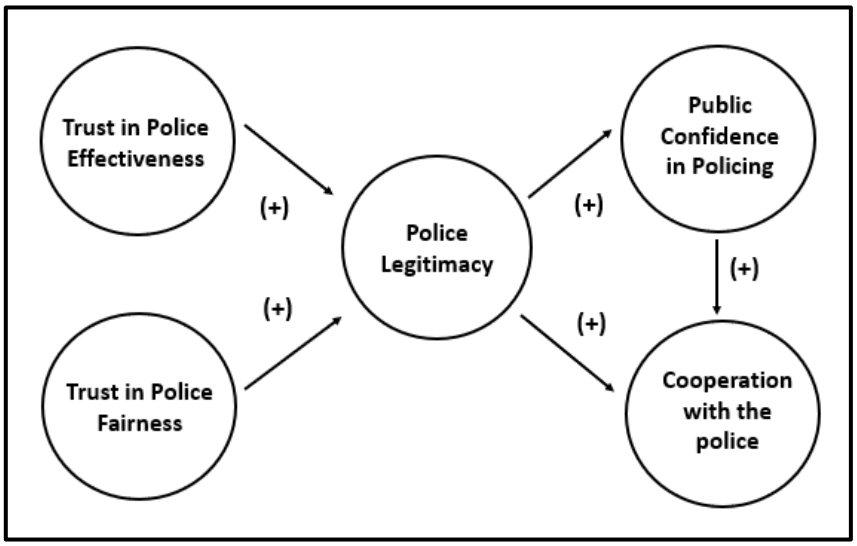
According to Bradford, *et. al.* (2008), the acts of compliance and cooperation from the public are expressions of perceived ‘police legitimacy’. The evidence discussed above supports that claim. Murphy *et. al.* (2009) also found consistent evidence from a sample of Australian citizens, on how procedural justice shaped their willingness to cooperate with the police’ by influencing their perceptions of police legitimacy. The individuals that perceived a stronger fair treatment and legitimate law enforcement from the police were more inclined to cooperate.

Similarly, Jackson *et. al.* (2012) ran a mediation analysis of the relationships between the trust aspects and the refined version of 'police legitimacy' to influence 'compliance' –in the form of offending behaviour. 'Trust in police fairness' had larger and significant effects on 'police legitimacy' notions –i.e. 'moral alignment' (β = 0.75)–, than 'trust in police effectiveness', to reduce offending behaviour (β = -0.23).

For Jackson and colleagues (i.e. Jackson and Gau, 2016), 'police legitimacy' motivates people's behaviour in two ways. First, it elicits the duty to obey (or cooperate). This occurs due to a sense of 'value congruence', duty and social responsibility. The citizens comply because it is the right thing to do. Second, 'police legitimacy' entails a normative justifiability to exert their authority.

In this view, people believe that the police share the same values and act lawfully. In turn, these beliefs activate ethically motivated behaviours in the people to follow the rules of the group and to act on its behalf. The notion of 'appropriateness' is a strong normative force through which the police show their commitment to 'policing by consent' (Jackson *et. al.*, 2013). Police legitimacy could, thus, influence PCP, and both might contribute to propitiate social order (Jackson *et. al.*, 2013: 153). Considering these relationships, Figure 3 below expands the conceptual model by adding a hypothetical relationship between the outcome variables. It shows that, while 'police legitimacy' influences both of them, PCP only influences CP.

Figure 3. The mediating role of PCP between police legitimacy and CP



Source: conceptualisation proposed in this thesis.

The research discussed so far, is concerned with aspects of trust in the police and the mediating role that police legitimacy might have in influencing PCP and CP. However, this literature has focused on anglophone countries. Therefore, it is necessary to shed more light on how the aspects of trust and legitimacy might affect PCP and CP in different social contexts.

2.10. Evidence on procedural justice in non-anglophone contexts

The empirical evidence on PJ theory discussed above has been largely produced in the U.S., the UK and Australia. The research on PJ in non-anglophone countries is relatively recent. As outlined above, one of the main critiques to the PJ framework is that it has not been sufficiently evaluated in settings other than the U.S. and, in general, beyond anglophone jurisdictions. Therefore, the key PJ concepts might be understood differently in non-anglophone contexts due to cultural and historical backgrounds, as well as varying degrees of democratic development.

In this regard, Shaap and Sheepers (2014: 90) note that "the unique national context (could) be very important when studying trust in the police". Indeed, they obtained results in this direction, in their study with data from the European Social Survey (ESS), covering 26 countries. Their findings indicate that 'trust in the police' was not entirely understood in equivalent terms across jurisdictions, especially between Western and Eastern countries. Hough *et. al.* (2013) also drew on ESS data to compare the relevance of 'trust in police fairness' and 'trust in police effectiveness' in shaping the three aspects of 'police legitimacy' mentioned above: 1) felt obligation to obey, 2) moral alignment and 3) perceived lawfulness. They also analysed if, in turn, these aspects influenced 'willingness of CP'. According to their findings, 'trust in police fairness' was the most consistent and significant predictor of the aspects of police legitimacy across the 26 countries analysed. Interestingly, 'trust in police effectiveness' was also relevant in some countries and showed significant –although weaker– effects on 'felt obligation to obey' and 'moral alignment'. The three subconstructs of 'police legitimacy' significantly predicted 'willingness of CP'. Thus, this evidence seemed to indicate that the process-based model 'travels well' to other jurisdictions, at least in more mature democratic contexts.

The research from the Global South is relatively scarce, though, despite the increasing number of studies that has been produced in those jurisdictions during the last years. In addition, the evidence produced has yielded mixed results. It is not quite clear what component of trust is more important in eliciting PCP and CP. For instance, Nalla and Madan (2012) used survey data from New Delhi (India) to analyse people's perceptions of the police more generally. They found that 'overall satisfaction' was associated with a positive relationship with the police and those who perceived the police to be professional (a proxy of 'fairness in treatment') during encounters, were more likely to favour CP. However, this study did not include relevant indicators for measuring 'trust in police effectiveness'; thus, it was impossible to compare the effect of each aspect on CP. In contrast, in his study for Turkey, Karakus (2017) found that this instrumental this instrumental aspect was as relevant –indeed slightly stronger– than normative appreciations of 'PJ' in influencing 'police legitimacy'. When the latter was included together with the aspects of trust and other variables to predict CP, it was the only significant predictor. This suggested that 'police legitimacy' mediated the effects of PJ. Lee and Cho (2019) obtained similar results in their study for South Korea. Both aspects of trust had significant effects on 'police legitimacy' and indirect effects, mediated by the latter, on CP. However, 'trust in police effectiveness' had stronger effects than 'trust in police fairness' and it had the only significant direct effect on CP. In these two Asian countries, where societies are more traditional and State institutions are more distant from the citizens, the latter place high expectations on police performance as these are relied upon to control crime.

The evidence from China further supports that view. Drawing on data from a large city in Southeast China, Sun and colleagues (Sun *et. al.*, 2017), tested whether PJ, 'distributive justice' and 'trust in police effectiveness' had significant direct effects on willingness of CP. They also assessed if 'police legitimacy' ('obligation to obey' and 'trust in the police') played a mediating role in those relationships. The results yielded significant direct effects of PJ on 'police legitimacy' and CP. However, 'trust in police effectiveness' was stronger in predicting 'police legitimacy', and the latter also significantly mediated the indirect effect on CP. In a subsequent study (Sun *et. al.*, 2018), they assessed Tankebe's (2009; 2013) alternative version of 'police legitimacy', distinct from 'obligation to obey'. As discussed above, 'police legitimacy' was operationalised by PJ, distributive justice, police effectiveness and lawfulness (legality). In this model, 'police legitimacy' influences 'obligation to obey' and, in turn,

the latter predicts CP. They found that all the subconstructs had internal consistency and discriminant validity from each other. Moreover, 'police legitimacy' had a significant direct association with CP and was indirectly mediated by obligation to obey.

Overall, this evidence reflects that, in less developed democracies or authoritarian regimes, 'police legitimacy' is not necessarily rooted in normative aspects entailed in 'obligation to obey', while the rationale about the interplay of equally relevant normative and instrumental concerns is reinforced. Insofar as the citizens suffer abuses from State institutions more frequently and they perceive a lack of effective crime control, they might value those instrumental concerns more importantly, than people in consolidated democracies do. These findings also speak to the policing regime which prevails in the MMA. As outlined in Chapter 3, instrumentally oriented policing has been dominant across several police forces. It has encouraged non-democratic practices, which have strained the relationships between police forces and the residents in many neighbourhoods.

The research from African countries has rendered similar findings. A study from Ghana (Tankebe, 2010) indicated that 'trust in police effectiveness' was, at least, just as relevant as 'trust in police fairness' for shaping 'police legitimacy'. In their study for South Africa, Bradford, *et. al.*, (2014) found that 'trust in police fairness' could be outweighed by perceptions of 'trust in police effectiveness' in controlling crime. In addition, these studies and another one from Nigeria (Ordu and Nnam, 2017), included reversed-mode variables of PJ –such as 'mistrust in public institutions', 'police misconduct' and 'corruption'– to measure the limits of the 'rightful authority of the police', as mentioned in the PJ framework. The findings revealed that such negative behaviours undermined PCP. Thus, even if 'trust in effectiveness' could be prioritised, when people evaluate the police in normative terms, negative perceptions about police demeanours might be more relevant than positive ones for eliciting PCP and CP. This is crucial in settings –such as the MMA– where power tends to be centralised in State institutions –such as the police. As mentioned above, this might imply a non-democratic exercise of their authority, including abuse and corruption.

In the first study for Latin America and the Caribbean, Kochel *et. al.* (2013) went further in analysing the mediating role of 'police legitimacy' (felt obligation to obey) between the aspects of trust and CP (reporting crime) in their study for Trinidad & Tobago. The results showed direct effects, whereby one standard-deviation increase above the mean in perceived 'police legitimacy' increased 69% the chances of people

reporting crime. Similarly, a one standard-deviation increase above the mean in perceived 'trust in police fairness' increased 63% the probability of CP. They found that 'trust in police effectiveness' had a very weak and insignificant effect. In contrast, Jackson *et. al.* (2020) recently conducted a couple of studies with data from Sao Paulo, Brazil, in which they tested whether perceptions of police procedural justice, effectiveness, lawfulness and distributive justice predicted legitimacy (moral alignment with the police). They evaluated if this concern entailed in 'appropriateness of the police', was significantly shaped by any of those dimensions. 'trust in police fairness' had the highest and most dominant effect (β = 0.81) and 'trust in police effectiveness' was the only other significant predictor (β = 0.12). In addition, they analysed people's instrumental and non-instrumental motivations for obeying the police, and whether these were distinct from each other. In a high-violence context where a considerable proportion of the public fear the police, have a low normative alignment with them, but justify police violence in some cases (i.e. target demographic minorities associated with crime), the results are illuminating. The instrumental and non-instrumental motivations failed to represent two separate dimensions. Instead, a continuum with 'coercive power and instrumental motivators' at one end, 'consensual authority and normative motivators' at the other end, and variations of both concerns intermingled along the whole range, was a more accurate representation (Jackson *et. al.*, 2020: 11,17). The results show that a one-standard deviation increase (more consensual) in the continuum, increased in 5% the probability of reporting not having committed a crime. Hence, their coercive-consensual continuum lends support to the potential of 'police legitimacy' for eliciting compliance, as well as PCP and CP. In addition, obedience rooted in normative considerations, increases the chances of citizens' compliance, whereas obedience due to 'fear of the police' decreases such chances. This study is particularly relevant for this thesis, since its findings show that, even in a setting –similar to the MMA– with more challenging conditions than in anglophone and other Global North jurisdictions, PJ could contribute to improve people's perceptions of police legitimacy. Interestingly, the citizens draw on a mix of motivations for obeying the police, suggesting that social characteristics of the local context shape their orientations towards the police.

The studies in Mexican contexts are scarcer but offer some similar findings to the evidence from other developing countries. Bergman and Flom (2012) conducted a comparative study between Mexico City and Buenos Aires, Argentina. The results

indicated that ‘police performance’ accounted for most of the variation in PCP in both cities. The results also showed that the residents that were victims or witnesses of ‘police abuse’ –including corruption– would have the confidence to let the police know about leaving their homes alone during holidays between 13% and 18% fewer times than those that did not suffered such experience. In a different study for a middle-sized municipality of Northwest Mexico, Sandoval (2016) sought to analyse people’s instrumental and normative views of the police. The results showed that, a significant increase of 597% in the odds of negative views of the police, was associated with perceptions of escalating crime –a proxy of police effectiveness. He also included the latent variable ‘police integrity’ for testing the impact of corruption, which decreased by 42% the **odds** of negative attitudes towards the police. More recently, Caamal and Reyes (2020) conducted a study for the Monterrey Metropolitan Area, in Northeast Mexico. Using a logistic-regression model, they tested the influence of ‘trust in police effectiveness’ and ‘trust in police fairness’ on PCP, controlling for crime levels and socioeconomic variables. They found that the odds of individuals having PCP were 18 times higher for those who considered the police to be effective than those who did not, whereas the odds for individuals who perceived the police to be fair were 15 times higher than those who thought otherwise. Although ‘trust in police effectiveness’ was stronger than ‘trust in police fairness’, the difference was not substantial. Overall, these Mexican studies found that effectiveness-driven trust affected public opinions of the police more importantly than fairness-related trust, and that PCP dropped with increased police abuse or lower integrity. This evidence reinforces the view mentioned above, that local political culture influences the considerations that people prioritise in their relationship with the police. In contexts similar to the MMA, the citizens appear to value ‘trust in police effectiveness’ more than ‘trust in police fairness’, in contrast to what occurs in anglophone jurisdictions. Nevertheless, these studies failed to address how police legitimacy works in the interplay with aspects of police trust and PCP. As outlined above, it is important to this thesis to analyse whether ‘police legitimacy’ plays a mediating role between the trust aspects –especially ‘fairness’– and the outcome variables.

Overall, the literature discussed has been focused on the different ways in which trust in the police, police legitimacy, PCP and CP are related in well-established democracies –especially anglophone jurisdictions– and in the Global South. This bulk of research also points out additional considerations, such as the role of contextual

attributes, contact with the police and individual characteristics (i.e. age, gender) in shaping people's perceptions of PCP and CP. These considerations and their relevance for this thesis are discussed in the next section.

2.11. Additional factors shaping PCP and CP

As outlined above, contextual differences between Global North and Global South jurisdictions seem to shape the way in which the citizens understand such concepts and prioritise certain concerns over others. As Tankebe (2009: 1266) notes, the content, conditions and implications of the police-citizens relationships "are shaped by specific factors found in particular socio-political and cultural settings". In this regard, several PJ studies (i.e. Sargeant, 2017) have identified certain contextual attributes, concentrated at the neighbourhood level, which mould people's orientations towards the police. This is important in the context of this thesis as levels of crime and social hardship are higher in the MMA than in other settings researched in the Global North. In turn, such worse social conditions might wane PCP and CP. According to Kubrin and Weitzer (2003), this could be due to citizens' perception that the police have failed to protect them, leaving them vulnerable.

It was also mentioned in Chapter 1, that the new police model seeks the police forces to be more approachable through more frequent contact between their officers and the citizens. This is also thought to be helpful for establishing closer relationships between both parties. However, it is not quite clear from the literature that 'contact with the police' affects people's perceptions about them (i.e. Skogan, 2009). This line of research on PJ suggests that it is not simply the fact that someone has had contact with the police that determines their perceptions. Instead, it is how a person judges contact with the police what seems to determine its significance. As Skogan (2009: 315) found in this study, it may relate to the quality of the contact –more than its outcome– what could magnify its consequences; that is, an individual's perception of the police (Skogan, 2009: 315). According to the PJ framework, such interactions consist of teachable moments. As mentioned above, the procedures of the police in public encounters with the citizens convey to the latter a notion of social representation (see: Tyler, 1990: 175).

Similarly, the literature is inconclusive on whether individual characteristics (i.e. age, gender, socioeconomic) significantly influence PCP and CP (i.e. Merry *et. al.*,

2012). As outlined discussed below, some studies have found these to be influential, while others have yielded opposite results. These considerations deserve further attention and thus are discussed in this section.

2.11.1. Crime and structural factors at the neighbourhood level

Social Disorganisation Theory (i.e. Shaw & McKay, 1942) documented the uneven geographical distribution of crime across urban areas, associated with different concentrations of social disadvantage among the residents of those areas. More recent literature, especially in anglophone countries (i.e. Hawkins, *et. al.*, 2010) has anchored individual perceptions to the 'neighbourhood' as an objective geographical unit of analysis, rather than subjective references (e.g. communities). This research argues that individuals make decisions by reacting to the neighbourhoods where they live (Sampson, 2012). Thus, neighbourhood characteristics give rise to social dynamics called 'neighbourhood effects'. These reflect, not individual characteristics, but collective properties from which social mechanisms and interactional processes emerge. These insights highlight the importance of considering the influence of neighbourhood characteristics in policing and crime-reduction strategies.

The empirical research on the relation of neighbourhood characteristics with PCP and CP is scarce. However, the few studies available suggest that high concentrations of crime and social hardship could worsen people's views of the police. For instance, in their seminal study about Chicago's neighbourhood areas (NAs), Sampson *et. al.*, (1997) found that structural factors –concentrated disadvantage, ethnic diversity and residential instability– were closely associated with crime levels. Their findings also indicated lower satisfaction with the police among the residents of NAs with higher concentrated disadvantage (Sampson and Bartusch, 1998; Sampson, 2012). A subsequent comparative study between Chicago and Stockholm consistently showed an association of more violent crime in neighbourhoods with higher residential instability and concentrated disadvantage (Sampson and Wikstrom, 2008).

Other neighbourhood-effects studies have also focused on disaggregating neighbourhoods' social composition in urban areas. For example, a couple of studies in Swedish and Turkish cities (Gerell and Kronkvist, 2017; Karakor and Parlar, 2017, *respectively*) tested 'spatial explanations' of crime, according to neighbourhood location. The findings indicate that certain neighbourhoods, for example, in the city

centre, concentrate the highest crime rates. In the UK, Brunton-Smith *et. al.* (2013) conducted a multilevel study for urban areas in England and Wales. They used Super Output Area (SOAs) as the geographical units of analysis that reflected more homogenous compositions. They found that population mobility, ethnic diversity, and recorded crime had significant neighbourhood effects (spatial autocorrelation) on the residents' perceptions of crime. The findings of these studies speak to the aim of this thesis, concerned with accounting for the negative influence that neighbourhood characteristics could have on PCP and CP.

In this regard, modern studies acknowledge the relevance of neighbourhood contexts in moulding attitudes towards the police (Kubrin and Weitzer, 2003). As discussed above, PJ rationale puts forth that, when the police are engaged in a proactive relationship with the residents, crime levels are more likely to be lowered, due to a closer relationship between both parties. The police promote shared values among the neighbourhoods' residents that contribute to reinforce their self-regulatory capacity and elicit their willingness of CP in crime-reduction initiatives (Tyler, 1990; Tyler and Huo, 2002). Recent research in the U.S. and the UK on community and neighbourhood policing show its potential to elicit PCP and CP, which supports the claims of PJ theory (i.e. Innes, 2004; Lowe and Innes, 2012; Myhill and Quinton, 2010; Skogan, 2006).

The studies available in anglophone jurisdictions suggest that crime and structural factors shape the residents' perceptions in a way that could undermine PCP and CP (i.e. Brunton-Smith and Sturgis, 2011). Their findings also reinforce the importance of considering if, in non-anglophone contexts, high concentrations of crime and structural factors could hinder the police efforts for gaining PCP and CP. This is even more relevant, considering the paucity of research in the Global South, on the relationship between 'neighbourhood effects' and the outcome variables. For example, in the U.S., Reisig and Parks (2000) estimated a multilevel model of the influence of neighbourhood contextual factors on 'satisfaction with the police', with data from two mid-sized cities. Concentrated disadvantage had a negative and significant association with the outcome variable, whereas 'homicide rate' was not significant. Nix. *et. al.* (2015: 611) conducted a study with data from another mid-sized city in the U.S. They acknowledged the possibility that "cognitive orientation of people toward their neighbourhood partially shapes the level of trustworthiness they afford to the police".

However, their results showed insignificant effects of crime on PCP and no relevant structural factors were included in their analysis.

In the UK, Jackson *et. al.* (2013) gauged for neighbourhood effects associated to the instrumental and normative evaluations of PCP. They found a strong variation (above 70%) between neighbourhoods, from which normative evaluations (i.e. fairness) were especially important in predicting lower crime levels. In addition, police legitimacy mediated some of the neighbourhood effects on CP. Neighbourhoods with worse social conditions were associated with poor perceptions of police legitimacy and cooperation. In a more recent study (Jackson *et. al.*, 2020), they further tested CP as a neighbourhood-based norm in high-crime areas in England, and whether this varied across neighbourhoods. The results indicated a variation of 20% of CP across neighbourhoods and more willingness to cooperate in less deprived neighbourhoods. Police legitimacy (moral alignment) was found to strongly predict neighbourhood-based cooperation only when this was low or ambiguous. Thus, 'moral alignment' had a substitution-effect for the neighbourhood-based norm.

Sargeant (2015) found similar evidence in her study about Brisbane, Australia. Neighbourhood-concentrated minorities, proportion of unemployment, and residential stability had negative and significant effects on the residents' perceptions of their neighbourhoods. Alongside these findings, trust in police effectiveness and trust in police fairness were strong, positive and significant predictors of those perceptions. Overall, these studies favour the view that, in neighbourhoods with more crime and social hardships, the residents usually have negative views of the police, and their relationship could be distrustful. This is a serious concern since, as will be outlined in Chapter 3, the MMA presents worse crime rates and social conditions than most settings in the Global North where the aspects of trust, police legitimacy and the outcome variables have been studied. However, it is unclear the extent to which 'neighbourhood effects' could wane PCP and CP in the MMA, due to a lack of Mexican studies on this matter.

2.11.2. Contact with the police

Many PJ studies have noted that contact between police officers and citizens could alter the latter's opinions of the police. As outlined in Chapter 1, the new police model in Mexico promotes more frequent contacts with the public, to propitiate closer

relationships with them. As will be outlined in Chapter 3, this is particularly important for municipal police forces, which respond to most reports from the citizens. However, these corporations arouse the worst public opinion among all police bodies in the MMA. Thus, intentional frequent contacts could be worrisome if these worsen people's views about police forces.

Some of the research discussed above suggests that close contact between both parties could be beneficial for the police. Sunshine and Tyler (2003) analysed the potential benefits that policing strategies, aimed at establishing more interactive relationships with the public, could have in improving the latter's views of the police. As discussed above, PJ and 'police legitimacy' had strong, positive and significant effects on CP. Gau's (2014) study also rendered evidence on the smaller effects of perceptions of PJ attributable to face-to-face encounters, than the effects of more general perceptions. The study of Mazerolle *et. al.* (2013), also points to police initiatives aimed at communicating PJ, enhancing 'police legitimacy', promoting PCP and CP. The results already discussed show the potential of those efforts of active engagement with the citizens for improving their perceptions of the police. Another systematic review of this type of initiatives (Myhill and Quinton, 2010) found that community and neighbourhood policing contribute to enhance PCP and when addressing different problems that affect a group of residents.

However, other studies (i.e. Bradford, *et. al.,* 2008) have been sharper in noting that, in most circumstances, and despite any effort made by the police, direct encounters undermine confidence in them. Findings from the UK (Bradford, Jackson and Stanko, 2009) and in the U.S. (Skogan, 2006; 2009) show that people who had recent contact with the police express less positive opinions about them –at least in the short term– than those who have not recently contacted the police. More recently, MacQueen and Bradford (2015) tested PJ foundations in Scotland, in an experimental study that involved roadside checks. Police officers were separated in two groups: control and treatment. The former proceeded as they usually did in their interactions with the drivers stopped, but the latter followed a script designed for communicating procedurally just behaviour. The results indicated that perceptions of PJ were lower among the drivers who were stopped by the police officers in the treatment group. In a subsequent article (MacQueen and Bradford, 2017), they offered possible explanations on implementation flaws that might have affected the treatment group, such as failure of some officials to follow the script, or not being completely aware of

this experiment and how to proceed. Thus, not all the officers entirely communicated the message in the script as expected, which in turn could have biased the results. Nevertheless, Pósch (2020), ran a sensitivity analysis with the same data and did not find significant variation in the interactions of police officers with the drivers. The impact of the treatment effect was homogenous across the individuals stopped. In addition, he used mediation-analysis techniques for testing the influence of police contact on perceptions of police legitimacy (duty to obey) and 'social identity' (self-perceived membership of the Scottish community) and whether PJ mediated these effects. His findings confirmed that having had contact with the treatment-group officers did not directly predict legitimacy and identity. It only influenced legitimacy when it was mediated by PJ. Moreover, these results were consistent with MacQueen and Bradford's (2015) previous findings on the negative influence of contact with the police in roadside checks on people's perceptions. Overall, this evidence is not definitive on the whether 'contact with the police' significantly affects the citizens' views about them, and if these are more likely to be positive or negative. In addition, 'contact with the police' has been studied, mainly, in anglophone countries of the Global North. Therefore, it is unclear what role 'contact with the police' might play in the MMA.

2.11.3 Individual socioeconomic factors

It has been argued that the police have historically targeted powerless people with specific socioeconomic characteristics, who have become the 'police property' (Reiner, 2000). The PJ research has also considered how certain demographic groups might shape their attitudes towards the police in different ways. For example, Tyler and Huo (2002: 91) argued that young minority males "are primarily concerned with issues of respect and acknowledgement of their rights". Similarly, Bradford (2014) points out the special relevance that procedurally fair police behaviour has on their relationships with minorities, as a way of communicating that they are valued members of society. More recently, Farren *et. al.* (2018) tested if PJ claims could hold true among adolescents across European jurisdictions. For most of these countries, they found strong and significant effects of trust on police legitimacy. In addition, the influence on compliance was mediated by police legitimacy. Indeed, as Gau (2011: 496) suggests, citizens' perceptions might be related not just to their experiences with the police, but also with their social characteristics.

The evidence, mainly from democratic countries, shows mixed results regarding the relevance of demographic variables. While some studies (i.e. Brown and Benedict, 2002; Reisig and Parks, 2000) indicate that the PCP is lower among men and young people, others (i.e. Miller and Davis, 2008; Schuck *et. al.*, 2008) found those factors to be insignificant. A review of the evidence of the drivers of trust and confidence (Merry *et. al.*, 2012) also found gender to be an inconsistent predictor. This review also showed that older individuals have more positive opinions of the police, whereas younger people hold less favourable attitudes towards them.

The literature discussed in previous sections, from less mature democracies and non-democratic countries, has also accounted for the influence of demographic characteristics. For example, in China, Sun *et. al.* (2013) found differences about perceptions of police procedural fairness and distributive fairness, among urban and rural residents, as well as migrants. In Latin America and the Caribbean, the research on this matter has controlled for age, gender and socioeconomic level, yielding mixed results. In Brazil, these variables were only helpful for preventing biased estimations of procedural justice and competing instrumental concerns (Jackson *et. al.*, 2020). In Trinidad and Tobago, those predictors were insignificant (Kochel *et. al.*, 2013). In their comparative study for Mexico City and Buenos Aires, Bergman and Flom (2012) found that individuals with lower socioeconomic level were 23% more likely to trust the police and that men had 30% more chances of trusting the police than women. In contrast, Sandoval (2016) found that age, gender and social class were not significant predictors of satisfaction with the police, in his study of mid-sized Mexican city. In addition, Caamal and Reyes (2020) showed that, in the State of Nuevo Leon, age and educational level were significant predictors of PCP, whereas gender was not. Overall, the extant research shows inconsistent results on the influence and significance of individual characteristics (i.e. age, gender and economic position) in both consolidated and less mature democracies. Due to the unclear effects of these characteristics, it is necessary to consider how they might shape the outcome variables in the MMA.

2.12. Gaps in the literature

This chapter has reviewed the existing literature on the relevant considerations for this thesis involved in the generation of PCP and CP. It makes conceptual clarifications about ‘trust in the police’ and ‘police legitimacy, which will be useful for

the methodological (Chapters 4 and 5) and analytical (Chapters 7 to 9) developments of this thesis. The PJ framework has drawn on normative standards put forth by the macroscopic accounts, for guiding the conceptualisation of 'police legitimacy' more objectively. This refined definition informs the extent to which 'police legitimacy' aligns with democratic ideals and practices. With this updated version of PJ theory, it is possible to frame the empirical analysis within the context of a particular political culture, across different jurisdictions.

Nonetheless, there are some gaps in the same literature on PJ theory. At the theoretical level, the normative nature of 'trust in police fairness' has led many recent studies to include the element of 'shared values and interests' in its definition (see: Jackson and Bradford, 2010; Jackson *et. al.*, 2013). This approach deserves a couple of considerations. On one hand, these studies recognise a normative overlapping of trust with legitimacy in the 'appropriateness of the police' (Jackson and Gau, 2016). On the other hand, it is also acknowledged that 'shared values and interests' is a moral element that police legitimacy captures. Thus, combining 'fairness' with 'shared values and interests' could obscure the distinctiveness of each aspect. Although 'fairness' and 'shared values and interests' are closely interrelated, they are different. The former is a trust aspect –whereby people assess if the police have treated them with respect and dignity– and the latter is the moral component of legitimacy. This distinction is key to study the conceptual relations mentioned above in Figure 3.

At the empirical level, that framework suggests that 'police legitimacy' is a mediating mechanism though which 'trust in police effectiveness' and 'trust in police fairness' influence PCP and CP. However, these mediated relationships have not been empirically tested, as it was proposed above in Figure 3. In this chapter, the importance of 'context' was also discussed, insofar as specific social conditions at the local level could shape citizens' perceptions of the police in particular ways. Therefore, having reviewed the literature on PJ, the next chapter outlines the relevance of the local context of the MMA, in Mexico. It will be discussed that the MMA has a distinctive policing background and different social conditions from those of anglophone countries and others within the Global North. This context shapes the importance that individuals give to the aspects of trust in the police (effectiveness and fairness) and their assessments of the role that police legitimacy plays.

2.13. Conclusion

There is an extensive literature which has largely informed the research on the interplay between trust, legitimacy, confidence and cooperation. The existing research shows the complexities involved in the distinction between theoretical constructs, since many studies have shown the different conceptualisations of 'trust in the police' and police legitimacy. The PJ framework has been particularly helpful in clarifying these concepts. This framework offers a special strength compared to other accounts, due to its empirical approach to testing its foundations. This body of evidence lends support to the view that normative aspects, such as fairness of police procedures and shared values and interests could be more relevant than instrumental concerns, such as 'police effectiveness' and 'perceived risk of sanction', in eliciting PCP and CP. The literature also indicates the importance of taking into account the local context in which the PJ framework is situated. As its concepts are in constant evolution, it is even more necessary to test them in under-researched contexts, such as the MMA in Mexico. As discussed in Chapter 3, the MMA poses more challenging social conditions and a different policing background compared to the anglophone countries and other jurisdictions in the Global North where the PJ framework has been studied. These differences might shape the MMA citizens' orientations towards the police, including their perceptions of PCP and CP.

Chapter 3. The context of the MMA for studying Procedural Justice

3.1. Introduction

Having discussed the relevant literature which provides PJ theory as the conceptual framework for this thesis, the MMA as the locus of this research will now be explored. It was mentioned in Chapter 2 that 'police legitimacy' is fundamental for gaining PCP and CP. PJ research has demonstrated that the empirical study of the elements that strengthen or weaken 'police legitimacy' must consider the local context. For instance, certain police behaviours in a particular political and social setting might shape the extent to which the citizens consider them legitimate, and this may differ to other contexts. In contrast to the anglophone settings where PJ theory has been widely researched, the MMA offers a combination of more unequal and worse levels of social hardship and crime, a relatively recent past of authoritarianism and lower levels of public confidence in criminal justice institutions. Therefore, the aim of this chapter is to outline the economic, social and institutional conditions of the MMA that make it different to the contexts of the Global North where PJ theory has been tested.

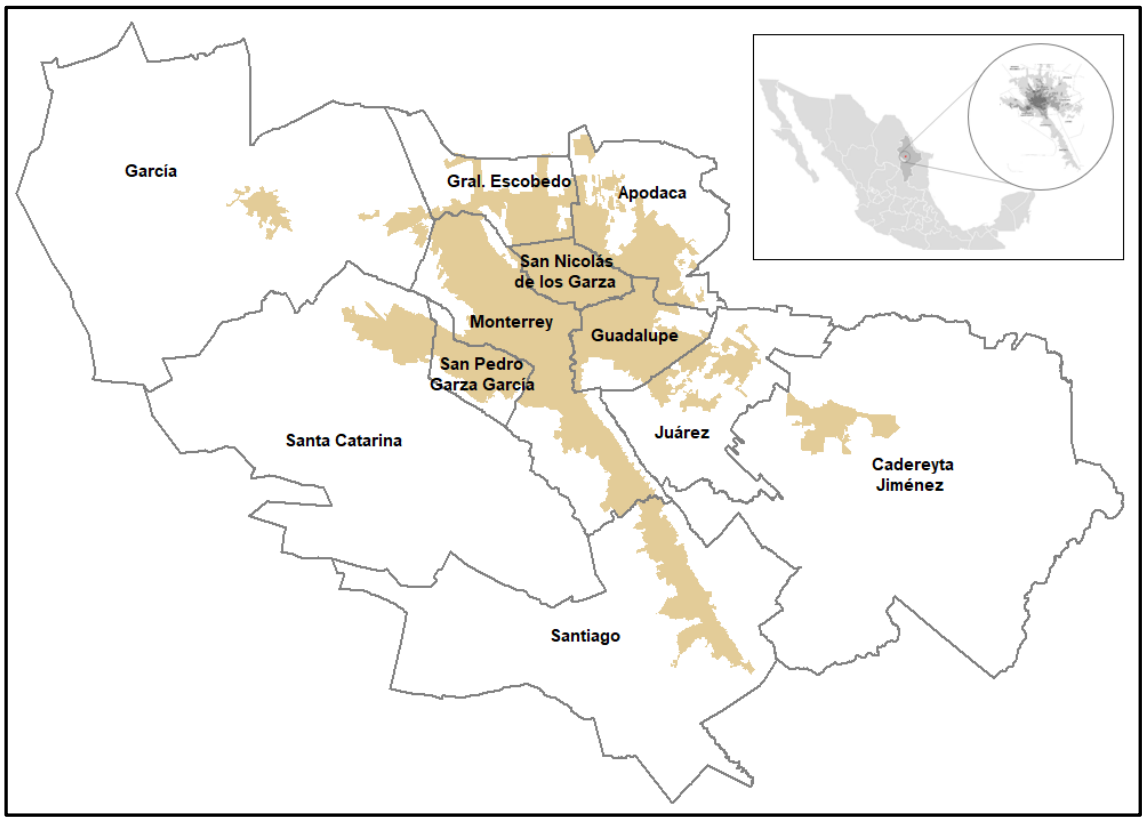
This chapter begins by describing the rise in violent crime experienced in the MMA and the different conditions in which this has happened, in contrast to other cities in Mexico and Latin America. A set of police reforms that the Mexican government has promoted for reducing crime, while obtaining PCP and CP is then discussed. The third part of this chapter covers policing in the MMA, including two opposite philosophies resulting from the police reforms, which have shaped the relationship between the police and the citizens. While one philosophy argues that the police should be endowed with more functions and powers, the other emphasises a closer relationship with the citizens and their active participation for encouraging police accountability (Fruhling, 2007). These two policing views have an important implication for the study of PCP and CP in this thesis. As mentioned in Chapter 2, a distinct political culture could affect the orientations of the MMA residents towards the police. Thus, in addition to social hardship and crime, opposing policing approaches might generate different reasonings (i.e. normative vs. instrumental) about 'police legitimacy'. In turn, this mix of conflicting motivations could influence PCP and CP in contradictory ways. Furthermore, it is unclear whether the normative motivations entailed in 'police legitimacy' could outweigh the instrumental ones to enhance the outcome variables. The last section

outlines some considerations arising from the relationship between this chapter and Chapter 2, which give rise to the research questions that will guide the analytical strategy in this thesis.

3.2. The MMA amidst rising violent crime in Mexico

The MMA is located in the State of Nuevo Leon (NL), in Northeast Mexico, as the shaded area in Image 1 shows below. From an official viewpoint, it consists of twelve municipalities (CONAPO, 2010), but this thesis considers eleven of them. These have largely or entirely urban areas, and abut each other: Apodaca, Cadereyta Jimenez, Garcia, General Escobedo, Guadalupe, Juarez, Monterrey, Santa Catarina, San Nicolas de los Garza, San Pedro Garza Garcia and Santiago. The municipality of Salinas Victoria was excluded –and thus not shown in the map below– since its territory adjacent to the MMA is vastly rural, its urban area is 19.3 kilometres away and its policing demands are thus very different.

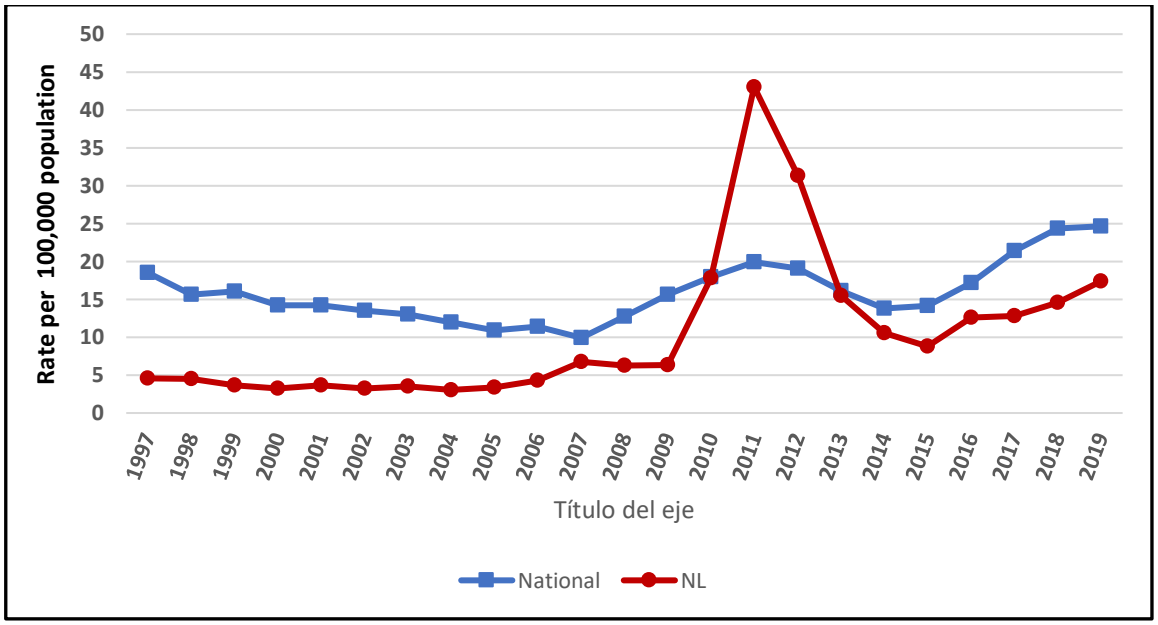
Image 1. Monterrey Metropolitan Area (MMA)



Source: elaborated with Geographic Information System Data (INEGI, 2010)

The eleven municipalities are home to 4,383,451 inhabitants, which represent 86.5% of the total state population (INEGI, 2015). Within the first decade of the 21st Century, the MMA was one of the many cities drawn into a whirlwind of increasing violence in Mexico, mainly driven by homicides. Drawing on official data from the National Public Security System (2020), Figure 4 shows intentional homicide rates in Mexico and NL per 100,000 inhabitants, from 1997 to 2017. The data by municipality was not available before 2011 and, in order to keep consistency in the estimations, the data by State was used.

Figure 4. Intentional homicides in Mexico and NL (1997 – 2019)



Source: National Public Security System.

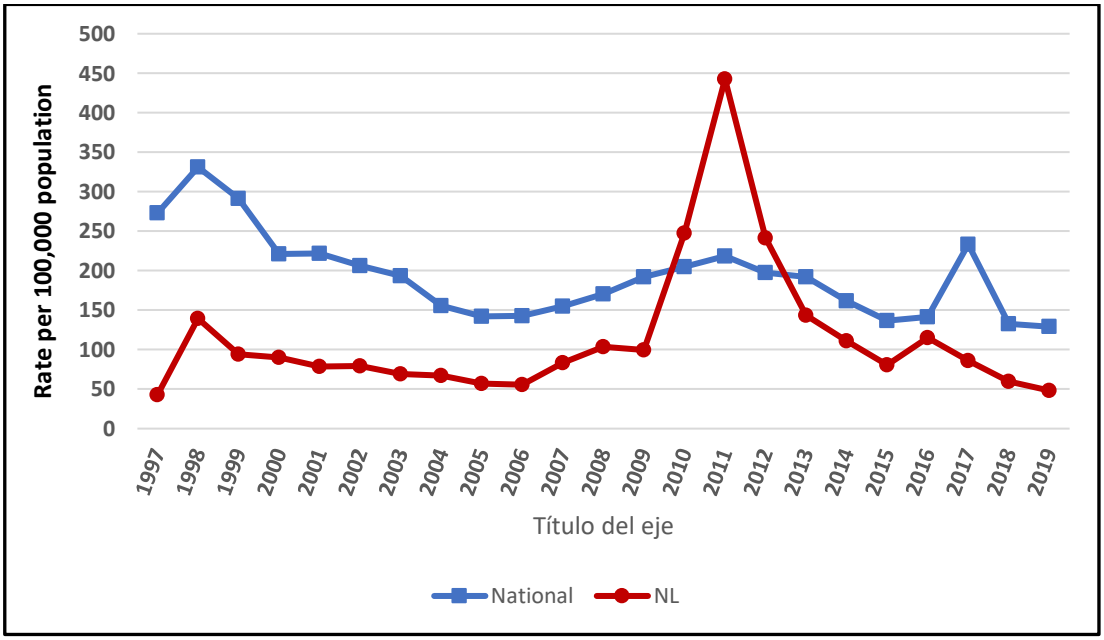
The chart above shows a relatively stable trend of intentional homicide rates in NL, which was below the national trend until 2009, although it moderately increased at an average rate of 17.82 from 2004 to 2009. Over the next two years, it soared dramatically, peaking at 43.04 in 2011. This represented a rise of 576% in just two years and resulted in a rate that was 115% higher than the national figure.

Such increase has been well studied in the context of organised crime in Mexico. For instance, Dudley (2012) and Grayson (2014) explain the increase of violent events in the MMA in those two years as the result of a confrontation between the Gulf Cartel and the Zetas for control of *'la plaza'*, as criminal organisations call the trafficking corridor in a given territory. The Zetas not only propelled violence in the form of mass

killings of their opponents, but also by murdering other delinquents who carried out their criminal activities in the city and that failed to abide to the extortion scheme imposed on them.

In addition to the homicides during those years of escalating violence, Sánchez and Pérez (2014) point out the occurrence of other equally serious crimes with high social impact never seen before in the MMA (i.e. kidnapping), while street robberies and violent property crimes increased considerably. Figure 5 below captures these changes in the MMA.[1] These types of violent crime were strongly related to the confrontation between cartels mentioned above. As Dudley (2012) notes, criminal organisations, such as the Zetas, have complex and diversified structures with multiple sources of illegal revenue, including among other crimes, "kidnapping and (violent) theft". Similar to Figure 4 above, the number of other violent crimes rose 'moderately' between 2006 and 2009 at an average rate of 26.4%, but then they increased sharply to a peak in 2011 above the national figure, before declining again.

Figure 5. Other violent crime rates in Mexico and NL*
(1997 – 2019)



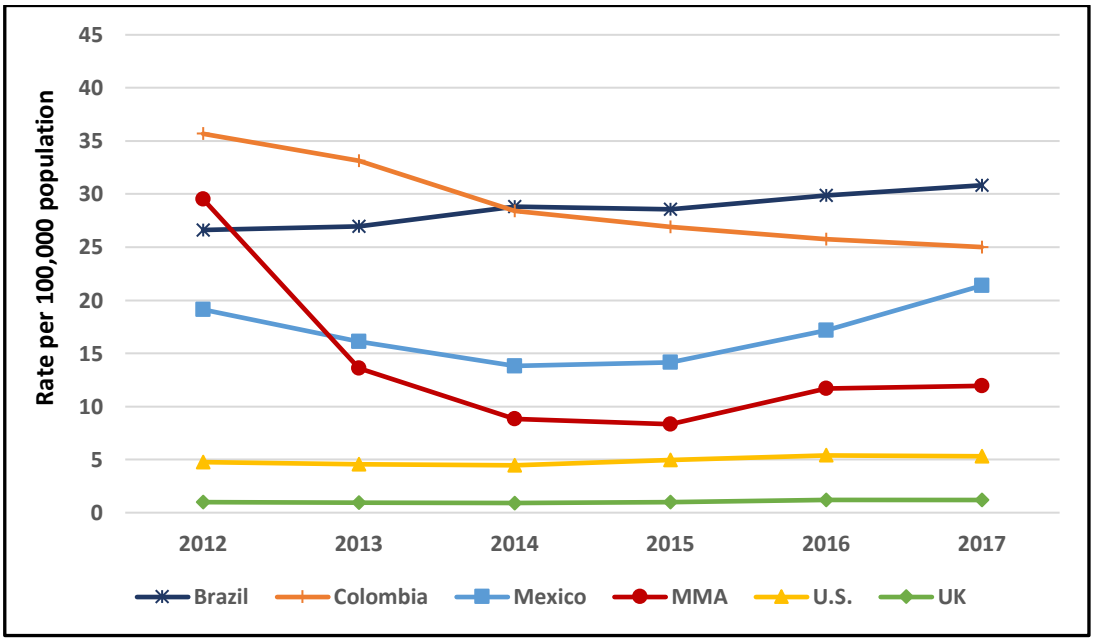
Source: National Public Security System. *Includes kidnapping and violent robberies: business, car, home, public transport.

[1] In Mexico, violent property crimes are recorded as 'violent robberies', as considered in Figure 5.

The sharp reduction that followed the peak of violence in NL stabilised in 2015 at a rate of 80.91 for other violent crimes and 8.81 for intentional homicides. Although the former declined at an average rate of 8.5% to reach in 2019 a figure lower than that of 2006, the latter has not returned to the lower level it was at before that year. In 2019, this figure stood at 17.36, a 400% higher than the rate of 3.41 in 2005, which clearly indicates that homicides are an ongoing problem and thus represent a challenge to the safety of MMA residents.

Urban centres such as the MMA have been the main drivers of high crime-rates in Mexico, consistent with the experience of other Latin American countries. According to the Igarape Institute (2017), Latin America has 43 of the 50 most violent cities and eight of the top-10 violent countries in the world, as measured by homicide rates. Figure 6 below illustrates this, by showing a comparison of intentional homicide rates in Mexico and the MMA with those in two other Latin American countries –Brazil and Colombia– in that list, and especially with the U.S. and the UK –where most PJ research has been produced.

Figure 6. Comparison of intentional homicide rates



Source: UNODC and NPSS

Intentional homicide in Latin American countries is a serious problem. Although the rates are higher than in the MMA, the figure in the latter is clearly higher than in the U.S. and the UK. As discussed in Chapter 2, a violent environment could hinder the

generation of PCP and CP. High concentrations of crime can generate among the residents the perception that the police are unresponsive or ineffective in enforcing the law, which makes them feel unprotected. In turn, this sense of vulnerability undermines their confidence in the police and prevents their collaboration with them in crime prevention, out of fear of delinquents (Kubrin and Weitzer, 2003).

3.3. Violent crime in Latin America and the difference in the MMA

Rosas (2012) argues that the increase in violent crimes in the region was propitiated by the economic difficulties that several countries faced in the 1980s. The inefficiencies associated with the management of State-led economies, protectionist measures for favouring their domestic markets and a sharp drop in commodity prices that were their main source of income led many Latin American countries to face serious external debt crises. Those years turned out to be the "lost decade" -as it is often called- for many countries in the region. Moreover, the economic difficulties gave way to a **new economic model which promoted a withdrawal of the State from the economy and favoured free market forces and austerity measures**.

These changes in the 1980s worsened the economic hardship, which impacted the region more seriously during the 1990s and weakened the State capacity in many countries to address increasing crime (Rosas, 2012). Similarly, Dammert and Malone (2006) argue that the new economic model triggered an increase in crime in many Latin American countries in the 1990s, even those considered safe until that time, such as Argentina. Here, overall crime increased 83% just in one decade, from 1990 to 2000, while it soared 115% in the Province of Buenos Aires. In other countries, the new economic rationality worsened crime that had been triggered before, by the economic crisis, such as Brazil. For example, Goertzel and Kahn (2009) note that in the city of Sao Paulo, homicide rates increased 52% in the same ten years, from 45.9 to 69.7. In Mexico, in the first half of this decade, crimes that fall within the jurisdiction of local authorities (municipalities and states) increased 20% and crimes that fall within the jurisdiction of the federal government (i.e. organised crime) increased 40%.

Notwithstanding that several Latin American cities severely suffered the effects of the economic downturn and the consequent increases in their crime rates, the MMA had a different experience. During the 20th century, the city of Monterrey underwent an **accelerated industrialization process** that stimulated the development of a

regional labour market and turned the city into one of the main economic centres of Mexico and Latin America, reflected in its high-quality infrastructure and services (Hernández, 2006). In turn, this economic development was accompanied by a significant population growth that produced an expansion of the city and, therefore, its transformation into a metropolis (MMA). According to Pussetto *et. al.* (2008), such economic progress created not only the conditions for the city's continued development, but also the widespread perception among its population that they lived in a safe environment. The 'National Survey on Insecurity' (ENSI, 2002-2010) supports that viewpoint. In 2002, only 34% of the respondents felt that they lived in an insecure state. The crime rates shown above in Figures 4 and 5 are consistent with that perception. Until the early 2000s, violent crime levels were considerably lower in NL than the national aggregate.

However, by the end of the first decade of the 21st Century, an insecurity crisis broke out. Violent crime in NL spiked abruptly and unexpectedly. It was paradoxical that its economic success turned the MMA into a magnet for criminal organisations and, thus, into one of the most violent cities in Mexico. In contrast to other big Mexican cities with an important share in the national economy in the 1980s-1990s, the MMA had not suffered the trends of rising crime (i.e. Mexico City), nor an upward spiral of violence (i.e. Guadalajara) that characterised those urban centres during those years (López-Montiel, 2000; Lomnitz, 2003; Shirk and Wallman, 2015). Bergman (2018) offers a compelling explanation of such a paradox. He argues that thriving economies enhance the demand of illicit goods and services, which in turn stimulates the expansion of illegal markets. However, this paradox varies according to the strength of criminal justice systems. Jurisdictions with weak and outdated criminal justice institutions (i.e. the police) usually experience dramatic increases in criminality, whereas this rise tends to be moderate in countries with stronger criminal justice systems. When the insecurity crisis started in the MMA, the local authorities did not respond promptly, to some extent, due to the shock caused by the sudden outbreak and escalation of crime. However, the hasty and poorly planned response could also be explained by the loss of institutional capacity brought about by the austerity measures mentioned above. In turn, this weakened capacity translated into a lack of police readiness for responding to the challenge of violent criminal organisations.

Furthermore, not only did intentional homicide rates increase during those years, first moderately from 2004 to 2009 and then dramatically from 2009 to 2012, but

citizens' perceptions also deteriorated. The ENSI (200-2008) shows that, in 2004, 41% of the respondents in NL felt insecure –a figure already higher than in 2002–, but this proportion rose to 70% in 2008. The 'National Survey of Victimization and Perception of Public Security' (ENVIPE, 2011-2013) for the following years indicates that the figure surpassed 80% of the respondents.

The insecurity crisis in NL had a very serious impact on daily life in the MMA. Many of its residents changed their habits and lifestyles (i.e. avoiding nightlife) and investments in new businesses were rescheduled. According to Sánchez and Pérez (2014), extortions from organised crime to local businesses also surged in the city. These were forced to pay between 20 and 30% of their total sales every week. As a result, between 2008 and 2009, around 40% of them had to close. They also note that violence in the MMA produced the emigration of people -especially students and businessmen- from NL to other Mexican states and the U.S. In this context, public criticism led the Mexican Government to undertake a set of reforms aimed at enhancing police capabilities for responding to this crisis and gain PCP, as will be discussed below.

3.4. Police reform and its impact in PCP

In the years prior to the drastic economic changes and State reform that occurred during the 1980-1990s period, Mexico and many other Latin American countries were ruled by an authoritarian regime. Public security was state-centric and the police had other aims. However, the 1990s marked a milestone in the beginning of the police reforms in several Latin American countries, although police reform process significantly deepened in Mexico and NL until the early 2000s. The reforms approved during the last 20 years have been part of a wider set of reforms aimed at modernising the criminal justice institutions, enhancing their capabilities for law enforcement and moving towards a professional police model that could improve their image and gain the public's confidence and support (Asch, Burger and Manqinq, 2011; Carbonell, 2012). As will be discussed below, these reforms, however, have not been well implemented and lack continuity, which has led to the prominence of militarised policing schemes with instrumental priorities.

3.4.1. A wave of police reform in Latin America

In the early 1990s the police and other security agencies in many Latin American jurisdictions were highly influenced by the context of the Cold War and thus targeted student revolts and guerrillas, which were considered serious risks to national security and the regime itself (Rosas, 2012). However, a wave of police reforms occurred in many of these countries during the 1990s. According to Frühling (2007), these were influenced by three factors. First, **democratisation processes** in the region marked the arrival of freely elected governments, in response to public criticism of police abuses which had been common during preceding authoritarian regimes. Democratic transitions also made it hard to use repressive police forces, as many authoritarian regimes had been doing until then. Second, the economic reforms mentioned above led to the emergence of **decentralisation processes**. National governments sought to reduce the size of the State apparatus, thereby, withdrawing from certain functions, and transferring them to local governments. Decentralisation was thought to help reduce costs of public services, bring them closer to citizens and improve the efficiency and effectiveness of public institutions. Third, the **increasing levels of violent crime** discussed above imposed serious pressure on many national governments. Democratisation sparked public debate about the need of more capable police forces and making changes in law enforcement strategies.

3.4.2. The process of police reform in Mexico and NL

Since Mexico is a federal state, there are three levels of government –federal, state and municipal–, each with its own police force. These share responsibilities of public security such as sanctioning violations of the law, public regulations and preventive policing (Rosas, 2012). The administration of President Vicente Fox (2000-2006) sought to strengthen the State and Police corporations. The Public Security Support Fund (*Fondo de Apoyos a la Seguridad Pública*, or FASP) was created for building capabilities on communications and creation of modern crime databases. Similarly, the Subsidy for Municipal Public Security (*Subsidio de Seguridad Pública* Municipal, or SUBSEMUN) was created in 2008 to complement budgetary needs of municipal police forces in their professionalisation and modernisation efforts. Both FASP and SUBSEMUN were boosted during the following administration of President

Felipe Calderon (2006-2012) as the police came to be regarded as one of the main pillars of public security policies. The Constitutional penal reform in 2008 was a milestone in his term that established the framework for better coordination and exchanging information among the police corporations at the three levels of government. This reform also defined professionalisation standards for police corporations should meet, such as proper procedures for collecting evidence and complying with Human Rights when carrying out judicial warrants. In addition, checks and controls were introduced in police forces for identifying potential corruption cases among police officers and holding them accountable (Asch, Burger and Manqinq, 2011; Carbonell, 2012; Meyer, 2014; Sabet, 2010).

It was during the following years that important steps were taken to strengthen the regulatory framework for police action. For instance, the administration of President Enrique Peña (2012-2018) emphasised the relevance of social prevention of violence and the administration of justice through non-penal mechanisms. Regarding the latter, his government published in 2017 the 'Model of civic justice and culture of legality for municipalities', which envisions the police as a central actor close to the citizens (SEGOB, 2017). In the same year, this administration also issued the 'Optimal model of policing', which establishes police action protocols and offers guidelines for the use of police force. The current administration of President Andrés López (2018-2024) has revised and updated such protocols and guidelines (SEGOB, 2018). A Presidential Decree of March 2019 also created the National Guard, with the purpose of replacing the federal police, to have a stronger national police force in charge of public security.

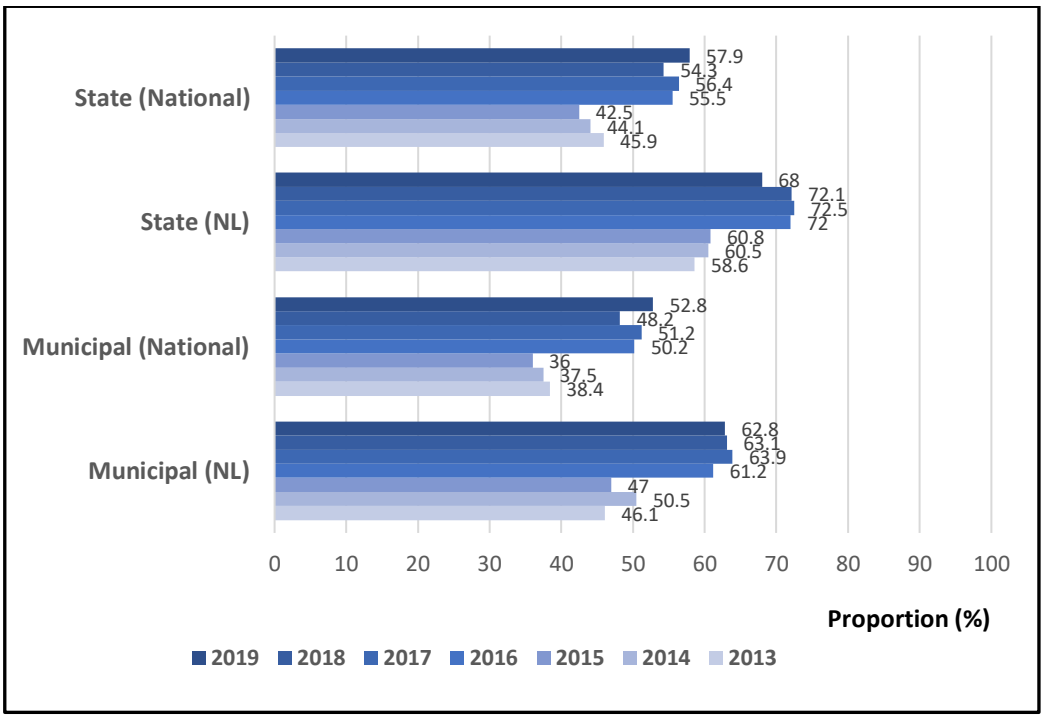
The reforms promoted by the federal government have produced institutional transformations in many states, including NL. Alongside the federal efforts, the state and municipal governments have also undertaken their own reforms aimed at tackling violent crime and improving public opinion of their police forces. For instance, the Constitutional penal reform of 2008 mentioned above has led to the establishment of the 'New Criminal Justice System' in NL since 2015. Its implementation has sought the expeditious administration of justice through an adversarial and oral scheme, especially concerned with the protection of victims (Government of NL, 2016). In 2016, the State Congress approved the 'Law for the social prevention of violence and crime with citizen participation of the state of Nuevo León'. Drawing on this framework and the models generated during Enrique Peña's administration, the state police and some municipal police forces implemented (i.e. Guadalupe, San Pedro Garza) or enhanced

(i.e. Gral. Escobedo) 'social proximity' policing schemes from 2012 to 2018. These policing initiatives have sought to generate a closer collaboration between the police and the citizens in the identification of problems that affect people, as well as in the elaboration of policies for the prevention of violence and the peaceful resolution of conflicts (Montero Bagatella, 2021).

3.4.3. Impact of police reform on PCP in NL

Overall, the reforms and initiatives outlined above could have contributed to enhance the capabilities of police forces in NL and improve PCP. According to data from ENVIPE (2013-2019), PCP levels on the Municipal and State police forces in NL are higher than the national average, as Figure 7 shows below. It refers to respondents who answered 'some' or 'complete' confidence to the question "How much confidence do you have in the police?". This data also shows a clear increase in the proportion of respondents that reported some or complete confidence, from 2015 to 2016, and this level remained similar the next two years. This figure supports the view that such policies had a positive effect on PCP in NL.

Figure 7. Public confidence in police forces in NL*



Source: elaboration with data from ENVIPE 2013-2019.
*Respondents with some or complete confidence

Nonetheless, PCP reached its highest levels in 2017, with 63.9% for municipal police forces and 72.5% for the state police and then dropped the following two years. Although this has been a slight reduction, the PCP levels in police corporations must not be taken for granted. These could worsen in the near future, as occurred in previous years. Consolidating PCP is particularly important for the current administration of the State Government of Nuevo León. This established in its 'Sectorial Program for Security and Justice' the aim to "improve it (confidence) and place Nuevo León among the states where the highest percentage of citizens have confidence in their police" (Government of NL, 2016: 24).

In fact, the reforms have shown flaws in their quest of enhancing police forces. These have sought to advance the professionalisation of police forces and to strengthen their relationship with the citizens. Many of them have now better equipment and more officers meet the required training and reliability standards. Despite these improvements and the other efforts mentioned above, local police forces have been unable to fully take over public security duties. There are still pending tasks, such as the enhancement of their capabilities for preventing and fighting crime (Asch, Burger and Manqinq, 2011; Sabet, 2010).

The last three administrations have heavily relied on military forces for such a purpose, which has considerably expanded their role in public security. Under President Enrique Peña, the Secretary of Defence (SEDENA), increased the number of military bases for 'mixed operations' with the police, from 75 in 2012 to 180 in 2017. These were also extended from 19 to 27 states and the number of soldiers who made up these bases doubled that of police officers. The current administration of President Andrés López (2018-2024), has transferred troops from the military to the recently created National Guard, claiming that the number of federal police officers and new recruits is insufficient. In April 2020, 76% of its 76,773 new police officers came from the army (Observatory of the National Guard, 2020). In addition, a Presidential Decree of May 2020 (DOF, 2020) states the subsidiary support of the army in public security tasks for the following four years until the National Guard reaches full operational capabilities. There has been, however, little importance given to local police forces. The funds for strengthening them have suffered budget cuts and are mainly focused on equipment for fighting crime.

A more serious concern about the shortcomings of the reforms is that these have produced two different and opposed policing approaches: 1) militarisation and 2)

citizen oriented. The former is observed in police forces commanded by former (or current) military chiefs that emphasize discipline and a rigid hierarchical structure. In the latter, police forces are led by civilian chiefs and have adopted a philosophy of working closely with the citizens (Sabet, 2010). These two approaches follow the continuum of policing strategies that Dammert and Malone (2006) observe in other Latin American countries. At one end of the continuum, a military model encompasses 'zero tolerance' strategies which have an aggressive approach to law enforcement for fighting crime and are founded in 'tough-on-crime' policies. This approach is known as 'mano dura' (iron fist) in Latin America, which is closely related to a militarised policing style responsible of Human Rights violations (i.e. police abuse). At the other end of the continuum is the civilian based model which involves 'community-based' strategies. These require the active collaboration and close relationships between the police and the residents of a specific area (i.e. neighbourhood, town) for identifying risks and designing crime prevention initiatives.

Militarisation prioritises the 'mano dura' approach (Frühling, 2007), focused on effectiveness in tackling crime, even though it has produced results contrary to those sought by the reforms. As Meyer (2014) notes, militarisation has failed to reduce violent crime, as this has continued to rise (see Figures 4 and 5 above). Violations to Human Rights have, nonetheless, increased dramatically. For example, between 2007 and 2012, the number of reports of military abuse went from 398 to 1,921. Malone and Dammert (2020) offer compelling evidence in this regard, in their study of 17 Latin American countries. They found the militarised policing scheme in Mexico, which prioritises effectiveness-driven strategies, to have the most negative effect on PCP of all the policing schemes analysed.

In contrast to the decentralisation experienced in other Latin American countries (Frühling, 2007), police reforms in Mexico have tended to centralise public security at the national level. Since the federal government has favoured militarisation, this has become the dominant policing style among many police forces in the MMA. Most of them have chosen personnel with military background to lead their police forces (Sabet, 2010). In addition, some municipal initiatives have been discontinued due to changes of administrations. For example, the 2015-2018 administration of Guadalupe abandoned the proximity policing scheme that was markedly promoted in the previous (2012-2015) administration and replaced it for an effectiveness-driven approach (Montero Bagatella, 2021). Just one municipality (General Escobedo) has consistently

maintained a citizen-oriented policing approach for the last ten years, across four different administrations (Salgado, 2020).

3.5. Policing in the MMA

As in other Latin American cities (Jackson, *et. al.*, 2020), the prominence of the militarised, reactive and effectiveness-driven approach in the MMA has created difficulties between the police and the citizens. It was mentioned above that militarised policing has propitiated abusive police conduct. Although this could be widespread among the entire population, the poor are often the most affected. As Kubrin and Weitzer (2003) note, the police often target people living in deprived neighbourhoods, who are more likely to experience excessive use of force than people living in better-off areas. The discussion in Chapter 2 shows that socioeconomic level in Mexico is not a clear predictor of people's attitudes towards the police. However, Ávila *et. Al.*, 2016 provide evidence that PCP in a small town in Mexico occurs among those with higher socioeconomic level, but it is insignificant among the poor.

There is also some evidence in this regard in the MMA. The state police offers a good example on the different policing approaches used according to the area served. In 2011, it changed its name to *Fuerza Civil* (Civil Force), to advance the professionalisation and enhancement of the corporation (State Government of Nuevo Leon, 2017). In 2017, a new branch called *Guardia Civil* (Civil Guard) was created within the force. Each branch has a distinctive image –as Image 2 shows below– and its own features.

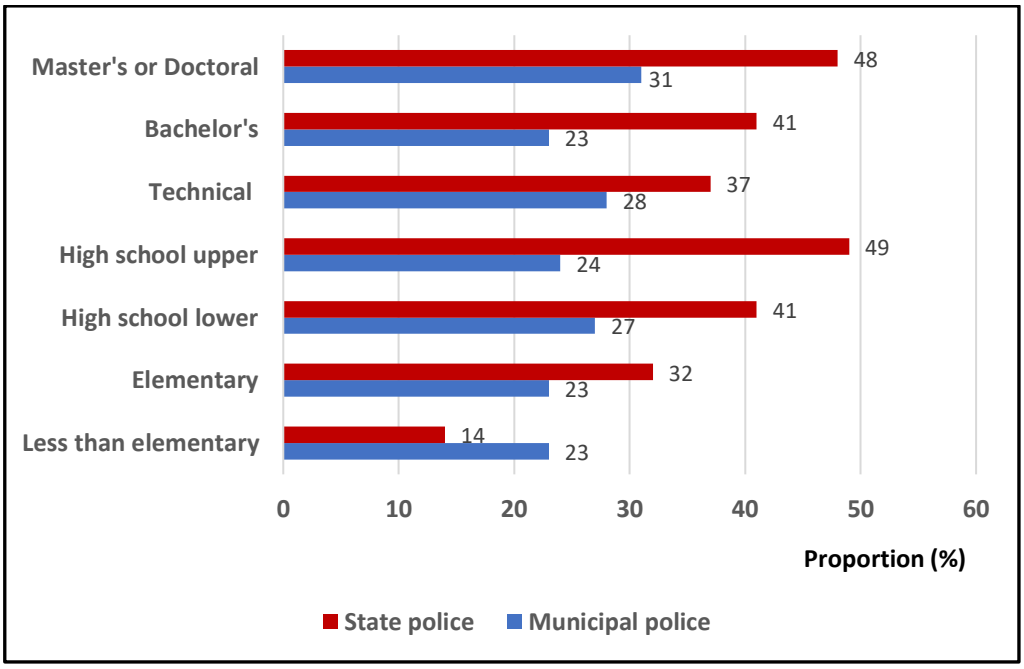
Image 2. Institutional image of *Fuerza Civil* and *Guardia Civil*

Source: *"El Porvenir"* and "*El Horizonte"*, Repository of Images (2018).

Guardia Civil was first deployed in the municipality of Monterrey –capital of NL– covering less violent medium-upper class and wealthy neighbourhoods. Police officers in this branch have received training in social proximity policing techniques, at the state police academy. Therefore, they promote policing initiatives which seek collaboration and closer relationships with the residents of those neighbourhoods. *Fuerza Civil* remains in deprived areas which usually exhibit high rates of violent crime. Its officers have been trained in the 'effectiveness approach' with a military discipline for responding promptly to emergency calls or incidents as the way of delivering police services. This form of response could include aggressive strategies, which have strained the relationships with the residents of those areas (Rincón, 2018).

As a result of such different policing approaches, based on the socioeconomic characteristics of the people served, the perceptions about the police vary accordingly. Figure 8 below illustrates this relationship. Drawing on data from ENVIPE 2018, it shows the respondents who reported some or complete confidence in police forces in the MMA, according to their educational level.

Figure 8. PCP in the MMA by educational level*



Source: elaboration with data from ENVIPE 2018.
*Proportion of respondents with some or complete confidence

Educational level is an appropriate socioeconomic proxy in Mexico, since it is correlated with, and used for estimating, the marginalisation index. This is a

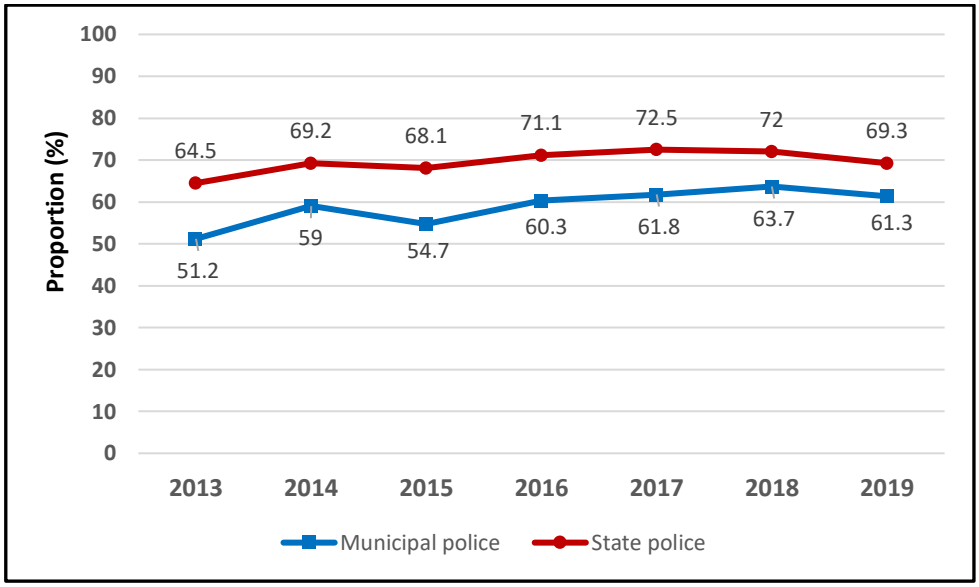
multidimensional indicator of the intensity of social deprivations (CONAPO, 2013). Respondents with complete high school or a higher degree tend to have confidence in police forces more than those with lower educational level. These perceptions are consistent with the view that more deprived people are also more likely to have negative opinions of the police.

As discussed in Chapter 2, high concentrations of structural factors, such as social disadvantage, shape the residents' perceptions in a way that could impact PCP and CP in negative ways. These concentrations are usually higher in jurisdictions of the Global South than those of the Global North. It could also be more difficult to gain PCP and CP in a setting with less favourable living conditions. For instance, the Human Development Index (HDI), estimated by the United Nations Development Programme (UNDP), stood at 0.774 for Mexico, 0.922 for the UK and 0.924 for the U.S. in 2017. The closer this indicator in a given country is to 1, the better it is the achievement in three key dimensions of human development: health, education and income (UNDP, 2020). The HDI for the MMA is not available, but it is for the State of NL, which stood at 0.79 in 2012. This figure is higher than the HDI in Mexico –even in 2017–, but lower than in the U.S. and the UK.

Interestingly, people's perceptions of the effectiveness of police performance have been stable since 2014, especially for the state police. Figure 9 below shows the proportion of respondents in NL that consider the state and municipal police forces to have somewhat or very effective performance. The perception of effectiveness reached its highest level in 2017 for the state police, while it did in 2018 for municipal forces and the figure marginally declined in 2019 in both cases.

It is worth noting the maximum 'ceiling' reached by the perception of effectiveness, around 70% of the respondents, which has remained practically unchanged since 2014, while the levels of PCP in police forces in NL (Figure 7) do show a substantial increase in 2016. In other words, PCP shows a clear shift from the 2013-2015 triennium to the 2016-2020 period, regardless of their fairly similar levels in perceptions of police effectiveness. These figures suggest that the instrumental approach focused on effectiveness has its limitations in influencing PCP, as there might be other aspects for consideration.

Figure 9. Effectiveness of police performance in NL*



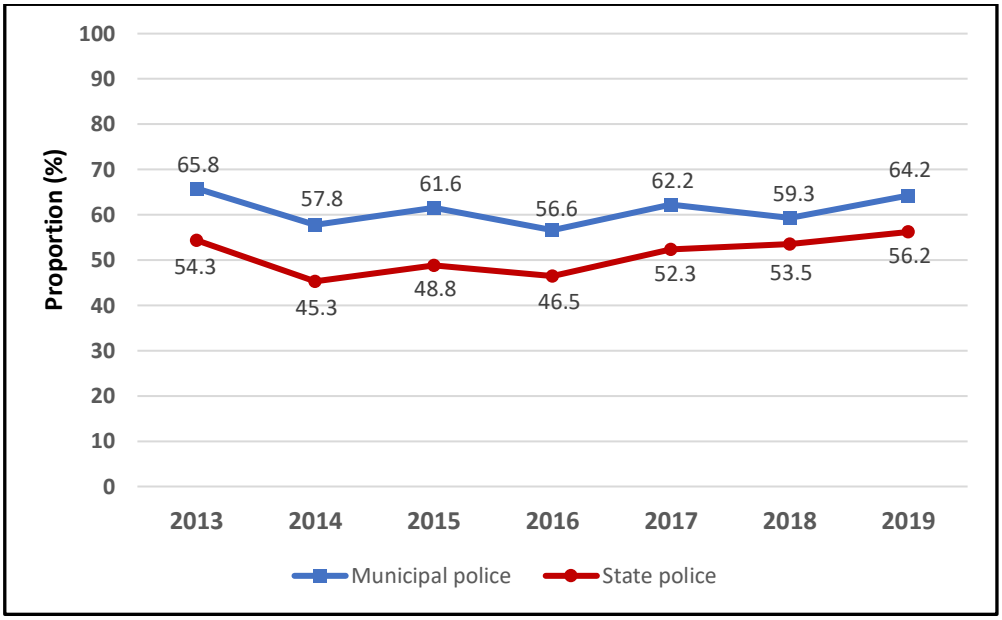
Source: elaboration with data from ENVIPE 2013-2019.
*Responses with 'somewhat' or 'very' effective.

According to Asch, Burger and Manqinq (2011), one of such aspects is corruption, which persists as one the main obstacles for enhancing. Negative opinions of the police deserve attention, as these could obstruct achieving adequate formal control. Kubrin and Weitzer (2003: 382-384) argue that the police can affect crime directly through their activity in the neighbourhoods they serve. They could contribute to reassure the residents and encourage them to collaborate in preventing or solving crime, but aggressive neighbourhood policing or police misconduct could have the opposite effects. The latter is likely to hinder the possibility for the police of building collaborative relationships with the citizens based on confidence. Cruz (2015) provides evidence from young and more mature democracies in Central America (El Salvador and Costa Rica, *respectively*), according to which police misconduct could erode legitimacy and confidence in state institutions more than crime. These findings are consistent with the Mexican studies discussed in Chapter 2, on the association of PCP with ethical features, such as police 'integrity' and 'corruption'.

In this regard, the latest ENVIPE 2019 revealed that a 56.2%of respondents in Nuevo Leon think that the state police are corrupt, while the figure reached 64.2% for Municipal police forces. The national proportion stood at 67.9% and 71.6%, respectively. It might seem that police forces in NL are more honest than in other states. However, a comparison over time indicates that corruption levels in NL have remained steady from 2013 to 2019, at an average of 51% for the state police and 61%

for municipal forces, as Figure 10 shows below. As with the trajectory in Figure 9, the average perception of police corruption in 2013-2015 triennium is closely similar to that in 2016-2020 period. It thus seems that perceptions of corruption of police forces have not significantly influenced PCP –as shown above in Figure 7.

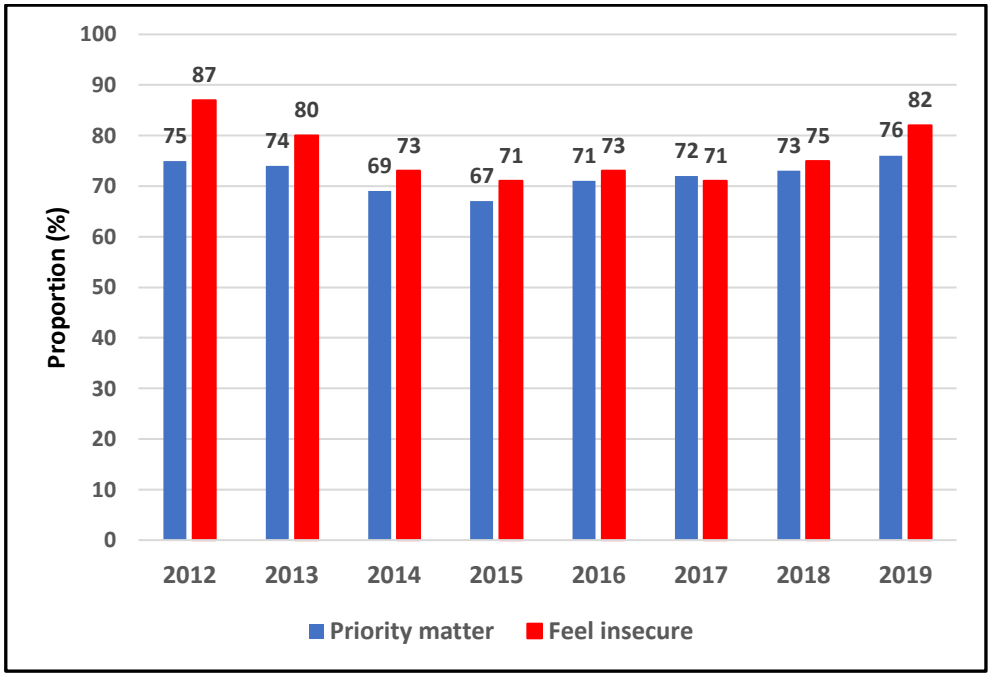
Figure 10. Corruption of police forces in NL*



Source: elaboration with data from ENVIPE 2013-2019.
*Respondents that consider the police are corrupted.

Hence, it has been discussed thus far that the perception of insecurity in NL has been worsening in recent years. This perception did improve slightly in 2015, as shown in Figure 11 below, since the proportion of respondents in the state who considered insecurity as a priority issue dropped to 67%, and the proportion of those who reported feeling insecure fell to 71%. However, these figures started to increase the next year. In addition, Figures 4 and 5 above show a rise in violent crimes, also in 2016 –with a sustained increase in intentional homicides–, and there was a considerable improvement of PCP in the same year –as Figure 7 shows above. Interestingly, it is not evident that this increase in PCP was influenced by people's perceptions of corruption and effectiveness of police forces, as these show similar trends before and after 2016. Some of these trends were even moderate, as Figure 12 shows below.

Figure 11. Perceptions of insecurity in NL (%)



Source: elaboration with data from ENVIPE 2012-2019.

Figure 12. Trends in key indicators in the MMA after 2015

	Figure in 2015	Average 2016-2019	Change (%) 2016-2019
PCP	Municipal = 47% State = 60.8%	Municipal = 62.75% State = 71.15%	Municipal = 33.51% ⬆ State = 17.02% ⬆
Insecurity	Priority = 67% Feeling = 71%	Priority = 73% Feeling = 75.25%	Priority = 8.96% ⬆ Feeling = 6% ⬆
Violent crimes	Homicide rate = 8.81 Other rate = 80.91	Homicide rate = 14.33 Other rate = 77.29	Homicide rate = 62.66 ⬆ Other rate = -4.47 ⇩
Effectiveness	Municipal = 54.7% State = 68.1%	Municipal = 61.77% State = 71.22%	Municipal = 12.93% ⬆ State = 4.59% ⬆
Corruption	Municipal = 61.66% State = 48.8%	Municipal = 60.57% State = 52.12%	Municipal = -1.66% 〓 State = 6.81% ⬆

Source: based on figures shown above.

At first sight, the breakpoint in 2016 that suggests a positive association of PCP with increasing violent crime and worse perceptions of insecurity, seems counterintuitive. As discussed in Chapter 2, crime and people's perceptions about it could prevent the generation of PCP. It was also mentioned above that PCP could have increased in 2016 due to police reforms, but their limitations and lack of continuity could explain the slight drop after 2017. Another possible reason is that, as Jackson *et. al.*, (2013: 167) argue, in contexts, such as the MMA, where social order is constantly under threat, people rely on the police for ensuring their protection. This is especially important for vulnerable social sectors, who are usually the most affected by crime. However, it is unclear what other factors could be intertwined with PCP for explaining such an increase.

Gaining a better understanding of such factors is critical in the context of the MMA, considering the dark figure of crime in Nuevo León, which has been around 90% between 2014 and 2018. This means that only about 10% of citizens have formally raised charges for any crime (ENVIPE 2015-2019). Moreover, the clear-up rate of violent crime is quite low. For example, Ángel *et. al.* (2019) point out that 94% of homicide cases recorded between 2010 and 2016 in NL did not get a sentence, given the difficulty for the police to investigate all the cases. In this scenario in which the police capabilities for solving crimes are insufficient, people could not only have less confidence in them, but also be less likely to cooperate with them.

3.6. Relevance of researching PJ theory in the MMA

Until now, this thesis has critically reviewed the literature on trust, legitimacy, confidence and cooperation involved in policing, which places PJ as the conceptual framework for this study. It was discussed that the normative underpinnings of PJ could be more relevant than instrumental aspects –such as 'trust in police effectiveness'– for enhancing 'police legitimacy' and thus elicit PCP and CP. The importance of the MMA as the locus for researching PJ theory has also been discussed. As a result of the two chapters discussed so far, a number of considerations for conducting research on PJ in the MMA has emerged. These insights are outlined in this section, which give rise to research questions that will guide this research.

A first consideration refers to the paucity of PJ research. The scarce availability of suitable data for such purpose reflects the instrumental priorities that prevail in

Mexico. This data comes from surveys funded by the federal government, which focus on measuring police effectiveness. For example, ENVIPE includes questions of the type mentioned in Figure 9 above: "How effective do you consider the performance of the (state/municipal) police?". Nonetheless, if as mentioned above, 'effectiveness' is not enough for achieving such purposes, especially in the circumstances that characterise the MMA, then, what else could explain the increase of confidence in police forces, which have been substantially unchanged over the past few years?

In this sense, the normative aspects have been largely unnoticed by researchers in Mexico. As discussed in Chapter 2, PJ theory entails such normative features which refer, not only to police fairness and impartiality, but also to people's views on how corrupt they perceive the police are. The latter deserve attention, as police behaviour could have a considerable impact on generating PCP and CP. This is possible even in Global-South contexts, such as the MMA, that bear worse social conditions than Global-North jurisdictions. As Malone and Dammert (2020) demonstrate, police behaviour in their interactions with the citizens had the greatest (and most significant) effects on PCP across 17 Latin American countries. They also found that, from the policing schemes analysed, those which prioritise the normative aspects put forth by PJ (i.e. community policing) tend to have higher levels of PCP than effectiveness-driven policing strategies.

Hence, policing based on PJ foundations could be an alternative to instrumental approach, for eliciting PCP and CP in the MMA. It is thus necessary **to analyse the interplay of 'trust in police fairness' and 'police legitimacy', to elucidate if these normative aspects weigh in more importantly than the instrumentally oriented 'trust in police effectiveness' in influencing PCP and CP.** This analysis raises specific questions. First, **could 'police legitimacy' work together with 'trust in police fairness' more strongly than with 'trust in police effectiveness' for strengthening PCP and CP?** The analysis of these relationships involves the extent to which public perceptions of 'police legitimacy' mediate the relationships of the competing aspects of 'trust in the police' with PCP and CP. Similarly, it would be necessary to investigate the potential mediating role of PCP, which poses a second question: **could PCP act as a mediating mechanism in the relationship between police legitimacy and CP?**

A second consideration refers to the importance of anchoring PJ schemes to specific local contexts. This involves situating the perceptions of instrumental

(effectiveness) and normative (fairness) aspects of trust, and 'police legitimacy' in the MMA, to account for its social conditions and political culture. Thus, it must be **explored the extent of applicability of PJ theory in the MMA, that is, whether its key concepts could be valid in this context and could render results consistent with the evidence produced mainly in the Global North**. Considering the historical background of the MMA discussed above, it would not have to bear the burden of high concentrations of structural factors and crime experienced by other Latin American cities, due to the economic downturns of the 1980-90s. Nevertheless, it was mentioned above that violent crime has increased since the 1990s and some areas in the city present high levels of marginalisation. The MMA thus offers a socially fractured setting, with considerably high levels of violent crime mostly concentrated in socially deprived neighbourhoods, where the relationships between citizens and the police are strained.

These conditions in the MMA are also more unfavourable than in countries of the Global North where PJ theory has been studied. People in different places experience things in different ways (Grove, *et. al.*, 2012), but this matter is considerably under-researched in Mexico. Little is known about the extent to which higher concentrations of crime and structural factors across MMA's neighbourhoods could hinder the generation of PCP and CP. Nor is it known if, in reaction to these worse conditions, the residents might prioritise instrumental concerns over PJ considerations. As discussed in Chapter 2, these different characteristics the MMA, embedded in its particular political culture, could shape differently how the citizens relate with, and perceive, the police. A third question thus emerges: **'how consistent are the understandings of the central concepts of PJ theory in the MMA with those in the Global North?'**

Furthermore, the evidence discussed in Chapter 2 has not clearly shown if –and the extent to which– these neighbourhood properties affect individual perceptions of the police. Nonetheless, some evidence from Latin America (i.e. Sampson and Villela, 2016; Sharkey *et. al.*, 2017) indicates that neighbourhood interactions between the residents and other agents can potentially transform their attitudes. This literature reinforces the necessity of accounting for the potential influence that police behaviour might have in shaping resident's beliefs. As mentioned above, PCP tends to be lower among the people with lower socioeconomic background. Therefore, analysing the influence of crime and structural factors is relevant as these could hinder the generation of PCP and CP among the MMA residents of distinct neighbourhoods. This

consideration is even more relevant since there is some evidence of differentiated policing according to the socioeconomic characteristics of the areas served. An instrumental policing approach in socially disadvantaged areas could further worsen the already modest levels of PCP there, and diminish the residents' willingness of CP. Therefore, a fourth question to consider is: **'do concentrations of structural factors and crime negatively affect PCP?'**

A third consideration which stems from the literature discussed in Chapter 2, shows that people's contact with the police might affect confidence in the latter and the willingness to cooperate with them. The policing approach promoted by the federal government has had an impact at the local level without considering whether people living in states and municipalities value such an instrumental view. The local impact of policing policies is important, considering that most local police forces have the most frequent contact with the public. Storr (2020: 47) notes that this is especially true for municipal forces, whose tasks "require immediate and close intervention (with the people), avoiding violent situations". In addition, the effectiveness-driven approach coexists with citizen-oriented strategies in the MMA. Thus, a fifth question worth asking is: **'how does 'contact with the police' affect PCP and CP?'** Analysing the potential influence of 'contact with the police' deserves attention, considering the scarce evidence in this regard, in Mexico. This concern must account for the coexistence and potential influence of instrumental and procedurally just policing approaches.

Due to the considerations discussed above, this thesis seeks to contribute to the debate on the consistency of PJ framework in a Mexican context. Having discussed the literature on PJ and the relevance of the MMA, the next chapter includes the objectives and hypotheses, which will orientate the analysis in the rest of this thesis, to achieve its aim. As outlined in Chapter 1, the aim of this research is to examine if, and to what extent, competing views of trust in the police work in tandem with public perceptions of police legitimacy to elicit PCP and CP, accounting for individual and neighbourhood characteristics.

3.7. Conclusion

The MMA offers a context with worse crime and structural factors than in most Global North settings where the majority of PJ studies have been produced. In response to increasing violent crime, the Federal Government in Mexico has

undertaken a set of police reforms during the last 20 years. Although these reforms have slightly improved confidence in, and support of, the police, the procedures and actions of many police corporations have not changed substantially. The federal government has prioritised an approach focused on effectiveness and *'mano dura'* for tackling crime, despite the lack of evidence-based research for supporting that decision. Corruption among police forces, which has accompanied such an approach, could have strained police-citizen relationships for the last three decades, although this is not apparent according to the data discussed.

In the MMA, adversarial relationships between the public and the police have particularly affected those living in neighbourhoods with higher concentrations of social disadvantage and crime, due to differentiated policing according to the characteristics of the areas served. The aggressive policing strategies of the instrumental approach tend to focus on poor areas, whereas citizen-oriented initiatives (following PJ notions) benefit upper-middle class and wealthy neighbourhoods. This combination of unfavourable social conditions and contrary policing approaches –illustrative of a distinct political culture– could mould people's perceptions of 'police legitimacy', PCP and CP, differently than in Global North settings. Therefore, it is worth researching the extent to which the police could gain PCP and CP in a context such as the MMA. It should be studied whether its citizens could value a procedurally-just policing approach which prioritises normative aspects (i.e. fair treatment) more than an instrumental approach which mainly focuses on effectiveness and aggressive strategies. Thus far, there is no research that has studied these two competing frameworks in a context such as the MMA, which is distinct from other Mexican and Latin American cities, due to the reasons outlined above.

Chapter 4. Research design and data

4.1. Introduction

The previous two chapters included a discussion of the relevant literature for this research and the relevance of the social setting in which this research is focused. As explained in Chapter 2, trust in the police, police legitimacy, PCP and CP are the four key concepts that make up the PJ framework informing this study. Then, it was outlined in Chapter 3 that the MMA offers different economic, social and institutional conditions from those in the Global North, where most PJ evidence has been produced. It was also suggested that the instrumental policing approaches, based on effectiveness-driven strategies, show limitations for influencing PCP and CP, which further reinforces the necessity of assessing the potential of PJ for such purpose. Some gaps were thus noted in both chapters, which deserve attention in the context of the MMA. First, there is scarce research on PJ in Mexico, due to the dominance of instrumental policing approached that have prevailed. Second, PJ must account for the particular local context. The MMA presents a fractured setting, with higher crime levels than in the Global North and strained relationships between the citizens and the police. It is, however, unknown, if in reaction to these worse conditions, police effectiveness would be prioritised over PJ. Third, it is unclear the extent to which crime and structural factors, which are worse in the MMA than in the Global North, could wane PCP and CP. Fourth, analysing the potential influence of 'contact with the police' deserves attention, considering the scarce evidence in this regard, in a Mexican context.

To fill these gaps, the aim of this chapter is to outline the rationale adopted in this research, including the aims, research questions and the key data sources used for addressing them. This chapter is divided in five sections. First, it begins by setting out the aims, research questions and hypotheses that seek to fill the gaps discussed and guide the analysis in the remaining of this thesis. Second, this chapter presents details of the mixed-method strategy adopted in this research, its dominant deductive approach and the reasons behind this choice. The third section describes the data sources used (and their relevance) in this project. Fourth, the operationalisation of central concepts is outlined. These are distilled into analytical categories (measures), consistently with a deductive view. This chapter ends by discussing ethical considerations involved in this research.

4.2. Research aims, questions and hypotheses

The gaps discussed in Chapters 2 and 3 gave rise to two broad objectives. Firstly, **it is necessary to explore the extent to which the application of PJ in the MMA yields results that are consistent with most evidence produced in the Global North, to understand if such a framework fits within this context.** Secondly, **to analyse the interplay of 'trust in police fairness' and police legitimacy, to elucidate if these normative aspects weigh in more importantly than the instrumentally oriented 'trust in police effectiveness' in influencing PCP and CP.** These objectives contribute to the achievement of the aim of this thesis, which is to examine whether 'trust in police fairness' is more influential than 'trust in police effectiveness' in enhancing police legitimacy and if, in turn, the combined effect of such normative concerns predominates in favouring PCP and CP in the MMA, taking into account individual and neighbourhood characteristics. To address this aim, the following five research questions will be explored:

1. **How consistent are the understandings of central concepts of PJ in the MMA with those of the Global North?**

   In Chapter 2, it was noted that the normative foundation of PJ corresponding to 'trust in the police' (i.e. fairness) must be distinguished from the normative notion of 'police legitimacy' (i.e. shared values and interests). Some studies (i.e. Reisig, *et. al.*, 2007; Gau 2011) have pointed out a second potential distinction between 'obligation to obey' and 'police legitimacy', in which the former is an outcome of the latter, rather than one of its components. It was also mentioned that different aspects of 'trust in the police' (i.e. effectiveness and fairness) are distinct from, and shape, PCP. It is thus necessary to examine how similarly the concepts of PJ used in Global-North studies are understood by the MMA residents. This extent of consistency is especially important for providing feedback on the operationalisation of PJ concepts in this thesis and thus inform the scope of PJ in the MMA. Therefore, it will be possible to elucidate which notions are especially relevant in each concept and which are distinct. For example, it is useful to analyse whether the citizens' understandings of police legitimacy involve notions of obedience (as in earlier research), or if they understand the latter as an outcome and thus different from legitimacy (as in

the more recent studies). Similarly, it could be explored if normative concerns are more relevant to MMA residents than instrumental ones in shaping their perceptions of police legitimacy.

2. **Does 'police legitimacy' work together with 'trust in police fairness' more strongly than with 'trust in police effectiveness' for gaining PCP and CP?**
   The literature on the Global North discussed in Chapter 2 has shown that 'trust in police fairness' is more influential than 'trust in police effectiveness' in shaping people's perceptions of 'police legitimacy', PCP and CP. However, research in some Global South countries, such as Turkey (Karakus, 2017), China (Sun *et. al.*, 2017) and South Korea (Lee and Cho, 2019), has shown 'trust in police effectiveness' to be a stronger predictor. Moreover, the analysis of these relationships must consider the extent to which public perceptions of police legitimacy mediate the relationships of the competing aspects of trust with PCP and CP. In a context with more adverse structural factors and crime, such as the MMA, it is unclear if 'fairness' could contribute to boost police legitimacy and gain the public's confidence and cooperation for them. Nor is it clear whether fairness could be a stronger predictor than 'effectiveness', considering the limitations of the latter for enhancing PCP –as discussed in Chapter 3.

3. **How does PCP affect the relationship of 'police legitimacy' with CP?**
   As discussed in Chapter 3, the bulk of PJ research indicates that 'police legitimacy' has a direct positive relationship with CP. This research also suggests an indirect relationship, whereby the combined occurrence of 'police legitimacy' and PCP contributes to propitiate social order. These two factors arouse people's motivation to follow the rules and their willingness of CP. In this view, PCP mediates the relationship between 'police legitimacy' and CP. Nevertheless, such a mediating role has not been empirically researched, thus it is unknown whether this occurs and, if so, whether PCP enhances or weakens the influence of 'police legitimacy' on CP. This is relevant in the MMA since PCP seems to be closely related to the people's low willingness of CP, as exemplified by the high estimated figure of unrecorded crime, in Chapter 3.

4. **How does recent 'contact with the police' affects PCP and CP?**

   Some studies (e.g. Mazerolle *et. al.*, 2013) have shown the potential of active public engagement by the police for improving the perceptions about their legitimacy and gain the citizens' confidence and cooperation. However, other studies (i.e. Bradford, Jackson and Stanko, 2009) show that, despite efforts made by the police to improve people's perceptions, face-to face encounters tend to worsen public opinions about them. The influence of 'police contact with the public' in Mexican contexts is unknown, due to the scarce evidence available. This is relevant considering that local police forces in the MMA have the most frequent contact with the people, but two conflictive policing approaches coexist in the same city. On one hand, the instrumental policing approach promoted by the federal government has strained the relationships between the citizens and the police. On the other hand, citizen-oriented strategies have strived to establish close relationships with the people based on confidence and collaboration.

5. **Do concentrations of structural factors and crime have a negative influence on PCP and CP across neighbourhood areas?**

   As discussed in Chapter 2, social disorganisation studies have demonstrated that people experience things in different ways depending on where they live (Grove, *et. al.*, 2012). This line of research has also documented uneven geographical concentrations of social disadvantage and crime across urban neighbourhoods, which shape the opinions of individuals about the police. However, these 'neighbourhood effects' (Sampson, *et. al.*, 1997) are considerably under-researched in Mexican contexts. Thus far, it is unknown if such concentrations across MMA's neighbourhoods, which are worse than in the Global North, could erode PCP and CP.

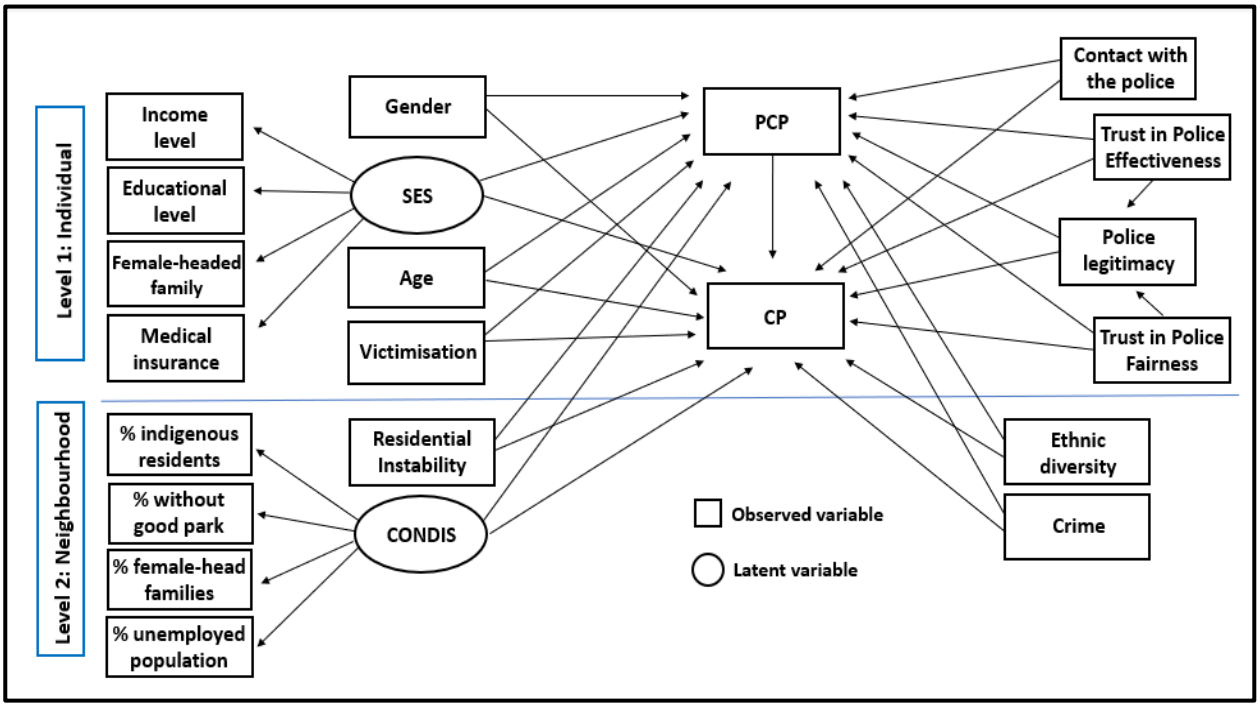
As will be discussed in the next section, this research adopts a mixed-method strategy. Based on the existing literature, this thesis considers that research question 1 outlined above can be approached qualitatively. However, research questions 2 to 5 can be addressed quantitatively, which are appropriate for setting out the following five research hypotheses:

H1. ‘Trust in police fairness’ increases people’s likelihood of considering the police legitimate, having PCP and expressing CP, more than ‘trust in police effectiveness’
H2. The joint influence of ‘police legitimacy’ and ‘trust in police fairness’ on PCP and CP is greater than the combined effect of ‘police legitimacy’ and ‘trust in police effectiveness’
H3. PCP enhances the positive influence of ‘police legitimacy’ on CP
H4. Individuals who had recent ‘contact with the police’ are more likely to express PCP and CP than those who had not
H5. The residents of neighbourhoods with higher concentrations of structural factors (social disadvantage, residential instability, ethnic diversity) and crime are less likely to express PCP and CP than those living in areas with lower concentrations

Figure 13 below offers a graphical representation of the hypothetical relationships set out above, and the model intended to be tested in this thesis. The conceptual measures included are described further below. In the meantime, it is worth noting that this conceptual model is an expansion of Figure 3 included in Chapter 2. It adds the individual-level and the neighbourhood-level predictors: crime concentrated disadvantage (CONDIS), residential instability and ethnic diversity.

The hypotheses are appropriate for two reasons. First, these arise from the PJ framework that has been widely studied in the Global North and, to some extent, also in Global South countries. Second, this thesis seeks to elucidate whether the relationships between the central concepts of PJ in the context of the MMA could yield results that support the main arguments of such a framework. As such, the six hypotheses reflect propositions aimed at answering questions 2 to 5 outlined above. This task itself encapsulates the relevance of this study, by addressing the theoretical and empirical gaps noted in Chapters 2 and 3.

Figure 13. Hypothetical relations of individual and neighbourhood-level predictors



Source: proposed in this thesis.

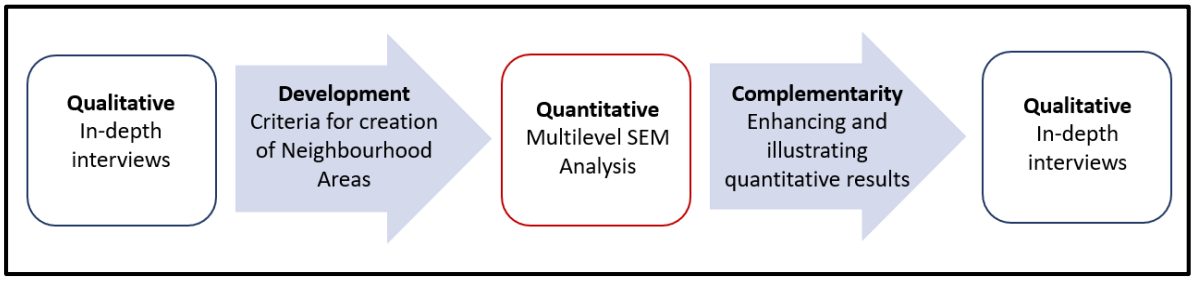
There are, however, other motivations for conducting this research. In this sense, it is possible to assess its value according to practical considerations, which further justifies its usefulness (Hernández *et. al.*, 2003). First, this research addresses a two-sided problem. On one side, the dominant instrumental approach to policing in the MMA has shown limitations for enhancing PCP and CP, while straining relations with the citizens. On the other side, policing policy in the MMA lacks evidence-based research for informing alternatives to the instrumental approach. This need for alternatives leads to the second motivation of this study, the social relevance, which refers to the potential benefits for people and the police. As mentioned in Chapter 3, the consolidation of PCP is of great importance for the State Government of NL. Higher PCP levels could improve public reporting of crime by encouraging better cooperation between both parties in order to solve and reduce crime rates. An improvement of PCP and CP among local police forces could also reduce perceptions of insecurity in NL, which risks reaching levels similar to 2011, the most violent year in the state. Third, this study offers methodological usefulness as it could contribute to the creation of an instrument for collecting data aimed at monitoring PCP and CP. A systematic analysis

across neighbourhood areas (NAs) could complement the geographical analysis currently done by the local police forces.

4.3. Research strategy

This project follows a multi-strategy (mixed methods) approach, specifically a 'sequential typology' (Robson and McCartan, 2016: 178). Figure 14 below shows a linear research path according to a sequence of steps, whereby one method follows and **complements** the other, but an emphasis is given to quantitative data.

Figure 14. Sequential mixed-methods approach used in this study



Source: adapted from Robson and McCartan (2016).

This approach is preferred over other alternatives for two reasons. First, drawing on both types of methods, increases the understanding of different facets of a social phenomenon (DeCarlo, 2018). While one strategy draws on hypotheses for answering questions about the objective reality, the other addresses the subjectivities involved at certain stages of the analysis. For instance, a quantitative strategy is appropriate for analysing the relations among the PJ concepts outlined above in Figure 13. The qualitative component is useful for defining the geographical units in which such analysis is situated and for exploring the meanings of PJ concepts according to the understandings of MMA residents. This strategy thus contextualises and illustrates key ideas of the quantitative strategy. In this way, the results from one method inform the analysis conducted with the other method. Second, the union of both strategies not only adds depth to the study of a social phenomenon. It also offers the possibility of **triangulation** (Denzin, 1978), that is, to obtain convergent results through both types of methods for enhancing the validity of this study. This implies that the findings yielded

by one strategy should support those produced through the other strategy, rather than entirely corroborating each other (DeCarlo, 2018).

Each strategy thus has a function for answering the research questions. Although subjectivity is acknowledged in the qualitative component, the focus is on demonstrating how well the subjective aspects match the objective reality analysed in the quantitative part (Neuman, 2013: 166). Therefore, this research pursues a (qualitative) characterisation of analytical categories clearly delimited by the PJ framework and the scope of the quantitative analysis. In this approach, the findings are integrated through interpretation, in the results phase.

4.3.1. Quantitative methodology

The dominant methodology adopted for fulfilling the aims of this research is quantitative. This allows us to answer questions about the "reasons for the existence of characteristics or regularities in a particular phenomenon" (Blaikie and Priest, 2019). Quantitative methods are suitable for leading this research, as the aims and most research questions of this thesis translate into hypotheses. The latter, in turn, offer tentative answers in the form of explanatory relationships between conceptualisations (Hernández *et. al.*, 2003: 142).

More importantly, this quantitative strategy follows a deductive rationale used for studying PJ, both in the Global North and the Global South. This means deducing findings from a theoretical framework in the process of testing hypotheses. The interest in this thesis is not to induce detailed understandings for building new theory, but to assess (and inform) the extant PJ framework, by addressing specific gaps (mentioned above) which are particularly relevant in the context of the MMA (Neuman, 2013:174).

The methods chosen in this study are appropriate for assessing the discriminant validity (distinctiveness) of the quantitative measures used for operationalising the key PJ concepts considered. It is also possible to analyse the way in which contending aspects of 'trust in the police' and 'police legitimacy' could influence PCP and CP. In addition, the data obtained from the '*Así Vamos*' survey is suitable for "relating parameter estimates" used for making inferences "from a random sample to a population" (Matthews, 2017: 88). This data also offers a sufficiently large sample size for creating the NAs, as the survey collected data across 991 neighbourhoods. Maas and Hox (2005) found that a sample size as low as 20 groups (NAs) may allow for an

accurate estimation, since the interest is in the coefficients and standard errors obtained. If the analysis focuses on variance estimates, the sample size must be at least 100 groups for large models, and 50 for small models. Following similar studies (Sampson *et. al.*, 1997), the data used in this research allows the creation of 337 NAs ranging from 2 to 46 observations (respondents) per area. As discussed in Chapter 5, the NAs are created with a Geographic Information System (GIS) file from the Mexican Census Data (2010). This is a digital cartographic file including roads and other physical features, which are superimposed on the Marginalisation Index digital cartography to account for physical barriers delimiting each NA.

Then, a Multi-level Structural Equation Model (ML-SEM) technique is used for estimating the hypothetical direct and indirect relationships outlined above in Figure 13. This estimation also involves analysing the influence of neighbourhood-level and individual-level variables on the dependent variables (PCP and CP). In addition, ML-SEM allows the analysis of the variation attributable to differences between neighbourhoods. The details of this technique are discussed in the next chapter. In the meantime, it is worth highlighting that a multilevel SEM analysis is preferred for three main reasons. First, it does not assume perfectly reliable predictor variables. Second, it can model indirect relations, such as legitimacy's mediating effects of trust aspects on PCP and CP. Third, it allows estimating relations between observed and latent variables (Hox, 2013).

4.3.2. Qualitative methodology

Despite the usefulness of quantitative methods for deducing findings from a theoretical framework of reference, it presents limitations at certain stages of this study, which indicates the necessity of a complementary approach. A qualitative methodology thus offers a valuable complement, as it is better equipped for analysing certain subjective aspects of reality which are equally important for fulfilling the aim of this thesis. The inductive rationale of qualitative methods is concerned with answering questions about the discovery and description of "the characteristics and regularities in a social phenomenon" (Blaikie and Priest, 2019). For instance, the first research question is concerned with the nature of certain concepts and the relationships amongst these in the MMA. It is not enough to note the suitability of PJ in this context for analysing the instrumental and normative drivers of PCP. It is also necessary to

shed light on whether the understandings of key PJ concepts by the residents of the MMA are consistent with those documented in the Global North. This is useful for providing feedback on the measures used for operationalising such concepts in explanatory relationships. The exploration of these understandings also allows the characterisation of the concepts in the MMA in the form of illustrations, examples, situations and interactions.

A second consideration is the subjectivity related with the context. As discussed in Chapter 2, macroscopic views are valuable for the importance they attach to context and the point of view of social actors. Each culture or social system has a unique way of understanding situations and events (Hernández *et. al.*, 2003: 11). This thesis requires defining NAs in the context of the MMA. It is thus necessary to grasp an understanding of the relevant criteria which must be considered for defining the frontiers of MMA neighbourhoods. These limits make it possible to group such neighbourhoods into larger areas. The concentration of structural factors and crime in those areas could then be accounted for in the explanatory analysis between the key PJ concepts.

Therefore, in-depth interviews are used in this study with a double purpose. One, is to explore the ways in which the residents of different neighbourhoods in the MMA comprehend the central concepts of PJ considered in this thesis and whether the relationships amongst such concepts operate according to the expectations of the PJ framework. The other, is to elucidate the considerations involved in shaping boundaries across neighbourhoods in the MMA, which is necessary for grouping them in NAs. As Smith *et. al.* (2001) note, neighbourhoods are not necessarily limited to predefined geographical boundaries. These could also be socially constructed based on the residents' notions of belonging to social groups, as well as their perceptions of distinct socioeconomic or cultural characteristics. Interviews are useful, as these draw on local knowledge (respondents' experiences) for obtaining qualitative data about the elements or aspects that a group of residents in a neighbourhood takes as references for defining its frontiers, whether such references are physically observed in the territory or sociocultural, and if both converge to place a social group within certain limits of a neighbourhood. In this regard, the residents' opinions and perceptions could offer insights about differences in structural factors and crime within a neighbourhood or between contiguous neighbourhoods.

4.4. Data sources

4.4.1. Quantitative data

The main source of quantitative data for this study is the 'Así Vamos' (This is how we are doing) survey, conducted by a privately financed NGO based in Monterrey known as 'Cómo Vamos, Nuevo León' (How are we doing Nuevo Leon?). It conducts research for informing State policies. The survey measures opinions of Nuevo Leon inhabitants on four main topics: 1) Social development, 2) Security and Justice, 3) Mobility and Urban Development and 4) Good government. Although it has been conducted since 2016, the 2018 edition included appropriate and relevant questions for operationalising PJ concepts and it was the most recent version available.

This survey is representative of the population size and demographic profile for each of the 11 metropolitan municipalities and the whole MMA. It was based on a random stratified sample of 2,438 valid observations across the 11 municipalities. The respondents were 18-years old or over with permanent residence in the selected household. The data refers to events that occurred within the previous 12 months. For each metropolitan municipality, an estimation error limit of 0.07 (7.0%) was considered. For the MMA, the estimation error limit was 0.02 (2.0%) (Cómo Vamos, 2018). Table 1 below shows the representative subsamples for each metropolitan municipality.

Table 1. Breakdown of sample by municipality

Municipality	Interviews	Percent	Cumulative
Apodaca	220	9.02	9.02
Cadereyta	218	8.94	17.97
Escobedo	220	9.02	26.99
Garcia	222	9.11	36.10
Guadalupe	224	9.19	45.28
Juarez	224	9.19	54.47
Monterrey	224	9.19	63.66
San Nicolas	224	9.19	72.85
San Pedro	222	9.11	81.95
Santa Catarina	222	9.11	91.06
Santiago	218	8.94	100.00
TOTAL	2,438	100.00	

Source: elaboration with data from '*Así Vamos* 2018'

In addition, Figure 15 shows the blocks (highlighted in black) where the respondents were interviewed. These are distributed across each municipality and across the MMA, which lends support to the randomness and representativeness of the sample.

Figure 15. Distribution of survey respondents across the MMA

Source: elaboration with data from INEGI's National Inventory of Households

As noted above, this study used the 2018 edition of '*Así Vamos*', which is useful for the following reasons:

- It provides questions about the respondents' evaluations of the concepts studied in this research, which were not included in past editions, or in surveys funded by governmental agencies; as mentioned in Chapter 3, official data has relied on instrumental features of policing, such as effectiveness of police performance.

- The survey also includes questions about individual and household characteristics on demographics and victimisation, which must be accounted for in the explanatory analysis of PCP and CP
- It provides identification numbers of the respondents, which are georeferenced to the neighbourhoods where they live; as mentioned above, this thesis follows the approach of other studies (i.e. Sampson et. al., 1997), for 'nesting' individuals withing NAs
- The survey also includes questions about the characteristics of such neighbourhoods, which are useful for operationalising structural factors (i.e. concentrated disadvantage) across neighbourhoods
- The dataset is also appealing, since its identifiers match those of the National Institute of Statistics and Geography (INEGI) of Mexico included in the 'National Inventory of Households'. This allows us to link data from the 2010 National Census (e.g. socioeconomic characteristics), with the survey data.

Another positive feature of the sample is its weights. A weight is aimed at representing the variable measured that the sampling design determined for each final sampling unit (i.e. respondent). It is calculated as the inverse probability of selection in that unit (CONEVAL, 2007). In the '*Así Vamos* 2018', weighting was estimated for the complete response, and then it was adjusted for the non-response, to obtain a final weight for households and another one for individual respondents. The socioeconomic strata defined in INEGI's (2010) 'National Census' were considered in the calculation of such weights (Caamal, 2021).

These weights seek to approximate the respective populations of the municipalities and the MMA, which allows making statistical inference for its 4,383,451 inhabitants. It is worth noting that weights provide a reliable representation of the 11 municipal and metropolitan populations. Table 2 below shows the comparison between weighted and unweighted samples for four demographic characteristics. The weighted and unweighted proportions do not show substantial differences.

In addition to the questions taken from '*Así Vamos*' survey, INEGI's 2010 Census Data and crime records from NL State Police are used as complementary sources for quantitative analysis. Census data offers indicators which reflect concentration of structural factors, such as foreign residents, residents from other

states, indigenous population, and residents living in a block for the last five years. One concern about this data is that it could be outdated, since it was collected in 2010. The potential limitation is offset by its coverage of the total MMA's population.

Table 2. Sample details for '*Así Vamos* 2018' dataset

Variable	Unweighted%	Weighted%	Difference %
Gender			
Male	50.70	49.02	1.68
Female	49.30	50.98	-1.68
Age			
16-22	6.98	6.63	0.35
23-29	10.38	10.34	0.04
30-36	10.01	9.44	0.57
37-43	15.53	15.25	0.28
44-50	15.24	15.04	0.20
51-57	13.21	14.79	-1.58
58-64	10.09	10.46	-0.37
65-71	9.14	9.00	0.14
72-78	5.77	5.32	0.45
79-85	2.70	2.46	0.24
86-92	0.83	1.21	-0.38
93-97	0.12	0.04	0.08
Educational level			
Primary	23.12	19.88	3.24
Jr High school	29.57	28.41	1.16
Sr High school	18.69	20.97	-2.28
Technical (Sr High school)	13.03	14.75	-1.72
University (Graduate)	13.82	14.62	-0.80
Masters	1.40	1.13	0.27
Doctorate/PhD	0.35	0.24	0.11
Medical Service			
None	12.06	13.52	-1.46
Public	83.76	83.39	0.37
Private	4.17	3.09	1.08

Source: elaboration with data from '*Así Vamos* 2018' dataset.

Similarly, crime records from NL State Police are helpful for three reasons. First, these contribute to ensure discriminant validity of 'neighbourhood effects' of crime (as Sampson *et. al.*, 1997) by using an alternative crime-scale to victimisation ('*Así Vamos*' survey). Second, NL State Police use the same INEGI's identification numbers in their crime records, which means that it is possible to link every crime to the specific neighbourhood where it occurred in 2018. Third, prior to 2018, police records had not undergone quality checks, such as standardisation of crime categories across

municipalities and avoiding duplicities of phone reports by more than one resident in the same neighbourhood (Rincón, 2018). Police records in NL thus offer advantages over other states, where state police still make those mistakes (see: López, 2020).

4.4.2. Conceptual measures

The literature reviewed informs the questions used for operationalising the central concepts of PJ (i.e. Jackson and Bradford, 2010; Jackson *et. al.*, 2012; Jackson et. al., 2013). These questions, as well as those obtained from the '*Así Vamos* 2018' survey, are included in Appendix 1 at the end of this thesis. Control variables at the neighbourhood and individual levels used in this study are also informed by previous research (Nix *et. al.*, 2015; Sampson *et. al.*, 1997, Sampson, 2012; Sargeant, 2015). The neighbourhood-level measures are useful for analysing their influence on individual perceptions of trust in the police, police legitimacy, PCP and CP.

4.4.2.1. Dependent variables

PCP: this represents full trust in the police, or the overall confidence level resulting from the influence of trust and legitimacy (Jackson and Bradford, 2010; Jackson *et. al.*, 2013). The '*Así Vamos* 2018' survey includes a dichotomous question which taps onto that notion: "Do you have confidence in the police in your neighbourhood?". There was a total of 2,324 valid responses distributed across 1,229 individuals (52.8%) who answered 'Yes', and 1,095 (47.1%) who answer 'No'. There were 114 missing values or 4.6% of the total sample for this variable.

CP: this is the 'likeliness to report a crime or suspicious activity' or willingness of the public to help the police to 'find a suspected criminal' (Sunshine and Tyler, 2003). The dichotomous question used for measuring this variable is: "Do the citizens collaborate with the police to reduce crime incidence in the neighbourhood?". A total of 2,199 valid responses is distributed across 1,150 (52.2%) individuals who answered 'Yes', and 1,049 (47.7%) who answered 'No'. The proportion of missing values was 9.8%, with 239 cases.

4.4.2.2. Individual-level independent variables

Policing

Trust in Police Effectiveness: this is a measure of technical competence in terms of how effective the police are in providing visible presence, tackling or preventing crime and responding to emergencies or enquiries from the public (Sunshine and Tyler, 2003; Jackson and Bradford, 2010; Jackson *et. al.*, 2013). This variable was measured using the dichotomous question: "Is police presence in your neighbourhood sufficient?". From the 2,331 valid responses, 1,283 individuals (55%) answered 'Yes' and 1,048 (45%) answered 'No'. Missing cases stood at 107, that is, 4.3% of the total sample.

Trust in Police Fairness: this refers to whether the treatment that the police give to the public is fair, respectful and helpful (Tyler, 1990; Jackson and Bradford, 2010; Jackson *et. al.*, 2013). The dichotomous question taken from the '*Así Vamos* 2018' survey is: "Does the police officer gives a respectful treatment to the citizen?". A total of 2,278 valid responses is distributed across 1,510 individuals (66.2%) who answered 'Yes' and 768 (33.7%) who answered 'No'. There were 160 missing values, or 6.56% of the total sample.

Police Legitimacy: this refers to 'the 'right of the police to exert their authority' and 'moral alignment with them', that is, they have the right intentions in making decisions that affect the people, because they share the same values and interests (Hough *et. al.*,2010; Jackson *et. al.*, 2013). The question used for measuring this variable ("Is the treatment of the citizen to the police officer respectful?") implicitly suggests the recognition of 'shared group membership and values' and, more importantly, it signals deference to the police. With 2,279 valid responses, there were 1,574 individuals (69%) who answered 'Yes', and 705 (30.9%) who answered 'No'. The proportion of missing values stood at 6.5% of the total sample, with 159 cases.

Control variables

Contact with the police: this is an individual control variable that explores whether the residents of the MMA neighbourhoods had contact with the police or not (see: Skogan, 2009). The dichotomous question "In the past year, have you had contact with the police or required their presence?" was chosen from the survey. With

2,178 valid responses, just 165 individuals (7.5%) answered 'Yes', whereas a majority of 2,103 (96.5%) answered 'No'. There were 170 missing cases, equivalent to 6.9% of the total sample.

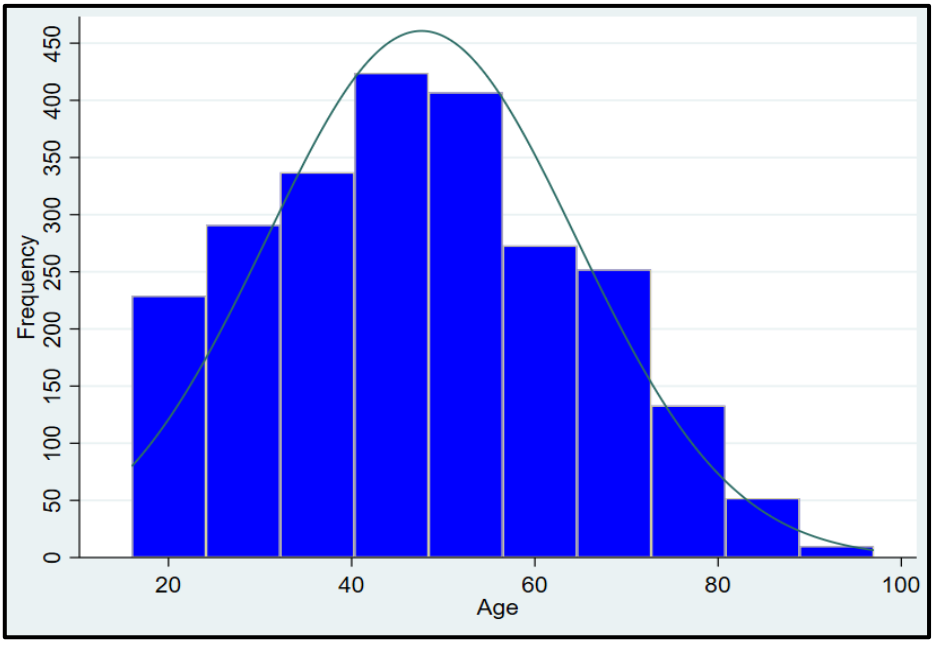
Individual victimisation: this study is interested in micro-macro (two-level) propositions. As discussed below, the measure of 'crime' refers to aggregated data. However, a correlation between the macro-level variable of crime and the outcome variables (PCP and CP) cannot be used to make inferences about micro-level relationships between the same variables. With such aggregated measure comes the potential error of ecological fallacy (Snijders and Boskers, 2012: 15, 83). Therefore, this variable at both the individual and neighbourhood levels is included to distinguish the within-group and between-group effects of crime on PCP and CP. The survey offered an individual-level question on whether the respondent or any other family member had been victim of any crime within the last year. A total of 2,424 valid responses distributes between 278 individuals who answered 'Yes' (11.4%) and 2,146 (88.5%) who answered 'No'. The missing values accounted just for 0.57% of the total sample, with 14 cases.

Socioeconomic indicators: these individual control variables have also been included in previous studies (Jackson, *et. al.*, 2013; Nix, *et. al.*, 2015; Sampson, 2012; Sargeant, 2015). The '*Así Vamos* 2018' survey includes items such as 'gender', with 1,236 males (50.7%) and 1,202 females (49.3%), and no missing values. The survey also includes the continuous variable 'age'. Figure 16 below shows that its distribution approximates normality, although it is slightly skewed right, since the mean (47.62) is greater than the median (47).

In addition, '*Así Vamos* 2018' includes four observable variables which will be used for measuring the latent variable 'Socio-Economic Status (SES)' in Chapter 6: job activity, income level, educational level, female-headed household and medical service. The other variables have ordinally arranged categories. There are seven nominal categories included in 'Job activity' related with employment status of respondents. Income level includes twelve categories, from 'none = 1' to '$24,800 MXN or more = 12'. Educational level shows ten categories, from 'nursery = 1' to 'PhD = 8'. Female-headed household is a dichotomous variable related with whether the respondent lives in this type of household or not. Medical service refers to three categories: 'not having access = 1', 'having access to public health service = 2' and

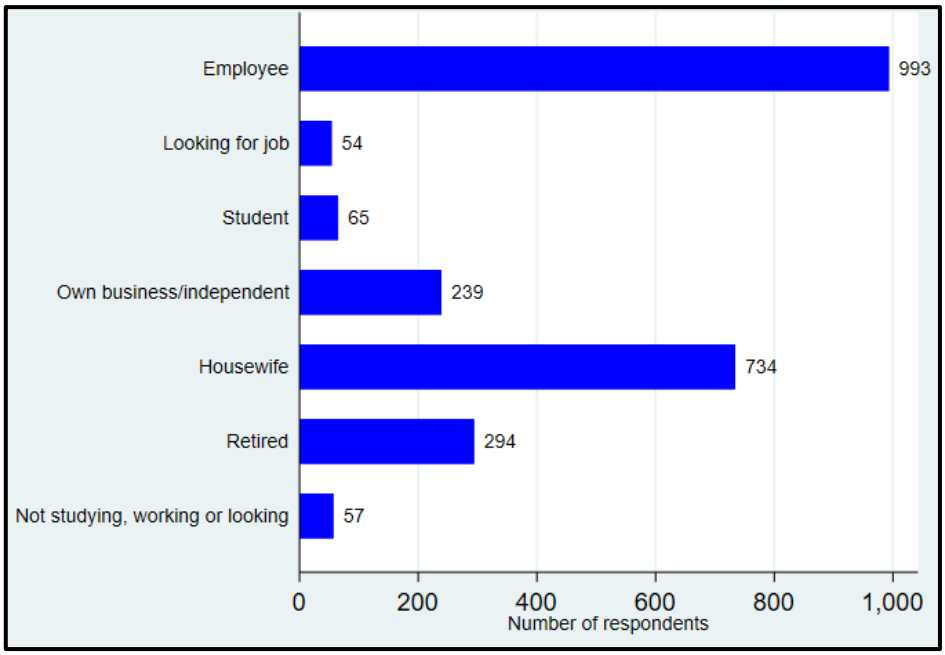
'having access to private health service = 3'. Figures 17 to 21 below show their distributions.

Figure 16. Distribution of age



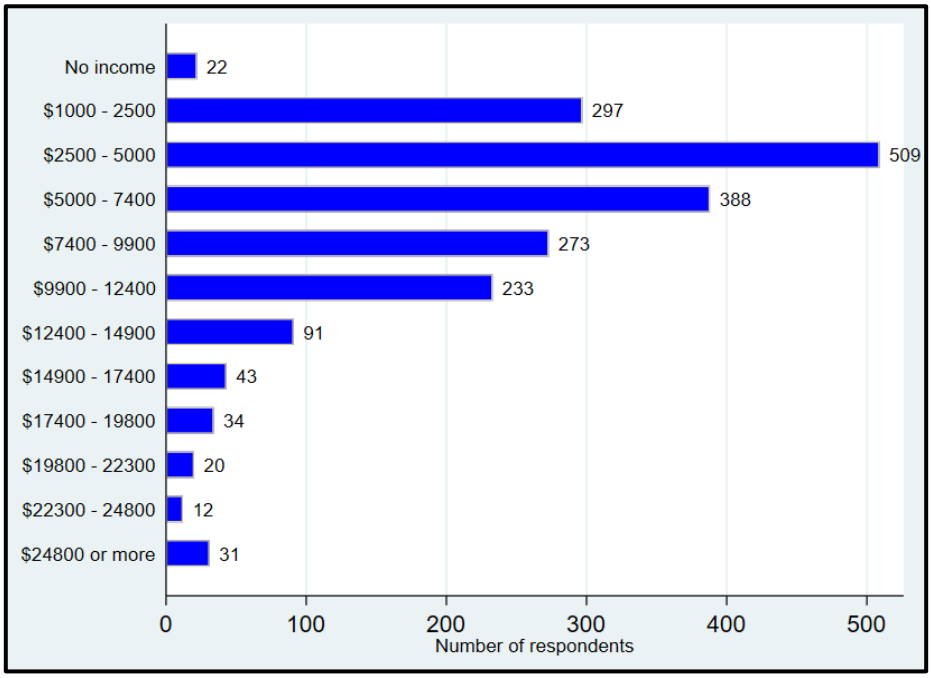
Source: elaboration with data from '*Así Vamos* 2018'.

Figure 17. Distribution of job activity



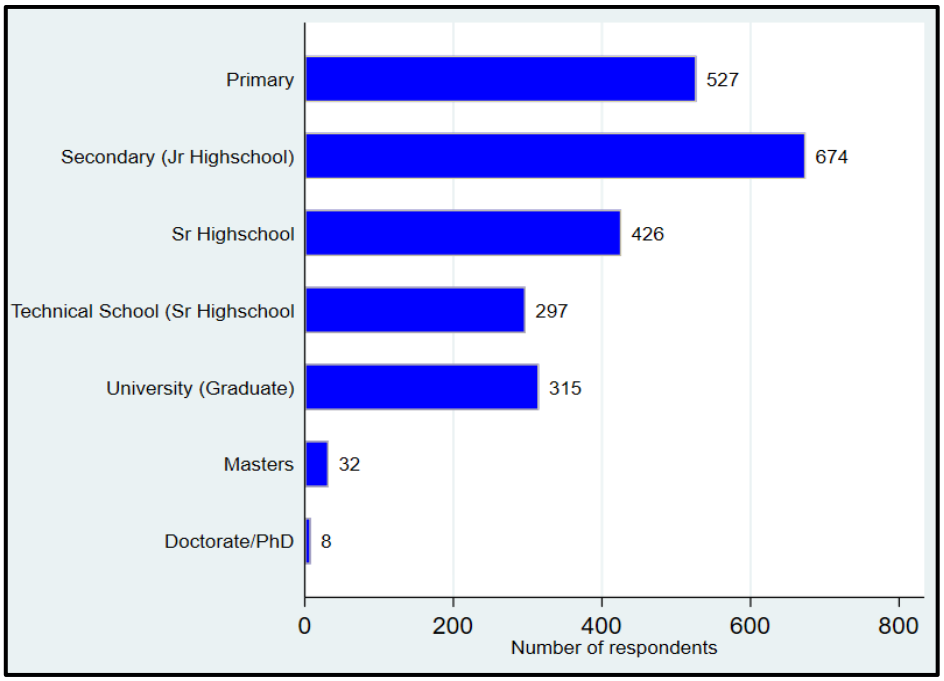
Source: elaboration with data from '*Así Vamos* 2018'.

Figure 18. Distribution of income level



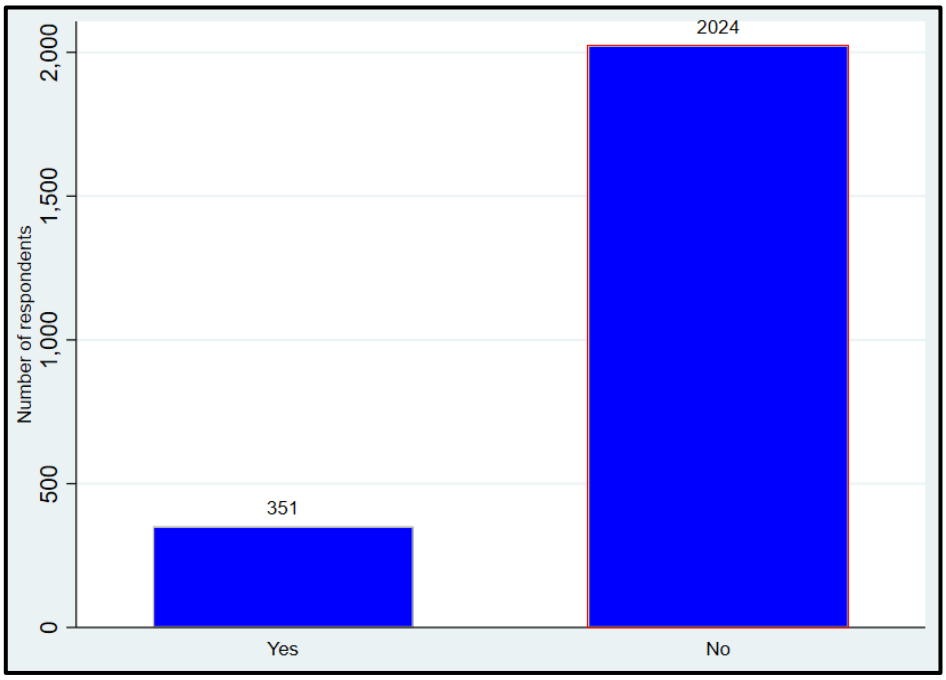
Source: elaboration with data from '*Así Vamos* 2018'.

Figure 19. Distribution of educational level



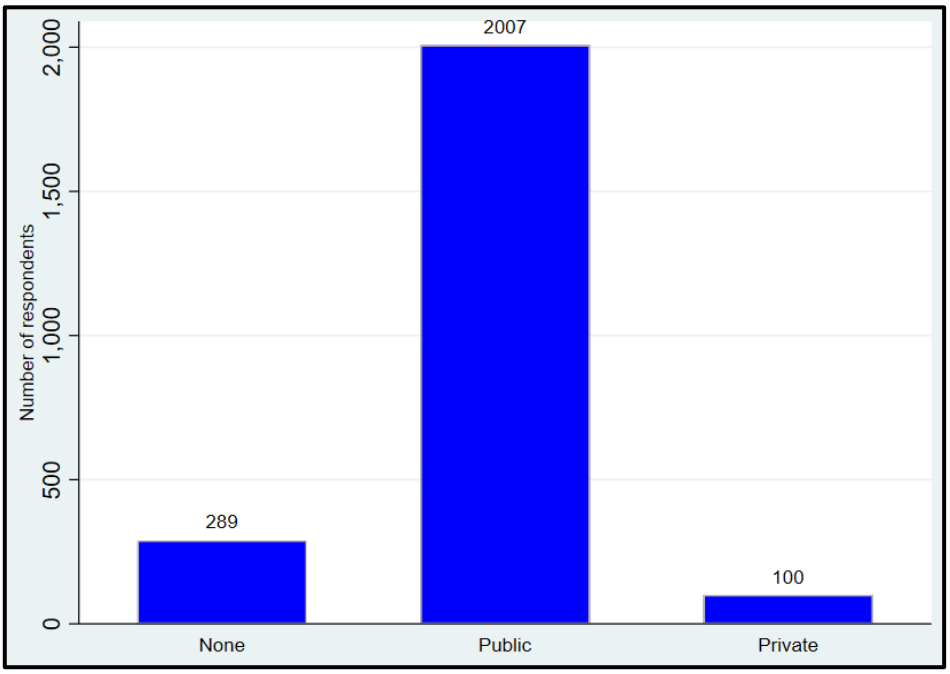
Source: elaboration with data from '*Así Vamos* 2018'.

Figure 20. Distribution of female-headed household



Source: elaboration with data from '*Así Vamos* 2018'.

Figure 21. Distribution of medical service



Source: elaboration with data from '*Así Vamos* 2018'.

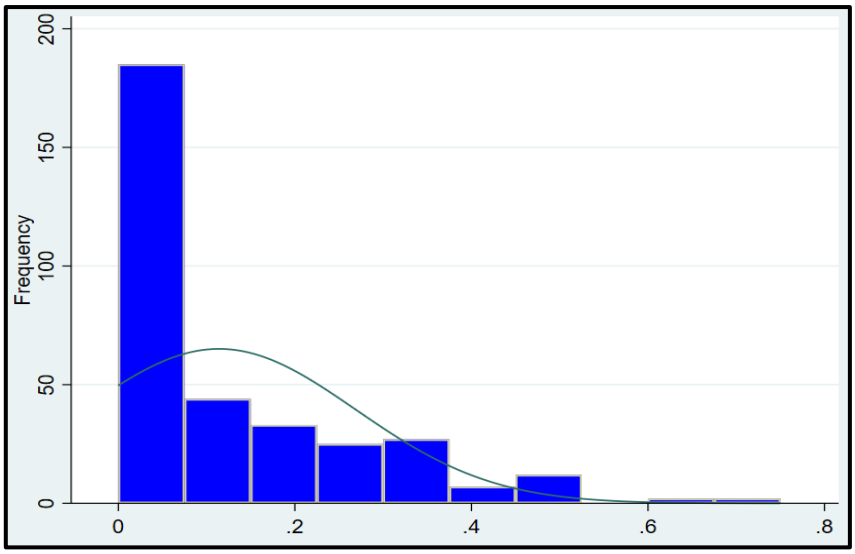
4.4.2.3. Neighbourhood-level independent variables

Following the multilevel approach used by Sampson and colleagues (1997) this study draws on individual-level data from '*Así Vamos* 2018' and the National 2010 Census for estimating the neighbourhood structural factors. Similarly, two different sources were used for measuring neighbourhood crime: 1) The '*Así Vamos* 2018' dataset was used for estimating the 'proportion of victimised individuals', and 2) NL State Police records were used for estimating crime rates. Further details of how NAs were created for estimating neighbourhood-level variables are included in Chapter 6.

Neighbourhood crime

Proportion of victimised individuals: this was estimated by aggregating responses of individual victimisation. Figure 22 below shows that it has a positively-skewed distribution, which generally means that just in a minority of the neighbourhoods across the MMA, the majority of their residents (as measured by survey responses) have been victimised. In contrast, a larger proportion of residents in other neighbourhoods have never or barely experienced victimisation.

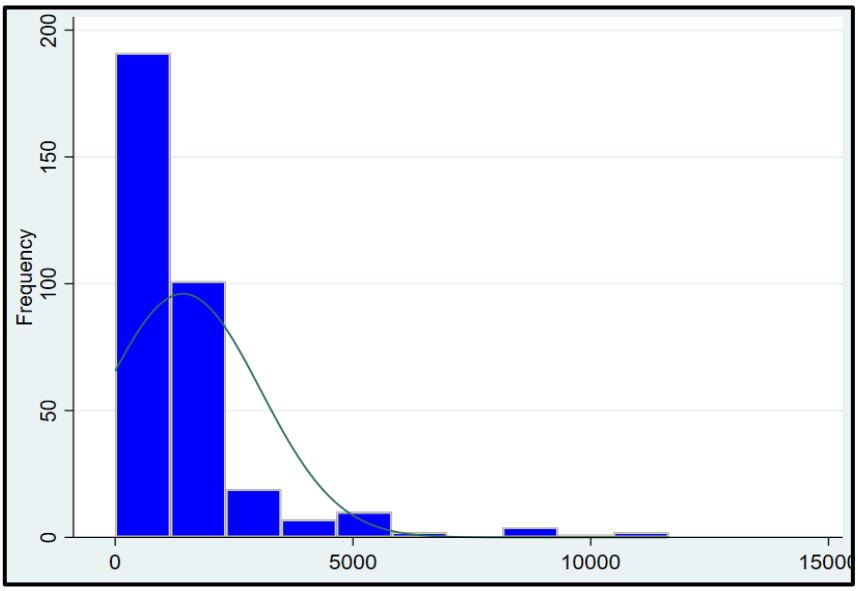
Figure 22. Distribution of 'proportion of victimised'



Source: elaboration with data from '*Así Vamos* 2018'.

NL State Police records: this source provides 148 types of crimes recorded in 2018. This study considers only those that are public in nature, and are classified as high-level impact: gang fight, street fight, home burglarised, vehicle stolen, vehicle broken into, car parts stolen from vehicle, physical assault with a weapon (e.g. knife or gun), physical aggression, and personal threat with a weapon (e.g. knife or gun). These were used for estimating the average crime rate. As with Figure 21, the distribution in Figure 23 below shows that a minority of neighbourhoods seem to concentrate higher crime rates.

Figure 23. Distribution of 'crime rate'

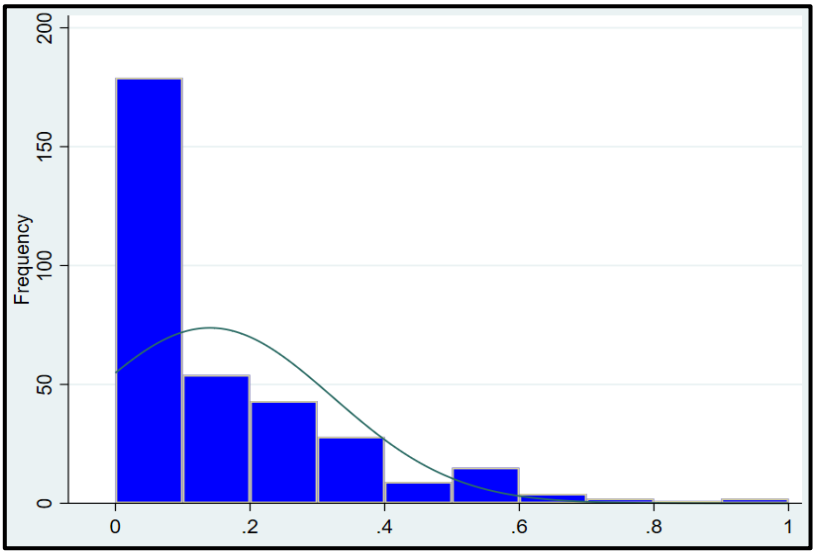


Source: NL State Police records.

Neighbourhood structural factors

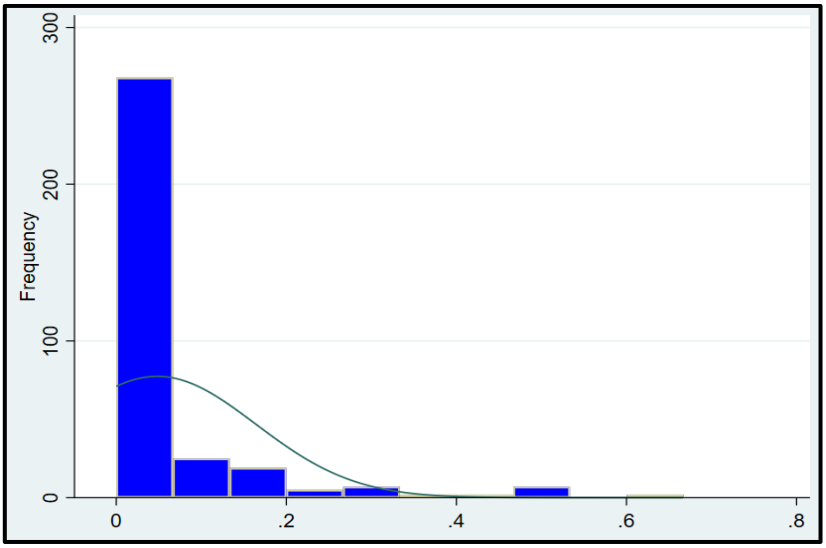
CONDIS: following Sampson's work (1997, 2012) this study draws on useful items included in the survey for measuring CONDIS: 1) proportion of female-headed households, and 2) proportion of unemployed individuals. Both could be aggregated using data from the '*Así Vamos* 2018' survey. Figures 24 and 25 below show their distributions.

Figure 24. Distribution of 'proportion of female-headed households'



Source: elaboration with data from '*Así Vamos* 2018'.

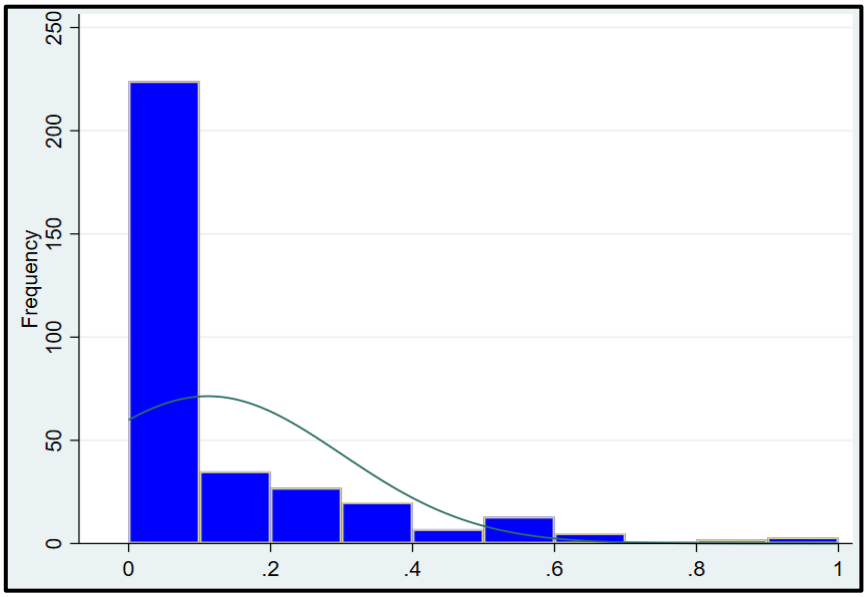
Figure 25. Distribution of 'proportion of unemployed'



Source: elaboration with data from '*Así Vamos* 2018'.

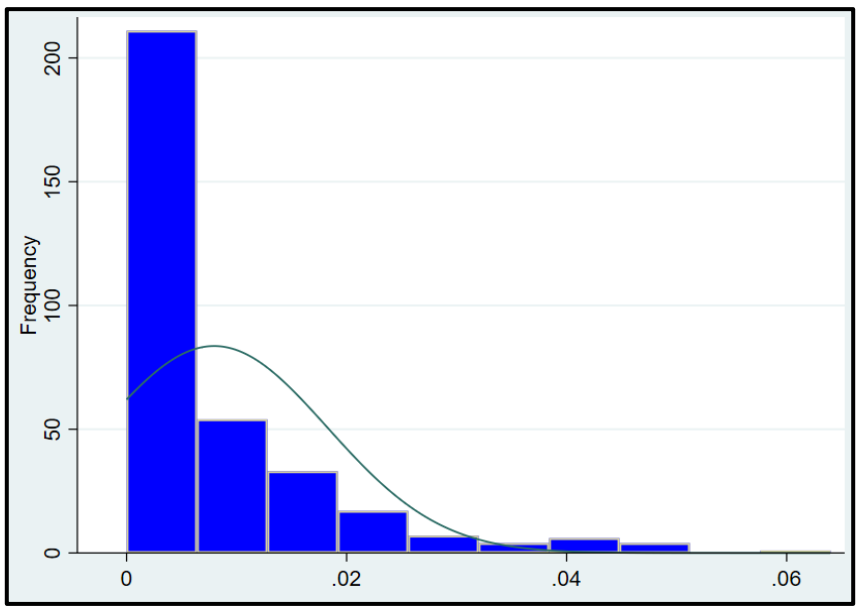
Another proxy is the survey question about neighbourhood development, on whether the respondents reported to have a "park near, clean and/or with good infrastructure". This variable was reverse-coded, since not having access to such park reflects a worse concentrated disadvantage. Census data was used for estimating ethnic heterogeneity in the form of 'proportion of indigenous population'. The distributions of these variables are shown below, in Figures 26 and 27.

Figure 26. Distribution of 'proportion of individuals living in a developed neighbourhood'



Source: elaboration with data from '*Así Vamos* 2018'.

Figure 27. Distribution of 'proportion of indigenous population'

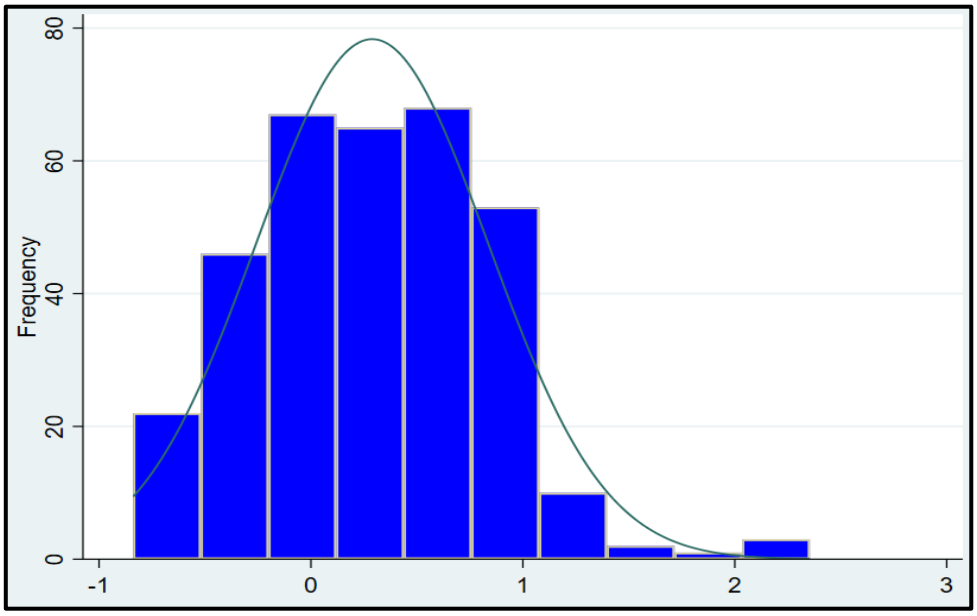


Source: elaboration with data from National Census (INEGI, 2010).

The average of 'SES', which draws on the '*Así Vamos* 2018' dataset, is also used as an alternative measure of CONDIS. Its inclusion at the neighbourhood-level also addresses the potential error of ecological fallacy mentioned above. In addition, the National Population Council (CONAPO) (2010) provides disaggregated data of the marginalisation index in the MMA. As mentioned in Chapter 3, it is a multidimensional indicator of the intensity of social deprivations. These are measured through nine forms of exclusion, groups in four dimensions –education, housing, population distribution and monetary income. Since the marginalisation index is referenced to state and municipal geostatistical areas, it could be used for estimating the average neighbourhood marginalisation.

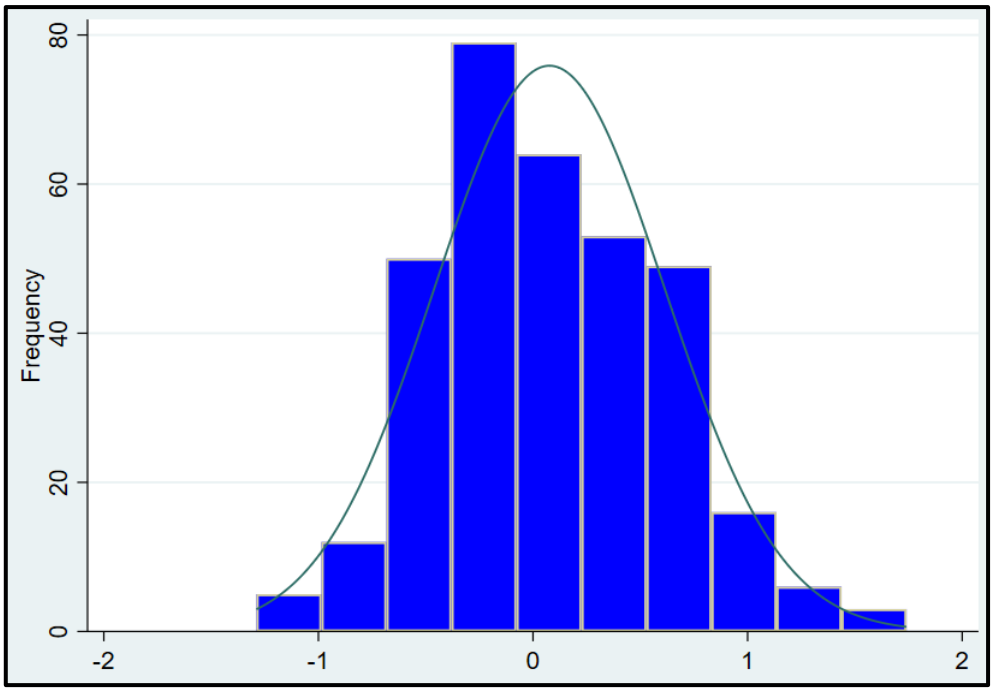
Figures 28 and 29 below, show the distributions of these variables. Both measures exhibit a slight positive skewness, but their distributions are closer to normality than those depicted above, in Figures 23 to 26. This could be due to the multiple-indicator nature of the individual-level variables used, which offer more balanced distributions than the single-indicator items of CONDIS.

Figure 28. Distribution of average marginalisation



Source: elaboration with data from CONAPO (2010).

Figure 29. Distribution of average SES

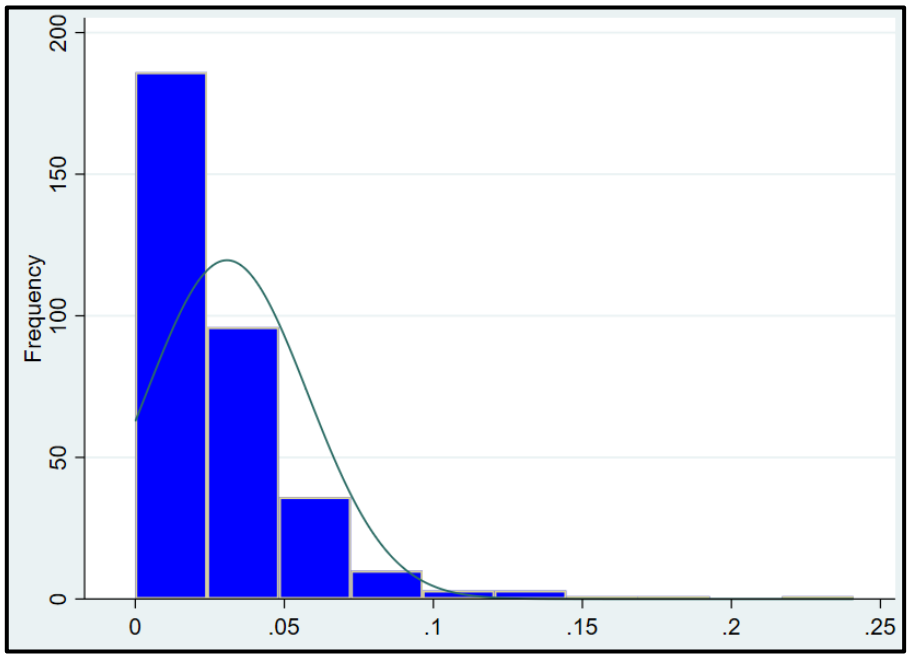


Source: elaboration with data from '*Así Vamos* 2018'.

Other structural factors: the National Census (2010) included two relevant measures: 1) 'individuals who lived in a state other than Nuevo León five years ago' and 2) 'individuals who lived in a different country five years ago'. These were used to estimate neighbourhood proportions related with **residential instability** and **immigrant concentration**, respectively.

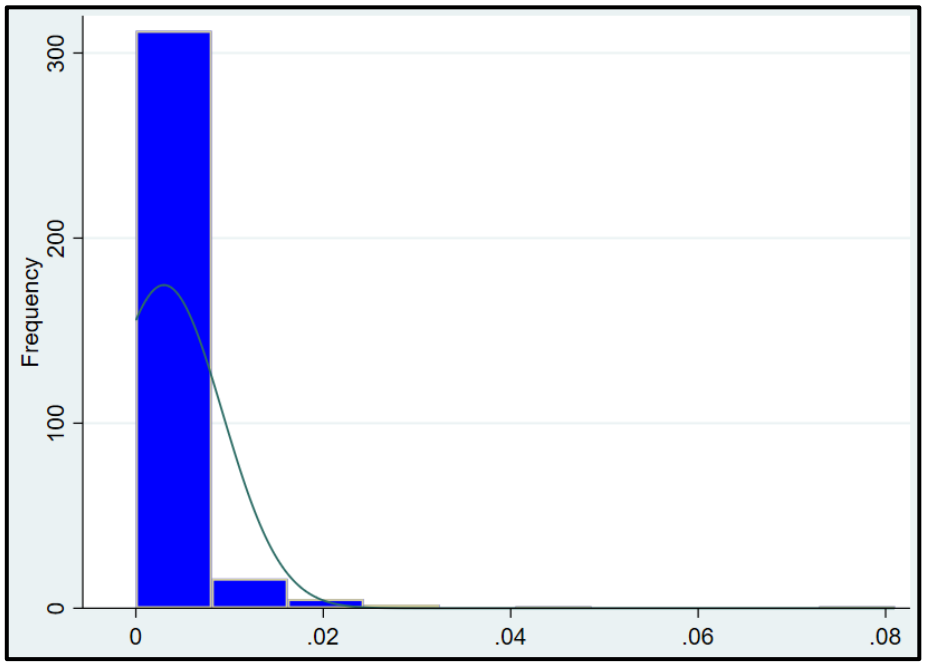
Both indicators are closely similar to the measures used in Global-North research on 'neighbourhood effects' (Brunton-Smith *et. al.*, 2013; Sampson *et. al.*, 1997; Sargeant, 2010). The distributions of these variables are shown below, in Figures 30 and 31. In addition, Appendix 3 at the end of this thesis includes the log-transformed distributions of these variables, as well as those of the single-indicator items described above.

Figure 30. Distribution of residential instability



Source: elaboration with data from National Census (INEGI, 2010).

Figure 31. Distribution of immigrant concentration



Source: elaboration with data from National Census (INEGI, 2010).

4.4.3. Limitations of quantitative data

As outlined above, the data sources used are useful for the analysis in this thesis. However, there are some caveats worth noting. For instance, '*Así Vamos* 2018' dataset is appropriate for this thesis, due to its robust sampling method and the inclusion of a variety of indicators which have not been considered together in government-funded surveys. Notwithstanding these strengths, this dataset poses some methodological challenges, which could have implications for the validity and reliability of the analysis. First, the extant research on PJ (Jackson, *et. al.*, 2013; Nix *et. al.*, 2015) have relied on a longer battery of questions than those available in the '*Así Vamos* 2018' dataset, for establishing relationships among the key constructs studied. In contrast, this study uses single indicators. This could mean that, for example, the aspects of 'trust in the police' fail to adequately capture the notions involved in 'fairness' and 'effectiveness'. Similarly, the indicator used for operationalising 'police legitimacy' might entail a wide range of normative and non-normative understandings, which could not possibly be disentangled from a single measure. However, the scarce research that does exist for Mexico shows that several concepts considered in this thesis –mainly related with aspects of trust–, have been operationalised in quite similar ways. Thus, the indicators used in this thesis closely mirror those used in such studies. Moreover, the analyses of the relationships among such concepts have rendered results which –to a considerable extent– support the relationships proposed *a priori* in the hypotheses set out above. Therefore, the '*Así Vamos* 2018' dataset is appealing, despite its limited battery of questions, since it includes data on normative features for studying PJ in the MMA, which have been disregarded in the few official surveys available. As with some prior PJ studies (i.e. Jackson *et. al.*, 2012), this thesis represents a steppingstone to trigger future research in Mexican contexts and, by extension, to generate data on a variety of concerns which could elicit PCP and CP.

Second, it provides few cases of certain categories which are relevant for this study. For example, one of the research questions is about whether PCP and CP are lower among the residents that had recent encounters with the police, than those that did not. The sample includes 165 cases of respondents that reported having contact with the police "during the last year", which represents only a 6.77% of the total sample. Third, the question "Do the citizens collaborate with the police to reduce crime

incidence in the neighbourhood?", which is used for operationalising CP, does not explicitly refer to the intentions of the respondents themselves, but to their perception on whether other individuals in their neighbourhood cooperate with the police. This was a consequence of the design of the survey and could not be avoided in the context of this study. One key implication of this is that the perceptions of what other people would do could be different from what the respondents report about their own behaviours, which may significantly affect the interpretation of this variable. For example, attitudes towards CP may be a greater reflection of others' perceived behaviours than that of the individual, which may (for a number of reasons) be different. In any future research, it would be desirable to measure the individual's propensity to collaborate.

Fourth, there is a considerable proportion of missing values. The highest proportion of missing values across the variables of interest stands at 20% of the 2,438 observations in the dataset. These challenges and their implications for this study will be addressed in detail in Chapters 5 and 6. In the meantime, it is worth noting that the logistic multilevel SEM technique involved in the statistical analysis is suitable for skewed (unbalanced) distributions between categories, and accounting for missing data. In addition, multiple imputation is used for treating missing values.

Fifth, other PJ studies have pointed out that cross-sectional data carries a 'causal-ordering challenge' between possible predictors and outcome variables (see: Skogan, 2006). Thus, a longitudinal approach would be necessary to account for temporary variations in individual opinions, and for addressing the causal direction between variables. In response to this concern, it is worth noting that the '*Así Vamos* 2018' dataset offers representative opinions on the concepts studied at the moment when the survey was conducted. Therefore, in the absence of longitudinal data, this dataset would still allow us to test the statements set out above in the hypotheses, and to find out whether there is support to the directionalities that they propose *a priori*.

Regarding the other data sources, State Police records have some quality drawbacks, such as inconsistencies in names of neighbourhoods. For instance, many of these show orthographic mistakes, there are different versions of a same neighbourhood name and others are doubtful. A manual revision is thus required for matching identification numbers and names in these records with their location displayed in the digital map of the National Inventory of Households. The latter is superimposed on the google maps platform, which is helpful for this task.

4.4.4. Qualitative data

As mentioned above, the data for qualitative analysis comes from in-depth interviews with representatives of ten local organisations of the MMA. These were conducted in two rounds. In the first round, it was possible to interview them in the MMA from October to November 2019. However, the COVID-19 pandemic impeded a second visit to the MMA for the second round in April 2020. Therefore, the interviews were finally conducted by videoconference from May to June 2020. The criteria for choosing the organisations were based on their experience and knowledge of dynamics in different neighbourhoods. In the process of mapping, evaluating and contacting these local organisations, the researcher contacted two institutions, which provided support and guidance. These organisations had been previously contacted at an early stage of this research (in 2018) for socialising this study. One is '*Cómo Vamos Nuevo León*', which collaborates with several organisations in different civic projects. The other is the School of Law and Criminology (FACDYC) at the Autonomous University of Nuevo Leon (UANL), which is an active member of the 'social prevention of crime network' in the State of Nuevo León. Many of the organisations with the profile sought were also members of such network and were recommended by FACDYC. The representatives from the ten organisations that were interviewed had coordinated projects in many neighbourhoods or had considerable experience working in the field at that level. Altogether, they have implemented projects in circa 500 neighbourhoods in the MMA. Due to ethical procedures (as will be discussed further below), the names of the ten organisations are anonymised.

It is worth noting that qualitative data is appropriate for gaining an understanding about the elements or aspects involved in the definition of a "neighbourhood" in the MMA. Other understandings are concerned with the features of PJ constructs, such as 'trust in the police' and 'police legitimacy' and their roles in shaping individuals' PCP and CP. A further discussion of the interview method is included in the next chapter, and the analytical categories explored during the interviews are included in the information sheets shared with the participants (see: Appendix 2). In particular, the second round of interviews inquired into categories which were not possible to operationalise using data from *'Así Vamos* 2018*'*, for example: 'quality of decision making', 'obligation to obey the police', 'police authority' and 'residents' expectations of the police' and 'police corruption'.

4.4.5. Limitations of qualitative data

One potential concern with this source of data is the relatively low number of interviewees for achieving data saturation, that is, when “no new information or themes are observed in the data” (Guest, Bunce and Johnson, 2006: 59). However, qualitative data is not focused on reaching a proportion of respondents as high as possible for reducing statistical bias in the data collected (Albaum and Smith, 2012: 182). Interestingly, in their landmark study, Guest, Bunce and Johnson (2006: 59) found that saturation could be noticed “in the first twelve interviews” and some simple elements in six interviews. As explained above, the concern of qualitative data is with grasping the details about the themes and categories explored. In addition, the vast experience of representatives from the ten organisations in a large number of neighbourhoods outweighs what could be considered ‘few’ interviews.

Another possible concern is about the reliance on vicarious experiences of organisations, rather than drawing on personal experiences of the MMA residents. Vicarious data is preferred as this is feasible considering two practical constraints in this research. One is the time limitations faced by the researcher, who must conclude this project in less than four years, as instructed by his sponsor, and thus it would take longer to conduct fieldwork in several neighbourhoods. The other constraint relates to the researcher’s physical integrity and safety involved in conducting fieldwork. Some neighbourhoods are located in high-crime areas in the MMA. Thus, it does not seem appropriate to conduct personal interviews there. Regardless of these limitations, vicarious experiences are just as illustrative as personal experiences for making a point. As Norrick (2013: 386) argues, personal experiences are restricted to what individuals have directly witnessed. Instead, vicarious experiences offer a pathway for obtaining general information and exemplifying situations which individuals have not experienced.

4.5. Ethics

Any research must consider the ethical implications involved in the analysis and data management. This project followed the recommendations in the literature on research ethics, the guidelines of The British Society of Criminology (2015) and those

from the Research Ethics and Integrity Committee (REIC) of the Edinburgh Law School.

4.5.1. Qualitative considerations

The REIC issued ethical authorisation for conducting in-depth interviews in this project, subject to four main considerations about the rights and interests of the respondents who participated in this research (Denscombe, 2002: 174). First, any deception or misrepresentation about the aim of this research was avoided. This project provided the respondents with an information sheet, that outlined the aim of this study and institutional contacts at Edinburgh Law School where they could ask for more information, follow up on the study or file a complaint. In addition, consent was obtained from them in advance of the interviews. Second, the participants were advised that they were free to withdraw from the interview at any moment if they felt the need to do so. Third, this study did not anticipate themes that could be sensitive for the respondents, but the researcher advised them that, they had the right to stop the interview if they felt emotional discomfort (Ransome, 2013: 31-43). The fourth measure is related to private data that identifies the respondents. This research ensured that all the data provided by them was confidential, by using nicknames instead of their real names. This study also sought to ensure the integrity of the data by securely storing it in the servers of the University of Edinburgh. At the end of this project, the consent forms and any transcripts from interviews will be destroyed. These ethical considerations were expressed in a Level-2 form which, together with a risk-assessment form for conducting fieldwork in Mexico, were approved by the REIC on 11 June 2019 and 10 June 2020.

4.5.2. Quantitative considerations

Regarding the quantitative methods used in this thesis, the motivations mentioned above point out the benefits it can have for enhancing PCP and CP in the MMA. Nonetheless, its limitations and scope are also acknowledged. Some of these posed potential conflicts between data analysis and ethical standards (Rosnow and Rosenthal, 2011), which had implications to reliably answer the research questions and fulfil the aim of this thesis. For instance, the quantitative analysis in this thesis

seeks to stay up to date, drawing on more recent and robust methods than others developed in the past. As Goldstain (2011: 341) points out, newer methods can expose "the hidden distortions and biases" of older methods. As will be explained in Chapter 5, Confirmatory Factor Analysis (CFA) is preferred in this thesis than Exploratory Factor Analysis (EFA) for assessing the validity and reliability of latent variables SES and CONDIS. However, it is worth acknowledging the exploratory nature of some of the CFA done to answer research question 1, as will be developed in Chapter 7. In this regard, it is more ethical to approach factor analysis as a continuum between confirmatory and exploratory extremes, than treating it as a dichotomic distinction (McArdle, 2011). Similarly, Multi-Level Structural Equation Modelling (ML-SEM) contribute to expand the scope of quantitative analysis of PCP and CP in this thesis, to account for direct and indirect relationships, as well as contextual factors. From an ethical viewpoint, it is an obligation to use these techniques where possible and appropriate, to improve the accuracy and reliability of the parameters estimated (Goldstein, 2011).

Secondly, in employing these complex methods in data analysis, McArdle's (2011) argues that researchers could be tempted to choose one model among the many estimated to serve the purpose of satisfying goodness-of-fit standards. In contrast, this thesis reports the results of all the relevant models estimated, even if these fail to completely fit the acceptable criteria, insofar as altogether they contribute to support the hypotheses set out above. This consideration leads to a third one, which is avoiding a 'dichotomous thinking' (Cumming and Fidler, 2011) centred on rejecting or confirming hypotheses. Instead, it is ethically more appropriate to use parameter estimates and their significance to render informative results on the extent to which hypotheses could be supported. This is a quantitative approach to theory, whereby the evidence obtained might support or not the foundations of PJ framework. Therefore, this study strived to balance the researcher's needs with the fulfilment of ethical concerns in quantitative analysis.

A third ethical consideration concerns the steps that must be taken to fulfil ethical standards when using secondary data for conducting quantitative analysis. In this regard, the data sources used avoided placing unnecessary burdens or exerting potential harms upon individuals during this research (Rosnow and Rosenthal, 2013). This was ensured by following the same guidelines on storage and confidentiality considered for qualitative data. For instance, these datasets were stored in the secure

servers of the University of Edinburgh, and they provide identification numbers that make it impossible to link them to specific individuals. Thus, they are anonymised, which ensures their confidentiality in this study and in any other future research output. These ethical considerations are reflected in the discussion of methods and results in the remaining of this thesis, which aim at drawing clear and honest conclusions that could be used for informing policing in the MMA and Mexico.

4.6. Conclusion

This chapter began by setting out the aims, research questions and hypotheses of this thesis. These address the gaps in the literature (Chapter 2) considering the relevance of the MMA as the context for this research (Chapter 3). It then discussed the necessity of a sequential mixed-methods strategy, with dominant deductive approach. The discussion included important reasons for adopting this multi-strategy, such as the explanatory nature of the relationships of between concepts established in the hypotheses and in most research questions. This thesis also considers qualitative data in the form of vicarious experiences from community organisations, which are useful for illustrating PJ concepts, but within the categorical definitions used for the quantitative analysis. Therefore, this complementary analysis builds on (informs) the extant PJ framework, instead of generating new theory. In addition, qualitative data is useful for gaining an understanding of the elements and aspects that define a “neighbourhood” among MMA residents. Nevertheless, there are some caveats involved in this research, such as its cross-sectional scope and the validity and reliability of the data sources used. Despite these limitations, this thesis puts forth a rationale which includes complementary approaches for enhancing the analysis on PCP and CP in an under-researched context. Hence, it offers a contribution to multi-method, multilevel and Mexican criminological research on PCP and CP.

Chapter 5. Methods

5.1. Introduction

The main concern of this thesis is with studying the extent to which 'trust in police fairness' could have a greater weight than 'trust in police effectiveness' in enhancing 'police legitimacy' and, in turn, elicit PCP and CP in the MMA. This motivation influenced the research design outlined in the previous chapter. Answering the research questions and fulfilling the aim set out in this project requires the completion of three main tasks. First, it is necessary to assess the interplay of the key concepts considered in the PJ framework. Second, such an evaluation involves situating the analysis at the neighbourhood level and, therefore, NAs in the MMA must be clearly defined. Third, it is important to account for the joint influence of individual and neighbourhood-level factors on PCP and CP. The purpose of this chapter is thus to describe the functioning of the methods adopted in this study for carrying out such tasks. As discussed in Chapter 4, a multi-method (mixed) approach is used in this thesis. These methods have been used in previous studies –as discussed in Chapter 2– informing this project. The discussion in this chapter includes the contribution of such methods to answer one or more research questions of this project, as well as their limitations.

This chapter is divided in four sections. The first one describes Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) statistical methods. CFA is appropriate for testing the discriminant validity of the measures used for operationalising the key PJ concepts considered in this thesis. This will allow us to know whether these indicators represent distinct underlying notions, and thus contribute to answer research question 1 which refers to the consistency of the key PJ concepts in the MMA. In addition, CFA is suitable for analysing how well a set of indicators represents a latent concept, such as SES and CONDIS. As outlined in Chapter 2, these latent constructs could partially shape PCP and CP. Therefore, they are included as control variables in the analyses involved in answering research questions 2 to 5. In this sense, SEM is employed for analysing the relationships among the PJ concepts considered, accounting for individual characteristics, which contributes to answering research questions 2 to 4.

The second section discusses the methods involved in creating the Neighbourhood Areas (NAs) in the MMA –such as Geographic Information System (GIS) and semi-structured interviews. It also details the matching of the Census Data and State Police records at this level, with data from the *'Así Vamos'* survey. Linking these data sources with the NAs allows us to obtain neighbourhood-level indicators for conducting the CFA of CONDIS, and the analysis which accounts for the separate influence of individual and neighbourhood-level variables on PCP and CP.

In this regard, the third section outlines the multilevel modelling technique, used for estimating the specific effects of individual and neighbourhood-level factors on the outcome variables, thereby contributing to answer research question 5 and complementing the answers to questions 2 to 4. This section also outlines an alternative approach of aggregating data at one level of analysis. The comparison of both approaches highlights the contribution of multilevel analysis in accounting for neighbourhood-level factors more accurately.

Following the sequential approach adopted in this study, the fourth section addresses the qualitative component, which consists of semi-structured interviews with local organisations. Drawing on their vicarious experiences, these are used in two ways for complementing the analysis focused on answering research questions 1 to 5. First, this method allows us to explore the understandings of the key PJ concepts considered, that is, to analyse their consistency in more depth. Second, this method is also used for exploring the relationships among such concepts.

5.2. Measuring factors that influence PCP and CP

The literature review discussed in Chapter 2 has highlighted the need to evaluate the properties of key PJ concepts considered in this thesis: 'trust in police fairness', 'trust in police effectiveness', 'police legitimacy', PCP and CP. This assessment involves an analysis of their distinctiveness, that is, the extent of association among the indicators used for operationalising such concepts, to know whether they refer to a same underlying construct, or touch on different concepts. The same literature has documented two types of constructs about social features, namely SES and CONDIS. The former summarises individual socioeconomic characteristics, such as income level, educational level, female-headed household and medical service. The latter is employed for measuring different concentrations of structural

factors across neighbourhoods, such as proportion of female-headed households, proportion of unemployed individuals, proportion of individuals living in a developed neighbourhood and proportion of indigenous population. As mentioned above, SES and CONDIS are individual and neighbourhood-level constructs –respectively–, which could shape PCP and CP. Therefore, CFA is used in this study for assessing the extent to which the associations among the sets of indicators mentioned above, lead to specific constructs (SES and CONDIS), or for evaluating their distinctiveness (PJ concepts). In addition, SEM is employed for measuring the relationships and their directionalities among such constructs and other indicators outlined in Chapter 4.

5.2.1. Measuring latent concepts: Confirmatory Factor Analysis

CFA is a useful technique of statistical analysis for simplifying the identification of patterns in data, which represent underlying concepts. The latter are called **latent variables**, since these cannot be observed. To study such constructs, a different measurement scale must be constructed, drawing on **manifest variables**. These are indicators of a latent variable which are observed in reality and could be directly measured (Tarling, 2009).

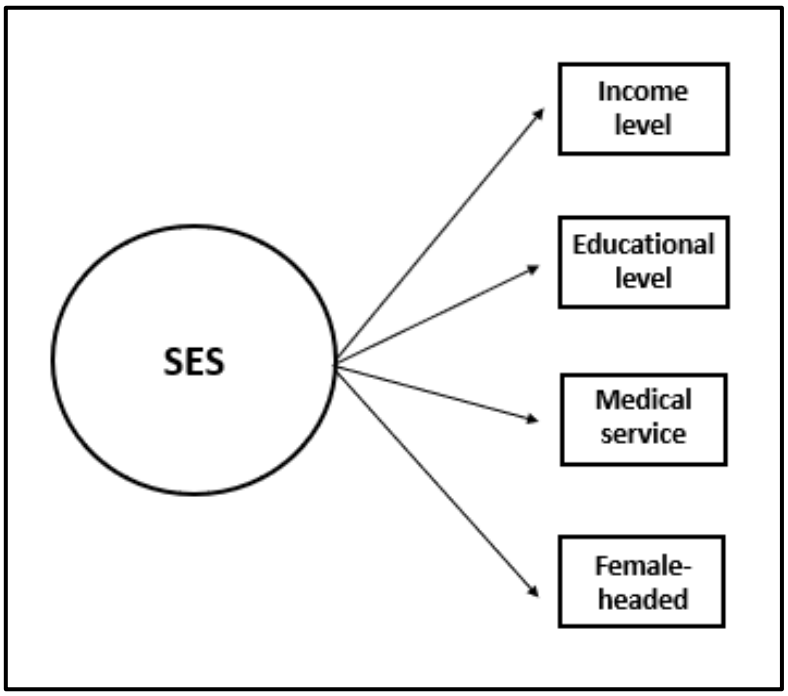
The premise of CFA is the existence of linear relationships between the latent variables (factors) and the observed indicators. It assesses whether the linear combination between such manifest variables produce outcomes consistent with previous studies, that is, how well the observed indicators represent a factor. In contrast to other factor analysis techniques (i.e. Exploratory Factor Analysis (EFA)), whose exploratory nature looks for associations between a set of manifest variables for representing two or more concepts, CFA is strongly guided by theory and empirical foundations. All the patterns are thus prespecified, such as the number of factors and the relationships between these and the indicators (Brown, 2015). Since this project is strongly informed by the literature (Chapter 2), its approach (Chapter 4) is consistent with the rationale of CFA.

5.2.1.1. The usefulness of CFA in this study

This technique is useful in this research for four reasons. First, one of the main tasks in this study is to analyse if a set of indicators represents the same underlying

construct, that is, whether the data fits a latent variable (see: Gatignon, 2009: 59). For instance, CFA allows assessing if the observed sociodemographic variables informed by the literature and pointed out in Chapter 4, could measure the notion of SES. A similar analysis could be conducted with variables observed at the neighbourhood level (also outlined in Chapter 4), to evaluate if they touch on the latent concept CONDIS. Figure 32 below exemplifies a CFA model of SES, consisting of four indicators observed in the data which load on one factor. This simple structure indicates that all the manifest variables 'measure' the same latent construct. In other words, the model represents the "attempt to reproduce the observed relationships among input indicators" (Brown, 2015: 43). The arrows represent the contribution (or loading) of each indicator on the factor. Factor loadings are standardised in one-factor solutions and thus reflect correlations between the factor and the indicators (Tarling, 2009).

Figure 32. Confirmatory Factor Analysis
(One factor and four indicators)



Source: based on notation in Muthén and Muthén (2010).

A second reason for using CFA is the necessity of analysing the discriminant validity among the key PJ concepts (see: Gau, 2010; 2011). As discussed in Chapter 2, this occurs when specific indicators lack the necessary association to represent a single construct. Instead, they correspond to different underlying concepts. The same

discussion indicates conceptual differences between PJ concepts, but due to the limited number of indicators drawn from the *'Así Vamos* 2018*'* dataset –as outlined in Chapter 4–, it is not possible to test their psychometric properties. This would require a group of indicators for measuring each construct. However, it is feasible to gauge the convergence of the indicators available into a same latent variable, through different combinations of CFA models with all the indicators. The parameter estimates of the alternative models can reveal if these manifest variables fail to converge or not. Failing to converge would support the view that such indicators reflect conceptual notions which are different from each other. In contrast, convergence would imply that they measure the same latent concept.

Third, this statistical technique offers the possibility of calculating factor scores. These are estimates of the relative ranking of each case on a factor (Brown, 2015; Kline, 2011). In contrast to other types of factor analysis, CFA does not require factor scores to be used as proxy indicators of latent constructs in subsequent analysis. The factors are used themselves in the analysis of their relationships. Nonetheless, factor scores are continuous data which could also be used in other analyses, such as multilevel models –discussed further below. As mentioned in Chapter 4, 'Average SES' is used as one of the neighbourhood-level indicators of CONDIS in the multilevel analysis. The scores would reflect an individual's SES, whereas the average of such scores would reflect the mean concentration of socioeconomic conditions shared by a group of residents in a particular NA. Higher individual or mean scores would imply better-off socioeconomic conditions.

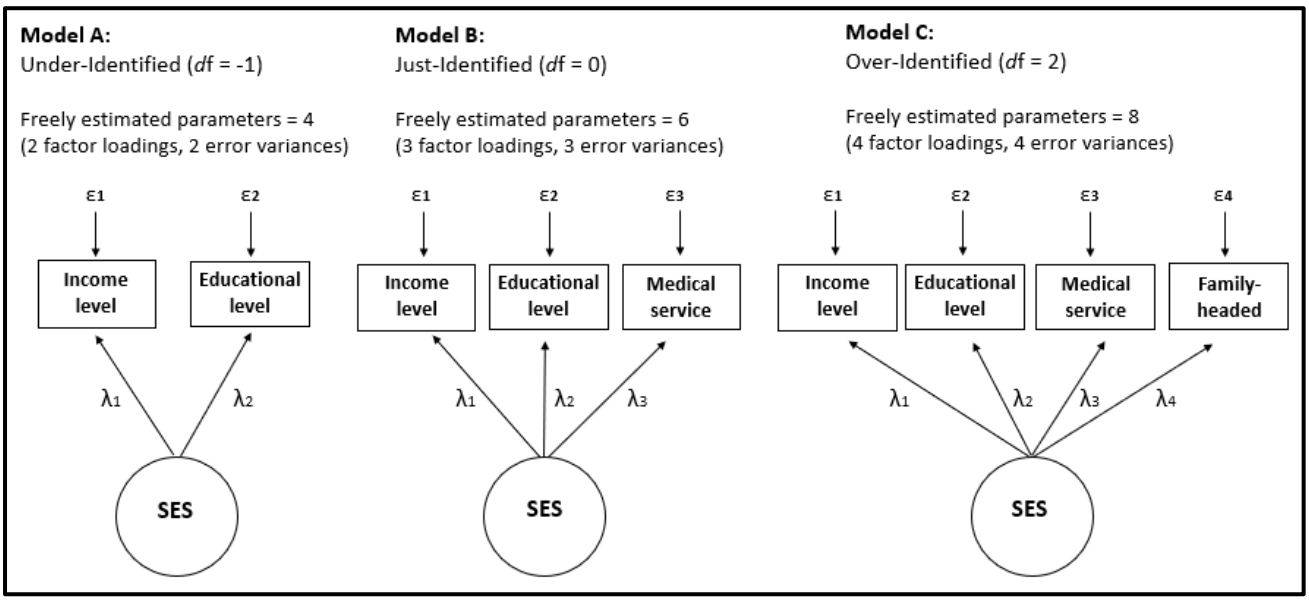
Fourth, CFA is a necessary previous step for analysing structural relationships among latent variables (Bowen and Guo, 2012; Brown, 2015). As mentioned above, SEM is used in this study for estimating structural models which specify the hypothetical direct and indirect relationships among the PJ indicators and other variables, based on the literature discussed in Chapter 2. The prerequisite for conducting this analysis is to estimate the measurement model first. This is a CFA model with a specified number of factors, the relationships among them (when there are more than one) and how these are related to the indicators considered. SEM will be discussed in the next section. In the meantime, the main statistical considerations for conducting an appropriate CFA analysis are discussed below.

5.2.1.2. Considerations for CFA in this study

Identification

Having specified the measurement model, it is then necessary to assess the theoretical possibility of deriving a unique solution of parameter estimates for a CFA model. A critical requirement indicated by the relevant literature (i.e. Kline, 2011; Brown, 2015) is that a model must have, at least, zero degrees of freedom (*df*M = 0) to be just-identified. This means that the number of freely estimated parameters cannot surpass the elements of known information (i.e. variance-covariance matrix). If this occurs, the model would be under-identified (*df*M < 0), thereby producing an infinite number of solutions. In contrast, an overidentified model would lead to a unique solution with fewer freely estimated parameters than known elements (*df*M > 0). For instance, Figure 33 below shows hypothetical examples of the extent of identification of a CFA model of SES.

Figure 33. Under-identified, just-identified and over-identified CFA models



Source: based on examples in Brown (2015).

First, Model A shows a situation with three known pieces of information: the variance of y1, the variance of y2 and the covariance between these indicators. These three elements are fewer than the four freely estimated parameters, thus leaving this model under-identified (*df*M = -1). Then, Model B presents a just-identified solution

(*df*M = 0) with six freely estimated parameters, which equals the known information (3 variances and 3 covariances). The third solution in Model C is over-identified (*df*M = 2), since there are ten known variances and covariances, which exceeds the eight freely estimated parameters.

In addition, it is worth noting that CFA offers the possibility of specifying correlations between errors of the indicators as additional parameters to those considered in the examples above. The **correlated uniqueness**, as it is known in CFA terminology (see: Brown, 2015: 46) assumes that not all the covariance between two indicators is attributable to the shared influence of the latent variable. The relationship between such indicators is also due to other sources. Method effects constitute the most salient cause of such covariation, commonly related to items with similar wording or reversed-worded included in the measurement model, among other reasons.

Despite the importance of accounting for unique variances between the indicators, this is unlikely to considerably affect this study for three reasons. First, most indicators used in this study for measuring whether these converge into a latent variable (i.e. SES, CONDIS) or exhibit discriminant validity (i.e. PJ indicators) do proceed from the same survey and are strongly correlated. Nevertheless, the manifest variables associated with its corresponding latent construct are not similarly or reversed worded.

Second, the wording of such items was piloted in advance of the implementation of the *'Así vamos'* in 2018, and most of them were included in the previous edition in 2017. These items were also subject to statistical checks to ensure their validity and reliability. Third, other indicators used for measuring other latent constructs refer to observed individual characteristics (i.e. SES) or their averages in each NA (i.e. CONDIS), rather than respondents' opinions subject to wording issues. These constructs are estimated as one-factor solutions, which eliminates the possibility of cross-variances between factors. It is thus reasonable to assume a random measurement error approach, allowing more parsimonious CFA models with fewer parameters and reducing identification challenges.

The discussion hitherto indicates the necessity to measure models which are, at least, just identified. The literature does not recommend them though, due to potential challenges of empirical under-identification. This commonly occurs when there are more known variances and covariances than specified parameters to be freely estimated, but the former are fewer (in practical terms) due to non-existence of

covariances between indicators. As Kline (2011) warns, a CFA model fails to converge when the data used offers poor information, such as a lack of association among indicators, leaving the model with fewer known pieces of information and under-identified. Thus, just-identified models could fit the data, but cannot test hypotheses. Therefore, assessing their goodness of fit does not apply in practice, since such models always yield perfect fit and this could, in fact, be a signal of empirical under-identification.

Other signals of identification issues arise with solutions presenting nonpositive definite matrices and failing to converge. These could indicate misspecification of the measurement models but might as well be related to 'Heywood cases', for example, negative variances or correlations greater than 1.0 (Kline, 2011: 232-233). One reason behind could be the inclusion of less than three indicators per factor. This is not an issue in the CFA models considered in this study, since all include, at least, four indicators, as exemplified by Model C, in Figure 33 above. In addition, insufficient information might also pose challenges for meeting the identification requirements. For instance, a small sample or missing data could affect the estimation of models. This is the second statistical consideration to which the discussion now turns.

Estimation

Having accomplished an identified model, this is suitable for estimation. This consists of computing estimates for the parameters considered in the measurement model. The aim is to predict a matrix that approximates the sample matrix as much as possible. As mentioned above, in CFA the researcher must pre-specify the parameters to be estimated, offering the possibility of constraining some of them to certain values (Bowen and Guo, 2012). This is in fact crucial for **scaling the factor**, that is, defining the metrics of latent variables, whose unobserved nature deprives them from predefined units of measurement. One way of accomplishing scaling is by choosing a **reference indicator** and fixing its loading to 1.0, thus applying its metric to the factor. Another way, preferred in this study, is to fix the factor variance to 1.0 (Brown, 2015). As mentioned above, this approach produces a standardised unique solution for one-factor models, which facilitates interpretation of factor loadings as estimated correlations between the latent factor and its indicators (Kline, 2011). For instance, λ_1 in Figure 33 above, would represent the factor loading of 'income level', but also the

correlation between this indicator and SES. In addition, scaling the latent variable also contributes to meet identification requirements, since fixed parameters do not count in the calculation of *df*M.

The most common estimator method used in CFA is Maximum Likelihood. Its aim is to estimate parameter values which maximise the probability of obtaining the observed data (Brown, 2015). It is, however, important to meet certain assumptions. First, the sample size should be large, with at least 200 observations for simpler models and more than 450 for complex ones (Kline, 2011). Second, the indicators must be continuous. Third, it requires normally distributed indicators, as closely as possible. A further assumption is that Maximum Likelihood performs better with complete information, so missing data poses a challenge to this estimator. The sample in this study is large enough, with more than 2,000 observations. However, all the indicators included in the CFA models at the individual level of analysis are categorical, thus failing to meet the assumptions of normal distributions. Furthermore, many of these variables have missing cases.

Due to these limitations, the Weighted Least Squares Means and Variance (WLSMV) adjusted method is used in this project for estimating latent factors at the individual level. This estimator is more appropriate for handling categorical variables, for which it estimates robust standard errors and it is less computer intensive. According to Muthén *et. al.* (1997), WLSMV shows a good performance with samples larger than 200 observations. Other studies (i.e. Bandalos, 2014; Suh, 2015) have found that it performs similarly well to ML, yielding comparable predictive power. The WLSMV estimator is included in the capabilities of the software (Mplus 6.1) used for estimating CFA models in this study. Conveniently, Mplus 6.1 also handles missing (incomplete) data by adopting pairwise deletion. This means that, in one-factor solutions (without covariates), “each correlation is estimated using all available data” (Muthén, 2010). A further advantage of WLSMV is its contribution to satisfying identification, since “variances of categorical variables are not parameters in cross-sectional models” estimated by this method (Muthén, 2010).

In contrast, neighbourhood-level latent variables are continuous and thus suitable for Maximum Likelihood estimation, since these are the result of average scores, or proportions calculated with individual-level data. Data at this level of analysis is thus complete, which also meets the Maximum Likelihood assumptions. Such variables are, nonetheless, not normally distributed, as will be discussed in Chapter 6.

This requires employing a variant of this estimator method. Therefore, Maximum Likelihood with Robust Standard Errors (MLR) estimator is used. It produces parameter estimates robust to non-normality (Muthén, 2018). Simulation studies (Muthén and Asparouhov, 2002) have shown that it performs well with non-normal and missing data. The adoption of two different estimators thus seeks to produce robust parameter estimates. However, the models must be evaluated to ensure that each set of indicators adequately represents its corresponding factor, as it is discussed in the final part of this section.

Evaluation

The assessment of latent factors involves comparing the predicted matrix with the observed matrix within the sample data, to observe how well the former fits the latter. There are several measures for evaluating goodness-of-fit, which has stimulated a debate on the most appropriate ones. However, most specialised scholars (Hu and Bentler, 1999) agree on the appropriateness of reporting various fit indices, since the strengths of one measure can compensate for the limitations of the others. The most common of these indices is the chi-square (χ^2). A significant value indicates 'badness-of-fit', since it rejects the null hypothesis that the estimated and observed matrices are not significantly different. This fit index is particularly helpful for comparing simpler models with more complex ones. There is, however, criticism about this measure which warns about important caveats. One of these, of most importance for this study, is that large sample sizes (n>200) tend to 'inflate' the Chi-squared (χ^2) value, thereby making it significant. It is also restrictive regarding the hypothesis tested, compared to other indices which measure how 'reasonable' a model's fit is.

Due to such caveats about χ^2, other measures are more relied upon for assessing goodness-of-fit. Following the convenience and conventions that Gau (2010), and Bowen and Guo (2012) note on choosing fit indices, this study relies on the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and the Root Mean Square Error of Approximation (RMSEA). The CFI ranges from 0 to 1. The closer it is to 1 the better it fits the data, compared to a more restricted baseline model. The TLI is similar, but it is stricter, as it penalises complex models. The RMSEA measures the residual differences between the expected and observed covariances matrices. Thus, it indicates how closely the hypothesised model reproduces the true covariances among

the manifest variables. Values up to 0.10 are acceptable, but less than 0.05 are preferred. These three measures are included within the capabilities of Mplus 6.1 in both MLR and WLSMV estimator methods.

5.2.2. Measuring relationships: Structural Equation Modelling

The previous section outlined the considerations about CFA and the specification of a measurement model, which is the first step the estimation of a structural model. The latter draws on the statistical foundations of CFA, for the specification of directional relationships among the variables considered. SEM allows us to estimate the hypothetical direct and indirect relationships –outlined in Chapter 4–, in structural models. In contrast to other techniques, SEM could include manifest, latent, or a combination of both types of variables (Bowen and Guo, 2012), as required in this study. SEM is thus used for estimating a structural model at the individual level, before estimating a multilevel analysis that includes the neighbourhood level. Multilevel modelling will be discussed further below, but for now it is worth noting that estimating an individual-level SEM model is helpful for distinguishing potential specification errors. As Kline (2011: 352-353) notes, what matters is to analyse that the parameters make sense at this level. Therefore, it is necessary to discuss more in detail the convenience and the main considerations of using SEM in this project.

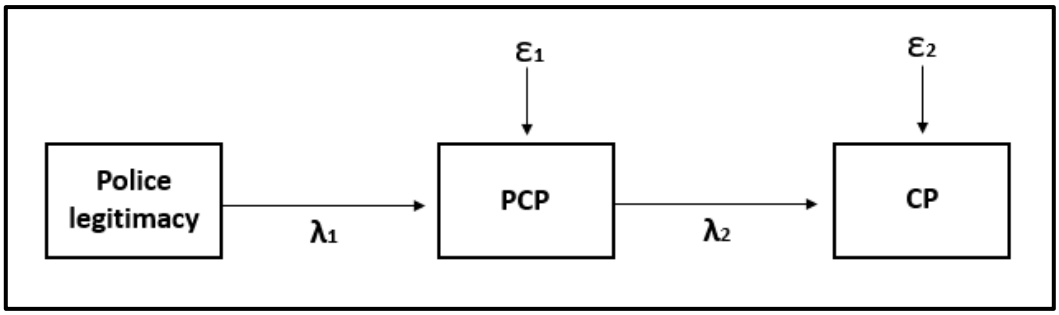
5.2.2.1. The usefulness of SEM in this study

This type of modelling encompasses a number of techniques, such as path and structural regression (SR) models, for analysing directional relationships among latent and observed variables (Gau, 2010). Graphical representations in diagrams are common ways of defining such relationships and the parameters to be estimated. McArdle and McDonald (1984) proposed the Reticular Action Model (RAM) symbology, which informs the notation used in Figure 13 (Chapter 4) and other diagrams. Specification is critical, since this first step outlines the identification requirements that models must satisfy in subsequent estimation; therefore, it should be guided by theory.

SEM is useful in this project for four reasons. First, the hypothetical relationships among PJ concepts, as defined in Chapter 2, reflect direct and indirect effects. In addition, such concepts are all observed variables, as outlined in Chapter 4. Path

analysis (PA) is therefore appropriate for modelling such relationships. PA estimates a structural model with specified directional effects between manifest variables. Figure 34 below shows an example of this type of model. Each arrow translates into a path coefficient, which could be interpreted as a regression coefficient. It includes direct (police legitimacy → PCP) and indirect (police legitimacy → PCP → CP) effects. The latter is also described in the PA literature as a mediation effect, in which a mediator (intervening) variable −in this case police legitimacy− transfers some of the effect from a preceding variable to a subsequent one (Kline, 2011). With SEM, it is thus possible to estimate direct regression coefficients of PCP and CP on the aspects of trust and police legitimacy, as well as the mediating roles of the latter and PCP in such cause-effect relationships (Gau, 2010).

Figure 34. Indirect effect in a PA model



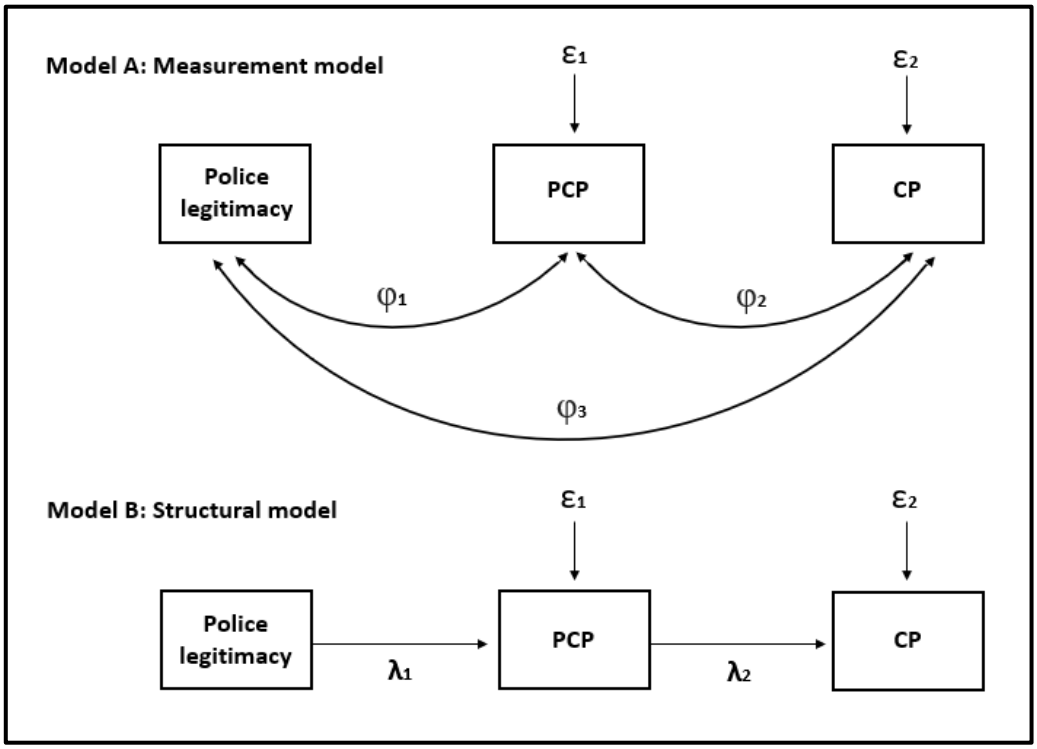
Source: based on examples in Kline (2011).

Second, as mentioned above, the SEM model considered in this project also involves latent variables. This type of structural model is estimated as a SR model. In contrast to PA, which only considers manifest variables, SR incorporates a measurement component of indicators representing an underlying factor. It also yields coefficients of direct and indirect effects (Kline, 2011). This flexibility for testing the measurement and structural portions in a single model, with manifest and latent variables, is a clear strength of SEM (Gau, 2010).

Third, the structural models estimated in this project are more parsimonious than measurement models. SEM implies specifying directional relationships between variables, thereby freeing some parameters for estimation. For instance, Figure 35 below shows the comparison between the measurement model (A) and the structural model (B). In the former, the variables are free to intercorrelate, translating into three

parameters for estimation. The latter specifies two directional relationships as the parameters to be estimated, where X is the variable that causes Y1 and this, in turn, causes Y2. SEM terminology refers to variables caused by other variables as endogenous. These are also known as dependent or outcome variables. In contrast, those causing other variables are exogenous or predictors. An endogenous variable can cause another endogenous variable, whilst exogenous ones cannot be affected by other variables. The structural model is more parsimonious than the measurement model since it estimates the relationships between exogenous and endogenous variables with fewer parameters.

Figure 35. Comparison between measurement and structural models



Source: based on examples in Kline (2011) and Brown (2015).

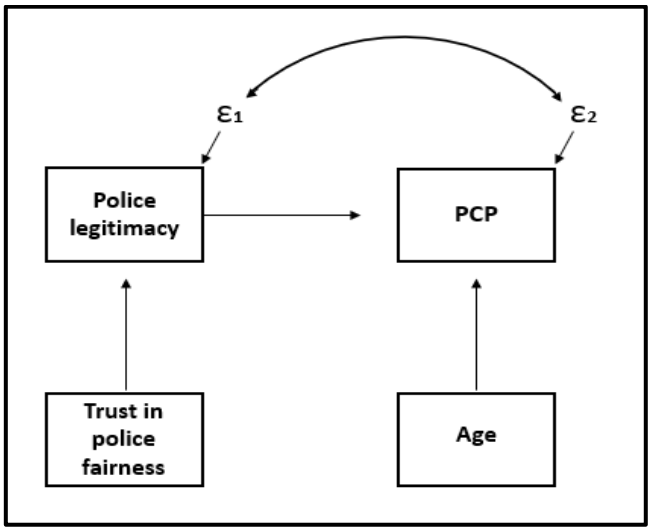
Fourth, SEM framework allows us to estimate structural models with different types of variables. As mentioned above, this study considers models with latent and manifest variables. These models also combine continuous and categorical indicators (Kline, 2011), which are either predictors or outcomes (Bowen and Guo, 2012). It is also helpful that Mplus 6.1 can estimate a model with such characteristics.

5.2.2.2. Considerations for SEM in this study

Identification

As mentioned above, SEM shares with CFA several statistical foundations, so it is not the intention to elaborate about considerations already discussed. Instead, the key aspects of the structural model estimated in this project will be outlined. It is possible to apply 'identification heuristics', that is, a "series of less formal rules" for ensuring the identification condition (Kline, 2011: 131). The most important consideration is the non-recursive nature of some models. These have two notable features. One is that the measurement errors (disturbances) of the endogenous variables are correlated. The other, applicable to the structural models estimated in this project, is indirect feedback loops, whereby a manifest variable is both an outcome and a predictor of another variable. This is exemplified in Figure 36 below, in which 'police legitimacy' is both predicted and a predictor.

Figure 36. Non-recursive model



Source: based on examples in Kline (2011).

Non-recursive models could pose identification challenges, since correlated disturbances introduce additional parameters which count on the *df*M. Hence, these models must satisfy additional requirements, namely, order and rank conditions. The order condition is satisfied when the number of variables (excluding disturbances), which do not have causal effects on each endogenous variable, is equal to or greater

than the total number of endogenous variables, minus one. For instance, Figure 36 above shows that one variable (trust in police fairness) does not cause PCP and one variable (Age) does not cause police 'legitimacy', whilst two endogenous variables minus one equal one. The rank condition is accomplished when there is only one direct effect from a variable outside the feedback loop (e.g. Age) on each variable within the loop (e.g. PCP). The model in Figure 36 also satisfies this condition.

Other considerations refer to empirical under-identification which could occur due to two reasons. One is the presence of high collinearity between the variables. For example, two strongly correlated variables would be treated as one variable in the analysis (Gau, 2010). This could be a serious concern for the analysis in this thesis. As detailed in Chapter 7, the measures used for operationalising the key PJ concepts are strongly correlated. However, those operationalised as exogenous variables (i.e. trust in police fairness and trust in police effectiveness) are not allowed to covary, as explained in Chapter 8. This follows the recommendations in the literature on using Mplus 6.1 for estimating SEM models with such types of variables by the WLSMV method (Muthén, 2012). In this case, the non-existence of covariances is appropriate to prevent two variables from being treated as one. The other reason is that variables with high proportions of missing data also affect degrees of freedom. In practice, some software programmes exclude such variables from the analysis and so their directional patterns. All these potential issues must be addressed before moving on to the estimation of the model.

Estimation

The considerations about measurement in CFA also apply to SEM. The measurement model draws on single-indicator measurement (one manifest variable) for measuring key PJ concepts. As noted in Chapter 4, there is a limited number of measures available in the *'Así Vamos* 2018*'* survey. Multiple-indicator measurement tends to have a higher measurement reliability than a single-indicator approach. This requires acknowledging that the approach adopted in this research sacrifices, to some extent, the reliability of the concepts measured (Kline, 2011: 97). As will be discussed further below and in Chapter 6, this study aims to address this limitation by drawing on qualitative data for complementing the analysis of key constructs.

Three additional considerations are particularly relevant to the models estimated in this project. First, the nested nature of the data used means that individuals are grouped in higher-level units, that is, residents' perceptions across different NAs. This is a reasonable concern since individuals' scores on certain measures tend to correlate. In turn, these non-independent observations could lead to underestimated standard errors (Bowen and Guo, 2012). To account for the clusterisation bias, Hubert and White sandwich estimator (Hubert, 1967; White, 1982) has been generally used for estimating robust standard errors when data is normally distributed (Wu and Kwok, 2012). In contrast, the analysis in this study considers WLSMV. As mentioned above, it is appropriate since the data distribution does not conform to the asymptotic normal theory, most variables in the model are categorical, and it allows us to handle missing values. Furthermore, simulation studies (i.e. Li, 2015; Hox *et. al.*, 2010) have demonstrated that WLSMV yields less biased estimates than other robust estimators (i.e. MLR) and more accurate when large samples (N>200) are used. It thus reduces the chances of obtaining false positive findings (Type I error). As will be explained further below, this study also aims to account for the 'group effect' by modelling it in a two-level analysis.

Secondly, the approach adopted in this study is to use raw data, rather than an input covariance or correlation matrix. As with CFA, Mplus 6.1 uses pairwise deletion for handling missing values in SEM, this works fine in the estimation of the structural model. It will be discussed below that raw data is also useful for obtaining a number of imputed datasets that could be used in a multilevel model when missing data poses identification challenges.

Thirdly, the outcome variables (PCP and CP) in this project are dichotomous, which means that the estimation yields probit regression coefficients. These are not easy to interpret and, therefore, must be transformed. One possibility is to estimate the marginal effects or predicted probabilities of each predictor on the outcome variables. However, Mplus 6.1. does not include this functionality, thus requiring calculations by hand (Muthén, 2017). Another possibility could be to estimate the standardised partial changes, but this approach works better with continuous predictors, rather than dichotomous ones (Fullerton, 2020). An alternative could be to transform these coefficients in their logit versions, as these offer a more intuitive way of interpretation in the form of odds ratio. As Fullerton (2020:5) notes, "coefficients in logit and probit are different by a factor of approximately 1.6–1.8 due to the arbitrary assumptions

about the error variance". Logit models follow a logistic distribution with variance $\pi^2/3$, whereas probit models follow a normal distribution with variance 1. For instance, Aldrich and Nelson (1984) demonstrate that the probabilities of occurrence of the outcome variables are similar in logit and probit models if the coefficients are correctly scaled. Using a proportionality factor of 1.8, they multiplied this number by the probit coefficients to obtain logit coefficients. Similarly, the Z-values of the logit coefficients were also 1.8 times larger than those of probit coefficients. Considering that slight changes in the logit coefficients could lead to big differences in the odds ratio, this study adopts a conservative approach and uses a factor of 1.6 proposed by Amemiya (1981), as this "may be a better representation of the coefficient differences" (Aldrich and Nelson, 1984: 12-13). The results discussed in Chapter 7 thus include the odds ratio of the logit (log-odds) coefficients, which are 1.6 times larger than the original probit coefficients.

Evaluation

The assessment of the structural model draws on the same fit indices mentioned above, for evaluating measurement models. It is also worth noting the multiple-step approach adopted here for comparing between simpler and more complex models. This is valuable for observing the contribution of an additional exogenous variable and directional pattern in the model (e.g. mediating role of 'police legitimacy'). Alternative models of the relationships hypothesised can also be tested for comparing goodness of fit between them (Bowen and Guo, 2012). A further advantage of the approach adopted here is the possibility to gauge for the potential existence of bidirectional relationships between some key variables. However, bidirectionality would require a longitudinal analysis, but this study is cross-sectional. Therefore, the directional relationships considered in the estimation of structural models in this study are informed by theory. These estimations are discussed in Chapters 8 and 9.

5.3. Defining level-2 units of analysis: Neighbourhood Areas

Having outlined the main considerations for performing the analysis of variables and the relationships among them, the next step is to explain the procedures involved in delineating Neighbourhood Areas (NAs). As discussed in Chapter 2, criminological

research has documented ‘spatial explanations’ of PCP and CP based on neighbourhood location. As mentioned above in this chapter, one of the tasks in this thesis is to analyse the extent to which different concentrations of crime and structural factors across neighbourhoods in the MMA, influence their residents’ PCP and CP. It is therefore necessary to map the geography of such mechanisms, for carrying out subsequent analysis on the distinction between individual and neighbourhood-level reasons explaining PCP and CP. This section outlines the approach adopted in this study for constructing NAs, based on the limitations of an alternative method.

5.3.1. Social frontiers, social boundaries and spatial autocorrelation (SPA)

The definition of NAs involves the use of valid criteria informed by the literature and the context of the MMA. Accordingly, previous research has documented that neighbourhoods are not necessarily limited to predefined geographical boundaries. These could also be socially constructed according to the residents’ notions of belonging to social groups or based on perceptions of unequal individual social status (Sibley, 1995; Smith *et. al.*, 2001). There are two main views about situating such groups within particular urban areas. One is ‘social frontiers’, which refer to “boundaries between adjacent neighbourhoods where there are steep differences in the racial, ethnic, religious, cultural or social characteristics” (Dean *et. al.*, 2018: 272). The other is ‘social boundaries’ which are “any contiguous zone of contrasting density, rapid transition or separation between internally connected clusters of population and/or activity (Tilly, 2004: 214). The latter is a broader definition encompassing non-spatial divisions but could also include spatial shifts. This study adopts the concept of social boundaries for guiding the definition of NAs as it considers spatial and non-spatial differences.

A popular approach in quantitative methods for the identification of spatial divisions is Spatial Autocorrelation (SPA) regression analysis. This is a set of techniques which rely on weight matrices for treating the spatial elements that determine adjacency between areas (Bates, 2013; Ma *et. al.*, 2010). Its approach is to detect spatial discontinuities for defining boundaries between areas. For example, Sampson (2012: 240, 241) used a similar approach, by spatially analysing the weighted average of a variable of interest (i.e. poverty) for the contiguous or nearby neighbourhoods of a given focal neighbourhood.

Haining (2003) warns that, despite the usefulness of SPA for placed-based research, it faces two main challenges which are of concern. A first issue is 'spatial autocorrelation or dependence', which occurs when data about a specific feature in a given areal unit has similarly high or low values to its neighbouring areal units. Spatial autocorrelation is problematic as it could lead to an inaccurate measurement of uncertainty, which is of great importance for estimating a reliable aerial unit, distinct from those derived from random error. Second, the Modifiable Aerial Unit Problem (MAUP) is also an issue insofar as the statistical results depend on the number of units into which an urban area is divided (scale) and how the boundaries into which the different units could be partitioned according to the researcher's criteria (zonation). A further problem with the latter is that if zones change, it alters the weight matrix used in the SPA model, thereby also modifying the contiguous aerial units. As Bates (2013: 89) notes, "the same data, aggregated to a (same) spatial unit, can produce different results purely due to the scale or set of zones chosen for that area".

To address such concerns, more recent techniques have been developed (see: Jacquez *et. al.*, 2000) based on Womble's (1951) approach for improving the estimation of uncertainty measurement involved in the identification of abrupt shifts between areas. For instance, Dean *et. al.* (2018) estimated an 'adaptive spatial conditional autoregressive' model, a less computationally intensive Bayesian approximation, to identify social frontiers in Sheffield. They detected 'closed' boundaries according to significant steep changes in the spatial data, as well as porous segments along such boundaries where contiguous areas blended into each other. With this method, the authors also estimated the spatially weighted average effect that their variables of interest in an aerial unit (i.e. neighbourhood) had in contiguous aerial units. This approach defines the number of neighbourhood areas, based on the social frontiers obtained through the estimations.

Such an approach is, however, inappropriate for this project due to three reasons. First, it would require a large dataset covering the totality of the area studied (i.e. MMA) for analysing continuities and discontinuities. For example, the Sheffield study used Census Data on ethnicity and country of birth, in order to identify frontiers in the distribution of non-UK populations. Although the Mexican Census Data offers some variables for this project, it is the *'Así Vamos* 2018*'* dataset which provides the individuals' perceptions and characteristics to be nested (grouped) in different NAs. This dataset includes many MMA's neighbourhoods but excludes others, making

impossible to estimate spatial discontinuities as in the SPA approach. Second, this project is focused on the concentration of structural factors and crime within each NA, rather than detecting boundary segments where transitions between contiguous NAs occur; nor it is focused on analysing the impact of contested boundaries on their residents. Third, enhanced SPA techniques over-rely on quantified information for identifying boundaries. They ignore qualitative aspects which deserve attention for gaining a better understanding of the different aspects shaping boundaries in a particular place. In this view, the researcher's judgement is more relevant than developing a replicable method across different contexts (Bates, 2013: 57).

5.3.2. Using 'local knowledge' and GIS for the definition of boundaries

The limitations of SPA analysis for this study indicate the necessity of adopting a different approach. It is also acknowledged in this thesis that relying on the researcher judgement could lead to subjective criteria in the definition of boundaries. This scenario is no better than defining boundaries of NAs arbitrarily or based on pre-existent administrative demarcations. Instead, this project considers attributes and structures operating across NAs. Geographic Information System (GIS) is used for mapping NAs according to such elements. According to Dangermond (1992: 11), GIS is a "collection of computer hardware, software and geographic data designed to efficiently capture, store, update, manipulate, analyse and display all forms of geographically referenced information". Earlier studies only used GIS quantitatively, which raised concerns mainly among geographers (i.e. Taylor, 1990). In contrast, more recent research (i.e. Cope and Elwood, 2009) has advocated for its qualitative use or combined ways.

The use of GIS in this research draws on quantitative and qualitative components for grasping the relevant elements which shape boundaries between NAs. This rationale follows a similar approach to that of *The Edinburgh Study of Youth Transitions and Crime* (see: Smith *et. al.*, 2001). The social geography of Edinburgh was mapped using 1991 census data and police records. The city was divided into 91 neighbourhood areas of similar population size, according to an "index of social and economic stress (ISES)". Although it could be argued that this method did not completely "distinguish true frontiers from those that are the product of random error" (Dean *et. al.*, 2018: 273), its strength relies in the composite measure (i.e. ISES) used

to test the homogeneity of neighbourhoods. In addition, it considered physical barriers in the definition of each neighbourhood and, most importantly, drew on knowledge of local people for getting insights of social divisions perceived by them.

In this project, the quantitative part of GIS employs a composite measure, similar to the ISES employed in the Edinburgh study, to strive for homogeneity within each neighbourhood area. The Marginalisation Index (described in Chapter 4) is adopted as a measure of the deficiencies suffered by the population in the MMA, for example, as a result of lack of access to education, residence in inadequate housing, the perception of insufficient monetary income and other social deprivations. This is estimated through Principal Component Analysis (PCA) and using nine different indicators that refer to such deficiencies, which can be then georeferenced in a GIS map. The marginalisation index is not completely available at the block level, due to missing data associated with confidentiality issues, but it is complete at the Basic Geostatistical Area (AGEB)[2] level which is thus preferred. The programme used for georeferencing and visualising such index is *Mapa Digital*, an open software branded and freely supplied by INEGI.

In addition, the qualitative component is inspired on Participatory GIS (PGIS), whereby a group of residents collaborate in mapping their surroundings (Cope and Elwood, 2009). As mentioned in Chapter 4, the difference here is that the inputs come from vicarious experiences. In-depth interviews were conducted with representatives of local organisations who understand neighbourhood dynamics, for exploring the perceptions and opinions of residents in different MMA neighbourhoods. These interviews investigated the aspects that the residents in a neighbourhood take as references for defining its boundaries. For instance, the interviewees were asked a range of questions to explore if they identify the same (or different) features (i.e. socioeconomic characteristics, physical barriers) considered in similar studies. With these elements in mind, the criteria for defining the boundaries of NAs were set out and then used for matching the marginalisation index and the *'Así Vamos* 2018*'* data. These procedures are described in detail in Chapter 6, but in the meantime, it can be generally outlined what they entail. First, neighbourhoods must have similar socioeconomic characteristics, according to their marginalisation index. Second, neighbourhoods are delimited by physical or territorial references. Third, NAs include

[2] An AGEB is made up of 25 to 50 blocks, based on socioeconomic characteristics, independent of population, and match state and municipal limits.

complete neighbourhoods, instead of splitting or segmenting them. Fourth, the size of a NA considers the number of observations required for the statistical analysis.

5.4. Measuring individual and neighbourhood-level relationships

This chapter has hitherto focused on outlining the methods used in this thesis for analysing key constructs and how these are related, and for delineating NAs. As mentioned above, these are especially relevant to account for the concentrations of structural factors and crime in those demarcations. The next step in this sequential approach is to describe the method used for considering the separate influence of neighbourhood-level predictors on PCP and CP.

5.4.1. (Dis)aggregating 'neighbourhood effects'

As discussed in Chapter 2, more recent literature has documented evidence which demonstrates the necessity of measuring the distinct effects of micro level and macro level variables on a social phenomenon. Until then, many studies opted for (dis)aggregating data for carrying out analysis with single-level techniques. As Heck (2016) warns, such an approach has analytical limitations for estimating accurate model parameters. For instance, conceptualising neighbourhood (macro) level variables at the individual (micro) level could lead to misspecification. Similarly, aggregating individuals' PCP and CP would be inaccurate. This specification fails to consider the effects of neighbourhood-level predictors on individual opinions. Instead, it evaluates their influence on aggregated perceptions (Norris, 2009:114). Making inferences about individual-level variables aggregated at the neighbourhood-level risks the potential error of ecological fallacy (Snijders and Boskers, 2012: 15, 83). Moreover, even if aggregating data yields significant results, this approach fails to theoretically justify the influence of the individual-level predictors on the outcome variables (Norris, 2009: 116).

In addition, models with (dis)aggregated data assume that individuals within the same macro-level group are independent from each other. As noted above in this chapter, such a view fails to account for the clustered (nested) nature of data. For instance, a stratified sampling method was used for generating the *'Así Vamos'* dataset

used in this study. The population was thus divided in mutually exclusive groups (strata) and then cases were randomly selected in each group (Kline, 2011).

A different approach is thus needed, in order to estimate accurate 'neighbourhood effects' on individual perceptions, while also considering the variation between individuals. One method which could be used for analysing data at two different levels of analysis is multilevel modelling. This can estimate a single model with two separate regressions, for distinguishing the within-group from the between-group effects, as discussed below.

5.4.2. Multilevel Modelling

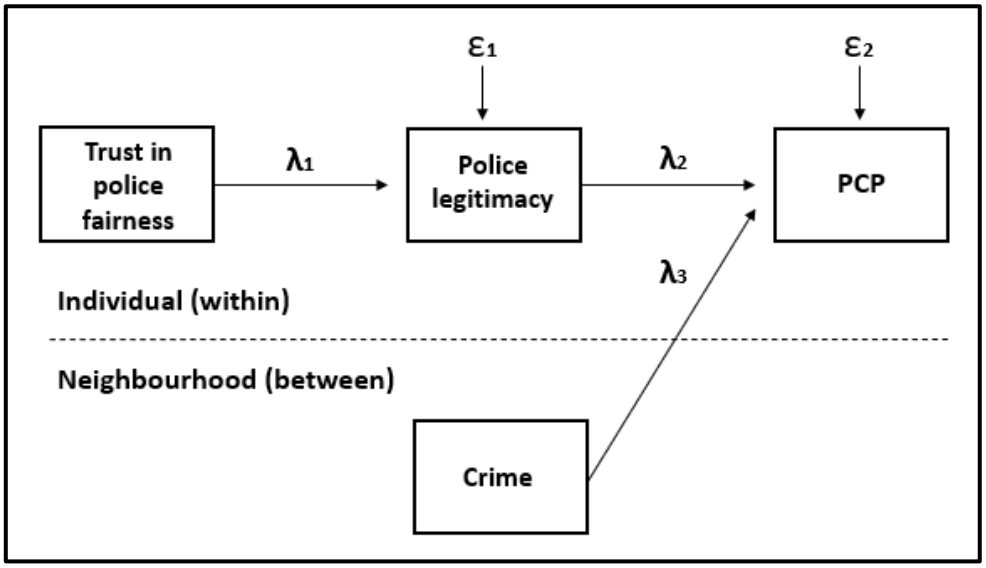
Multi-Level (ML) modelling is a family of techniques for analysing data with a hierarchical structure, that is, relationships between variables related to different populations at more than one level of analysis (Kline, 2011: 343). In this thesis a two-level model which treats individuals nested within groups (neighbourhoods) is estimated. With this technique, it is possible to decompose the total variation explained by individual and neighbourhood-level variables in a model, as well as distinguishing within-group and between-group components. Identifying the latter is important to account for contextual effects on outcome variables (Paccagnella, 2006: 74). For instance, a resident's perception on PCP and CP would tend to vary due to the characteristics of the NA where she lives. ML allows to estimate the Intraclass Correlation Coefficient (ICC), for measuring the proportion of the variability attributable to each level of analysis The ICC ranges from 0 to 1, and it is expected to be different from 0, if the cluster or group membership is relevant for the analysis.

Since it is a more flexible approach, several variants of ML have been developed, such as ML-SEM. This approach draws on the strengths of both techniques to allow "full-blown SEM models to be developed at each level of nesting for clustered data" (Mehta and Neale, 2005: 259). ML-SEM thus allows the estimation of models which include latent constructs at both levels of analysis, which matches the needs of this research.

Figure 37 below illustrates ML-SEM. The exogenous variables ('trust in police fairness' and crime) at within and between levels have direct effects on the outcome variable (PCP). Also, the endogenous variable 'police legitimacy' mediates the indirect effects of 'trust in police fairness' on PCP. As in the single-level SR model, the

predictors here could be latent or manifest. The same considerations about SEM outlined above are applicable to ML-SEM. There are, nonetheless, distinct issues about the models estimated in this thesis which are worth discussing, mainly related with estimation and evaluation.

Figure 37. Two-level SEM model



Source: based on example in Kline (2011).
Notation based on Muthén and Muthén (2010).

Estimation

There are three main considerations about the ML-SEM models in this project. First, random-intercepts models are estimated to account for random variation between groups, that is, the deviation of a neighbourhood-level variable from the overall (grand) mean value of the outcome variables (PCP and CP). A caveat to note, though, is that it assumes fixed effects of individual-level variables across neighbourhood areas which is unlikely to occur in reality (se: Hox, 2013). An alternative could be a random-intercepts-and-slopes models, which also estimates random slope variances of individual-level predictors to account for the presence of between-neighbourhood-areas differences and non-negligible effects for such predictors. The hypothetical effects could be positive (or stronger) in some neighbourhood areas and negative (or weaker) in others. Such random slopes variances are thus deviations of the effects of the individual-level predictors in each NA, from the overall effects of the same predictors across all NAs (Snijders and Boskers, 2012). Nevertheless, this type

of model is unfeasible to estimate in this study, given the complexity of the relationships explored and the dichotomous nature of most key individual-level variables.

A second consideration related with such complexity refers to data missingness. Muthén *et. al.* (2011: 87) point out, that Missingness at Random (MAR) is more likely to occur when the model considered includes observed variables which are correlated to missing data. One alternative to address this issue is to consider missing data as an additional variable in the model and let it covary with other manifest variables. However, missingness could pose identification challenges as it reduces the information available for the estimation. Due to several missing values in the '*Así Vamos 2018*' dataset, more than 10% of the data would be lost if complete case analysis is carried out. Pairwise analysis with the WLSMV method also impedes the estimation of the models due to the proportion of missing cases.

Another way could be to use a Bayesian method, which estimates reliable parameters which are not the product of random error. As mentioned above, they are usually less computer-intensive and faster than other estimation methods. Nevertheless, identification issues hinder model convergence in Mplus 6.1 when Bayesian methods are used. Therefore, the approach adopted in this analysis is to perform multiple imputation to harness the available data, for which a Bayesian estimation method can be used. This procedure in Mplus 6.1 considers eleven individual-level predictors with missing values. Following Hippel's (2009) approach, also adopted by Jackson *et. al.* (2020), twenty imputed datasets were estimated, since 20% was the highest proportion of missing values among the eleven predictors considered. With these imputed datasets, the maximum likelihood parameter estimates with standard errors and a chi-square test statistic (when applicable) that are robust to non-normality and non-independence of observations (MLR) method was then used for estimating the ML-SEM model. This method included Montecarlo simulations of 15,000 iterations performed for each of the twenty datasets. Although this approach is slow in achieving convergence, it reduces the likelihood of bias in the parameter estimates, standard errors and fit measures (Muthén *et. al.*, 2011: 86)

Third, the purpose of estimating a ML-SEM model is to disentangle the Between and Within effects of each predictor on PCP and CP. In this hierarchical approach, it is convenient to centre each neighbourhood-level variable around its grand mean in the sample, by making the predictor to equal zero (Snijders and Boskers, 2012: 77). This can be interpreted as the expected outcome of a resident in a given NA whose

estimates of neighbourhood-level variables are at the overall mean, that is, across all residents in the sample (Paccagnella, 2006: 70). Centring these predictors thus allows to create a reference situation to detect contextual effects, since the intercepts are freely estimated from the data.

Fourth, due to the dichotomous nature of the outcome variables, the estimation in Mplus 6.1 yields logit coefficients. As mentioned above, these facilitate the interpretation as odds ratio, in contrast to the probit estimates in single-level SEM. This binary logistic ML-SEM model follows the same intuition of conventional logistic models. It assesses the likelihood of success of the dependent variable, based on the coefficients of the independent variables, while addressing potential challenges to the normality assumption of the data (Hair, *et. al.*, 2014: 317; Khan and Shaw, 2011: 96).

Evaluation

Assessing ML-SEM models involves additional issues to those outlined above for single-level SEM. First, the ICC must be evaluated based on certain considerations. For instance, the ICC coefficients must be greater than 0.05, which is the minimum threshold within the acceptable range in social sciences (Hox, 2010). A minimum ICC of 0.05 would indicate that 5% of the chances of occurrence of an outcome variable is explained by between-group differences. It is also worth noting that, due to the binary logistic nature of the models estimated, Mplus 6.1 does not report within-variances. The variance of the standard logistic distribution represented by (pi^2)/3 was taken as the within-level variance. Its value is approximately 3.29 which, in turn, is used for calculating the ICC coefficients of the models estimated (Austin and Merlo, 2017; Heck and Thomas, 2015: 283).

Second, models with dichotomous outcome variables are more complex. As mentioned above, the models include exogenous and endogenous categorical variables, which are estimated with the MLR method. Estimating this type of models in Mplus 6.1 is unpractical as it is computer-intensive and time-consuming. As Muthén *et. al.* (2011: 43) recognise, it “requires numerical integration with six dimensions”, that is, “computational time grows exponentially with the number of factors and random effects” included.

Third, using imputed datasets increases the complexity of evaluating the models, since there are no clear indications of how well an estimated model fits the

data. For example, it is not possible to test chi-square differences (Muthén, 2019) and measures such as CFI, TLI and RMSEA are not available. One alternative here is to compare between models using a deviance statistic (-2*log likelihood) whereby a lower deviance is preferred (Heck, 2016). In addition, Akaike Information Criteria (AIC) and Bayesian Information Criteria (BIC), whereby lower measures indicate better fit of the data. The main difference is that BIC prefers more parsimonious models, thereby imposing a greater penalty on the number of parameters than AIC (Fabozzi *et. al.*, 2014: 400-403). In contrast, the latter tends to choose more complex models, although it fits the data more optimally.

5.5. Perceptions of residents through vicarious experiences

The methods outlined so far refer mostly to the quantitative analysis of the relevant concepts considered in this project, as well as their relationships for explaining PCP and CP. Conducting interviews with representatives of local organisations is considered an intermediate step, to define the necessary NAs for conducting a quantitative two-level analysis. Nonetheless, it was acknowledged in Chapter 4 that *'Así Vamos* 2018*'* has a limited number of measures for the quantitative analysis. It was also discussed in the previous chapters that the ecological effects of structural factors and crime have scarcely been studied in Mexican contexts.

For these reasons, this thesis draws on further in-depth interviews with the same representatives of local organisations at this final step of the sequential approach, outlined in Chapter 4. A semi-structured approach was adopted, which starts with an open conversation and moves to the specifics. This approach is useful to avoid losing focus on the main themes (Robson, 2002: 284), whilst keeping the conversations comfortable. These interviews involved reflective processes (Mason, 2002), through which the MMA residents' opinions of the police were reconstructed through the vicarious experiences of the participants.

Semi-structured interviews were useful for three reasons. Firstly, for answering research question 1 on how the MMA residents understand the central concepts of PJ. As will be detailed in Chapter 7, the interviews explored the extent to which the residents' understandings about such concepts are similar to those documented in previous research. This is something which could not be answered through quantitative means. For instance, the representatives were asked about the residents' views of

trust in the police, their authority, agreement with their actions when doing their job, obedience and shared identity with the police.

Secondly, the interviews produced knowledge which contributed to complement the answers to research questions 2 to 5 and, therefore, enhance the findings of this thesis. To achieve this, the participants were asked about the residents' expectations and priorities of policing, the most valued aspects and motivations which could explain their PCP and CP. Thus, the qualitative data informed the quantitative results of the relationships among the concepts studied.

Thirdly, the experiences shared by the representatives were useful for better understanding the contextual nature of the interviews. As Wooff (2014: 77) notes, interviews render "knowledge (which) is situated, contextual and interactional". This speaks to the influence that neighbourhood characteristics could have on PCP and CP, as discussed in Chapter 2. For instance, the questions asked to the representatives focused on how living conditions across different neighbourhoods had an influence on their residents' views of the police.

As Table 3 shows below, the interviews were conducted with 13 representatives across ten different organisations, with the characteristics specified (until June 2020). The semi-structured interviews were conducted in person (in 2019) and through virtual communication platforms (in 2020). Following McNeeley's (2012: 385) recommendation, both were face to face, which allowed the researcher to steer the conversation around the themes of interest. Face-to-face interviews are also more likely to yield honest answers from the respondents.

Even so, it was worth acknowledging the potential flaws of these interviews, such as misreporting. This could be due to 'social desirability' effects (De Vaus, 2014: 128), whereby respondents provide answers that they believe to be 'socially acceptable', rather than true. Similarly, local organisations –as any other stakeholder involved in research– have their own motivations. As Milan (2014) warns, they promote their agendas through the narratives of their activities.

This study took this concern very seriously and therefore strived to avoid taking the interviewees' comments at face value, that is, to believe them unquestionably (Milan, 2014). As mentioned above, their vicarious experiences were subject to a reconstruction, during the interviews with follow-up questions aimed at obtaining answers as specific as possible (Mason, 2002). This means that the researcher

critically reflected on the consistency and interpretation of the representatives' comments, during and after the interviews.

Table 3. Interview participants and their work

Organisation	Gender	Years in the organisation	No. Neighbourhoods where has worked	Municipalities where has worked
A	F	5	3	Monterrey
B	F	6	1	Monterrey
C	F	3	3	Monterrey, Guadalupe
	M	4		
D	F	3	7	Monterrey, San Nicolás
E	M	13	>100	Monterrey, Escobedo, García, San Nicolás, Santa Catarina, San Pedro
	F	3		
F	F	23	>100	Escobedo, Guadalupe, García, Monterrey, San Nicolás, Santa Catarina
G	F	6	15	Escobedo, García, Monterrey, Guadalupe, Juárez, Santa Catarina
H	M	7	>100	All the municipalities
I	F	20	>100	All the municipalities
J	M	4	8	Guadalupe, García, Monterrey, Santa Catarina, San Nicolás
	M	4		

Source: elaboration with data from the interviews

Finally, theory-driven coding practices were employed in the analysis of the qualitative data obtained. As mentioned above, the themes explored during the interviews drew on concepts defined according to the literature. These could then be hierarchically organised, for defining analytical categories and subcategories (Abric, 2001). For instance, Appendix 2 shows the questions used for exploring specific themes during the interviews. Each of these themes touched on a particular PJ concept

and its subconstructs, based on the conceptual definitions in the literature discussed in Chapter 2.

According to the participants' understandings of the key PJ constructs and subconstructs explored, the main categories were defined for each of them. These definitions involved a process of (re)organising and (re)grouping ideas which touch on the same underlying notion. This process also considered how consistently and frequently those ideas were mentioned across interviews. In most cases, saturation was noticeably reached, but in some cases (2 to 3 participants) few categories were drawn out as these were considered relevant in the context of this study.

The same approach was used for defining subcategories, around the categories previously defined. Follow-up questions to the participants yielded secondary ideas in the form of examples and illustrations, which identified more specific aspects of the categories. Consistency and frequency were also important for achieving saturation for most of the subcategories defined.

In this thesis, NVivo 12 was used for analysing and coding the data. The categories and subcategories corresponding to the definitions of the central concepts of PJ are detailed in Chapter 7. The analysis on the characterisations which illustrate the relationships among such concepts, as well as their respective categories and subcategories, are explained in Chapter 8.

5.6. Conclusion

This chapter has described the methods adopted in this thesis, the way in which these are used, their strengths and the main caveats involved in their implementation. Considering the limitations of this research, as outlined above, these methods are more suitable than other alternatives for answering the research questions and fulfilling the aims of this project. More importantly, such methods are useful for addressing three challenges faced in this study. First, the assessment of key PJ concepts. Second, the evaluation of relationships among those concepts. Third, to account for the distinct effects of two separate levels of analysis –individual and neighbourhood– on PCP and CP. The latter challenge also involves defining NAs in the MMA. Having described the relevant methods used in the analysis, the next step is to present and discuss the findings thoroughly in the following four chapters.

Chapter 6. Measurement of SES and CONDIS and the creation of NAs

6.1. Introduction

Hitherto, the discussion in this thesis has revolved around the relevant literature informing this project, as well as the multi-method research design adopted for answering its research questions and fulfilling its aims. It is now necessary to address two tasks discussed in Chapters 4 and 5. First, to assess if certain groups of indicators measure the latent constructs SES[3] and CONDIS. Second, to define NAs for analysing neighbourhood-level variables. Therefore, the aim of this chapter is to outline and discuss the results of these intermediate steps, before presenting the findings on the validity of PJ concepts in the MMA in Chapter 7, and how these might explain PCP and CP in Chapter 8.

This chapter is divided into three sections. Firstly, the results of the assessment of latent construct 'SES' is presented. This includes the analysis of association and CFA of its indicators. Secondly, the outcomes from the analysis of georeferenced data for creating NAs are outlined, which allow us to create specific neighbourhood-level indicators. Thirdly, these indicators are then used for conducting correlational and CFA analyses of the latent construct 'CONDIS'.

6.2. Assessing the internal consistency of SES

As discussed in Chapters 2 and 4, PCP and CP could be partially shaped by latent constructs, which cannot be directly observed. Therefore, they must be represented by sets of manifest variables. These must be assessed together to indicate how well they touch on such latent concepts. The literature discussed in Chapter 2 points out the indicators used in different analyses for reflecting the underlying construct 'SES' (i.e. Sampson, *et. al.*, 1997; Kochel *et. al.*, 2013). Since the analysis in this chapter is strongly guided by theory, such studies inform the indicators which are appropriate for measuring SES. The analysis also follows the approach adopted in other studies (i.e. Reisig *et. al.*, 2007; Gau, 2011) for testing internal

[3] For a reminder of acronyms, please refer to the list of abbreviations included in this thesis.

consistency of latent variables. However, it is first necessary to understand the nature of its manifest variables, before moving on to analysing them altogether.

6.2.1. Univariate analysis of SES indicators

As mentioned in Chapter 4, SES was captured by six indicators in this study. First, the extant research in the Global North has operationalised SES using employment status (Sargeant, 2010), 'educational level', 'income level' and 'type of job activity' for reflecting 'occupational prestige' (Sampson *et. al.*, 1997). Such indicators have also been widely used in Mexico as individual socioeconomic measures in the study of poverty and social development (i.e. Massé Narváez, 2002; Benítez, 2008). Second, several studies (i.e. Yoosefi Lebni, *et. al.*, 2020) have documented that individuals living in 'female-headed households' are highly vulnerable, who tend to experience poverty and exclusion, among other social problems. Third, the National Observatory of Inequities in Health (ONIS) (2019) points out that the poorest quintile of the population in Mexico concentrates the highest proportion of individuals (89.1%) who lack access to social security –including public health services, pension plan and other benefits. Many studies (i.e. Calderón and Peláez, 2008) and official agencies in Mexico (i.e. CONEVAL, 2010) have extensively used 'medical service' as a sociodemographic measure of multidimensional poverty. Therefore, access to health services measured by 'medical service' typology (private or public) is appropriate for operationalising SES in the MMA context. It is also distinctive, compared to previous research conducted in the Global North, where 'medical service' or access to 'health services' is not always considered an indicator of socioeconomic conditions.

The first step in analysing SES is to explore the level of measurement of its indicators. Table 4 below shows the frequencies and descriptive statistics for each indicator, as well as the missing cases. High proportions of these could have an impact in the statistical analysis. Both 'educational level' and 'income level' are ordinal variables and have right-skewed distributions. Their means (2.69 and 4.32, respectively), indicate that most observations tend to concentrate on the left-hand side (lower part) of the distribution.

Table 4. Sociodemographic indicators°

Variable	Mean	Mode	Frequency	Proportion
Educational level (ordinal)	**2.69**	**-**		
(1) Primary			521	21.78
(2) Jr High school			665	27.80
(3) Sr High school			415	17.35
(4) Technical (Sr High school)			291	12.17
(5) University (Graduate)			306	12.79
(6) Masters			31	1.30
(7) Doctorate/PhD			7	0.29
Missing			156	6.52
Monthly household income (ordinal)	**4.32**	**-**		
(1) $No income			21	0.88
(2) $1,000 – 2,500			291	12.17
(3) $2,500 – 5,000			500	20.90
(4) $5,000 – 7,400			385	16.10
(5) $7,400 – 9,900			270	11.29
(6) $9,900 – 12,400			225	9.41
(7) $12,400 – 14,900			91	3.80
(8) $14,900 – 17,400			41	1.71
(9) $17,400 – 19,800			33	1.38
(10) $19,800 – 22,300			19	0.79
(11) $22,300 – 24,800			12	0.50
(12) $24,800 or more			31	1.30
Missing			473	19.77
Medical Service (nominal)	**-**	**2**		
(1) None			285	11.91
(2) Public			1,969	82.32
(3) Private			97	4.06
Missing			41	1.71
Job activity (nominal)	**-**	**1**		
(1) Employee			975	40.76
(2) Looking for a job			52	2.17
(3) Student			65	2.72
(4) Own business / independent			234	9.78
(5) Housewife			722	30.18
(6) Retired			287	12.00
(7) Not studying, working, looking for job			55	2.30
Missing			2	0.08
Female-headed household (nominal)	**0.85**	**-**		
(0) Yes			351	14.67
(1) No			2,024	84.62
Missing			17	0.71

Source: elaboration with data from '*Así Vamos*' dataset. (°) = unweighted data.

Similarly, ‘medical services’ could be regarded as an ordinal indicator, since it reflects an incremental socioeconomic continuum from ‘lack of access’ (1) to health services, to the ability to pay for private health insurance (3). However, with a three-category distribution, which does not indicate any pattern, it is more appropriate to treat it as nominal. Around 86% of the respondents have access to ‘medical services’, with most of them in the public health system; while almost 12% do not have access at all.

Regarding ‘job activity’, this is also a nominal variable, with a mode of (1), indicating that most respondents are employees, followed by housewives. Other categories (i.e. retired individuals and those owning their business or working independently) exhibit lower proportions.

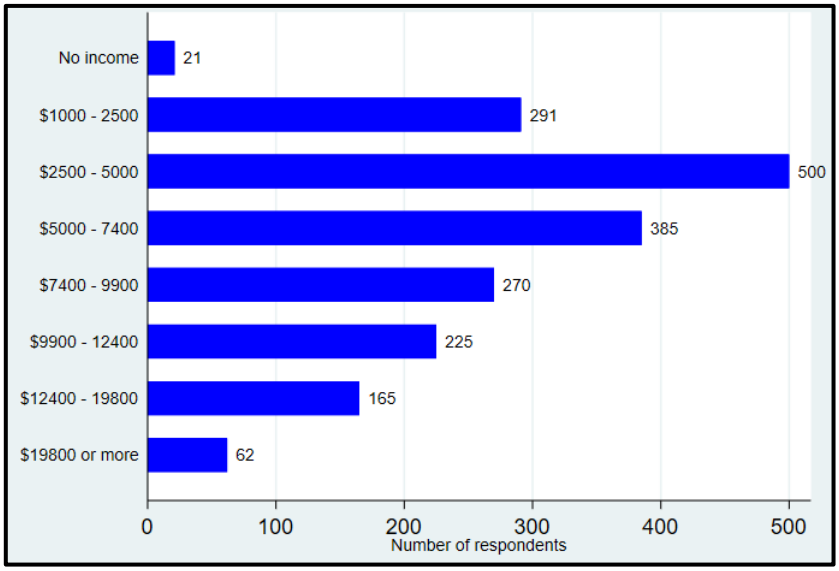
In addition, Table 4 above shows female-headed households, a dichotomous variable. This was reverse-coded, to reflect a consistent direction with the other indicators; thus, not living in this type of household is associated with a higher SES. Just a minority (14.67%) lives in female-headed households, while 85% reported the opposite. Nonetheless, further analysis reveals that the proportions of those living in female-headed households are higher in the lower income levels, and vice versa. For example, 38.10% have no income, compared to 8.06% in the highest income level. Therefore, as the household income level increases, individuals are less likely to live in female-headed households.

To facilitate the analysis with fewer categories and satisfy the requirements of the software used for correlational analysis (Stata admits maximum ten categories per indicator), the variables must be recoded. For instance, the number of categories in ‘income level’ is reduced to eight. The seventh category considers the respondents within the ‘$12,400 – 19,800’ threshold (originally categories 7 to 9), whereas the eighth category includes those within the ‘$19,800 – or more’ threshold (originally categories 10 to 12). An empirical approach was used for choosing the cut-off points of the resulting categories, which was aimed at having sufficient cases in each category for subsequent statistical analysis, while preventing a bimodal or fat-tailed distribution. Figure 38 below, shows the resulting distribution after recoding. This is less right-skewed, compared to the original distribution shown in Figure 18, in Chapter 4.

The same approach was used to recode ‘job activity’ into four categories, to reflect a notion of ‘job reputation’. This recoded variable distinguishes ‘employed individuals’ from those with their ‘own business/independent’, as well as from ‘unemployed (looking for a job; and not studying, working or looking for a job)’

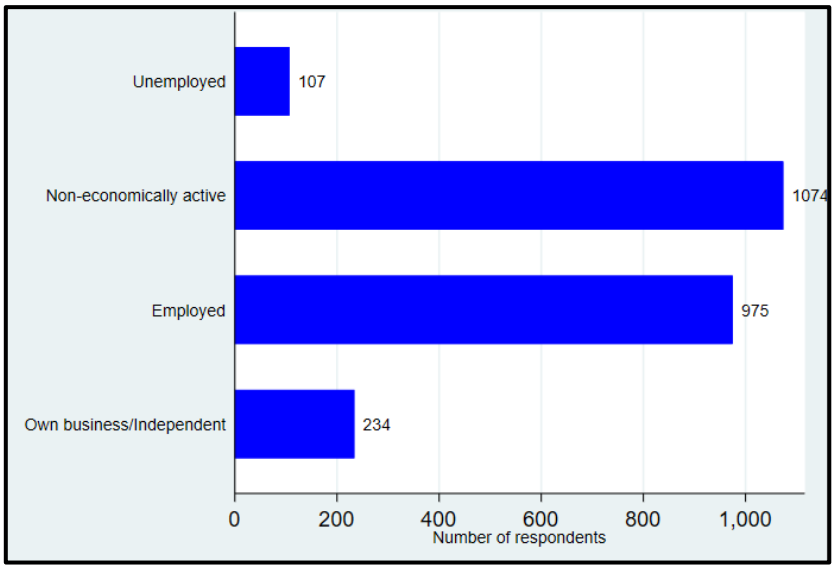
individuals and those who are 'non-economically active (student, housewife, retired)'. Figure 39 below, shows the resulting distribution. Furthermore, 'job activity' was also used for creating 'unemployment status', which indicates whether a respondent is unemployed (0) or not (1). This variable was reverse coded to reflect that not being unemployed implies a higher SES. Figure 40 below, shows its distribution.

Figure 38. Distribution of income level (recoded)



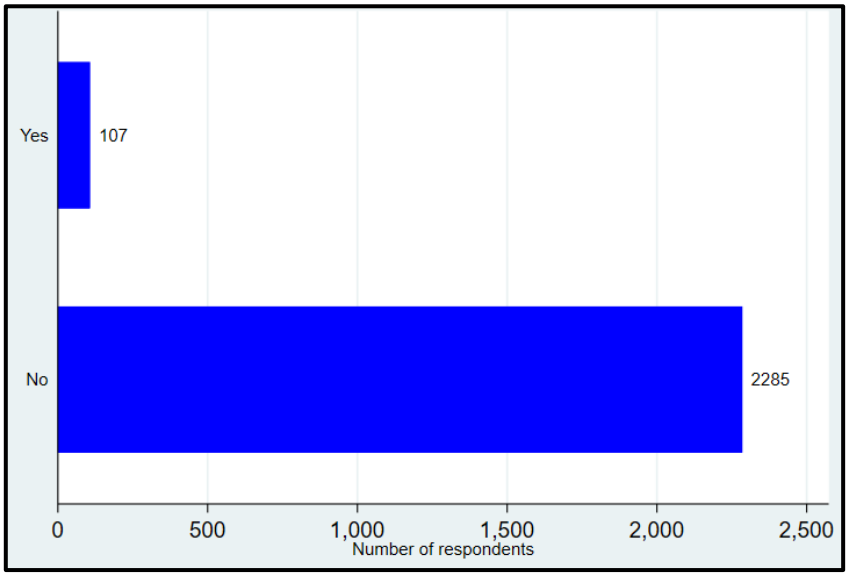
Source: elaboration with data from '*Así Vamos* 2018'.

Figure 39. Distribution of job reputation



Source: elaboration with data from '*Así Vamos* 2018'.

Figure 40. Distribution of unemployment status



Source: elaboration with data from '*Así Vamos* 2018'.

Having executed the recoding, Table 5 below presents the descriptive statistics of the six resulting indicators. Again, the distribution of 'income level' is right-skewed. However, most observations in 'job reputation' fall within the 'non-economically active' category –with 1,074 observations–, followed by those who were employed. The 'unemployment status' indicator shows that only 4% (107 respondents) are unemployed. Thus, a mode equal to 1 indicates that a majority is not unemployed.

Table 5. Descriptive statistics of SES indicators°

Variable	Level	Mean	Mode	Min	Max
Income level	Ordinal	4.16	-	1	8
Educational level	Ordinal	2.69	-	1	7
Job reputation	Nominal	-	2	1	4
Medical service	Nominal	-	2	1	3
Unemployment status	Nominal	0.95	0	0	1
Female-headed household	Nominal	0.85	1	0	1

Source: *Así Vamos* 2018. (°) = unweighted data; missing cases included.

6.2.2. Bivariate analysis of SES indicators

Having explored the structure of the indicators, it is now necessary to explore associations among them. Bivariate analysis must be conducted to get insights on the strength and statistical significance of their associations. Due to their different typologies (nominal and ordinal), Table 6 below shows a mix of correlation coefficients suitable for categorical data. Khamis (2008) notes that the Spearman rank correlation coefficient is appropriate for measuring an ordinal-ordinal association, rank biserial coefficient for ordinal-nominal, and Cramer's V for nominal-nominal. The latter is an extension of the Phi coefficient, used when at least one of the variables has more than two categories. All these measure strength (from -1 to +1), significance, and direction (positive or negative) –except Cramer's V–, just as the Pearson's r coefficient does for continuous data.

Table 6. Correlations among SES indicators°

Variables	Income level	Educational level	Job reputation	Medical service	Female-headed H.
Income Level	-				
Educational Level	0.491***	-			
Job Reputation	0.033*	0.055**	-		
Medical Service	0.092***	0.060***	0.174***	-	
Female-Headed H.	0.066***	0.065***	0.147***	0.046	-
Unemployment Status	-0.014*	0.003***	1.000***	0.191***	0.053**

Source: *Así Vamos* 2018. Sample size = 2,392. (°) = Pairwise computation in Stata; unweighted data. (***) = 0.001, (**) = 0.01, (*) = 0.05.

According to the standards of research based on survey data and the categorical nature of the indicators, a coefficient is considered strong when it is greater than 0.30, moderate in the 0.11-0.30 range and weak when it is 0.10 or lower (De Vaus, 2014; Healey, 2015). Based on these criteria, Table 6 shows mixed results. The strong or moderate coefficients are grey-shadowed, and the others exhibit weak correlations, although the association between 'income level' and 'medical service' shows potential due to its moderately weak coefficient. Nonetheless, it is worth noting that, except the correlation between 'female-headed household' and 'medical service', all the other

coefficients are significant. The strongest correlation coefficient is observed between 'income level' and 'educational level'. This is not surprising, considering the similar distributions that both variables showed in Table 4, that is, as the educational level of individuals decrease, they are more likely to live in households with lower monthly income. As mentioned above, these indicators have also been widely used in past research as individual socioeconomic measures.

The only odd coefficient (perfect association) is between 'job activity' and 'unemployment status', reflecting that the latter is a recoded version of the former. As Figures 39 and 40 showed above, the 'unemployed' category includes exactly 107 observations in both variables. In addition, 'unemployment status' exhibits the weakest coefficients –except its relationship with 'medical service'–, compared to the associations among the other variables. Thus, it might be an unsuitable indicator for measuring SES, although further statistical analysis is needed.

6.2.3. CFA of SES

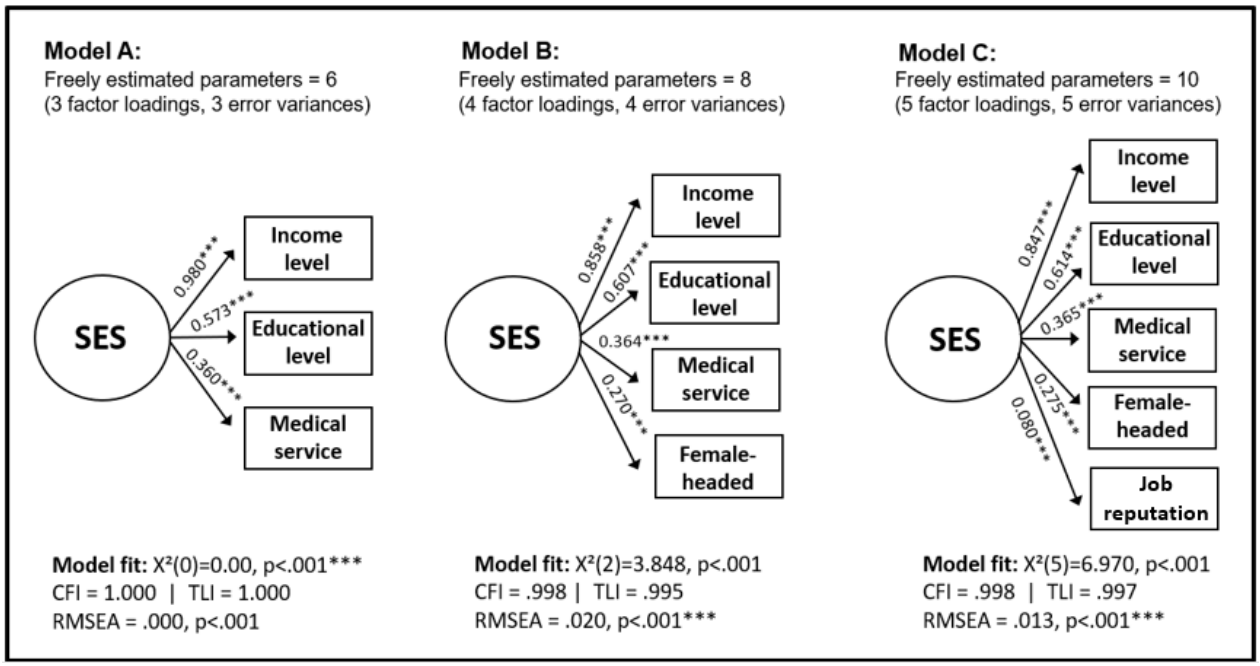
As mentioned in Chapter 5, one way in which CFA is employed in this study is for analysing how well the associations among certain indicators measure a latent construct. CFA is useful for testing internal consistency of a latent variable more robustly than correlational and EFA approaches used in previous studies (Gau, 2011; 2014). It allows testing hypotheses on the overall quality of a model's representation of the data. Following Gau's (2011:493) criteria, the CFA of SES aims to find a model which satisfies three requirements: 1) an acceptable fit to the data, 2) best acceptable fit than alternative models, 3) as parsimonious (fewer parameters) as possible. All the CFA models consider the issues discussed in Chapter 5, such as non-normally distributed categorical data, a minimum of three indicators per model, and the necessity of using the WLSMV method.

Figure 41 below shows the results of three CFA models of SES estimated using Mplus 6.1, which illustrate the criteria mentioned above. Model A includes three indicators which consistently yielded the highest loadings in all the models tested. Perfect CFI and TLI measures of 1.0, as well as a lack of information for the RMSEA and (χ^2) indicates a poor fit of the data, possibly due to the issues explained in Chapter 5. A low number of indicators used in the estimation and missing data could offer little information for satisfying identification of the model. For example, 'income level' shows

around 20% of missingness (Table 4 above). It is thus clear that three indicators are not enough for measuring SES.

Model B shows a considerable improvement in all the fit measures. The CFI and TLI coefficients are very close to 1.0, while the RMSEA is lower than 0.05 and statistically significant. The loadings of income level, educational level and medical service are similar to those in the previous model, considered strong according to the conventions (≥0.30) in the literature (see: Tarling, 2009: 128). The only loading slightly below such cut-off point corresponds to individuals living in female-headed households. A 'weak' loading could affect the reliability of the latent construct.

Figure 41. CFA models of SES



Source: *Así Vamos* 2018.

However, such a loading is not considerably lower than the cut-off point, and thus it is necessary to balance the desirability of strong loadings with the necessity of satisfactory fit measures (See: Swisher *et. al.*, 2004: 794). Accordingly, Ximénez (2009: 1038) advises to 'recover' weak loadings if these contribute to correct model specifications. Based on her two Monte Carlo simulation studies, she notes that, if the indicators are carefully chosen, the reliability issue should not raise great concerns. In addition, the risk of using unreliable indicators for estimating SES is reasonably low,

since all are theoretically and empirically informed. Altogether, the model shows that the indicators touch on the same underlying notion of SES.

Model C includes a fifth indicator (job reputation). It shows, however, a very weak loading and the fit measures marginally improve. Hence, the addition of 'job reputation' is not useful for measuring SES. Alternative models with different combinations of four, five and six indicators were tested, but these failed to meet the goodness-of-fit requirements. Moreover, some indicators (i.e. unemployment status) rendered weak and insignificant loadings in most cases. Thus, Model B is the most appropriate, since a more parsimonious (four-indicator) solution is preferred, and it shows a good fit.

6.3. Defining NAs and measuring CONDIS in the MMA

As discussed in previous chapters, CONDIS concentrates across neighbourhoods differently. It is thus important to clearly define their boundaries and to analyse the specific relevance of different neighbourhood-level indicators related with CONDIS. The latter is particularly important in the MMA, where structural factors are worse than in the Global North –as discussed in Chapter 3. The outcomes of the analysis for creating NAs are first described in this section, before outlining the results from the statistical analysis of CONDIS indicators.

6.3.1. The creation of 337 NAs in the MMA

As discussed in Chapter 5, a mix of quantitative and qualitative components is considered in the definition of boundaries between NAs, following the approach of the Edinburgh Study. GIS data has a key role in the analysis. It enables visualisation of physical barriers, which are informed by qualitative data obtained from in-depth interviews with representatives of local organisations. Their 'local knowledge' is also used for obtaining information on additional factors which explain divisions among neighbourhoods. GIS data also allows visualising the Marginalisation Index. As noted in Chapter 4, it is a homogeneity measure of the neighbourhoods within each NA.

6.3.1.1. Identifying neighbourhood boundaries through in-depth interviews

As mentioned in chapters 4 and 5, in-depth interviews with representatives of local organisations are useful for investigating the considerations that residents across the MMA have in mind for defining their neighbourhood boundaries. The representatives have significant experience working in different areas of the city. Drawing on their 'local knowledge' thus allowed us to explore the relative importance of physical and non-physical considerations across different neighbourhoods.

Physical barriers

When they were asked about the physical elements, anchored to the territory, that residents 'take as references' for defining their neighbourhood boundaries, the interviewees mentioned a diversity of examples. These are often located in specific places which are useful for delimiting the neighbourhoods. All the respondents consistently and emphatically mentioned **avenues and streets** as the most common physical barriers throughout the whole MMA. These can define the limits of a neighbourhood, just as they can distinguish it from contiguous neighbourhoods. The boundaries defined by avenues are clearest in neighbourhoods located on foothills, as several participants mentioned. The neighbourhood boundaries are imposed, not just by avenues but also by the **hills** behind them. One interviewee explained: "In those neighbourhoods, their residents have more clarity about their limits as they are located between the hill and the avenue below" (Organisation H).

Half of the interviewees mentioned that in several neighbourhoods the residents set their boundaries on **river and stream beds**. The representatives explained that streams create gaps in the terrain which define such boundaries. They further confirmed these boundaries on cartographic maps, as part of their fieldworks. A different half of the representatives mentioned the role of **walls** as even more evident physical barriers. These are more common nowadays in the MMA, due to the proliferation of **gated (or walled) neighbourhoods**. As one representative noted, "a wall is a clear barrier as it delimits the neighbourhood… In this model of walled neighbourhoods, residents have clarity about the limits of their neighbourhood" (Organisation E). There are, however, examples of **walls built up on one side** of the neighbourhood, which abruptly divide it from other neighbourhoods. Several comments

referred to walls as ‘protective measures’, as one interviewee noted: “there was the wall that divides them… due to the perception that people in one neighbourhood rob those in the other neighbourhood and damage its infrastructure” (Organisation B).

The interviews further revealed that neighbourhood boundaries are also clearer for those located in peripheral areas, away from the urban sprawl. Such neighbourhoods tend to be isolated as they are often **surrounded by empty land, factories, or industrial parks**. One interviewee exemplified such situation in the municipality of García: “when we arrived to work there, there were no shopping malls, no cinemas, nothing. There were only houses, a church and a school. The residents used to say that ‘where the dust begins, it is no longer García’, meaning that poor houses in irregular settlements indicated the end of urbanization and hence of the neighbourhood” (Organisation G). To a lesser extent, and depending on the area of the MMA considered, the interviewees referred to **malls and supermarkets** as large physical barriers to neighbourhoods. In addition, they considered neighbourhood boundaries to be delimited sometimes by **governmental buildings, community centres and public schools.** However, only three interviewees mentioned such physical barriers, which reflects their experience working in a few specific neighbourhoods.

Non-physical considerations

Non-physical considerations were mentioned to permeate throughout a neighbourhood. These aspects could raise a reasonable concern, due to their relative importance in shaping residents’ perceptions for setting different neighbourhood boundaries than those defined by physical barriers. For instance, all the participants revealed that, in many neighbourhoods, the residents perceive internal social divisions, based on cultural and socioeconomic differences and not so much on physical aspects. One interviewee illustrated this point based on previous work with the organisation:

> “Divisions between social groups are more imaginary than physical, within the same neighbourhood. In just about 30% of the neighbourhoods, divisions are based on physical boundaries. Most of the divisions are social perceptions” - (Organisation I).

According to the representatives' experiences, there are many neighbourhoods where non-physical considerations converge with physical barriers, thereby defining internal divisions more clearly. For instance, this **convergence is common in neighbourhoods located on foothills**. Houses located higher up the hill signal worse socioeconomic conditions, which are often irregular settlements lacking urban infrastructure and public services. Those living in such settlements usually come from other Mexican states, seeking job opportunities. Few of them belong to indigenous communities, who mostly concentrate in the municipality of Juarez. In most of these neighbourhoods, **main streets are physical barriers which divide 'those uphill from those downhill'**, as the participants often heard from the residents. The location of another physical landmark on a main street dividing uphill from downhill, such as a school or a community centre, tends to visually reinforce internal divisions. Similarly, in neighbourhoods without streets connecting the uphill parts, **the limits are defined by stairs.** As a participant mentioned, "you can tell clear divisions between the residents living upstairs and those downstairs" (Organisation G).

The interviews also revealed cases in which perceptions based mainly on socioeconomic differences match neighbourhood boundaries, distinguishing neighbourhoods from each other. The example mentioned above by the representative from Organisation B illustrates well this point. In this case, the hill is behind the neighbourhood and a main avenue is located downhill. In the participant's opinion, "it is clearly segregated", since it is adjacent to better-off neighbourhoods on its left and right sides, one of which built a wall in between.

Interestingly, non-physical aspects seem to weigh more in defining neighbourhood boundaries in relation to other neighbourhoods, than in accentuating internal divisions. Notwithstanding these inner differences, they do not seem to substantially impact perceptions about neighbourhood boundaries. The residents usually understand that they live in the same neighbourhood, as mentioned by most participants. When perceptions about neighbourhood boundaries are unclear, this is not due to 'contested boundaries' (Dean *et. al.*, 2018), as defined in Chapter 5, but rather to the residents' transit habits in their neighbourhood. Therefore, they are likely to know just the area where they 'move around' every day. This view, however, is not incompatible with the definition of neighbourhood boundaries based on physical barriers. As one interviewee clearly noted, "In many cases, people can tell 'the range' of their neighbourhood on the basis of avenues" (Organisation H).

Even in situations of potential boundary disputes, the approach of creating NAs could be useful. This allows us to encompass larger areas which include such boundaries, when the neighbourhoods involved have similar socioeconomic characteristics and there are no clear physical barriers between them. As explained in Chapter 5, this study is concerned with defining NAs for measuring concentrations of structural factors and crime, rather than identifying contested boundaries.

Intermunicipal boundaries

The participants mentioned a number of examples in which perceptions and physical barriers converge on intermunicipal borders. In this scenario, two neighbourhoods with marked differences in their socioeconomic characteristics and the quality of the public services they receive, as well as potentially conflictive views between them, are usually divided by a street, which also defines the border between two municipalities. Borders like this are reinforced when two or more physical barriers are placed together, as one interviewee noted:

> "There are **walled neighbourhoods** like *Paseo Guadalupe*, for example. It is surrounded by older neighbourhoods. Several years ago, there used to be football pitches and a small stream where the neighbourhood is now. It was a meeting place for residents of contiguous neighbourhoods in Guadalupe and Juárez, where they had a good time… but later they built *Paseo Guadalupe* with a **wall around it** in that same place… and the other lands around it are **vacant lots between the two municipalities**. Now, there is a clear division of borders (between municipalities), which **had one side of the street lit and with painted houses, while the other side of the street had not**".

In this example, two physical barriers –walls and nearby vacant lots– converge in between adjacent neighbourhoods located in two different municipalities. The third physical barrier is a street signalling disparity in the quality of public services and stark socioeconomic differences between neighbourhoods, which further emphasises the division. These barriers thus turn administrative borders into broader intermunicipal (neighbourhood) boundaries.

The persistence of physical barriers

Hitherto, the discussion has focused on the considerations involved in defining neighbourhood boundaries. It is worth noting that most examples mentioned above illustrate conditions in deprived areas of the MMA, thus leaving better-off neighbourhoods underrepresented. This limitation is acknowledged, which could affect this study to some extent. However, the vicarious experiences of the participants interviewed are useful for informing the extent to which the considerations mentioned above are also applicable to better-off neighbourhoods and their residents' perceptions. For instance, two interviewees who had worked in upper-middle class neighbourhoods noted the occurrence of internal conflicts among their residents, although with a different nature (i.e. parking and noise). They had also noticed that physical barriers (i.e. walls) accompany the residents' perceived differences between them and those living in deprived contiguous areas.

Thus, the interviews offer two key findings about neighbourhood boundaries, regardless of their socioeconomic conditions. First, non-physical considerations, such as sociocultural perceptions, can complement the definition of neighbourhood boundaries, but they are more useful for understanding internal divisions within neighbourhoods. Second, non-physical aspects coincide sometimes with physical barriers, but the latter end up being more relevant in delimiting neighbourhood boundaries. Therefore, non-physical aspects might inform physical ones, but the latter persist as clearer markers of such boundaries. These findings are consistent with the concept of 'social boundaries' adopted in this study. As mentioned in Chapter 5, it considers non-spatial divisions, such as physical barriers, which were found to be the most relevant considerations in defining neighbourhood boundaries. The participants mentioned just a few examples of neighbourhoods where potential overlapping of boundaries may occur, based on social perceptions about socioeconomic differences. As noted above, even these cases could be included in larger NAs given that they fulfil additional criteria, as outlined below.

6.3.1.2. Additional criteria for defining NAs

Having discussed the physical barriers and other sources of division between neighbourhoods, two additional aspects must be considered in the criteria used for

defining the boundaries among NAs. Firstly, the homogeneity of neighbourhoods within the same NA, and therefore the differences among NAs. As discussed in the previous chapter, this project employs CONAPO's marginalisation index for measuring such homogeneity. It is a composite score of nine indicators which synthesises socioeconomic deprivation experienced by the residents of the MMA. This measure is divided into five levels, from 'very high' to 'very low' marginalisation, which allows us to demarcate the boundaries of NAs by grouping neighbourhoods according to similar socioeconomic characteristics. This approach is consistent with the findings from the interviews discussed above, about the socioeconomic considerations for differentiating between neighbourhoods. It also mimics the five-level ISES used in the Edinburgh Study as a measure of social and economic stress. At this point, it is worth noting that the definition of the NAs takes into account additional aspects to those considered in pre-established aerial units, for example, the AGEBs. As noted in Chapter 5, these are basic geostatistical areas, defined according to administrative borders and specific physical barriers, namely streets and main avenues. AGEBs divide urban areas in sets of 25 to 50 blocks –independent of population–, matching state and municipal limits.

Secondly, the appropriate size of NAs, based on the statistical power needed for subsequent analysis. Each NA must include enough respondents from the *Asi Vamos* 2018 survey, for conducting ML-SEM analysis. The number of respondents varies in the literature. For example, Smith *et. al.*, (2001) had around 50 cohort members per neighbourhood in the Edinburgh study. Sampson and colleagues (1997) had 50 respondents in 80 Chicago neighbourhood clusters (NCs), and 20 respondents in 263 NCs, totalling 343 NCs. In a comparative study, Sampson and Wikström selected neighbourhoods in Stockholm with at least 5 survey respondents, which yielded 200 areas. In their ML simulation study, Maas and Hox (2005) found that the sample size at the group (neighbourhood) level must equal at least 100 groups for large models, and 50 for small models. They also found that variance estimates are highly accurate with 100 or more groups, and that the number of groups has a larger effect than group size or intraclass correlation on such estimates. Hox (2013) obtained similar findings in his meta-analysis of ML studies, whereby the number of groups is more important than the number of respondents per group.

This project thus requires a large number of groups, which is more important than a large number of individuals in each group to get efficient parameters. The *Así Vamos* 2018 dataset has a sufficiently large sample size, as it collected data from

2,392 individuals across 991 neighbourhoods in the eleven metropolitan municipalities. Therefore, this data is used for creating 337 NAs, which satisfies the technical robustness required, as will be explained below.

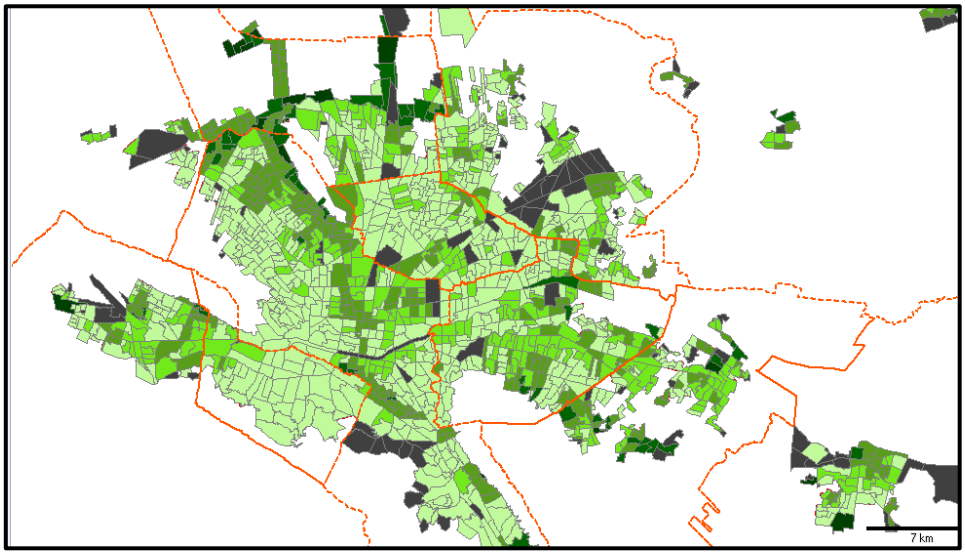
6.3.1.3. GIS visualisation: *Así Vamos* 2018 and Census 2010

The criteria discussed so far for defining the NAs are summarised in four points: 1) neighbourhoods share similar socioeconomic characteristics, 2) they are delimited by physical barriers, 3) complete neighbourhoods are included, instead of splitting them, and 4) include sufficient observations for the statistical analysis. Having defined such criteria, it was then necessary to visualise these aspects for further analysis. The National Inventory of Households 2016 offers GIS data disaggregated at the block level, including different layers of information, such as population details from the Census 2010 and urban infrastructure. The latter includes bridges, water currents, canals, train tracks, roads, streets, parks and green areas. A version of this dataset, including the Marginalisation Index disaggregated at the AGEB level was obtained from INEGI's Northeast office.

Mapa Digital (also provided by INEGI) is the tool used for visualising GIS data of the MMA. It includes a functionality for merging datasets which share the same ID structure. As mentioned in Chapter 4, the '*Así Vamos* 2018' dataset follows the ID structure employed by INEGI. Therefore, this ID was used as the 'reference key' at the block level for merging the survey data to the National Inventory of Households 2016.

Having merged the datasets, it was then necessary to visualise each layer of information at a time. The first one was the Marginalisation Index. As mentioned in Chapter 5, it was complete at the AGEB level, but not at the block level, due to missing data. Even so, AGEBs are helpful as they follow municipal borders. As informed by the in-depth interviews, municipal borders are important. The residents in a neighbourhood take it as a whole; its limits distinguish it from contiguous neighbourhoods, as well as from neighbourhoods which administratively belong to other municipalities. Thus, the marginalisation index, used in this study as a homogeneity measure, is shown below in Figure 42. Darker AGEBs reflect higher marginalisation levels, such as those in the northwest and east of the MMA.

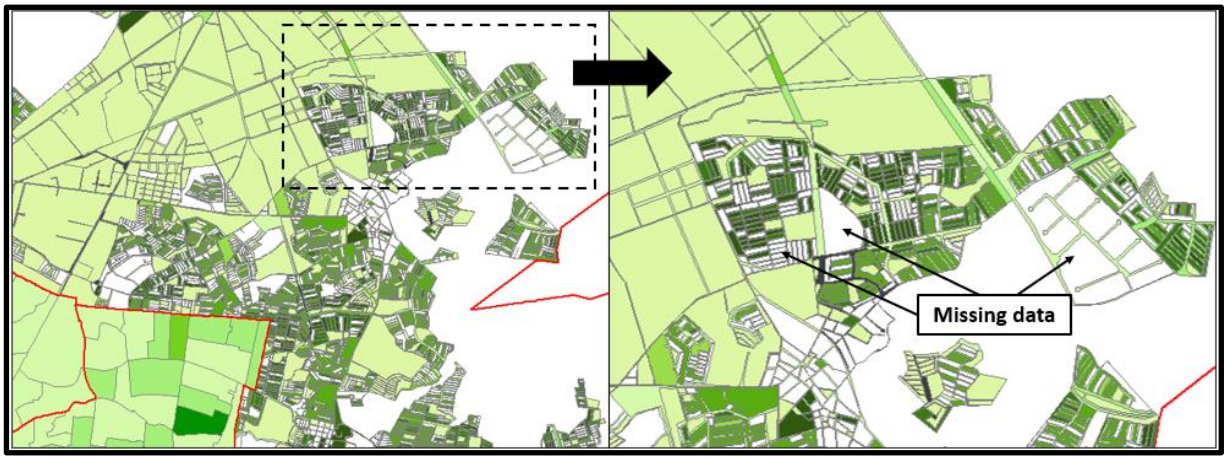
Figure 42. Marginalisation Index by AGEB in the MMA



Source: elaboration in *Mapa Digital* (2020).

Although the AGEB level allowed us to observe the extent of homogeneity of certain areas, the block level was also used for complementing the visualisation and definition of the NAs where a reasonable number of cases could be visualised. This was particularly useful for situating the survey data, which was disaggregated at the block level –as mentioned above. Visualising the marginalisation index at the block level also allowed us to distinguish, more clearly, similarities and differences between adjacent neighbourhoods, despite the missing data. These considerations are illustrated in Figure 43 below.

Figure 43. Missing data for block-level marginalisation index



Source: elaboration in *Mapa Digital* (2020) with CONAPO's Marginalisation Index.

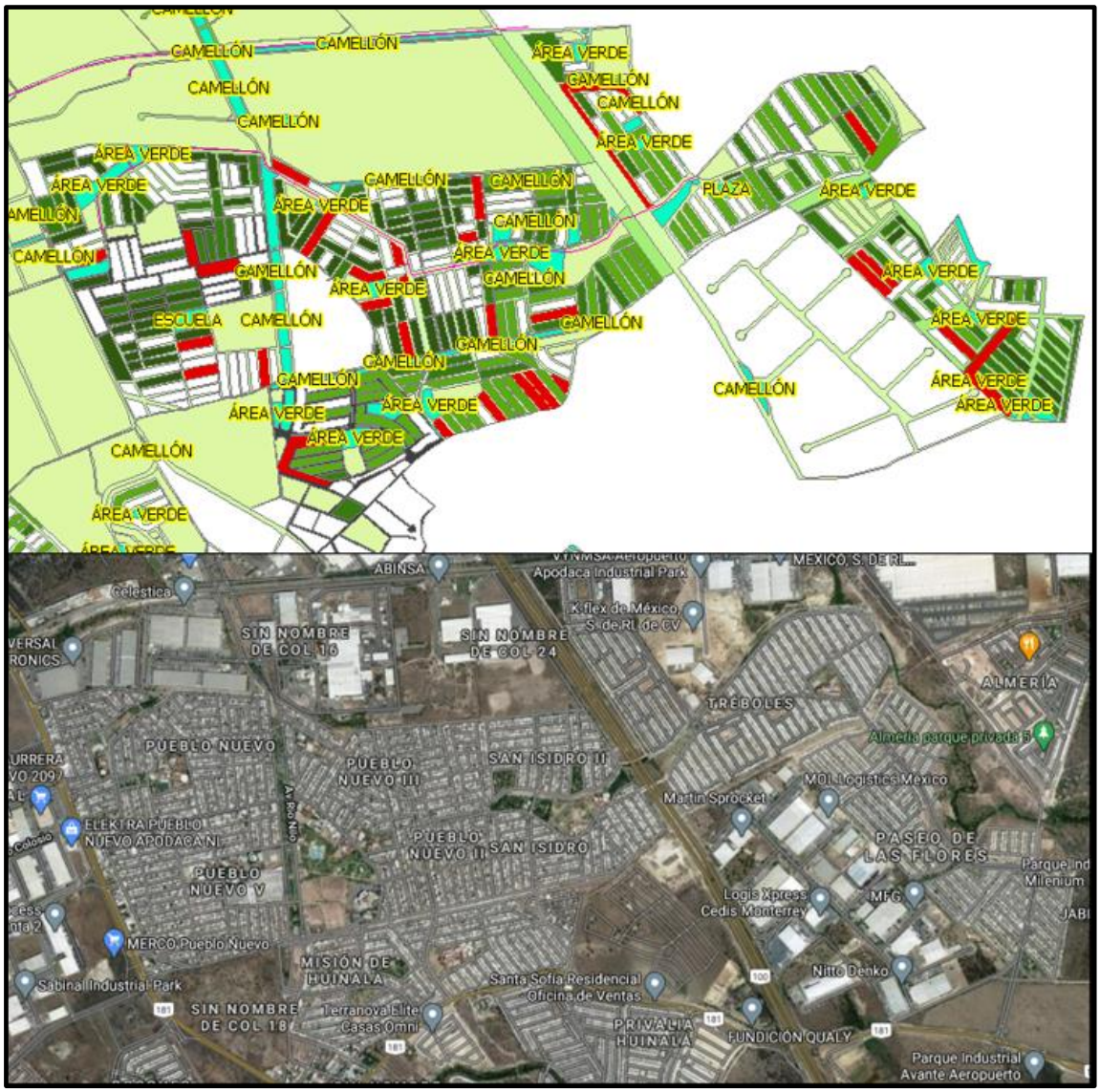
First, the left-hand side depicts an area in the municipality of Apodaca, showing the AGEB-level marginalisation in neighbouring municipalities, which are located to the southwest. The smaller area delimited by the dashed-line rectangle then shows the block-level marginalisation index in the right-hand side, with the colourless blocks indicating missing data. In general, the blocks in the northwest are darker than those in the south and the east. With this block-level data, it is more intuitive to observe concentrations of similar cases (more homogeneous) within certain neighbourhoods.

Then, Figure 44 below shows the inclusion of the '*Así Vamos* 2018' data as an additional layer of information, with 30 cases (in red) distributed throughout the area. The labels highlighted indicate the inclusion of specific physical barriers (streets, avenues, street medians, green areas, a bridge, a canal, a square and train tracks) as the third layer. It is worth noting that other physical barriers –i.e. empty lands, factories and warehouses– identified above, through in-depth interviews, are not included in any of the layers of the National Inventory of Households 2016. Google Maps is thus used as a complementary GIS tool to visually inspect areas which might include such barriers. This is important, as the urban landscape changed from 2010 to 2018.

Figure 44 shows two clear examples of the usefulness of Google Maps. First, there are new residential and commercial buildings north, south and west of '*Pueblo Nuevo*', as well as new neighbourhoods located east of '*Treboles*', which did not exist in 2010, according to the image taken from *Mapa Digital*. Second, the right-hand side of the image from *Mapa Digital* shows a large colourless block, which was empty land in 2010. However, it was transformed into an industrial park in 2018. With these considerations in mind, physical barriers were used for refining the boundaries of NAs.

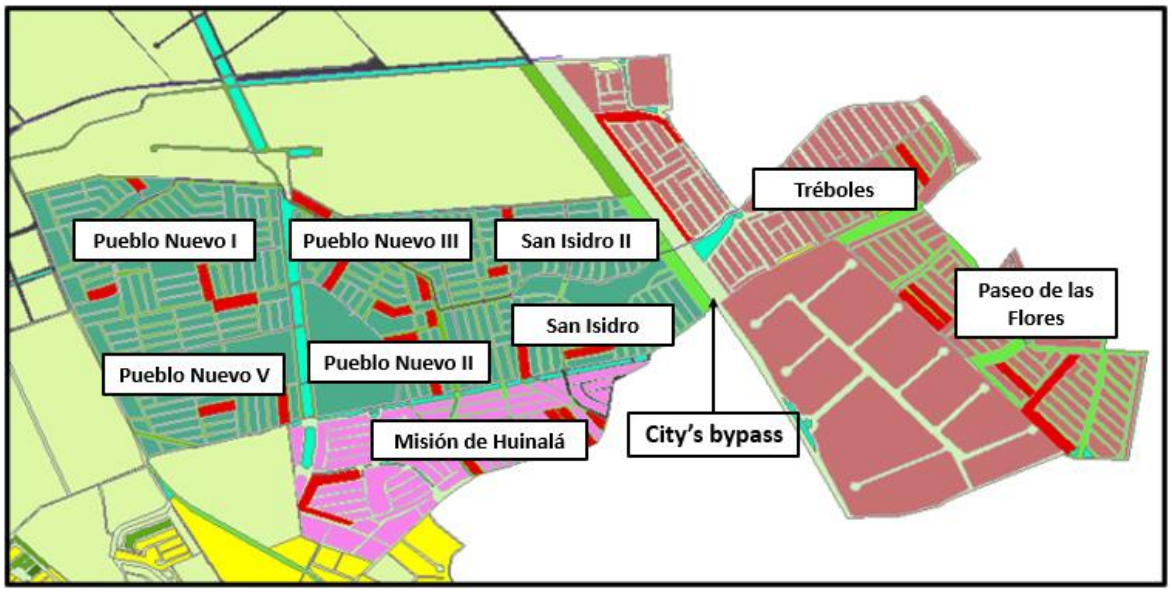
Figure 45 further below shows how the layer of physical barriers superimposed on the layers of Marginalisation Index and '*Así Vamos* 2018' allowed us to create three different NAs. For instance, MMA's peripheral avenue (city's bypass) is a wide and high-speed transited road which divides the neighbourhoods on the left, from those on the right. In addition, '*Pueblo Nuevo* I to V' and '*San Isidro* I and II' are neighbourhoods on the left which exhibit lower marginalisation levels than those south of them (e.g. *Misión de Huinalá*). Each NA also includes enough survey cases (in red) to satisfy the statistical power requirement.

Figure 44. Visualisation of '*Así Vamos 2018'* and physical barriers



Source: elaboration with *Mapa Digital* (2020) and Google Maps.

Figure 45. Definition of NAs based on outlined criteria



Source: elaboration in *Mapa Digital* (2020).

In the process of defining NAs, Google Maps is also useful for visually confirming the divisive character of specific barriers in certain areas. Some of these, are clearly divisive, such as the peripheral avenues mentioned above. These tend to be very wide and difficult to cross from one side to the other. This is consistent with several opinions expressed in the in-depth interviews, regarding main avenues as the most common physical barriers to 'continuities' between neighbourhoods. Nevertheless, other barriers are not as clear-cut in certain areas, making it challenging to define NAs. Neighbourhoods surrounded by large tracts of empty land, and (semi)gated neighbourhoods are two good examples. Figure 46 below illustrates a neighbourhood which meets both conditions.

It shows that '*Ex Hacienda San Francisco*' is surrounded mostly by empty land. It is also a gated neighbourhood, with a security booth at its front and only entrance. This neighbourhood had remained isolated even in 2018, with just one small industrial park next to it. Under these circumstances, it is not possible to observe continuities between this and other neighbourhoods. Therefore, this neighbourhood is itself defined as a NA.

Figure 46. Example of an isolated gated neighbourhood

Source: elaboration with *Mapa Digital* and Google Maps (2020).

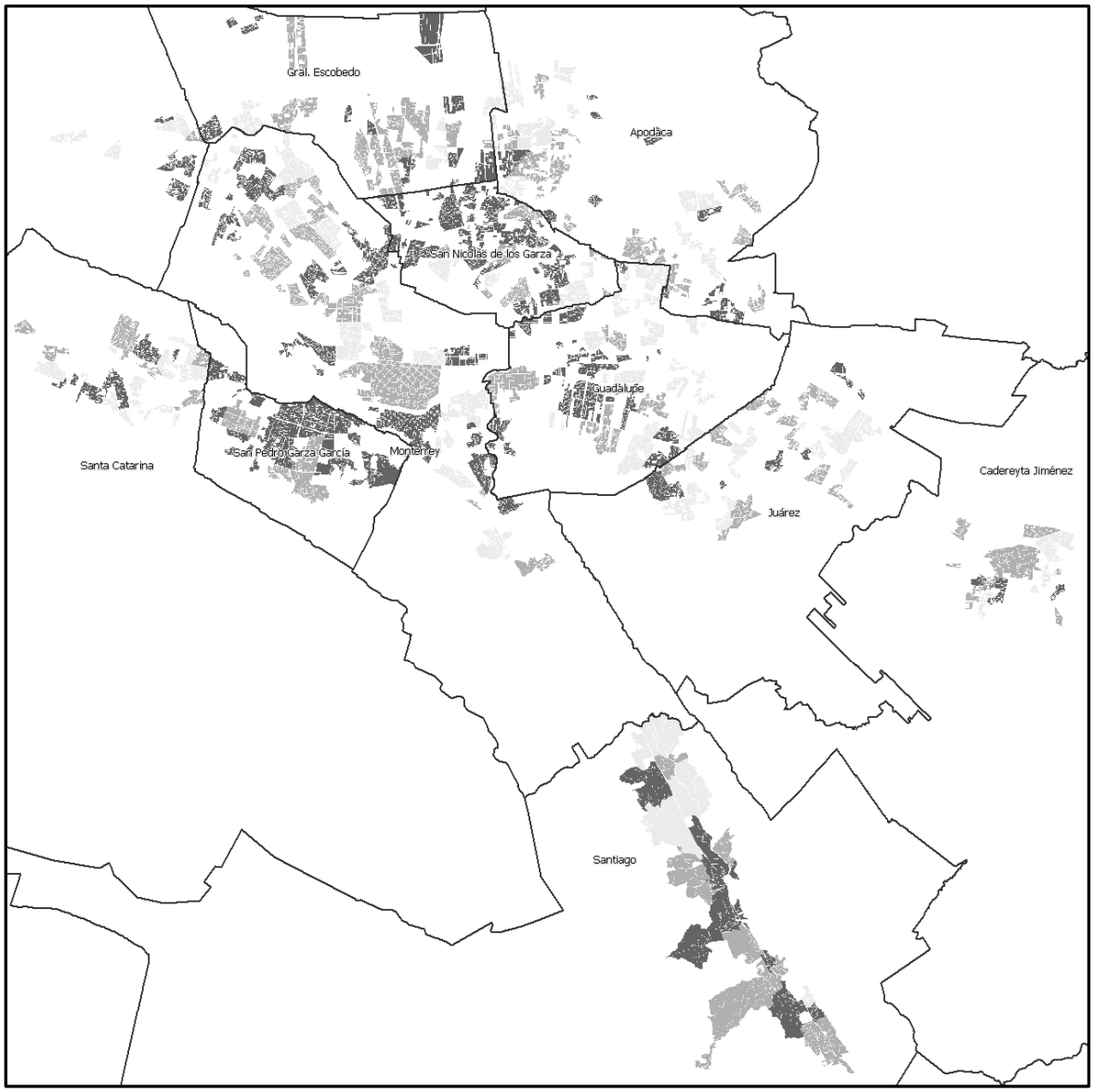
In contrast, there are semi-gated (or semi-walled) areas which are included in larger NAs if they seem to be integrated with contiguous neighbourhoods, that is, continuities between them can be observed. Figure 47 below includes a good example. It shows the entrance to a '*privada*', which is a small residential area with one entrance consisting of a 'dead end' road and few houses on each side. It is walled but not gated, thereby allowing a continuity towards outer streets. It is, therefore, integrated into the '*Mirasierra*' NA, highlighted in magenta.

Figure 47. Example of an integrated semi-walled neighbourhood

Source: elaboration with *Mapa Digital* and Google Maps (2020).

Thus far, the approach described demonstrates how the qualitative criteria inform the aspects considered in the layer of urban infrastructure, which is superimposed on the layers based on quantitative criteria. Applying these criteria at the block level across the whole MMA, 337 internally homogenous but geographically distinct NAs were defined. These are shown in Figure 48 below. The bold lines indicate the borders among the metropolitan municipalities.

Figure 48. Geographical distribution of 337 NAs in the MMA



Source: elaboration in *Mapa Digital* (2020).

The NAs range from 2 to 46 observations, consistently with previous studies (Sampson *et. al.*, 1997; Sampson and Wikström, 2008). Table 7 below summarises the number of NAs, the average and range (maximum minus minimum) of survey cases, by municipality. A minimum of two cases was considered for defining an NA in all the municipalities. Monterrey has the highest number of NAs, while San Pedro Garza García has the lowest. The number of NAs across municipalities reflects their different sizes, but also their respective urbanistic landscapes as exemplified above.

Table 7. Summary of NAs and survey cases by municipality°

Municipality	Number of NAs	Average of survey cases	Range of survey cases
Apodaca	34	6.29	(18-2) = 16
Cadereyta	22	9.77	(46-2) = 44
García	28	7.85	(22-2) = 20
General Escobedo	25	8.72	(27-2) = 25
Guadalupe	39	5.58	(15-2) = 13
Juárez	34	6.52	(13-2) = 11
Monterrey	43	5.02	(14-2) = 12
San Nicolás de los Garza	34	6.47	(19-2) = 17
San Pedro Garza García	21	10.47	(27-2) = 25
Santa Catarina	31	6.93	(25-2) = 23
Santiago	26	8.23	(16-2) = 14

Source: elaboration with GIS data (INEGI, 2010; *Así Vamos*, 2018).
(°) = Unweighted data.

Having defined the NAs, the next step is to analyse if a set of neighbourhood-level indicators reflect the underlying notion of 'CONDIS' as it has been found in previous studies (see Chapter 2). Therefore, it is necessary to evaluate such indicators separately and altogether, to which the discussion now turns.

6.3.2. Assessing the internal consistency of CONDIS

As mentioned in Chapters 2 and 4, the latest theoretical developments in Social Disorganisation Theory (SDT) have advanced knowledge on the uneven concentrations of structural factors and crime across geographic units of analysis. In this sense, previous studies (i.e. Sampson, *et. al.*, 1997; Reisig and Parks, 2000; Jackson *et. al.*, 2013; 2020) have used similar indicators for measuring the latent construct 'CONDIS' at the neighbourhood level, which could influence PCP and CP. Such a construct is measured in this section, using the same approach used above for the individual-level SES, but this time applied to the NAs.

6.3.2.1 Univariate analysis of CONDIS indicators

Most studies have measured CONDIS in slightly different ways. For instance, Sampson and colleagues (1997: 920) analysed certain poverty-related indicators which could describe the underlying structure of 343 neighbourhoods in Chicago. They found that the proportions of residents in **poverty**, those on **public assistance**, **unemployed**, **black**, in **female-headed families**, and with high **density of children under 18 years old**, reflected conditions of high CONDIS. Following this line of thought, Reisig and Parks (2006: 617) operationalised the latent construct with proportions of poor, black, unemployed and in female-headed families in neighbourhoods of Indianapolis and St. Petersburg. Smith and colleagues (2001: 170) used similar indicators for capturing the socioeconomic homogeneity of Edinburgh neighbourhoods. Their ISES mentioned above was constructed as a composite measure made up of proportions of **demographic** (population in each neighbourhood who had lived there for less than 12 months, and those aged 10-24), **household** (those with lone parents and children and those overcrowded), **housing** (those living in local authority housing), and **socioeconomic** (those who are unemployed) characteristics. It is worth noting that 'living in a neighbourhood for less than 12 months' touches on 'residential stability', more than CONDIS, according to the Chicago study (Sampson *et. al.*, 1997; Sampson, 2012).

Considering the indicators mentioned above, this study operationalises CONDIS drawing on proportions of individual-level indicators available in the Census 2010 and the '*Así Vamos'* 2018 survey. As outlined in Chapter 4, the former offers data for calculating **'proportion of indigenous population'** while the latter allows to estimate **proportions of unemployed** and those **living in female-headed families**. The survey also includes similar measures for calculating proportions of individuals with a **park nearby, good and clean**, which is a proxy indicator of neighbourhood development. Previous research in Mexico (i.e. Meza Aguilar and Moncada Maya, 2010) has documented a direct relationship between marginalised and poor areas with fewer green areas, which also tend to show a lower quality. A number of comments in this sense also emerged during the interviews discussed above. The representatives shared several examples on the insufficient urban infrastructure in deprived areas. Altogether, these indicators closely mimic those used in the Chicago study. This city in the U.S. seems to offer a 'more similar' context to the MMA, than Edinburgh. In fact,

several of the indicators chosen in this study have proved useful for calculating similar composite measures in Mexico, such as the marginalisation index.

All the CONDIS indicators have a continuous level of measurement. As outlined in Chapter 4, they are based on neighbourhood-level data, obtained by averaging the individual-level data of each NA. Therefore, this data is complete, without any missing cases. Their distributions were also shown in Chapter 4. Table 8 below shows their descriptive statistics, which provide a useful overview of the variation across the 337 neighbourhood areas in the MMA.

Table 8. Descriptive statistics of neighbourhood-level variables°

Variable	Mean	Median	Variance	Std Dev	Range
Proportion of indigenous population	0.007	0.004	0.000	0.010	0.064
Proportion without a park nearby, clean, good	0.111	0.000	0.035	0.188	1.000
Proportion of female-headed households	0.140	0.083	0.033	0.182	1.000
Proportion of unemployed population	0.048	0.000	0.013	0.115	0.667

Source: *Así Vamos* 2018. (°) = Unweighted data.

Three important remarks must be made. First, it is worth remembering that, as mentioned in Chapter 4, the original individual-level variable about the respondents who reported that their area had a park nearby, and was clean and/or well equipped' was reverse-coded, to reflect a consistent direction in the condition of disadvantage with the other indicators. Hence, the table above includes the proportion of those who did not have access to such parks. Second, the means are greater than the medians in all the indicators. Thus, Table 8 above further confirms their right-skewed distributions as exhibited by the histograms included in Chapter 4.

To reduce such skewness, log-transformations could be applied to the data, as evidenced by the histograms included in Appendix 3. These show improved distributions for all the indicators. However, the original data includes a considerable proportion of 'zero' values. This means that such log-transformed observations were not calculated, thereby yielding a large number of missing values. The approach in this study is thus to choose the original data for further statistical analysis, acknowledging the trade-off between leaving non-normality unaltered, but using complete data.

Nonetheless, Maximum Likelihood with Robust Standard Errors (MLR) estimator will be used in CFA further below. As explained in Chapter 5, such method is appropriate for producing parameter estimates robust to non-normality.

Third, it is worth noting the low variances and standard deviations of each indicator. This means that the data describing the proportions included above is just slightly spread out and dispersed, closely leaning towards the mean across different NAs per each indicator. The histograms mentioned above reinforce such patterns, since most observations concentrate on the lower part of their distributions.

6.3.2.2. Bivariate analysis of CONDIS indicators

Having statistically assessed the neighbourhood-level indicators, it is now necessary to conduct bivariate analysis among them, to shed light on the strength and statistical significance of their associations. Table 9 below shows Pearson's r correlation coefficients, which are suitable for continuous data. As mentioned above, it can range from +1 to -1 for measuring strength and direction. However, the convention in social sciences for measuring such a strength between continuous indicators is different from the conventions used between categorical indicators. With continuous variables, coefficients within the 0.10-0.30 range are considered weak, 0.30-0.50 are moderate and 0.50 or more are strong (Krehbiel, 2004; Rowntree, 2018).

Table 9. Correlations among CONDIS indicators

Variables	% of indigenous population	% without park near, clean, good	% of female-headed families
% of indigenous population	-		
% without a park nearby, clean, good	0.077	-	
% of female-headed households	0.082	0.187*	-
% of unemployed population	-0.020	-0.015	0.017
Significance: *p < .05			

Source: *Así Vamos* 2018 and 2010 Census.
Sample size = 337. (*) = 0.05.

The direction of the correlations is consistent with the expectations. For instance, as the concentrations of indigenous population and female-headed households increase, so does the proportion of individuals who lack access to a park near, clean and/or well-equipped. However, it is unclear the reason for which a lower neighbourhood development has a negative association with unemployment. It is also worth noting that most correlations are very weak and insignificant, perhaps due to a small sample size (n = 337).

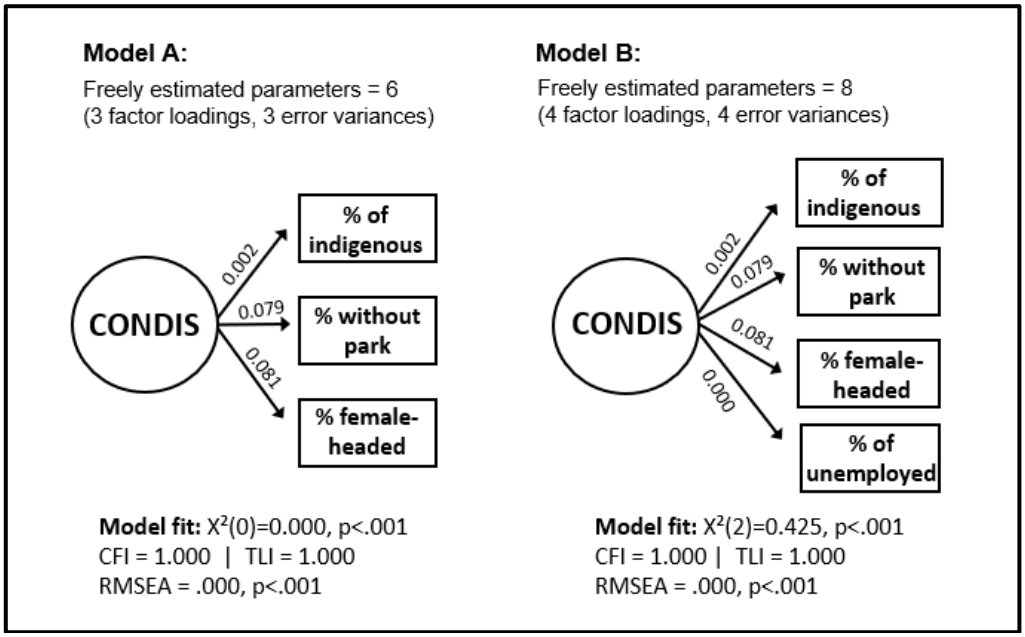
This bivariate analysis thus suggests that the chosen indicators may not be adequate for measuring CONDIS. Nevertheless, this bivariate analysis is preliminary as it only represents associations between two variables. Even if the theory has informed the relationship among the indicators, the occurrence of spurious correlations must not be ruled out. Therefore, a more sophisticated technique must be used for analysing the extent to which these indicators converge into a single construct.

6.3.2.3. CFA of CONDIS

The CFA of CONDIS follows the same approach detailed above for SES (Gau, 2011:493), that is, the model must satisfy an acceptable fit to the data, which is better than alternative models, and as parsimonious as possible. These models also include at least three indicators, and non-normally distributed data is acknowledged. In contrast, the analysis of potential CONDIS indicators draws on MLR estimator method, rather than WLSMV, as mentioned above. According to these criteria, Figure 49 below shows the results of two CFA models of CONDIS, estimated with Mplus 6.1.

None of the models show good fit and their loadings are marginal. A lack of information for RMSEA, and perfect CFI and TLI measures of 1.0, indicate identification issues. This is even clearer in Model A, since chi-square was not estimated. Even though complete data was used, few indicators and a smaller sample (337 NAs) with a large proportion of ‘zero’ values were considered in this model, thereby reducing the available information –in practical terms– for its estimation.

Figure 49. CFA models of CONDIS



Source: *Así Vamos* 2018.

Something similar might have occurred to Model B, despite the extra indicator (% of unemployed) used in its estimation. In fact, the latter exhibits a null loading, reflecting its poor association with CONDIS. Overall, these indicators fail to reliably measure such latent concept, notwithstanding their theoretically and empirically informed selection. Hence, alternative measures must be used for operationalising such a notion, as will be discussed in Chapter 8.

6.4. Conclusion

The analysis in this chapter was concerned with three main tasks. First, the latent variables SES (individual level) and CONDIS (neighbourhood level) were measured. The CFA models tested showed that the indicators used for measuring SES converged into a single construct which satisfies three conditions: 1) an acceptable fit to the data, 2) better fit than alternative models, 3) a solution as parsimonious as possible. However, the models tested for measuring CONDIS failed to converge or yielded unacceptable goodness-of-fit indices. One explanation could be that the manifest variables are not adequate for measuring CONDIS in the MMA context. It could also be due that the underlying structure of the dataset, makes statistically

unfeasible to reproduce a covariance matrix that represents such a construct. Thus, alternative measures must be used for representing this latent variable, or to draw on separate indicators for further analysis. Third, a total of 337 NAs was created based on a set of criteria, such as neighbourhoods with similar socioeconomic characteristics, delimited by physical or territorial boundaries, and including complete neighbourhoods instead of splitting them. The size of a NA also considers the number of observations required for the statistical analysis. With the creation of these NAs, it was possible to obtain aggregated data for estimating the neighbourhood-level indicators used in the measurement of CONDIS. Altogether, the results of these tasks allow us to conduct subsequent analysis in Chapters 8 and 9.

Chapter 7. Assessing the validity of PJ concepts in the MMA

7.1. Introduction

An assessment of groups of indicators for measuring SES at the individual level and CONDIS at the neighbourhood level was included in Chapter 6. These evaluations were part of a set of intermediate steps in the analysis of the explanations of PCP and CP. Following this sequential approach, the next step is to evaluate the central concepts of PJ in the MMA context. More specifically, the aim of this chapter is to answer research question 1, put forth in Chapter 4, on the extent to which MMA residents understand the central concepts of PJ in similar ways to those documented in the Global-North research. This task involves analysing how consistent and valid the PJ foundations are in a context where violent crime is unevenly distributed across the city, it tends to concentrate in socially deprived neighbourhoods, and these two characteristics are worse than in democratically mature jurisdictions of the Global North where the PJ framework has been researched.

This chapter is divided in two sections. The first one explains the results of the quantitative analysis of the PJ indicators used in this study. As mentioned in Chapter 5, a group of indicators cannot be used for testing the psychometric properties of each concept, due to the limitations of the *'Así Vamos'* 2018 dataset. It is, however, possible to assess if different combinations of PJ measures used in this project reflect (or not) the same latent variable, to ensure discriminant validity among them. The second section includes a qualitative analysis of the data collected from two rounds of in-depth interviews with representatives of local organisations. Drawing on their vicarious experiences is useful for exploring the understanding of MMA residents of the PJ concepts considered in this study. As outlined further below, this qualitative data enables 'triangulation of measures' (Neuman, 2013: 166), that is, the meanings that emerged from the interviews are consistent with the notions captured in the quantitative measures used in subsequent analysis, in Chapters 8 and 9.

7.2. Assessing the validity of PJ concepts

This section is concerned with the assessment of the conceptual validity of the PJ measures chosen for this study. As mentioned above, the limitations of the *'Así Vamos'* 2018 dataset make impossible to measure the PJ concepts in a similar fashion to the analysis carried out for SES and CONDIS in Chapter 6. Nonetheless, it is feasible to assess whether a group of indicators considered in this study touches on the same underlying construct, or rather reflects different concepts. This evaluation involves three steps: 1) to statistically describe the PJ-related indicators, 2) to measure the association between these indicators for gaining some insights on the whether they could refer to common or distinct concepts, 3) to test a number of CFA models for informing the extent of discriminant validity among the indicators.

7.2.1. Univariate analysis

As outlined in Chapter 2, the extant literature on PJ (i.e. Jackson and Bradford, 2010; Jackson *et. al.*, 2012; Jackson *et. al.*, 2013; Nix *et. al.*, 2015) has informed the questions chosen from the '*Así Vamos* 2018' survey. These tap into the key PJ concepts studied, such as PCP, CP, trust in police fairness, trust in police effectiveness and police legitimacy. This section offers a statistical description of the responses to such questions, which is summarised below in Table 10.

Table 10. Descriptive statistics of key PJ indicators

PJ Indicator	Yes		No		Missing values	
	Freq.	Prop.	Freq.	Prop.	Freq.	Prop.
Public confidence in policing	1,200	50.17%	1,081	45.19%	111	4.64%
Cooperation with the police	1,122	46.91%	1,036	43.31%	234	9.78%
Trust in police effectiveness	1,252	52.34%	1,035	43.27%	105	4.39%
Trust in police fairness	1,476	61.71%	758	31.69%	158	6.61%
Police legitimacy	1,542	64.46%	693	28.97%	157	6.56%

Source: *Así Vamos* 2018.

All the indicators are dichotomous with two possible answers (Yes/No) to the questions outlined in Chapter 4. The distributions of 'trust in police effectiveness', PCP and CP seem to be almost equally distributed between the two categories. In contrast, slightly more than 60% of respondents answered 'Yes' to the questions about 'trust in police fairness' and 'police legitimacy'. The number of missing values is relatively low across all the indicators, with the highest proportion being lower than 10% for CP. Since these variables are reasonably reliable, no further transformation or recoding are necessary for subsequent analysis.

7.2.2. Bivariate analysis

It is now necessary to test for associations among the indicators to shed light on the extent to which they could refer to common constructs. Considering their dichotomous nature, tetrachoric coefficients are appropriate for measuring correlations between binary variables (Ludwig-Mayerhofer, 2019; UCLA Statistical Consulting Group, 2019). Table 11 shows the correlation coefficients, estimated in Stata as it includes the tetrachoric functionality. Pairwise deletion was used for this computation. The measures reported in the table below show the strength, direction and significance of the associations among the variables.

Table 11. Correlations among key PJ indicators°

Variables	PCP	CP	Trust in police Effectiveness	Trust in police Fairness	Police legitimacy
PCP	-				
CP	0.802***	-			
Trust in police Effectiveness	0.894***	0.746***	-		
Trust in police Fairness	0.901***	0.799***	0.830***	-	
Police Legitimacy	0.838***	0.838***	0.772***	0.944***	-
Significance: (***) = p < .001					

Source: *Así Vamos* 2018. (°) = Pairwise computation in Stata; unweighted data. Sample size = 2,392.

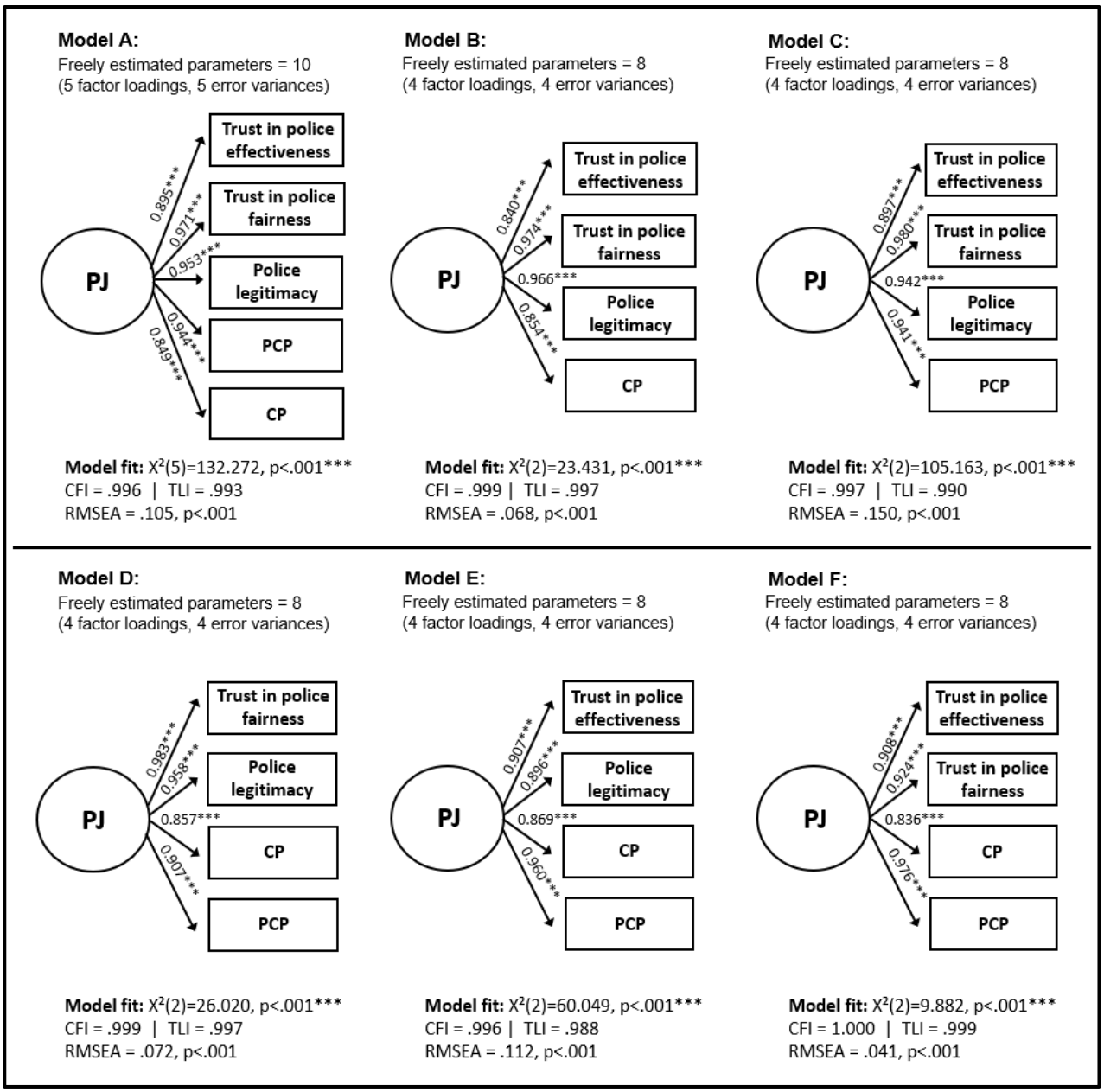
The bivariate analysis reveals very strong and highly significant correlations between the variables. The strongest associations occur between ‘PCP’ and ‘trust in police fairness’ (0.901), and between the latter and ‘police legitimacy’ (0.944). The correlation coefficient (0.772) between ‘police legitimacy’ and ‘trust in police effectiveness’ is the lowest observed above, but still within the ‘very strong’ range, according to conventions in social sciences for categorical indicators (Healey, 2015; Khamis, 2008). At first glance, strong and significant correlations support the hypothetical relationships among the indicators illustrated in Figure 3, in Chapter 2, and thus lend some preliminary support to hypotheses 1, 2 and 3 set out in Chapter 4. However, highly correlated variables also pose a concern of statistical multicollinearity and considerable conceptual overlapping. In turn, this would imply that such indicators are not sufficiently independent from each other, thereby falling short in their validity and reliability for operationalising key concepts of the PJ framework. To address this concern, the discriminant validity of the indicators must be tested.

7.2.3. Discriminant validity of PJ measures

Evaluating discriminant validity of key PJ measures involves performing a set of CFA analyses with different combinations of the indicators considered. To keep consistency with the criteria used in Chapter 6 for measuring latent concepts, the models estimated in this section include a minimum of three indicators, although parsimony is preferred. The same chi-square-based fit indices (RMSEA, CFI, TLI) are considered for testing their internal consistency. In addition, the WLSMV estimator method is employed, due to the nominal level of measurement of the indicators.

In total, 16 models were tested. Figure 49 below includes the results of the six of them which yielded mixed results. The consistent pattern observed across all the models is a statistically significant chi-square which, as outlined in Chapter 5, implies a ‘badness of fit’, since the theorised and the observed covariance matrices are significantly different (Gau, 2010: 144). Nevertheless, it was also noted that large sample sizes could cause such significant differences. Therefore, it is necessary to take the other fit measures into consideration. For instance, the RMSEA must be ideally lower than 0.05, which is just satisfied in Model F, but even the latter fails to meet statistical significance (95% confidence level) on this fit measure. Moreover, its perfect CFI coefficient (1.000) hints at identification issues.

Figure 49. CFA models of PJ measures



Source: *Así Vamos* 2018.

Other models with less than four indicators were tested, but these either exhibited practical identification issues, or did not converge. This is important as one concern about conceptual overlapping is that this is more likely to occur between highly correlated indicators, such as 'trust in police fairness' and 'police legitimacy'. The fact that models with two or three indicators failed to converge lends support to the view in this thesis that these variables refer to different concepts, despite being closely related. The evaluation in tandem of all the fit measures further reinforces such a view. Even

so, it is necessary to expand the analysis of these concepts, for shedding light on how well the PJ model 'travels' to the MMA.

7.3. Exploring the understandings of PJ concepts

The vicarious experiences of representatives of local organisations are useful for clarifying the extent to which MMA residents understand key notions of PJ in a similar way to citizens in the Global North. This qualitative data was collected through two rounds of interviews. It thus represents, not the representatives' opinions, but their experiences based on specific situations and events witnessed by them, or what they heard from the residents of several neighbourhoods. This data also considers additional concepts which could not be captured by the measures included in the '*Así Vamos* 2018' dataset. As outlined in Chapter 4, a hierarchical thematic approach (see: Abric, 2001) was used for coding the data in NVivo 12. This approach rendered subcategories belonging to each conceptual definition.

7.3.1. Trust in the police

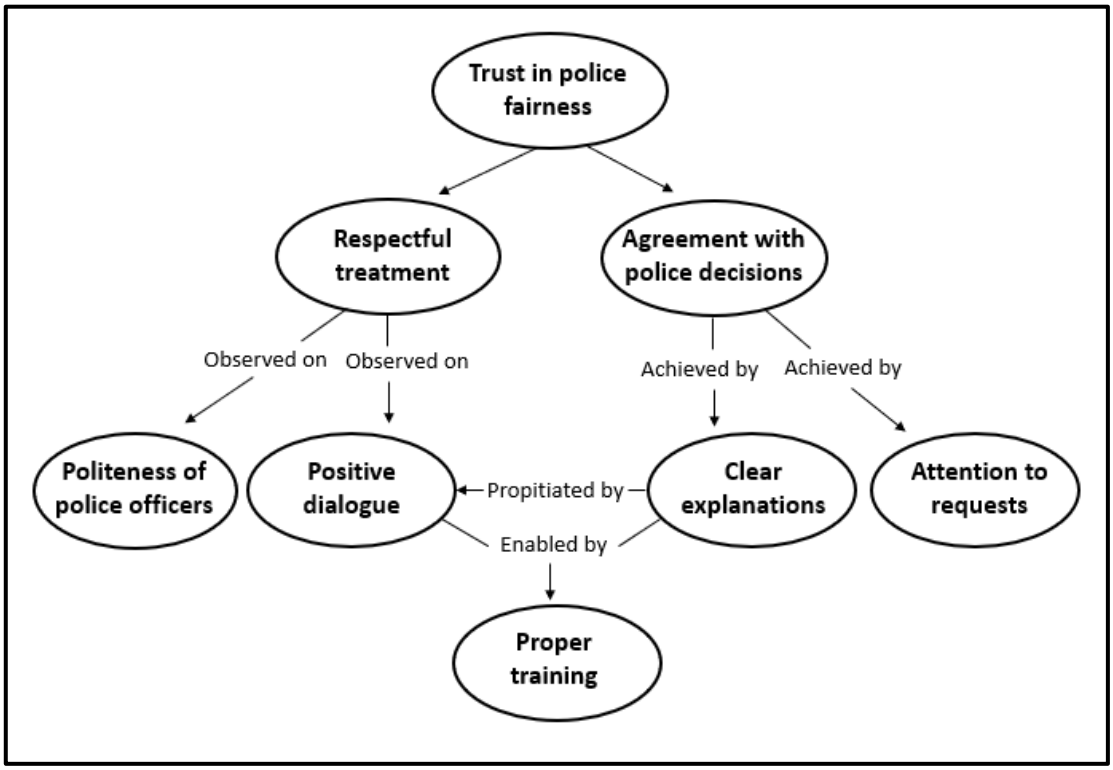
As explained in Chapter 4, 'trust in police fairness' is about the citizens' assessments of whether the police treat them with respect and dignity during public encounters and take the best decisions for them because they have people's interests at heart (Jackson *et. al.*, 2013; Smith and Somerville, 2013). It was also explained that 'trust in police effectiveness' consists of the perception that the police are technically competent in preventing and fighting crime, answering promptly to people's emergencies and providing visible patrolling. The normative nature of fairness thus means that the police are evaluated in terms of the quality of interactions that the citizens perceive to have with them, whereas the instrumental motivations behind effectiveness refer to police performance and a results-driven approach (Nix *et. al*., 2015; Sargeant, 2015).

Trust in police fairness

The analysis of the data suggests that the MMA residents generally understand 'fairness' in a similar fashion to how it is understood in previously researched

jurisdictions. Such understandings mirror those documented in the Global North and, to some extent, in the Global South. Interestingly, the form they take could vary from one neighbourhood to another. Figure 50 below shows a concept map of the subcategories of 'trust in police fairness' commonly mentioned by the interviewees.

Figure 50. Concept map of 'trust in police fairness'



Source: elaboration based on interviews with thirteen participants.

The first subcategory, 'respectful and just treatment', was the most commonly mentioned among the ten representatives. They recurrently noted the appreciation that the MMA citizens give to polite and kind treatment received from the police. Consistently with the findings in the Global-North research (i.e. Sunshine and Tyler, 2003) –and in some Global-South studies (i.e. Ordu and Nnam, 2017)–, any disrespectful, authoritarian or even mocking demeanours against the citizens could hurt the relationship between both parties. One participant illustrated this point based on previous experiences in neighbourhoods with strained police-residents backgrounds:

“Police officers were more authoritarian or ‘rigid’, which contributed to maintaining a tense relationship with the residents and generating negative opinions among them… People complained that the police treated them badly. There were comments from ladies in the neighbourhood that when they reported an incident and the police arrived to deal with it, the officers said things like "get back inside your house, ma'am" – Organisation C.

Several interviewees attributed derogatory comments and rude attitude of police officers, to a lack of an appropriate training for endowing them with the skills to become more accessible and cordial in their dealings with the people. According to the representatives, the scarcity of well-trained police officers was a common issue in a large number of neighbourhoods across the whole MMA. In contrast, proper training enabled the officers’ capabilities to engage in dialogue with the residents, as one participant pointed out:

“Trained police officers approach people… they ask, 'what is going on?’ They have a little more intuition because they have received more training”.

– Organisation F.

In addition to fairness of treatment, ‘agreement with police decisions’ was the second most frequently subcategory mentioned among the interviewees. This closely follows the ‘quality of decision-making’ dimension documented in the Global North, according to which the impartiality of police officers in their dealings with the citizens and the attention paid to the requests of the latter, shape individuals’ opinions about the police (McCluskey *et. al.*, 1999; Tyler and Huo, 2002). This was reflected by themes about two opposite situations exemplified during the interviews. For instance, the citizens tend to agree with the decisions made by the police regarding incidents that occurred in their neighbourhood, as long as the police clearly explained to them how those incidents put people's safety at risk. As one participant illustrated:

"When robberies occurred in the neighbourhood, the residents agreed with the police actions, since the police explained to them that, just as it happened to one person, it could happen to the others. Thus, both parties began to generate empathy through dialogue wherein the police explained their actions to the residents. In these cases, the residents agreed that the police should arrest people who committed crimes in their neighbourhood…"

– Organisation A.

On the contrary, the citizens expressed a total rejection to police decisions, when the latter were perceived as arbitrary. Arrests without explanations, abusive police behaviours and use of excessive force are good examples. As documented in the Global North, the police are perceived to behave unfairly when they ignore the citizens' requests or fail to explain the reasons for denying such requests. An interviewee shared some related experiences in one MMA municipality:

"On one occasion, the police scolded a group of people who were drinking on the street, these people got upset, and an argument with the police was generated; There were even struggles with several residents in the neighbourhood who saw the incident and the police arrested many of them… There were people in the neighbourhood who agreed that sometimes the police arrested other residents because they were doing something wrong, but they disagreed with the way the police officers proceeded. For example, officers threatened people, and on a couple of occasions they pointed their guns at the residents" – Organisation D.

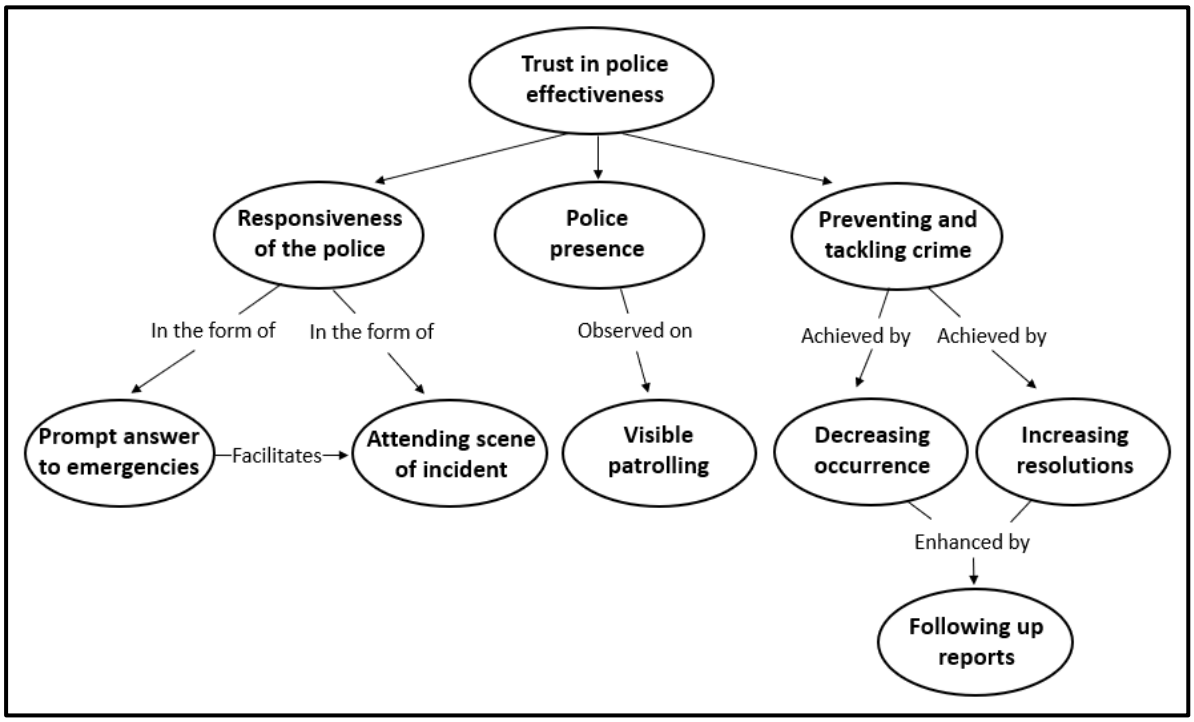
The understandings of 'trust in police fairness' therefore involved references to polite and respectful dialogue between the citizens and police officers. When the latter paid attention to the requests of the former and clearly explained to them the reasons for their procedures, people tended to perceive the police treatment and decisions as fair and just. These views were similar across different areas in the MMA. The references recalled by the interviewees closely touch on both notions of 'quality of treatment' and 'quality of decision-making' considered in a number of PJ studies in the Global North (see: Reisig *et. al.*, 2007). Moreover, the form that these understandings

take in the MMA context seem to closely mirror those successfully tested in studies in the UK and Australia. For example, ‘the police would treat you with respect if you had contact with them for any reason’ and ‘the police listen to the concerns of local people’, in the first case (Jackson *et. al.*, 2013); or ‘the police treat people with dignity and respect’ and ‘the police listen to people before making decisions’, in the second case (Sargeant, 2015). The examples mentioned above thus lend support to the use of ‘respectful and just treatment’ for measuring ‘trust in police fairness’ in the quantitative analysis, as will be discussed in Chapter 8.

Trust in police effectiveness

Several participants evaluated ‘effectiveness’ in terms of three subcategories shown below in Figure 51. These forms were consistently heard from residents living across different MMA neighbourhoods. They also echo the MMA citizens’ concerns advanced in Chapter 3, about how they rely on the police for their protection in a setting with higher levels of violent crime than in Global-North contexts.

Figure 51. Concept map of ‘trust in police effectiveness’



Source: elaboration based on interviews with thirteen participants.

For instance, ‘preventing and tackling crime’ was a commonly mentioned subcategory. It refers to the citizens’ beliefs that the police should prevent the occurrence of crimes and solve those reported to them. The citizens not only identify these specific duties, but there is a generalised perception that the police are not effective in fulfilling them, as one representative recalled from previous experiences:

> *“The people saw that the police patrolled the neighbourhood, but there were no arrests, there were young people taking drugs in the streets and the robberies did not decrease. The residents told them (the police) about the crimes that some young people committed in the neighbourhood, but they did not see the police doing anything”* – Organisation A.

The quote above captures the instrumental aspect of ‘trust in the police’ studied in the Global North, according to which ‘effectiveness’ is evaluated in terms of the police performance in fighting crime (Sunshine and Tyler, 2003) and the extent to which they “present a powerful risk of sanction and punishment” (Hough *et. al.*, 2010: 206). Similar views were shared by other interviewees. For example, one participant noted that the police could do more to prevent violent incidents:

> *“People perceive that there are recurrent problems… ‘small’ situations that could be solved with the intervention of a police officer, but they are not solved, and they are allowed to grow until they become bigger problems. Conflicts emerge between neighbours that escalate until they turn into violent confrontations, simply because the incidents were not addressed on time. People do not perceive that the police solve these situations on time”*
>
> – Organisation H.

Further to the citizens’ expectations about decreasing crime occurrence and increasing resolution rates, ‘follow up reports’ also emerged as a relevant theme. The participants related this theme to people’s expectations that the police should update them about crime investigations reported and expect the police to capture ‘the guilty ones’. People were dissatisfied when they perceived that the police failed to accomplish such a task, as one participant noted:

"It is important that the police follow up the incidents that the residents report, especially crimes. For example, sometimes the residents complained that the police arrested a guy who robbed a house or stole something, but they released him the next day" – Organisation J.

Interestingly, 'follow-up and update' practices have not been regarded in the Global North as central considerations of 'trust in police effectiveness'. In contrast, they have been closely linked to normative aspects, typical of PJ initiatives, such as re-contacting individuals to inform them about the status of issues or requests previously reported (Tyler and Jackson, 2013: 85). This difference is thus worth noting as a distinctive feature of 'trust in police effectiveness' in the MMA.

More importantly, the quotes above seem to indicate that the MMA residents perceive an insufficient police effectiveness to address crime. Consistently with how this aspect of 'trust in the police' has been studied in Global-North countries, such as the UK (i.e. Jackson and Sunshine, 2007), the MMA citizens expect the police to sanction those who commit crime, in order to feel safe.

Considering the opinions just mentioned about police effectiveness to punish those who commit crime, the interviewees noted the residents' wishes that the police could, at least, 'be around' more often. The PJ research in the Global North (i.e. Bradford *et. al.*, 2009; Jackson *et. al.*, 2013) has found 'police presence' to significantly predict trust in police effectiveness. In people's minds, police visibility seems to convey the message that they are 'doing their job' (Jackson and Bradford, 2010; Wolfe *et. al.*, 2016). Therefore, the participants often mentioned the 'police presence' subcategory. One of them reflected about how the residents:

"… they were already resigned to the fact that the police were not going to solve their insecurity problems but felt that, if they saw the police patrolling their neighbourhood at that moment, nothing (bad) was going to happen to them".

– Organization E.

Other participants mentioned that, regardless of whether the police patrol a neighbourhood, its residents prefer that the police respond to emergencies promptly. The 'responsiveness of the police' was, indeed, the most recurrent subcategory mentioned by the participants, as one of them illustrated in the following remark:

"People face concrete problems of insecurity and, at least, they need the police to attend when they are called" – Organisation B.

Interestingly, it has not been a common representation of 'effectiveness' in the Global-North research. Just a few studies (i.e. Jackson *et. al.*, 2013) have tried to operationalise it, for example, as 'how effective the police are in responding to emergencies promptly'. This is also different from normative operationalisations, such as 'responsiveness to people's concerns' (Hinds and Murphy, 2007), which refer to the notion of 'quality of decision-making', mentioned above. Another participant who worked in several neighbourhoods across three municipalities, mentioned something which further reinforces the view that police responsiveness is the top understanding of 'trust in police effectiveness' for many MMA citizens:

"People value more timely attention. If they call because they have a problem, they want them (police) to come, if they report something, they want them to attend, to respond. This is what generates positive perceptions".

– Organisation J.

Hence, the findings outlined above support the view that 'trust in police effectiveness' entails the following notions: 1) responsiveness to citizens' emergencies, 2) visible police presence, and 3) concerns about preventing and fighting crime. The latter also involves a notion of 'follow up reports', whereby the residents expect the police to update them about incidents previously reported. This notion, together with responsiveness of the police, are distinctive in the MMA. These opinions varied in terms of the forms (subcategories) they took across neighbourhoods, but they were common references among the participants. Importantly, the references to 'preventing and fighting crime' and 'visible police presence', align with the understandings documented in the Global-North research. Therefore, the illustrations outlined above support the choice of using 'police presence' as a measure of 'trust in police effectiveness' in the quantitative analysis.

7.3.2. Police legitimacy

In addition to the aspects of trust illustrated above, the literature discussed in Chapter 2 has well documented the key role of 'police legitimacy' in PJ theory. As Tyler and Jackson (2013) argue, it must be addressed as an issue in and of itself. As also discussed in Chapter 2, the extant research in the Global North strongly suggests that, although trust and legitimacy are intertwined, they are different constructs. Police legitimacy involves notions of power and authority.

However, the few empirical studies that have been conducted in Mexico failed to address how police legitimacy works in relation to other key concepts of the PJ framework. Studying this concern in the MMA context is particularly useful for shedding light on whether police legitimacy is understood by the residents in similar terms to those advanced in the Global North. In the latter, police legitimacy has been recently refined for considering three conditions: 1) the citizens felt obliged to obey the police, 2) the police exercise their authority according to the law, 3) the police authority is justified as they adhere to moral values shared with the citizens (Hough *et. al.*, 2013; Jackson *et. al.*, 2013). These three notions were explored during the interviews.

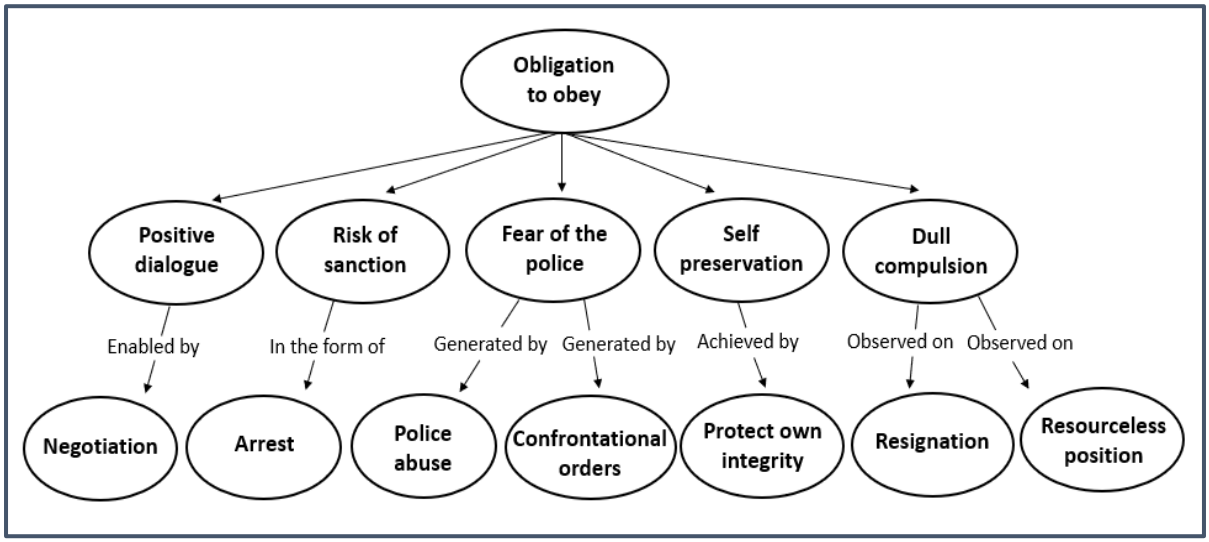
Obedience to the police

Earlier and more recent studies (Tyler, 1990; Tyler and Jackson, 2013) have pointed out that people obey the police because they consider it is the right thing to do. In this way, the citizens recognise the police authority. Nonetheless, obedience also entails a notion of consent, whereby the citizens perceive the exercise of such authority to be justified. Individuals thus feel a social connection with the police, as they see the latter to have their interests at heart. During the interviews, most references to obedience were framed in such terms, as normatively motivated by 'positive dialogue' with the police, as Figure 52 shows below.

Several remarks about this subcategory referred to how it propitiates the obtention of voluntary obedience from the residents in different neighbourhoods, as one participant (Organisation B) noted: "people obeyed the police when there were opportunities of dialogue between both parties". The same participant recalled that when the organisation arrived to a neighbourhood to implement a social project, they noticed a tense relationship between the residents and the police due to a lack of

positive dialogue. As this progressed (facilitated by neighbourhood meetings), the people began to voluntarily obey the police.

Figure 52. Concept map of 'obedience to the police'



Source: elaboration based on interviews with thirteen participants.

Similarly, other participants also noted that dialogue (or a lack of it) was key in the neighbourhoods where they worked. For example, one of them (Organisation J) pointed out that "the police forces with whom it was almost impossible to negotiate through dialogue, generated tension with the people, compared to other police forces with whom it was possible to dialogue". Another participant (Organisation D) pointed out the people's tendency to disobey the police when they had a tense relationship with them. This tension aroused out of situations improperly handled by the police:

> *"When people disobey, it is because the situation gets out of control, because the police do not know how to act in that situation. The police do not know how to implement action protocols to handle different situations".*
>
> – Organization D

The references to 'positive dialogue' thus support the view that obedience could adopt a normative connotation in the MMA. Nonetheless, the participants also expressed other non-normative understandings, which altogether were more frequently mentioned than the normative considerations. For instance, two

interviewees referred to situations which touch on ‘dull compulsion’, as defined in Chapter 2. According to Bottoms and Tankebe (2012), obedience is unquestioned, since the citizens perceive themselves in a powerless position and lacking alternatives in their relationship with the police. The first participant (Organisation E), who worked in an outskirt-neighbourhood noted that the residents always obeyed the police in a compulsory way when they were given an instruction, but they also ‘felt the police far away’, as described during the interview:

> *“There were always comments from the residents that ‘they were forgotten, the police did little, or they were not being watched as they thought they needed’ ... they felt a bit left out in the open".*
>
> – Organisation E.

In other cases, the residents’ powerless position is observed in the abuse they risk experiencing for disobeying the police. This is more likely to occur in socio-political contexts where police corporations bear the burden of considerable legitimacy deficits. The citizens express a ‘felt obligation to obey’ more often rooted on resignation –a form of dull compulsion– than on free consent to recognise the police authority and defer to them (Tankebe, 2009). Another participant referred to such powerless position of many residents in the same terms:

> *“One of the reasons for which they (residents) obey is because they have no way of responding. If they are arrested, they don't have money to pay for a bail or a fine. Since they cannot defend themselves easily, they have no alternative but to obey the police”* – Organisation B.

In contrast to ‘dull compulsion’ which neither involves normative considerations, nor instrumental ones, the participants referred to other subcategories which are clearly motivated by instrumental concerns: 1) ‘self-preservation’, 2) ‘risk of sanction’ and 3) ‘fear of the police’. The first one referred to cases in which the residents perceived to be at risk and, therefore, they obeyed the police to protect their own lives or welfare. For example, one interviewee recalled one time when there were shootings in one of the neighbourhoods where they worked. The police asked the residents to stay at home and the latter obeyed. Similarly, another interviewee noted that the

residents in a different neighbourhood obeyed the safety recommendations from the police after a flooding hit the city and caused a landslide. However, obedience in such terms seems to be motivated by extrinsic considerations (Mastrofski *et. al.*, 1996; McCluskey *et. al.*, 1999), beyond the type of relationship that existed between the police and the residents. Therefore, this notion seems to be more related to the residents' need to protect their physical integrity than to perceptions of acceptable requests from the police.

Regarding the second and third subcategories, 'risk of sanction' reflects punishments applied within the law. However, 'fear of the police' is motivated by police behaviours which are outside the "rightful sphere of police activity" (Jackson *et. al.*, 2020: 6), such as police abuse. The latter seems to touch on a different subconstruct of police legitimacy, as will be addressed further below. One participant referred to the coercive and intimidating conduct of the police to elicit the residents' obedience:

> *"The police gave orders to the residents in a confrontational way for them to obey, but this only further fractured their relationship. You did not see sympathetic police with the people who explained them clearly (the reasons of their instruction). For this reason, there was no such conviction among the residents to obey because they believed it was the right thing to do".*
>
> – Organisation H.

It was, however, 'risk of sanction' the most frequently mentioned instrumental subcategory. The participants who mentioned it consistently noted that, in most cases, people obey the police because they understand the potential consequences that not doing so could have. When two interviewees were asked on whether the residents proceed in a calculated manner, they answered affirmatively. For instance, one of them mentioned:

> *"When there could be a consequence, for example a sanction, people obey. When there is no consequence, people do not obey ... So, it is not so much that people obey because they believe it is the right thing to do, but because they know that they can be punished or arrested"* – Organisation F.

The understandings outlined above thus suggest a considerable extent of consistency with the operationalisations discussed in Chapter 2. On one hand, normative considerations might increase the chances of obeying the police. These normatively rooted motivations seem to be more related to the 'quality of decision-making' –one of the two dimensions of PJ– in the form of 'positive dialogue', than to a 'feeling of moral duty', as has been proposed in the Global-North research.

On the other hand, a number of references from the interviews pointed to how different groups of citizens across a variety of neighbourhoods seem to respond to non-normative and instrumental motivations for obeying the police (Jackson *et. al.*, 2020). For example, 'risk of sanction' and 'fear of the police' are likely to induce obedience, which echo the strained (and even fractured) relationships between both parties discussed in Chapter 3. These motivations resonate out of the research conducted in Global-South contexts, as illustrated by statements such as 'people should always do what the police tell them, even when they don't like the way the police treat them' (Tankebe, 2009: 1274). However, such motivations have been found to be less important than normative motivations, in the Global North (i.e. Pósch *et. al.*, 2020). Overall, the normative notion of 'positive dialogue' entailed in 'quality of decision-making' seems to be more important than non-normative and instrumental considerations in motivating obedience, in the MMA.

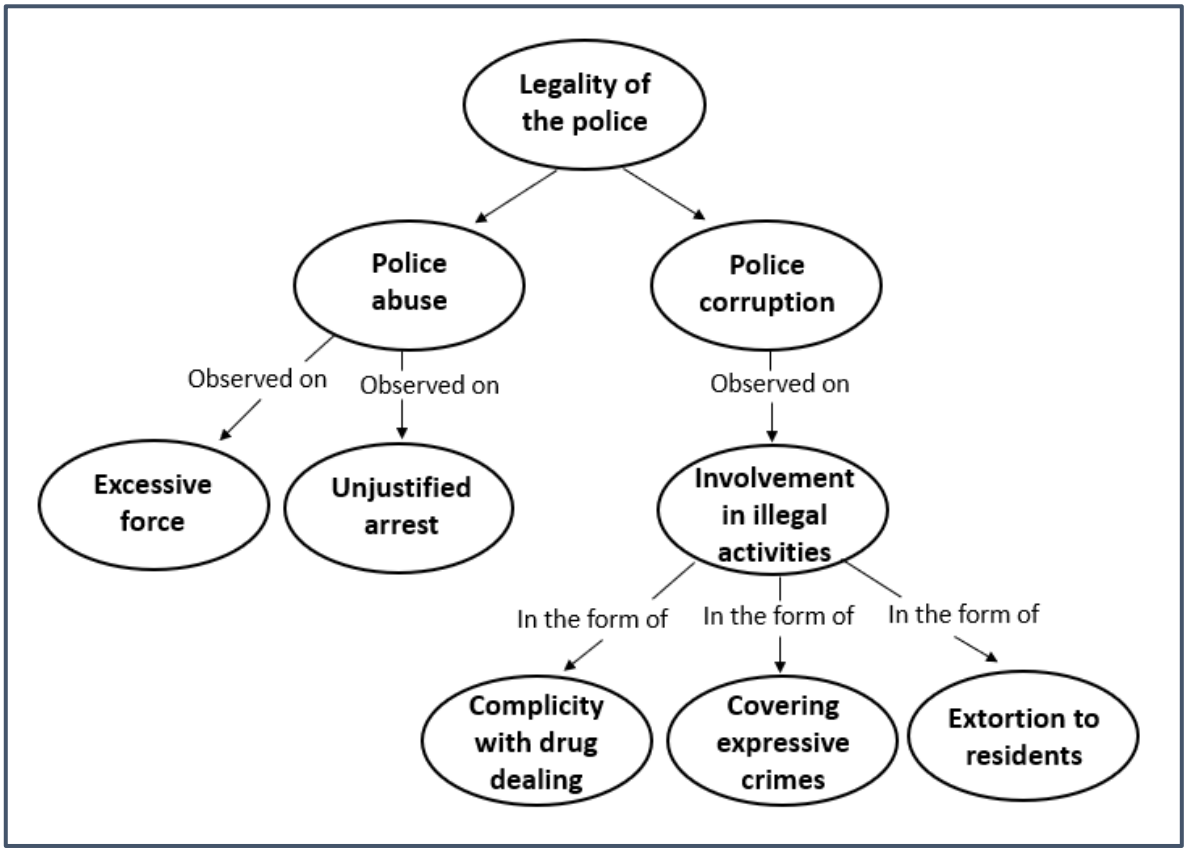
In addition, the illustrations outlined above also support to Gau's (2011) and Tankebe's (2009) findings regarding the distinction of 'obligation to obey' from 'trust in the police', despite being closely related. Several mentions suggest that obedience must be better understood as an outcome, rather than a subconstruct of police legitimacy. The participants identified motivations for deferring to the police which are best captured by other subconstructs, as explored below, in the next two sections.

Legality of the police

The legality of the police is the second subconstruct entangled in police legitimacy. According to Jackson and colleagues (Jackson *et. al.,* 2012; Jackson *et. al.,* 2013; Jackson and Gau, 2016), 'police legality' refers to citizens beliefs that the police behave according to the law and respect people's rights. When the police are perceived to use their authority in lawful ways, the citizens implicitly justify their right to determine behaviour.

In contrast, all the participants pointed out negative opinions about police legality. They referred to police misconduct in their dealings with the residents across different neighbourhoods. Figure 53 below shows the two subcategories: 1) ‘police abuse’ and 2) ‘police corruption’. These reflect how the police acted outside their rightful sphere of activity.

Figure 53. Concept map of ‘legality of the police’



Source: elaboration based on interviews with thirteen participants.

It is not surprising that these types of misconduct emerged during the interviews. As discussed in Chapters 2 and 3, both forms are negative representations of normative police features, which have been studied with especial interest in Global-South jurisdictions. The participants often mentioned police abuse, which outnumbered the references to police corruption. Most mentions on police abuse were of the type:

"The residents used to say that, when the police were not needed, they were present in the neighbourhood, arresting underage just for walking on the street, or they used excessive force against the people they arrested".

– Organisation D.

Another interviewee mentioned that residents (or members of their families) who have suffered abuse by the police are most likely to have negative perceptions about them. The following quote exemplifies how 'police abuse' strongly influenced the attitudes of the residents towards the police:

"People hope there will be no police abuse, but a close relationship with both adults and youths instead. Above all, they (police) must avoid abusing young people as it could enhance their rejection against, and hatred of, the police" – Organisation H.

Although the participants mentioned 'police corruption' to a lesser extent, they indicated the harmful impact it could have on people's perceptions about the police. For instance, two participants noted that, in the neighbourhoods where they worked, they detected cases of police corruption linked to drug dealing. One of the interviewees (Organisation G) offered two examples. First, all the police officers who patrolled a neighbourhood were replaced by other officers from the same corporation, due to corruption allegations. Second, the entire municipal police force was suspended due to corruption accusations and all the officers were replaced by *Fuerza Civil* (the state police). The other participant (Organisation J) noted that police extortions also caused a negative image and distrust among the residents. There were also situations in which the residents perceived some police officers to use their power for covering serious crimes, as one interviewee exemplified:

"We have in our records a case of a police officer who people accused of protecting his relative who committed child sexual abuse".

– Organisation B.

The opinions above suggest that police abuse and corruption frequently occur in the MMA. At least, this is clearer in socially deprived neighbourhoods, as discussed in Chapter 3. Such types of misconduct do not refer in strict sense to the definition of legality in the Global North, according to which the citizens perceive the police to adhere to legal rules that apply to all (Jackson *et. al.*, 2013: 153). Instead, both adverse evaluations reflect a lack of legality in police behaviour, implying that they fail to justify the exercise of their authority in the people's eyes.

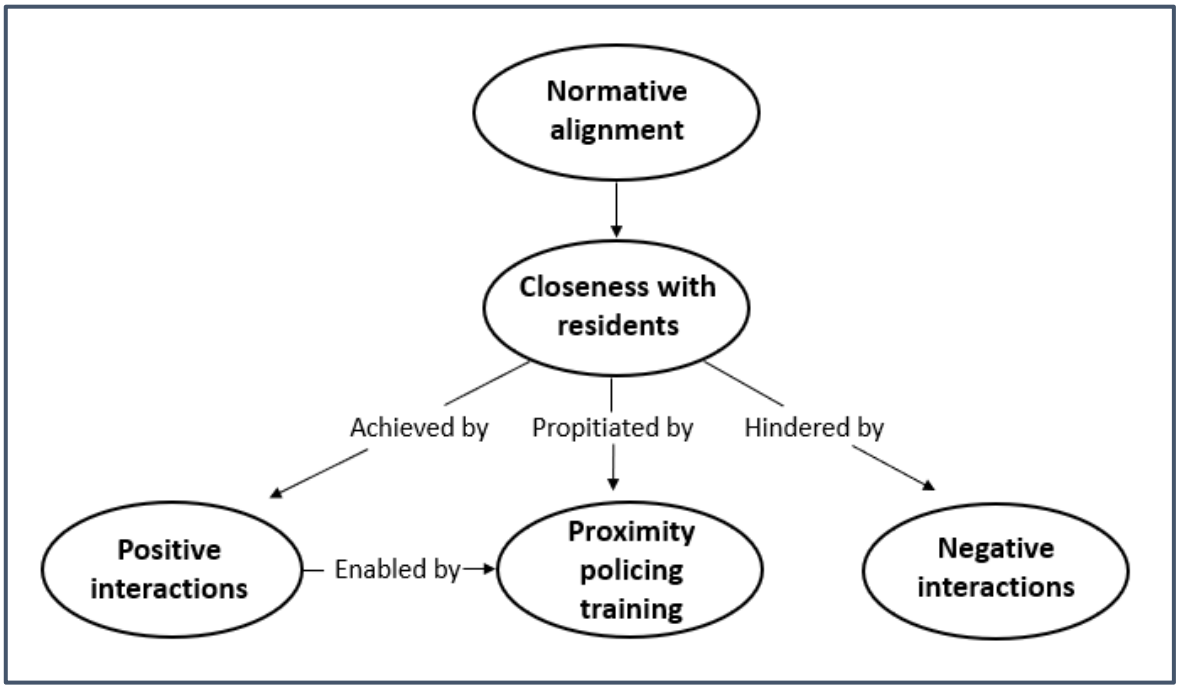
The references outlined above are consistent with the findings of Global-South studies (i.e. Bradford, *et. al.*, 2014; Jackson *et. al.*, 2020; Ordu and Nnam, 2017; Tankeve, 2010) and the scarce evidence from Mexico (Bergman and Flom, 2012; Sandoval, 2016), according to which police abuse and corruption arouse negative opinions among the citizens. For instance, Tankebe (2010: 304) measured vicarious experiences of police corruption in Ghana as a 'situation where the police refused to investigate, arrest, charge or prosecute (certain individuals) because of (their) relation to a police officer'. Similarly, Jackson *et. al.* (2020: 5-7) operationalised the limits of police conduct as 'bounded authority' in Sao Paulo, Brazil, whereby the 'citizens believe that the police should not have the right to act as if they were above the law'. Nevertheless, 'legality' is just one of the normative features captured in a broader notion of 'justification of police authority', as explored in the next section.

Normative alignment with the police

According to the PJ framework in the Global North, just as the citizens consider the extent to which the police exert their power according to the law, they also perceive how much this power adheres to moral rules (Jackson *et. al.*, 2013: 153). As discussed in Chapter 2, the citizens grant the police the right to exert their power, because they perceive to share the same values and concerns. Therefore, there is a belief of shared identify with the police, insofar as the latter have the people's interests at heart. As a constitutive feature of police legitimacy, 'normative alignment' conveys a social message to the people that the police are on their side. It entails a morally rooted belief among the citizens that the police share the same 'sense of right and wrong' with them (Jackson and Gau, 2016). Interestingly, the interviews yielded one key subcategory ('closeness with residents') through which normative alignment seems to manifest on

the MMA residents' views. Figure 54 below shows the specific understandings of 'closeness' that were identified.

Figure 54. Concept map of 'normative alignment' with the police



Source: elaboration based on interviews with thirteen participants.

This subcategory was systematically brought up by most participants as a key reference to normative alignment. For instance, many interviewees reiterated comments of the type: "when there was closeness between the people and the police, there was a better relationship between both parties" (Organisation I). According to most participants, 'closeness' propitiated that several groups of residents believed that the police were considerate with their concerns and cared about the issues going on in their neighbourhoods. These concerns closely mirror those considered in the operationalisation of 'normative alignment' in the Global North, such as "the police can be trusted to make decisions that are right for the people in my neighbourhood" (Jackson *et. al.*, 2013).

In a similar view, some other participants noted that 'positive interactions' enabled 'closeness'. For example, the residents had the chance to interact in positive ways with the police in social events organised in the neighbourhood. The residents

usually valued this type of activities which promoted ‘closeness’, as one of the participants described:

> *“When the police and the citizens get in touch, for example, in neighbourhood meetings more frequently, the relationship with the citizens becomes closer. When the residents know the police officers in their neighbourhood and that they are available to support them when needed, their perception of the police changes”* – Organisation D.

In contrast, there were police behaviours which hindered positive interactions with the residents. As one interviewee expressed, “police officers patrolling the neighbourhood were defensive and unreceptive to residents’ concerns”, which in turn generated the perception among the people that the police “did not take into consideration the residents’ needs” (Organisation A). It is worth noting that such interactions do not exclusively refer to requests made by the residents or to contact initiated by the police in a more formal sense. The participants’ views seem to reflect mundane episodes when the residents had any type of interaction with the police in their neighbourhoods. More importantly, their opinions –as recalled by the participants– seem to touch on the notion studied in the Global North (i.e. Jackson and Sunshine, 2007) of how well represented, and taken care of, by the police they felt.

There were also non-positive and even negative references to interactions with the police, which might lead the residents to express adverse attitudes towards them. As discussed above in the notion of ‘legality’, police abuse –for example– could generate negative perceptions about them and even rejection from the citizens “because they see the police as opposite or contrary to the people” (Organisation H). This view reinforces the argument illustrated above on how police abuse and excessive use of force could give the impression to the residents that the police do not exert their power in justifiable ways.

In addition, the participants noted the relevance of ‘proximity training’ for the police, in generating closer relationships with people. One interviewee noted that “police forces who have adopted a proximity policing approach, have increased public confidence in them” (Organisation E). The reasons for having PCP and the role that a fair and respectful treatment plays will be discussed in Chapter 8. In the meantime, the emphasis given to ‘proximity training’ must be noted. A number of participants

mentioned that the 'proximity' approach endows police officers with the necessary skills they need to establish positive interactions with the citizens. In turn, this type of interaction facilitates the generation of 'closeness' between both parties, as one interviewee illustrated:

> *"It is very important to train police forces to get close to people, in order to change the residents' perceptions towards opinions that the police are there to help them… there are several police forces (in the municipalities) where we have worked. The proximity police forces have provided a good service, they are close, and the residents feel more confident"* – Organisation F.

It is worth noting that 'positive interactions' overlap with 'positive dialogue', which was mentioned above as the only normative motivation of obedience. Similarly, 'training' was mentioned above as an enabler of positive dialogue, and it also received a few mentions regarding normative alignment. This finding is consistent with initiatives of active and positive engagement of the police with the citizens implemented in the Global North (Mazerolle *et. al.*, 2013), aimed at improving people's opinions of the police. Community and neighbourhood-based policing are some examples of such efforts, which have been found to be useful for enhancing police legitimacy (Myhill and Quinton, 2010).

Hence, the references outlined in this section suggest that a close relationship with the citizens is considerably relevant in the process of 'justification of the police' and their work. Positive interactions enable 'closeness'. Otherwise, the people are less likely to perceive that the police have their interests in mind. The police thus convey a social meaning to the citizens that they share the same moral values, and that these are "appropriate, right and ethical" (Murphy *et. al.*, 2009: 19). Legality and normative alignment together embody a broader notion of justification of police authority, as explored in the next section.

Justification of police authority

The findings discussed hitherto, point to a perception among the residents that the police authority is not unquestioned. On the contrary, several examples mentioned above support the view that people must justify the police authority. This implies that

‘justification’ is more relevant than ‘authorisation’ of the exercise of police authority. As discussed in Chapter 2, ‘police legitimacy’ entails notions of power and recognition of authority, but also of justification of such power and authority. For the MMA residents, deferring to the police occurs, not when they authorise the police because they believe that it is the right thing to do, but when they perceive that the police exert their power and authority in justifiable ways. In this regard, the motivations that lead the residents to justify police authority are more inclined to be normative than instrumental. For instance, most residents of different neighbourhoods understand that the police have institutional authority, but they do not consider it valid. They recognise such an authority due to their needs of protection, as one participant expressed, on the recognition of the institutional role of the police in preventing and fighting crime:

> *“People give that recognition to the police, out of necessity ... they call the police because they know that they are the competent authority to handle certain situations (e.g. crime)”* – Organisation B.

As noted above, in settings with authoritarian traditions and a lack of effective crime control, people might value instrumental concerns as much, or even more, than normative ones (see: Sun *et. al.*, 2018). A minimum level of effective response to crime matters to the residents, but this does not necessarily translate into the justification of police authority. In other words, the recognition of the institutional role of the police does not adhere to the recognition of police authority in a normative way.

Other participants noted that many residents in the neighbourhoods where they worked expressed respect to the police institution. However, it represented the ‘acceptance of police authority under protest’. In some cases, when the residents were victims of police abuse, they would not express their respect to the police. On the contrary, they disrespected them and even challenged their authority in the form of arguments and struggles. These findings speak to the discussion in Chapter 3 on how the instrumental policing approach has led several police forces to commit abuses against the residents, which seem to have strained their relationships and impacted on police legitimacy. As Sunshine and Tyler (2003) argue, the imposition of police power that characterises such an approach causes resentment among the citizens, which encourages the latter to challenge the police. Therefore, in neighbourhoods where the

relationship between the police and the residents was deeply frayed or strained, there was no such recognition of police authority, as one interviewee illustrated:

> *"People had so much anger against the police, that they no longer represented a figure of power or inspired respect ... These attitudes also relate to the 'normality' of how the residents see the police in daily life, that is, if they always see the police officer in the neighbourhood, who is on his car, who does not salute and who abuses, well... the authority figure gradually gets lost and they stop seeing the police as an ally of a basic need, and they start to see them as devalued and discredited for mistreating people, or for simply not addressing an immediate need of the residents"* – Organisation H.

In contrast, the findings seem to indicate that normative motivations could be crucial for justifying police authority and, in turn, generating the perception among the residents that the police are legitimate. Importantly, such a notion of justification occurs when the people consider the police to be appropriate. As explained in Chapter 2, the 'appropriateness of the police' (Jackson and Gau, 2016: 10) involves perceptions of 'normative alignment' and 'legality'. In this regard, one participant shared a salient remark about the process of validation of the police as a power figure:

> *"Police officers are power figures and if young people feel that their identities are closer to the police, they will feel safer than if they are closer to other power figures who commit crimes, for example, Cartels (drug dealers)"*
>
> – Organisation H.

Such a mention is quite revealing as it captures how the lawful conduct of the police signals shared values and interests to the residents, that is, the extent to which the people perceive the police to be on their side. Instead, illegal behaviours are seen as opposed to such shared identity. This is particularly important with some social groups in the neighbourhood (i.e. youths), with whom the police usually have conflictive relationships.

Therefore, the references outlined above suggest that the residents in the MMA validate the police as a power figure if they believe that the police exert their authority in ways that are lawful and signal shared values with the citizens because they have people's needs at heart. In this context where reminiscences of authoritarianism persist, and crime and social hardship are higher and more unequally distributed across the city than in Global-North jurisdictions, 'normative alignment' and legality' seem to be more relevant than instrumental aspects for understanding the justification of police authority. The police are thus seen as appropriate insofar as they symbolically convey the values and lawfulness that they ought to represent (Walker 1996; Jackson and Sunshine, 2007). This notion of justification closely reflects operationalisations in Global-North studies, such as 'the police generally have the same sense of right and wrong as I do' (Hough *et. al.*, 2013). Interestingly, only 'justification of the police' appears to shape perceptions of 'police legitimacy' in the MMA. In contrast to the Global north, the notion of recognition (authorisation) of police authority in a normative sense, and deference to them because it is the right thing to do, does not seem to be particularly relevant.

Such an implication, however, partially contradicts previous findings in Global South jurisdictions, such as Ghana (Tankebe, 2010) and Brazil (Jackson *et. al.*, 2020). In these contexts, the ambivalence of the citizens about police misconduct favoured instrumental and non-normative reasonings over normative attributes for 'accepting' the police authority. These findings also suggest that the measure used in this study for operationalising 'police legitimacy' in subsequent quantitative analysis, might capture a wide range of understandings. The citizens could be respectful to the police for normative or non-normative reasons, as well as due to both types of motivations. This concern was anticipated above as part of the limitations of the measures available in the *'Así Vamos* 2018' dataset, and a reason for expanding the understandings of PJ concepts in this chapter. This constraint will be considered in the discussion of the results included in Chapter 8.

7.3.3. PCP and CP

As discussed in Chapter 2, PCP consists of the belief that "the police are technically competent in the role assigned to them" and that they are fair and "have the right intentions" in their actions, by placing "the interests of others above their own"

(Jackson *et. al.*, 2013: 64-65). In addition, the research in the Global North (i.e. Jackson and Gau, 2016) on CP has theorised that the normative notions involved in 'appropriateness of the police', and PCP, trigger ethical principles in the citizens' minds to obey the law, since they feel motivated to act on behalf the group to which they belong. The interplay of PCP and CP with other concepts considered in the PJ framework will be analysed in Chapter 8. In the meantime, the task in this last section involves exploring the extent to which the MMA residents' understandings accord to the views documented in the Global North.

For instance, the findings discussed above suggest that PCP might be the result of close relationships between the police and the people. This connection between normative considerations and PCP is clearer in other experiences shared by the participants. Many of them worked in projects across several neighbourhoods, where they witnessed a disconnection between the residents and the police. The narratives that emerged during the interviews generally referred to the efforts made to facilitate the rapprochement of the police to the residents. At the end of such projects, they noticed improved relationships between both parties, as one participant exemplified:

> *"Over time, we realised that the people themselves contacted the police proactively, without the need for us to intervene or promote that contact. This happened gradually after a few months of our work in those neighbourhoods, when people had begun to have confidence in the police a little more"* – Organisation A.

The reference above implies a gradual change in the residents' attitudes towards the police as people perceived the officers differently. This shift in the public opinions of the police appeared to be related to the residents' perceptions that 'closeness' was accomplished. Conceptually, this close relationship is the result of fulfilling citizens' expectations about the normative and instrumental aspects of trust (see: Hardin, 1998), based on the assessments that they make of their interactions with police officers. As researched in the Global North, the extent to which such aspects of trust are satisfied, determines how much closeness and, thus PCP, could be achieved. Therefore, this finding supports the view that PCP is an outcome of 'trust in the police', that is, the latter shapes long-term confidence in the police as an institution (Luhmann,

1988). On these terms, PCP can be understood as a situation in which generalised or full trust in the police is achieved.

As discussed in Chapter 4, it is important to avoid taking all the comments from the participants at face value, as there is always the possibility that organisations are promoting their agendas by highlighting the success of their activities. Nevertheless, other participants acknowledged the limitations of their work, while emphasising their achievements in a comparative fashion. For instance, one of them recalled that, during the implementation of their projects in two neighbourhoods in different municipalities, the relationship of the residents with the police was more conflictive in one place than in the other. The interviewee was keen to share the results of the organisation's work, noting some caveats:

> *"In both neighbourhoods, crimes decreased. However, in 'neighbourhood1' the reduction in property crimes was 58%, while in 'neighbourhood2' it was 16% at the end of our intervention. The difference in what a good relationship between the police and the residents can do is very marked in one neighbourhood compared to the other. Although, it might also be that the significant increase in the police presence in 'neighbourhood1' related to our project could have contributed to a decrease in crime"* – Organisation C.

The participant was sincere in recognising that police presence was a more important component of the project in one neighbourhood than in the other. However, the police presence became important as the residents in the 'neighbourhood1' managed to establish a closer relationship with the police than in 'neighbourhood2'. This example thus supports the view that a cordial and closer relationship could, not only foster PCP, but also propitiate CP. In this sense, the quote above echoes the relevance of 'social group membership' for enabling CP. Insofar as the residents believe that they share the same values and interests with the police, they are more likely to collaborate with them (Tyler and Jackson, 2013).

It thus seems that the understandings of PCP and CP are conceptually consistent with those in the Global-North research. The measures used for operationalising them capture considerably similar views to those expressed in the measures used in this study. For instance, PCP has been represented as the extent of agreement with the belief that 'I have a lot of confidence in the police in this area', whereas CP has been

framed as the likelihood that ‘you would call the police to report a crime you witnessed?’ or ‘report suspicious activity near your house to the police?’ (Jackson and Bradford, 2010; Jackson *et. al.*, 2013).

In terms of their roles in PJ theory, the findings so far suggest that PCP and CP are the result of judgements captured in ‘trust in the police’ and ‘police legitimacy’. The references discussed above also follow the discussion in Chapter 3 about the existence of a relationship between PCP and CP. On one hand, PCP in Nuevo León hints a declining trend since 2017. On the other hand, there are signals of low collaboration with the police, evidenced by the dark figure of crime, which could be related to a waning PCP. However, the interplay of the considerations that shape PCP and CP must be further analysed, in Chapter 8.

7.4. Conclusion

This chapter presented the findings from the analysis of validity and consistency of central concepts in PJ in the MMA. The preliminary quantitative analysis included an assessment of the measures used in this study for operationalising such concepts. The results revealed very strong correlations among the indicators, which poses a concern that they might measure a same underlying concept. Notwithstanding the strengths of their associations, a robust CFA showed poor goodness of fit in all the models tested, and some of these even failed to converge. These results support the discriminant validity of the indicators, that is, they are separate and distinct constructs.

In addition, the analysis was complemented with data obtained from interviews with ten representatives of organisations. The exploration of their experiences working across several MMA neighbourhoods, was useful for shedding light on the understandings of different groups of residents about the PJ concepts studied. The findings suggest both points of consistency and difference with the research in the Global North. Regarding the points of coincidence, a first example is that ‘fair and respectful treatment’ reflects ‘trust in the police fairness’, whereas ‘police presence’ touches on ‘trust in police effectiveness’. Second, a notion of ‘closeness’ mirrors ‘normative alignment’, insofar as the people perceive that the police take care of their needs. Third, the residents’ perceptions involve notions of ‘legality’ and ‘normative alignment’ which are central in justifying the police authority and, thus, shaping police

legitimacy. Fourth, the participants provided a number of examples and illustrations in the MMA, which suggest that 'trust in the police' above are distinct from those pertaining to 'police legitimacy' (Gau, 2011; Reisig *et. al.*, 2007). Trust in the police refers to normative and instrumental aspects involved in the work done by police officers. Police legitimacy captures notions of recognition and, more importantly, of justification of the police right to exercise their power and authority (Tyler and Jackson, 2013: 94). This leads to a fifth point, on how 'obedience to the police' is not a subconstruct of police legitimacy and must be better understood as an outcome. Sixth, although there are non-normative and instrumental reasons for obeying the police, normative motivations appear to be more relevant. Seventh, the findings lend support to the consistency of the understandings of PCP and CP.

In contrast, the points of difference are first observed in the distinctive understandings of 'trust in police effectiveness' in the MMA, such as 'responsiveness of the police'. Second, the residents expect that, as part of 'preventing and tackling crime', the police 'follow up and update' them about the status of an incident previously reported. Third, some results are similar to those obtained in some Global-South studies. For instance, police abuse and corruption are normative considerations which appear to be relevant in influencing the residents' perceptions about the treatment received by the police and the lawfulness of their actions. These considerations have been addressed with especial interest in some Global-South studies (i.e. Ordu and Nnam, 2017; Tankebe, 2010).

Fourth, the findings above do not support the view that the citizens recognise the police authority in such a way that they feel morally obliged to obey them. Although most references stressed normative features which theoretically inform police legitimacy, such aspects seem to capture the residents' perceptions of the 'appropriateness of the police', rather than a sense of obedience. Several references outlined above suggest that the residents across different neighbourhoods obeyed the police voluntarily when they believed that the police exerted their power lawfully and had people's needs at heart. Rather than authorisation of police power and authority, it is justification what seems to be salient in the MMA. These findings are consistent with the most recent and refined PJ research produced in similar contexts (i.e. Jackson *et. al.*, 2020), which points to the key role of the normative features of police legitimacy for eliciting desired outcomes. In this sense, there were comments suggesting that

proximity training is necessary for propitiating a close relationship between the police and the citizens.

Fifth, it was mentioned above that normative motivations seem to be more important than non-normative and instrumental considerations for inducing obedience. This finding must be nuanced though, since several references were made –to a lesser extent– about people's responses to instrumental and non-normative motivations. This seems to occur when they are left without alternatives, or in vulnerable situations in their relationships with the police. However, further analysis is needed to gain a better understanding of the interplay of these, and other considerations involved in PJ theory for eliciting PCP and CP, to which the discussion now turns.

Chapter 8. Individual-level explanations of PCP and CP

8.1. Introduction

The main argument of this thesis is that trust in police fairness –founded on PJ theory– could weigh in more importantly than trust in police effectiveness to strengthen police legitimacy in the eyes of the citizens and, in turn, elicit PCP and CP; accounting for individual and neighbourhood-level characteristics, in a less democratic jurisdiction. The first step in addressing this argument was presented in Chapter 7, by assessing the conceptual validity of the measures used in this study for operationalising the key PJ concepts in the context of the MMA. The statistical analysis of such measures indicated their independence from each other. These results were complemented with qualitative data, according to which the MMA residents' understandings of 'trust in police fairness', 'trust in police effectiveness' and 'police legitimacy' –central concepts of PJ theory– are closely similar to those documented in Global-North research. The next step is to analyse the interplay of such PJ concepts in shaping PCP and CP. This is the aim of this chapter, to which the discussion now turns.

This chapter seeks, more generally, to examine the extent to which the results of such an interplay are consistent with the evidence produced so far in the Global North. More specifically, it seeks to test hypotheses 1 to 4 and, thus, answer research questions 2 to 4 included in Chapter 4. This chapter is divided in five sections. The first section includes bivariate analyses of the individual-level variables considered in this study, which were outlined in Chapter 4. The second section is focused on answering research question 2, that is, whether 'police legitimacy' could work together with 'trust in police fairness' more strongly than with 'trust in police effectiveness' for influencing PCP and CP. This task involves two steps. One, is to analyse the direct relationships between both aspects of trust and the outcome variables (Figure 1 in Chapter 2). The other is to analyse indirect relationships, whereby 'trust in police fairness' and 'trust in police effectiveness' shape 'police legitimacy' and, in turn, they work together for influencing PCP and CP (Figure 2 in Chapter 2). This analysis refers to the role that 'police legitimacy' could have in mediating the relationships between the aspects of trust and the outcome variables. In the third section, the results of whether PCP has a mediating role in the relationship between 'police legitimacy' and CP (Figure 3 in Chapter 2) are discussed, for answering research question 3. The fourth section

includes ‘contact with the police’ in the analysis, to answer research question 4 on how it might affect PCP and CP. In addition, individual sociodemographic characteristics and victimisation are considered in the models estimated. It is worth noting that the directionalities indicated in the hypothetical models do not imply causality. Instead, these relationships reflect "pathways of correlations" among the measures used, as in previous SEM studies of PJ (i.e. Jackson *et. al.*, 2012: 1058). The results thus offer evidence in support of the relative importance of each hypothetical pathway on shaping PCP and CP.

Following the sequential research strategy adopted in this project, and discussed in Chapter 4, the results are complemented with the analysis of qualitative data in the fifth section. As discussed in Chapter 7, there is a limited number of measures touching on the PJ concepts. Therefore, the vicarious experiences of the participants interviewed in this project contribute to expand the understanding of the hypothetical relationships analysed, by identifying other features of ‘trust in the police’ and ‘police legitimacy’ which might influence the outcome variables. These illustrations thus contribute to enhance the results (Neuman, 2013: 166).

8.2. Bivariate analysis of individual-level variables

As described in Chapter 7 (see Table 11), the central concepts of PJ are strongly and significantly associated with PCP and CP. In particular, ‘trust in police fairness’ shows stronger correlations with ‘police legitimacy’ and the outcome variables, than ‘trust in police effectiveness’. Moreover, there is a strong and significant association between PCP and CP. These correlations thus lend preliminary support to the direct and indirect relationships among such indicators set out in Hypotheses 1 and 2 and 3, in Chapter 4. However, these associations do not offer any insights about whether other individual-level predictors could also shape the outcome variables. Therefore, this section tests the association between the individual-level variables and PCP and CP, to provide an overview of the variation across the individuals in the MMA, included in the ‘*Así Vamos* 2018’ dataset. Table 10 below shows correlations which suggest how the outcome variables vary according to individual characteristics, as outlined in Chapter 4. Almost all the variables are dichotomous, except ‘Age and ‘SES’ which are continuous. The factor scores obtained from the CFA of SES in Chapter 6 were used in this bivariate analysis. The correlations presented include a combination of

tetrachoric and point-biserial coefficients, as these are appropriate for measuring dichotomous-dichotomous and dichotomous-continuous associations, respectively (Khamis, 2008). The point-biserial correlation coefficients are grey-shadowed for ease of distinction. As in Chapters 6 and 7, the figures below indicate strength, direction and level of significance.

Table 10. Correlations between individual-level explanations and outcome variables°

Variables	PCP	CP	Gender	Contact with police	Victimised individuals	Age
Gender	.000	.008	-	-	-	-
Contact with police	-.291***	-.139**	.100*	-	-	-
Victimised individuals	-.412***	-.214***	.027	.697***	-	
Age	.151***	.090***	-.010	-.086***	-.102***	-
SES	.158***	.205***	.011	.017	-.019	-.009
Significance: (***) = p < .001 (**) = p < .01 (*) = p < .05						

Source: *Así Vamos* 2018. (°) = Pairwise computation in Stata; unweighted data. Point-biserial coefficients are grey-shadowed. Sample size = 2,392.

It seems that 'gender' (female = 1) has no relevant relationship with PCP and CP, since the corresponding coefficients are null and statistically insignificant. In addition, it is only significantly ($p < 0.05$) associated to 'contact with the police', although within the 'very weak' range according to the conventions for bivariate analysis involving nominal indicators (De Vaus, 2014; Healey, 2015; Khamis, 2008). This is consistent with the findings of some studies in the Global North (i.e. Miller and Davis, 2008; Shuck *et. al.*, 2008) regarding very weak or insignificant associations with PCP and CP attributable to differences between females and males.

The coefficients above also show that 'Age' has a moderately weak association with PCP and a weak one with CP. However, both coefficients are highly significant and indicate positive directions, as expected. This means that, consistent with the results from previous research (i.e. Brown and Benedict, 2002; Reisig and Parks, 2000), as age increases the respondents are more likely to be confident in, and cooperate with, the police. Similarly, age has moderately weak associations with 'contact with the police' and 'victimised individuals', which are consistent with the

literature discussed in Chapter 2, on how negative interactions between young males and the police strain their relationships. These correlations also speak to the discussions in Chapter 3 and Chapter 7 on the complicated relationship between young people and police officers in the MMA, and the higher risk of the former of experiencing victimisation.

The figures for SES show that its associations with the outcome variables are within the moderate to moderately weak range. These are highly significant, contradicting previous studies in Latin America (i.e. Jackson et. al., 2020; Sandoval, 2016), on the insignificance of socioeconomic variables. In addition, the correlations exhibit positive directions, meaning that, for example, individuals with higher SES are more likely to have PCP and willingness of CP. This positive association contradicts the results of previous research (Bergman and Flom, 2012) which found, for example, that individuals with lower socioeconomic level are more likely to have PCP. The rest of the coefficients are weak and insignificant.

Regarding 'contact with the police', this shows a moderately strong association with PCP and a moderately weak one with CP. Both negative coefficients appear to indicate that the respondents who had recently contacted the police are less inclined to lend their confidence and cooperation to them. It seems that victimisation has a relevant role in shaping those contact-based perceptions, consistently with the findings of previous research (i.e. Bradford *et. al.*, 2009). First, the correlation with 'victimised individuals' (.697***) is very strong and significant, indicating that they are among the most likely to contact the police. Second, the respondents who had been victimised are less likely to express PCP and CP, as indicated by the strong (-.412***) and moderately strong (-.214***) negative associations, respectively. It thus seems that the quality of contacts between the police and victimised individuals influences the outcome variables to a great extent. Consistently with the findings from some Global-North studies (i.e. Bradford, *et. al.*, 2009; Skogan, 2006), the preliminary results above do not offer support to hypothesis 4 outlined in Chapter 4, since 'contact with the police' mainly translates into less favourable opinions about them. Nonetheless, the same research indicates that negative opinions are related to unsatisfactory encounters, as opposed to positive interactions which could improve people's views of the police.

This bivariate analysis has offered an indication of the association between the individual-level variables outlined in the hypothetical model of this thesis. Table 10 above shows, not only how different predictors might shape PCP and CP, but also

emerging patterns between certain predictors with implications for informing the PJ framework. However, the outcome variables are likely to be explained by the interplay of all those predictors, rather than by single associations between two variables. Even if the theory has informed these relationships, it is not possible to rule out the occurrence of spurious correlations. Since these considerations deserve attention, a more sophisticated analysis is thus needed to identify the most relevant variables explaining PCP and CP.

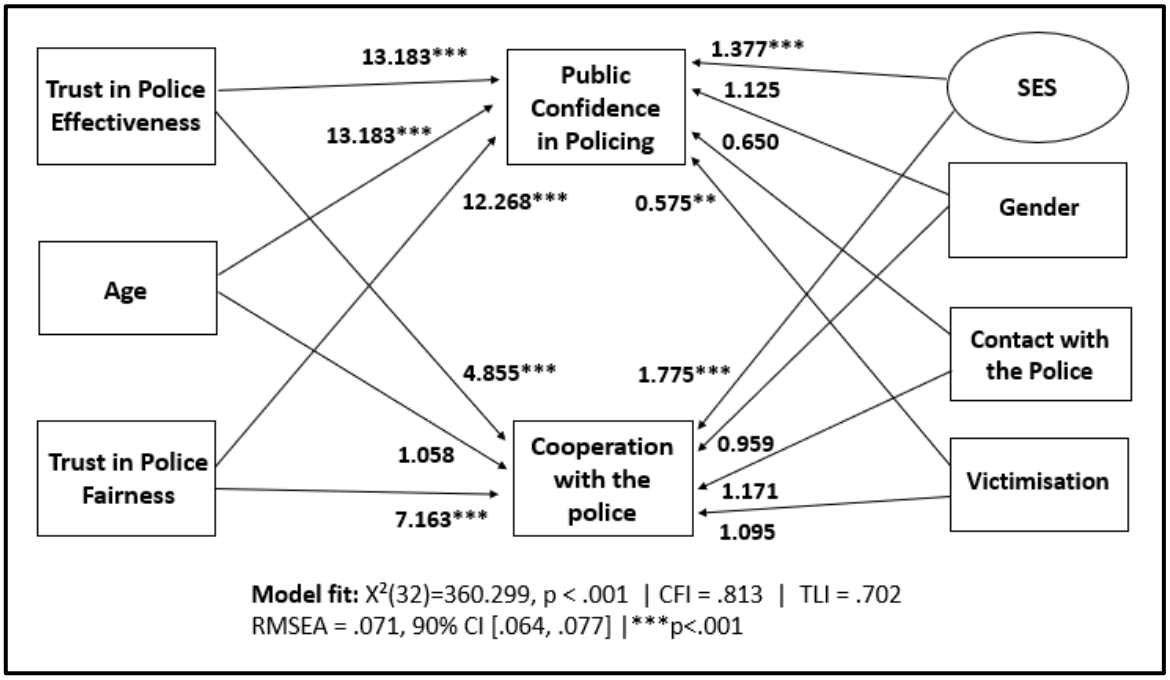
8.3. Competing aspects of trust in the police

As discussed in Chapter 2, PJ has shown to have a more relevant role than instrumental concerns –such as 'effectiveness' and 'deterrence'– in generating among citizens a perception that the police are legitimate and, in turn, contribute to gain the public's confidence and cooperation for them. In addition, procedurally just actions could have such positive effects, regardless of the outcomes derived from their decisions. Drawing on the PJ framework, this section analyses whether 'trust in police fairness' could be more influential than 'trust in police effectiveness' for eliciting PCP and CP (Hypothesis1). This distinction is key for the analysis, since it was discussed in Chapter 3 that the instrumentally driven policing approach in the MMA shows limitations for sustaining and even gaining PCP and CP. Nevertheless, this must be assessed more robustly.

To assess which of the two aspects of trust could be more influential, Figure 55 below reports the results of the estimation of a logistic SEM model with the process-based 'trust in police fairness' on one hand, and the outcome-based 'trust in police effectiveness', on the other. As outlined in Chapter 5, this model was estimated with the WLSMV method in Mplus 6.1. The two predictors were not allowed to covary, following the recommendation of Muthén (2012) for observed exogenous variables in models with such an estimation method. The coefficients represent the odds ratio corresponding to the logit (log-odds) coefficients, which are 1.6 times larger than the original probit coefficients. It is worth noting that estimating individual-level models like this one, is helpful to distinguish potential specification errors. At this stage the main purpose of the analysis is to reveal that the parameters make sense (see: Kline, 2011: 352-353).

The coefficients of 'trust in police fairness' and 'trust in police effectiveness' thus represent the odds ratio of reporting PCP and CP, while controlling for individual characteristics, contact with the police, and victimisation. These control variables will be discussed further below, while their logit coefficients are included in Model 4, in Appendix 4.

Figure 55. Competing aspects of trust predicting PCP and CP



Source: *Así Vamos* 2018. | Sample size = 2,049.

The results show that all the coefficients are highly significant. The odds of individuals in the MMA of having PCP are 13.18 times higher for those with 'trust in police effectiveness' than those without, whilst those with 'trust in police fairness' have 12.26 times higher odds. In addition, individuals with 'trust in police effectiveness' have 4.85 times higher odds of willingness of CP, whereas the odds for those with 'trust in police fairness' are 7.16 times higher than those without. These results suggest that, after controlling for other individual-level predictors, the instrumental side of trust has a heavier weight in gaining the public's confidence, but its normative side seems to be more relevant for obtaining their cooperation.

At first sight, these results show partial consistency with the evidence produced in consolidated democracies in the Global North (Jackson and Bradford, 2010;

Jackson *et. al.*, 2013, Hough *et. al.*, 2013) on the greater effects of process-based normative considerations. For instance, it seems that 'fairness' is not entirely the most relevant aspect of trust for the MMA residents. Concerns related with 'effectiveness', such as 'police presence', seem to indicate that a minimum level of police competencies and quality of the services they deliver are prerequisites that the MMA residents particularly value. As in other less democratic contexts, the police in the MMA must demonstrate their usefulness, before being "caught up heavily" in 'trust in police fairness' as in the UK (Jackson *et. al.*, 2013: 67).

In addition, the two aspects of 'trust in the police' appear to be relevant for gaining the public's confidence and cooperation, regardless of the differences in individual characteristics (age, gender and SES). In general, the coefficients of these characteristics drop or turn statistically insignificant from Model 1 to 4 (Appendix 4), due to the introduction of the two aspects of trust. For instance, in Model 1 'Age' has a statistically significant and positive influence on both outcome variables, although slightly higher on PCP. Since this variable was standardised, its coefficient represents the odds ratio for one standard-deviation-change. For example, when age increases in one standard deviation, the odds of individuals in the MMA of having PCP are increased in 36%, and they have 20% higher odds of CP. These results indicate that the likelihood of reporting the outcome variables increases with age, which is consistent with the findings of some studies in the Global North (i.e. Brown and Benedict, 2002; Merry *et. al.*, 2012; Reisig and Parks, 2000) and one in Mexico (Caamal and Reyes, 2020), that youths tend to have more strained relationships with the police than adult people. Nevertheless, in Model 4, the odds slightly drop to 29% for PCP, while turning marginal and statistically insignificant for CP. The two aspects of trust thus appear to capture some of the effects of this individual characteristic, indicating the relevance that 'trust in the police' can have to enhance PCP and CP, regardless of the respondents' age.

Similarly, 'SES' has positive and significant influence on both outcome variables in Model 1. It is a factor score, as estimated in Chapter 6, and thus represents a standardised measure. One standard-deviation increase in this predictor increases 74% the odds of having PCP and twice the odds of reporting CP. Despite the drop in Model 4, the coefficient shows the same pattern. In this sense, people with a more favourable economic position in society are more likely to be confident in the police and cooperate with them. This is consistent with some evidence from Mexico (Caamal

and Reyes, 2020), but contradicts other studies which show that people with lower SES are less likely to have confidence in the police (Jackson *et. al.*, 2020) and collaborate with them (Bergman and Flom, 2012).

In both Models 1 and 4, 'Gender', does not have any meaningful influence on PCP and CP. This finding is consistent with the results of some studies from the Global North (i.e. Miller and Davis, 2008; Shuck *et. al.*, 2008) and two from Mexico (Caamal and Reyes, 2020; Sandoval, 2016). As Merry *et. al.*, (2012) note, 'Gender' has been found to be an inconsistent predictor in PJ research.

The goodness-of-fit measures show mixed results. While the coefficient of RMSEA is within the acceptable threshold (0.06–0.10), the coefficients of CFI and TLI are below the potentially useful threshold of 0.90 (see: Gau, 2010). This indicates that the aspects of trust and other individual-level considerations partially explain the likelihood of the MMA's residents of expressing PCP and CP. Consequently, the results discussed offer only partial support to Hypothesis 1. Other potential explanations must be considered in the analysis, to which the discussion now turns.

8.4. The mediating role of police legitimacy

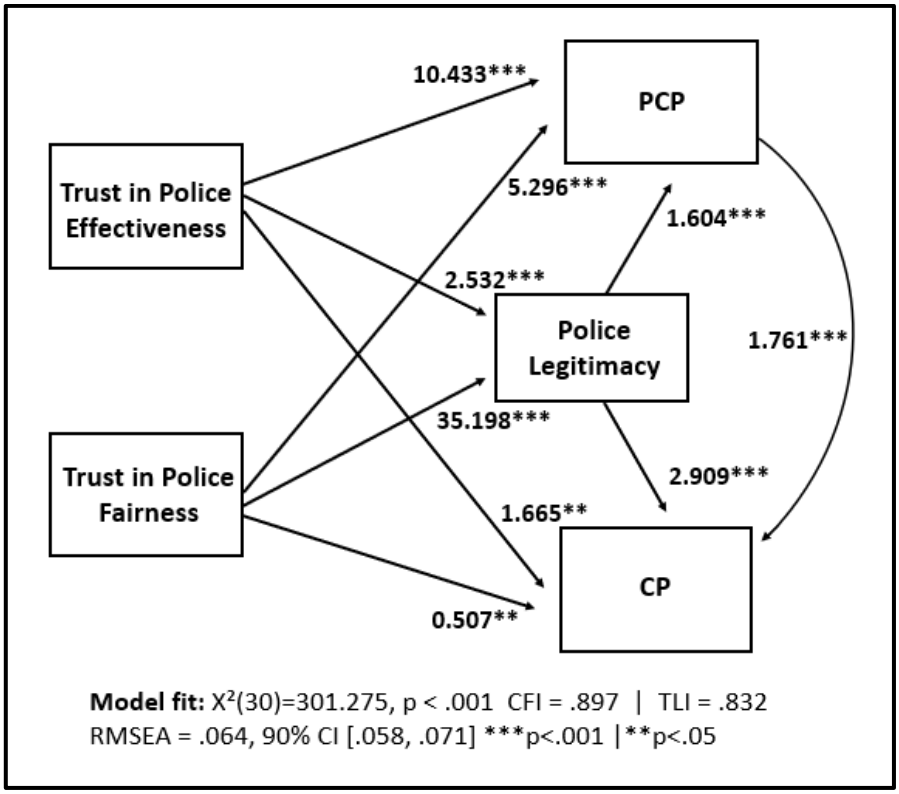
So far, each aspect of 'trust in the police' has shown to be more influential on one particular outcome variable. However, the hypothetical model proposed in Chapter 4 indicates that 'police legitimacy' intertwines with such aspects of trust for shaping the outcome variables. Its inclusion at this second stage of the analysis contributes to test Hypothesis 2 on whether 'trust in police fairness' is more influential than 'trust in police effectiveness' for generating police legitimacy and, in turn, eliciting PCP and CP.

Figure 56 below expands the relationships shown above in Figure 55, by including 'police legitimacy' as an additional predictor to the fitted binary SEM model, while controlling for other individual-level variables. The latter are omitted in Figure 56 for visual ease. As explained in Chapters 4 and 7, police legitimacy was measured as "Is the treatment of the citizen to the police officer respectful?", since it closely captures the notions of **recognition of police authority** and **deference to them**. The coefficients of the predictors represent the odds ratios of reporting PCP and CP.

The results showed that the analysis with fewer variables (Model 5 in Appendix 4) did not significantly alter the coefficients of the two aspects of trust, police legitimacy,

and the other predictors, compared to an alternative complete model. As outlined in Chapter 5, having fewer predictors makes the model more parsimonious, which is preferred to a more complex alternative (Gau, 2010). In addition, it slightly improved the fit indices. The coefficient of RMSEA is lower than in Figure 55 and within the acceptable threshold. Similarly, the CFI and TLI are higher, although still below the useful threshold.

Figure 56. Competing aspects of trust and police legitimacy predicting PCP and CP



Source: *Así Vamos* 2018. | Sample size = 2,189.

All the coefficients corresponding to the aspects of trust and police legitimacy are significant, although those related with CP are slightly lower. The direct effects of both types of trust on PCP are considerably higher than the direct effects on CP. This difference is greater than in Figure 55. Moreover, the odds of reporting CP are 49.30% lower (1 - .507 = .493) for the respondents who trust police fairness than those who do not. These results indicate that, when the model accounts for 'police legitimacy', the direct effects on the outcome variables decrease, especially on CP –in magnitude and significance. The drop in the coefficients is considerably larger for 'trust in police

fairness' than for 'trust in police effectiveness', compared to Figure 55 above. Nonetheless, the effects of the two types of trust on police legitimacy are highly significant, and that of 'trust in police fairness' is considerably large. Police legitimacy thus seems to capture a portion of the direct effects of the competing aspects of trust on the outcome variables, which offers a first signal of its mediating role.

To further analyse the significance of such a mediation, the indirect effects must be considered. These were estimated in Mplus 6.1, multiplying the logit coefficient of the direct effect of each aspect of trust on police legitimacy, by the logit coefficient of the direct effect of the latter on each outcome variable. These calculations were then transformed to odds ratios. The complete indirect effects are presented below, in Table 11, for ease of interpretation.

Table 11. Effects mediated by police legitimacy°

Predictor	Outcome	Effect
Trust in police effectiveness	PCP	1.551***
Trust in police fairness	PCP	5.387***
Trust in police effectiveness	CP	2.696***
Trust in police fairness	CP	44.835***

Source: *Así Vamos* 2018. (°) = odds ratios
Sample size = 2,189 | ***p<.001.

In addition to the highly significant coefficients, it is worth noting the larger magnitudes of the indirect effects on CP, compared to the direct effects. However, the indirect effects on PCP do not show substantial increases. For instance, the indirect effect of 'trust in police effectiveness' on CP is higher than its direct effect, as expected, and its indirect effect on PCP is actually lower than its direct effect.

It seems that citizens' perceptions of police legitimacy moderate the influence of 'trust in police effectiveness' on PCP. One possible explanation is that, as shown above in Figure 56, 'police legitimacy' has a weaker influence on PCP (β=1.60) than it does on CP (β=2.90). Another explanation could be related to previous findings in the Global-North research (i.e. Sunshine and Tyler, 2003; Jackson *et. al.*, 2013) and some studies in the Global South (Jackson *et. al.*, 2020), about the limitations of instrumental policing for enhancing people's perceptions of police legitimacy. As discussed in

Chapter 2, instrumental concerns can include the use of force and tactics of dominance in interactions with the public, for ensuring compliance and achieving results. However, these police behaviours might in fact weaken police legitimacy.

Figure 56 also shows that 'trust in police fairness' has a considerably stronger effect than 'trust in police effectiveness', on police legitimacy. As expected, this result offers three important insights. First, it is consistent with previous findings in the Global-North research (i.e. Sunshine and Tyler, 2003), according to which procedural fairness is the predominant antecedent of police legitimacy, compared to instrumental concerns. Second, 'trust in police fairness' and police legitimacy appear to work in tandem to elicit PCP and CP, as evidenced in earlier PJ studies (i.e. Tyler and Huo, 2002). Third, and more importantly, 'police legitimacy' has a stronger combined effect with 'trust in police fairness' than with 'trust in police effectiveness' in strengthening PCP (Jackson and Bradford, 2010) and CP (Sunshine and Tyler, 2003).

The results above thus offer support to the mediating role of police legitimacy proposed by Tyler, Jackson and colleagues, according to which the influence of the normative underpinnings of PJ "flow through legitimacy" (Sunshine and Tyler, 2003: 527; also see: Jackson *et. al.*, 2012; Pósch *et. al.*, 2020). These results also reinforce the view that 'trust in police fairness' has a different nature than 'trust in police effectiveness'. The latter appears to show stronger direct effects on the outcome variables than the former. In addition, the direct effects of 'trust in police fairness' are not as strong as its indirect effects mediated by police legitimacy. It seems that 'trust in police fairness' must work indirectly through –and together with– 'police legitimacy' to influence the outcome variables. Insofar as 'trust in police fairness' shapes 'police legitimacy', their combined influence contributes the most to enhance PCP and CP. The greatest potential of such an effect though, appears to lie in favouring CP more than PCP. For instance, it strikes that trusting police fairness and perceiving them legitimate increases the odds of CP in 44.83 times, in contrast to the decreasing odds of its direct effect.

The findings also indicate consistency with the key PJ foundations. In a context such as the MMA, where crime is unevenly distributed and mainly concentrated in socially disadvantaged areas, where the institutions have failed to deliver a basic level of security and the relationships between the police and the citizens are strained, it is not surprising that 'effectiveness' on its own has become more important than 'fairness' in influencing PCP and CP. This priority echoes previous findings in the Global South

(i.e. Sun *et. al.*, 2017; Tankebe, 2009) and even in some Global-North studies (i.e. Jackson and Bradford, 2010). Nevertheless, the findings also show that 'trust in police fairness' can induce the perception among the citizens that the police are legitimate. In turn, perceptions of 'police legitimacy' (respectful treatment to the police officer) work together with normative concerns of 'trust in the police' (fair treatment) more strongly than with instrumental concerns (police presence) to enhance PCP and CP. These insights thus support the view that 'fairness' is of great importance for conveying to the citizens that the police act on good faith for the people's benefit (i.e. Murphy *et. al.*, 2009), which motivates 'truly free consent' with them (Pósch *et. al.*, 2020). Consensual deference then contributes to strengthen PCP and CP (Merry *et. al.*, 2012). Overall, these findings offer support to Hypothesis 2.

Regarding the other predictors, 'gender' is the only individual characteristic excluded as it systematically yielded insignificant coefficients. It is worth noting that 'contact with the police' was also excluded from Model 5, due to non-significance. This seems to be intricated with 'victimisation' and the outweighing effects of the aspects of 'trust in the police' and 'police legitimacy', as will be addressed further below. The other predictors –Age and SES– present very similar patterns, compared to Model 4. For instance, the effects of SES on the outcome variables are both significant and positive. One standard deviation increase in SES also increases in 36% –instead of 37% in Model 4– the odds of having PCP. It also increases in 84% the odds of reporting CP, from a 77% in Model 4. Similarly, both coefficients of 'Age' are reduced and only that one related with PCP is significant. These findings suggest that 'Age' is particularly relevant for explaining the extent to which individuals have PCP, whereas SES has a specific weight in explaining both PCP and CP.

8.5. The mediating role of PCP

As discussed in Chapter 2, PCP is conceptualised as the result of the interplay of competing aspects of 'trust in the police' with 'police legitimacy', which means that it reflects levels of overall trust in the police derived from the recognition (and justification) of their authority. It was also mentioned that the aspects of trust and 'police legitimacy' trigger normative or non-normative motivations on people's minds that favour their collaboration with the police. This means that 'police legitimacy could directly elicit PCP and CP but, from a theoretical point of view, it could also flow through

PCP to indirectly propitiate CP (see: Jackson *et. al.*, 2013: 153). Despite these theoretical grounds, the pathway of 'police legitimacy' on CP mediated by PCP has not been empirically tested. In addition, the context of the MMA discussed in Chapter 3 also suggests the existence of a relationship between these two outcome variables. On one hand, PCP in Nuevo León hints a declining trend since 2017. On the other hand, this decline could explain the low collaboration with the police, as evidenced by a high level of hidden crime. Therefore, the potential role of PCP in influencing CP must be further analysed.

This section thus tests Hypothesis 3, on whether PCP has a mediating role which enhances the relationship between police legitimacy and CP. Figure 56 above includes the relationships among these three variables. It shows a direct effect of 'police legitimacy' on CP of 2.909 odds, meaning that those who perceive the police to be legitimate are almost 3 times more likely than those who do not perceive such legitimacy to report CP. Similarly, the respondents with PCP have 76.1% higher odds than those without, of reporting CP. Interestingly, the indirect effect, obtained by multiplying the paths of police legitimacy-PCP and PCP-CP equals 1.306 odds ratio. Thus, the odds of willingness of CP are 30.6% higher for those who consider the police legitimate and have confidence in them. An indirect effect with a lower magnitude than the direct effects is a first signal of the contribution of PCP as the mediating variable.

To further assess if PCP mediates the relationship between 'police legitimacy' and CP, this analysis adopted the same approach used above for the mediating role of police legitimacy. Table 12, below, shows the indirect effect of police legitimacy on CP. The full indirect effects of the competing views of trust on CP are also included. All the coefficients are highly significant. The indirect effect of 'trust in police fairness' on CP is the largest, which is reasonable considering its large effect on police legitimacy. In contrast, the considerably lower contribution of 'trust in police effectiveness' on 'police legitimacy' explains its seemingly lower indirect effect on CP.

These findings have one clear implication. Over and above the effect of 'police legitimacy', PCP could have also an influence on CP. Thus, in contrast to previous PJ research, the results above provide evidence in support to the indirect pathway between 'police legitimacy' and CP, mediated by PCP. Hence, they align with the view that PCP can work together with police legitimacy to influence CP. However, this also means that people's confidence in policing can potentially either reinforce or weaken the extent of collaboration with the police, as the coefficients of the indirect effects

indicate, which are lower than those of the direct effects. Thus, the findings fail to support Hypothesis 3.

Table 12. Effects mediated by PCP°

Predictor	Outcome	Effect
Police legitimacy	CP	1.306***
Trust in police fairness and police legitimacy	CP	2.593***
Trust in police effectiveness and police legitimacy	CP	1.281***

Source: *Así Vamos* 2018. (°) = odds ratios
Sample size = 2,189 | ***p<.001.

8.6. Contact with the police

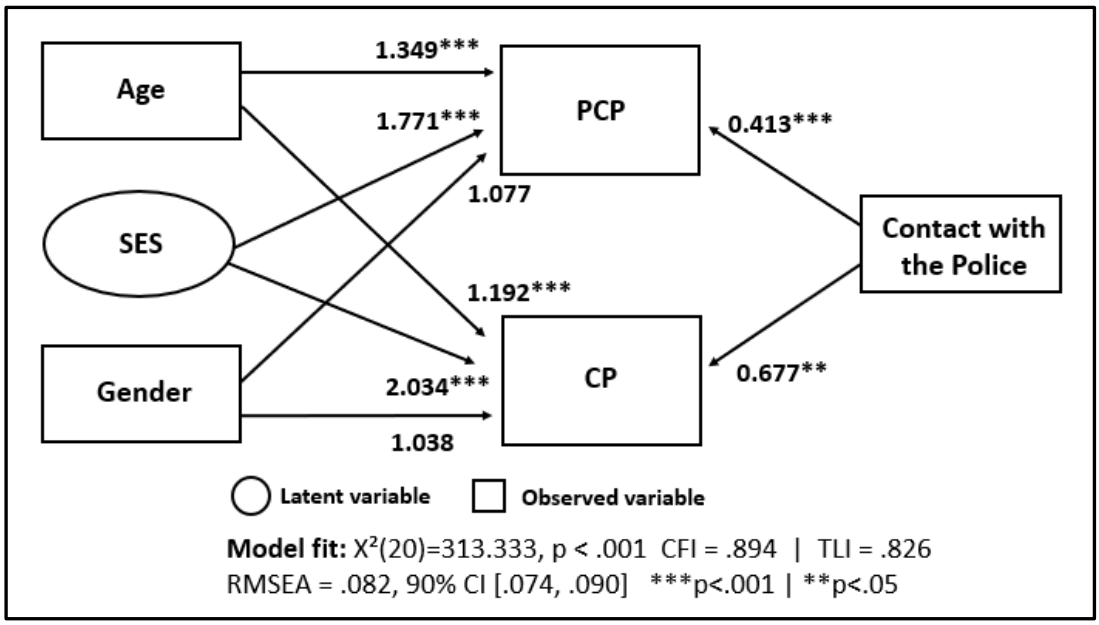
It was discussed in Chapter 2 that having had recent contact with the police and policing efforts of active engagement with citizens have shown to yield inconsistent results in terms of how such contacts contribute to enhance or worsen PCP and CP (i.e. Bradford *et. al.*, 2008; Skogan, 2009; Gau, 2014). The most recent evidence produced in the Global North (i.e. Pósch, 2020; Pósch *et. al.*, 2020) has shown no significant impact when people got in touch with the police recently; if any, they tend to have negative opinions about the police and these effects tend to be weak. In addition, it was discussed in Chapter 3 that the relationships between the police and the citizens are strained in the MMA, where those living in worse-off areas are often the most affected. However, it is uncertain whether people's attitudes towards the police are due to general judgements about them, or to specific encounters with them.

Distinguishing such effects is crucial, since "people can feel one way about the police in the abstract, and very differently about specific encounters" (Gau, 2014: 203). Moreover, the early studies of PJ which demonstrated the potential of this framework were based on personal experiences with the police, not on general evaluations about them (Sunshine and Tyler, 2003: 519). As described in Chapter4, the '*Así Vamos* 2018' dataset includes relatively few cases of respondents who had recent 'contact with the police', which complicates conducting a separate analysis on this subsample with the robustness required. Comparing results of respondents who had contact with the police to those who had not is therefore unfeasible. Nonetheless, it is possible to

analyse how it might alter people's general evaluations about the aspects of 'trust in the police' and 'police legitimacy'.

Figure 57 below shows the results of one of the models tested (Model 2 in Appendix 4), which includes 'contact with the police' and individual characteristics as predictors. For those who had contact with the police within the last year, the odds of having PCP decrease by 59%, whilst it reduces the odds of reporting CP by 33%. These results are consistent with the evidence from the Global North and expected according to the bivariate analysis above, which showed a negative and significant relationship with the outcome variables.

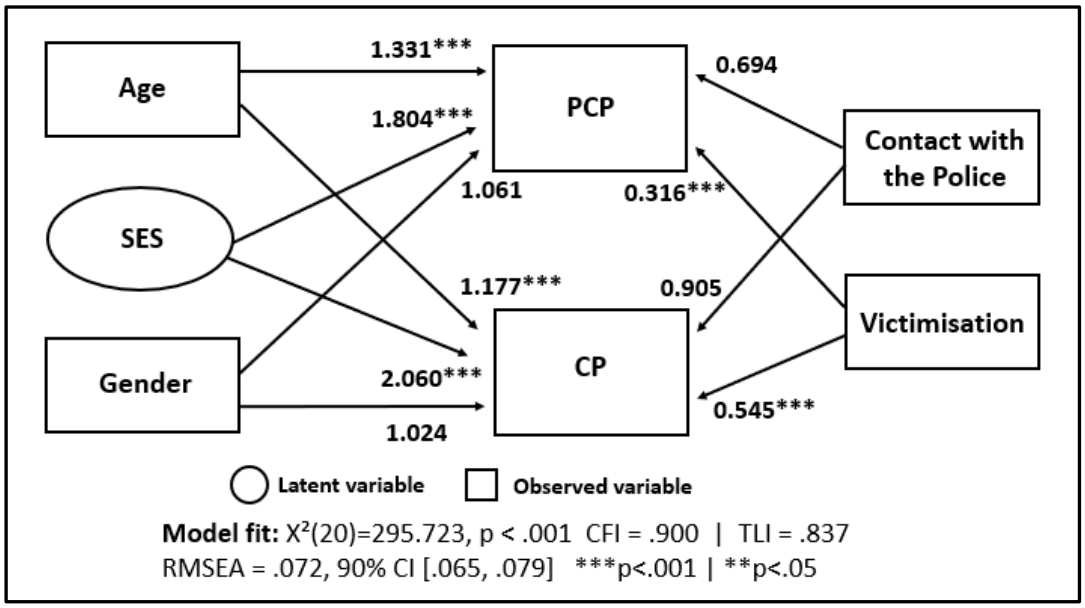
Figure 57. The effect of 'contact with the police' on PCP and CP



Source: *Así Vamos* 2018. | Sample size = 2,198.

However, 'contact with the police' fails to predict PCP and CP in subsequent models with more variables. For instance, Model 3 shows that when 'victimisation' is added to the analysis, the coefficients of 'contact with the police' decrease in magnitude and become insignificant. In contrast, victimisation exhibits highly significant coefficients, as shown below in Figure 58. This predictor also has negative (although insignificant) relationships with the outcome variables. The odds of having PCP and reporting CP are reduced in 68% and 45%, respectively, for individuals who had suffered victimisation.

Figure 58. The effect of 'victimisation' on PCP and CP



Source: *Así Vamos* 2018. | Sample size = 2,188.

Victimisation seems to capture the negative effects of 'contact with the police' on the outcome variables. The relationship between these predictors is consistent with their strong and positive correlation (r = 0.6975) exhibited above, in the bivariate analysis. A possible explanation of the intricacies of their relationship is that victims who reported crimes to the police are more likely to experience negative contacts with them. Previous research in anglophone jurisdictions of the Global North (Bradford *et. al.*, 2009; Slocum, 2017) supports this view. For instance, Slocum (2017) analysed different types of encounters between the police and victims in the U.S., how fair these victims perceived the encounters to be and their individual characteristics. Her results show that prior police-initiated contact had particularly negative effects among the poor. The latter evaluated these contacts as unfair or invasive and, thus, were less likely to report subsequent personal victimisation. However, Bradford *et. al.*, (2009) note that, such negative opinions could be the result of poorly handled contacts by the police. Some evidence from the UK (Tankebe, 2013) and Australia (Murphy and Barkworth, 2014) shows that, victims are more likely to report crime –independent of their socioeconomic background– if they perceive the police to treat them in procedurally fair ways.

Similarly, weak and insignificant coefficients of 'contact with the police' are observed in Model 4, although the negative impact of victimisation on PCP (42% lower odds) and CP (9% higher odds) is now mitigated by the introduction of the two aspects of 'trust in the police' in the analysis. In fact, its effect on CP is weak and insignificant. This suggests that the negative impact of victimisation on PCP and CP flows through trust in the police (fairness and effectiveness). As Jackson *et. al.* (2013: 179) argue, individuals who contact the police and feel disrespectfully treated by them, are less likely to defer to them, possibly because mistreatment damages people's perceptions that the police have their interests at heart. A lack of police presence or timely attention when individuals contact them seems to have a similar effect.

The results shown in Model 5 complement the explanation of how 'contact with the police' and 'victimisation' are intermingled. Victimisation reduces even more the odds of having PCP in 52%, but it now increases in 60% the odds of reporting CP. Although this seems counterintuitive, there are two reasonable explanations. First, 'contact with the police' is not included in the model and, since it is highly associated with 'victimisation', the latter enhances its effect. Second, the interplay of 'trust in police fairness' with 'police legitimacy' seems to be relevant. Even if this is not enough for gaining (or recovering) PCP of victimised individuals, these might still express their willingness of CP if they perceive the police to be fair and legitimate. This appears to be important for the citizens in their dealings with the police, which might influence future crime reports (Slocum, 2017).

The findings here do not demonstrate whether negative experiences with the police inform citizens' judgements about future contacts with them. They do indicate that the police are more likely to be contacted by victimised individuals, who are less inclined to have PCP. However, it cannot be concluded that this low PCP was due to the fact that victims had negative contact with the police, as it is possible for PCP to wane even when victims have positive contact, as Skogan (2009) found in his study. Another possibility is that negative contact with the police could outweigh positive contacts, but this is also impossible to determine from the results of this study. In addition, 'contact with the police' appears to favour CP, even among victimised individuals. Perhaps, when the police are perceived to be fair and legitimate, these general evaluations considerably counteract the negative impact of 'victimisation' to obtain people's collaboration; and mitigate, to some extent, its impact on PCP. As with prior studies (i.e Gau, 2014: 202), the results show that general judgements of

procedural fairness and ‘police legitimacy’ explain attitudes toward the police more strongly than specific assessments based on recent contacts.

Overall, these findings fail to offer evidence in support of Hypothesis 4, according to which individuals who had recent ‘contact with the police’ are more likely to express PCP and CP than those who had not. Nonetheless, these findings are similar to those obtained in Global North studies, on how the quality of treatment received from police officers in face-to-face encounters, alters the citizens’ attitudes towards them (Gau, 2014).

8.7. Illustrations of trust and legitimacy in relation to PCP and CP

The findings discussed hitherto are, to a great extent, consistent with previous PJ research in the Global North. It seems that ‘trust in police fairness’ is the main antecedent of ‘police legitimacy’, which together offer a powerful combination to enhance PCP and CP. However, the findings also indicate consistency with studies in the Global South, since the citizens of the MMA prioritise minimum levels of ‘trust in police effectiveness’, even if ‘trust in police fairness’ is also valued.

Notwithstanding this consistency, the models tested so far do not meet the required goodness of fit. A plausible reason is that there could be other factors at the neighbourhood-level of analysis which explain the outcome variables and might affect the fit measures. This point of discussion will be addressed in Chapter 9. In the meantime, it must be remembered that the analysis above reflects the interplay of a limited set of indicators obtained from ‘*Así Vamos* 2018’. Any change in the outcome variables could be attributable just to certain features of the two aspects of trust and police legitimacy. These concepts, however, entail broader theoretical notions. Excluding them from the analysis above could have left a portion of the variance unexplained, thereby affecting the fit indexes.

As illustrated in Chapter 7, there is more than one way (i.e. subcategories) of understanding each concept. For instance, it is still unknown whether the other features of ‘trust in police fairness’ and ‘trust in police effectiveness’ are more relevant than ‘police presence’ and ‘respectful treatment’ for influencing ‘police legitimacy’, PCP and CP. Similarly, it is unclear which aspects of the broader definition of ‘police legitimacy’ are captured by the item used to measure it. As mentioned above, the item

implies people's acceptance of authority of, and deference to, the police; but it is unclear if such an authority is accepted and what motivates this acceptance. As discussed in Chapter 2, 'police legitimacy' could reflect normative notions encased in 'appropriateness of the police' (Jackson and Gau, 2016), which means that the citizens authorise the police to wield their power; but it might also capture instrumental and dull compulsion considerations (Bottoms and Tankebe, 2012).

It is thus necessary to gain a better understanding of the extent to which the citizens' perceptions of the legality of the police and normative alignment with them (Jackson and Gau, 2016: 57) are more relevant than non-normative considerations (i.e. risk of sanction, dull compulsion) in influencing PCP and CP. In the same vein, people's reasons for obeying the police must also be better understood. Since 'obedience' seems to be an outcome, it reflects a form of compliance. Understanding what aspects of 'trust in the police' and 'police legitimacy' motivate obedience to the police could offer insights about what motivates compliance. All these aspects are confounded into a single indicator used in the quantitative analysis. Hence, the discussion here is focused on illustrating how the aspects of trust and police legitimacy most valued by the MMA residents, might explain PCP and CP, as well as obedience.

8.7.1. Trust in the police: effectiveness or fairness?

The results above indicate that 'fairness' seems to contribute in important ways to enhance PCP and CP. The interviews revealed similar results. Several participants noted that, the police tended to have more support and received positive opinions from the residents in the neighbourhoods where they had a good relationship with them. As one interviewee mentioned:

> *"It seemed that police officers 'were part of the landscape', in a positive sense. There was a well-established relationship between the residents and the police officers, like a good habit"*. – Organisation G.

However, they also mentioned that this was not the case in most neighbourhoods, where the residents did not have confidence in the police, due to an inappropriate treatment received from them. As one participant mentioned: "about 70% of the residents with whom we worked expressed discontent and complaints against

police officers" (Organisation D). Moreover, it seems that an appropriate treatment is even more relevant for victimised individuals who contacted the police, consistently with the quantitative results discussed above. As illustrated in a subsequent example:

> *"In a domestic violence project that our organization worked on, it was very difficult to convince women who suffered domestic violence to approach the specialised police unit in such cases, because they did not trust them. Training police officers is very important for the first contact with people, especially with victims of violence, as this will influence their confidence in the police"*.
>
> – Organisation D.

Nonetheless, several participants implied that a minimum expectation of 'effectiveness' must be satisfied. They were specific in emphasising certain instrumental features related to police performance, which could affect the residents' opinions of the police. For instance, 'police visibility' seems to be the main consideration shaping PCP. As one participant mentioned, *"there was some confidence in the police. When they patrolled the neighbourhood, the residents felt more secure"* (Organisation J). This view suggests that the police presence could moderately improve PCP. Other participants, however, were more emphatic in noting that the police absence could severely affect people's opinions, for example:

> *"The residents had very little confidence in the police, especially the municipal police, with which they had the most contact. The narrative of many residents in 'neighborhood3' was ... 'they ignore us ... they have forgotten us ... I never see the patrol ... I don't know if they are around' ... You could tell that the neighbourhood was very neglected by the municipal government"*.
>
> – Organisation E

Similarly, a lack of police presence hampers, not only the improvement of PCP but also of CP. One participant noted that *"in some neighbourhoods, the police were not as present, so it was difficult to establish cooperation with them if they were not around"* (Organisation J).

In addition, some participants highlighted the relevance of tackling and investigating crimes for enhancing PCP and CP. They related this feature of police

performance to ‘police visibility’, especially of *Fuerza Civil* (the state police) since they are perceived as more capable and better equipped for tackling crime. As one interviewee explained:

> *“People see Fuerza Civil as if they can have more confidence in them, because they are more related to patrolling focused on serious crimes than municipal police. There are neighbourhoods which Fuerza Civil do not have assigned for patrolling. Therefore, people understand that if Fuerza Civil is around, it is to tackle serious crime”*. – Organisation H.

Indeed, addressing crime seems to be also important for propitiating CP. As one participant mentioned, *"if people see that their reports to the police are resolved, this encourages people to continue reporting"* (Organisation E). As mentioned in Chapter 3, one of the reasons which could explain the high rate of unreported crime is a low PCP. A higher clear-up rate could thus foster CP.

The quotes discussed above capture well the opinions expressed during the interviews. These resonate with the findings of studies in Asian countries, such as Turkey (Karakus, 2017) and China (Sun *et. al.*, 2017) on the seemingly (or more) relevant role of effectiveness in shaping PCP and CP. One plausible explanation is that, in jurisdictions with “traditional authority structure”, there is a higher power distance between the government and society than in mature western democracies (Karakus, 2017: 27). In the former, the citizens accept orders from the governmental power, while in the latter they usually participate in the decision-making process. Just as in those jurisdictions, and other Latin American contexts, the MMA also exhibits reminiscences of State authoritarianism (see: Früling, 2007), as mentioned in Chapter 3. In this situation, the citizens appear to value normative aspects in a context where they suffer frequent police abuse. However, the people also need the police protection, even if their relationship is distrustful, as noted in in Chapter 7.

Insofar as the residents perceive a lack of effective crime control, they might prioritise instrumental over normative concerns. As previous research in the Global North suggests, this might occur in situations of “strife and difficulty”, in which the citizens could be more concerned with “effectiveness of police performance” than procedural fairness (see: Sunshine and Tyler, 2003: 522). This finding is also consistent with recent research in Brazil (Jackson *et. al.*, 2020), about how the

perceived importance of ‘effectiveness’ might be raised by deficits in the provision of security to the citizens. As one participant exemplified regarding ‘responsiveness of the police’, another feature of effectiveness identified in Chapter 7:

> *“People value that the police treat them well, but they value that the police answer the calls even more... it is like Maslow's pyramid, to pay attention to the basics, first”*. – Organisation J.

It thus seems that ‘effectiveness’ is well valued for enhancing PCP and CP. It is not that the MMA residents disregard PJ, in contrast to the citizens in consolidated democracies. As several participants mentioned, those in the MMA who have cordial relationships with the police seem to have better opinions of them. However, a majority of residents have not frequently received fair treatment from the police. Instead, these residents are more likely to face a dilemma between not getting police help or getting it even if the police treat them badly. According to most interviewees, a fair treatment could do much to enhance PCP and CP, as one of them illustrated:

> *“Patrolling is not enough, there has to be a respectful treatment to people… It is difficult for the police to produce results in such a violent country with so much crime. At least, a respectful and sensitive treatment from the police could help”*. – Organisation F.

8.7.2. Police legitimacy: PJ and closeness

The findings discussed in Chapter 7 strongly suggest that police legitimacy is mainly embodied by normative concerns of the MMA residents. The notion of ‘closeness’ between the police and the citizens seems to be the most relevant of those concerns for generating the perception among the residents that the police are appropriate. As discussed in Chapter 2, ‘appropriateness of the police’ entails not just the recognition, but also the justification of the exercise of police authority.

The interviews also provide examples suggesting that normative aspects of trust are more important than instrumental ones for propitiating ‘closeness’, which seems to be key for understanding why people respect the police. For instance, it was mentioned above that capabilities for tackling crime is an important feature police performance.

This instrumental consideration also seems to shape respect to police authority. According to some participants, the residents tend to respect more the police forces which they perceive to be better prepared for tackling crime. However, more capabilities and better training for such a purpose do not seem to propitiate close relationships between the citizens and the police. One interviewee offered another example of *Fuerza Civil* in this regard:

> *"People have more respect in Fuerza Civil, but they see them 'more from afar', because they have a more impressive uniform and weapons"*.
>
> – Organisation I.

Other opinions were consistent in pointing out that residents have more respect for *Fuerza Civil*, but "some of them are more afraid of them because they are more aggressive and have a militarised approach" (Organisation J). In contrast, several participants mentioned that, when the residents established a relationship with any police force, founded in mutual respect and constant dialogue, a sense of 'closeness' was produced. This was not the case in most neighbourhoods, where the residents constantly disagreed with police decisions. In the words of one participant:

> *"Although the residents understood the role of the police, they were very critical about the procedures used by the police in most neighbourhoods. People did not agree with the way of proceeding of the police, that is, they did not 'validate' their procedures".* – Organisation G.

Consistently with the discussion in Chapter 7, such disagreements seem to be motivated by abusive attitudes of the police against the residents, which erode the recognition of the police authority in a legitimate sense. The same participant just quoted above noted that:

> *"The residents respected the authority of the police, but it was not a 'legitimate respect' to them. People respected the police authority out of fear or because they had no other alternative".* – Organisation G.

The quotes above reflect that unfairness and disagreement with police behaviour are conducive to questioning the police authority. In these situations, the

citizens perceive that the police fail to act in lawful ways, and more importantly, that prevents a close relationship between both parties. This suggests that both aspects of PJ –'quality of treatment' and 'quality of decision-making' (Tyler and Huo, 2002)– seem to be closely associated to the normative concerns that 'appropriateness of the police' entails. This finding closely follows the key foundations of PJ theory in the Global North. Interestingly, 'normative alignment' –as reflected by closeness– appears to be more important than 'legality' for motivating respect for the police. Thus, closer relationships with the police seem to generate the perception among the residents that both parties share the same "sense of right and wrong" (Jackson and Gau, 2016: 57). In addition, PJ seems to be a more important antecedent than instrumental concerns of police performance (i.e. police capabilities for tackling crime) for defining what the MMA residents consider as the appropriate exercise of police authority (Jackson *et. al*., 2020).

8.7.3. Police legitimacy: closeness and PCP and CP

The discussion in Chapter 7 suggests that perceptions of police legitimacy, especially 'normative alignment', weigh in more than instrumental considerations in favouring desirable outcomes. For instance, 'obedience' (a form of compliance) does not seem to be usually stimulated by normative concerns. It tends to be motivated by instrumental and non-normative reasons but only because, in most situations, the residents are left without alternatives or are powerless in their relationships with the police. In contrast, the interviews seem to indicate that 'closeness' (moral alignment) could be a powerful normative element of police legitimacy for motivating obedience, but also other outcomes. For example, one participant pointed out the positive effects of a close relationship on PCP:

> *"When the residents began to work closely with the police in projects to rescue public spaces, they began to have more confidence in them, because the residents understood that the police would protect those spaces so that they were no longer drug outlets"* – Organisation A.

Similarly, it was outlined in Chapter 7 that close relationships between the police and the people lead to amicable collaborations in projects to reduce crime, which

render better results than when such relationships are strained. In this regard, one participant summarised some conclusions of their work in several neighbourhoods, on how close communication motivates CP:

> *"Cooperation has been improving over time. For example, the police have created WhatsApp groups with the residents, and they are in constant contact to report incidents. People are more confident in reporting these incidents… they know that they are not alone making these reports".* – Organisation F.

Similarly, it is worth drawing on one of the examples mentioned in Chapter 7, regarding the results of two projects implemented in different neighbourhoods. As described, in one of the neighbourhoods, the relationship became closer between the police and citizens, which led to higher levels of trust; whilst this did not happen in the other neighbourhood. According to the participants:

> *"When we arrived to work in 'neighbourhood1', we observed that the residents did not have confidence in their police officers at all. When the intervention project ended in this neighbourhood, between 40% and 50% of the residents reported good levels of confidence. In contrast, at the end of the intervention project in 'neighbourhood2', the residents did not improve the opinion of the police. Although thefts and other crimes did decrease over time, people did not have more confidence in the police, and the relationship between both parties did not change substantially. The relationship of distrust persisted".*
>
> – Organisation C.

Again, the views of social organisations must not be taken for granted. However, it is worth noting their acknowledgement about the limited impact achieved in 'neighbourhood2'. This is mainly attributed to a strained relationship between the police and the residents, although there could have been other factors involved, as they also recognised (see Chapter 7). The quote above reinforces the view that 'effectiveness' is not enough, and sometimes not the main reason, for eliciting PCP and CP. Together with the passage in Chapter 7, this example also indicates that closer relationships favour CP, for reporting and preventing crime. In addition, it supports the argument put forth in this thesis that PCP mediates the relationship between police legitimacy and

CP. In ‘neighbourhood1’, a closer relationship between the police and the residents appears to have improved PCP which, in turn, seems to have favoured CP. On the contrary, a strained relationship in ‘neighbourhood2’ seems to have prevented those outcomes.

These examples are thus consistent with the quantitative results discussed above on the role of the normative aspects of ‘police legitimacy’ in shaping PCP and CP. In addition, they are consistent with the most recent PJ research produced in Global North (Pósch *et. al.*, 2020), but also in Global South jurisdictions with authoritarian backgrounds, just as in the MMA (i.e. Jackson *et. al.*, 2020; Sun *et. al.*, 2018). In both types of contexts, the concerns captured by ‘normative alignment’ weigh in more than dull compulsion, deterrence and effectiveness of police performance in eliciting compliance, PCP and CP.

8.7.4. Additional considerations

The illustrations shared so far in Chapter 7 and this one, point to differences in perceptions of PCP and CP, depending on individual characteristics, and whether the residents had recently been victimised and contacted the police. It is worth noting that the interviews did not reveal any relevant differences in attitudes between women and men towards the police. These findings indicate that, in the MMA, such differences stem from other individual characteristics, namely age and SES, as discussed below.

The age and SES of residents

There is a strong opinion among all the participants that relationships between the police and the residents tend to be more strained with the youths than with adult people. This idea is well captured in the following two examples:

> *“Those who collaborate the most with the police and tend to have confidence in them the most are the adults. The young people had a distant relationship with the police and were afraid of them, because of the checks (stop and search) the police made to them. So, there was more confidence from the adults and distrust from the younger”*. – Organisation J.

"The residents said that when the police were not needed, they were in the neighbourhood arresting minors just for walking on the street or used excessive force against the people they arrested". – Organisation D.

These expressions are consistent with some findings for England and Scotland (Farren *et. al.*, 2018) that, when the police stop and search young people and handle these interactions poorly (i.e. impolite and disrespectful treatment), young people tend to have negative opinions about them. Just as in those jurisdictions, the contacts between the younger and the police in the MMA seem to implicate perceptions on how legitimate the police are, which are closely related to their views on PCP and CP.

Furthermore, a majority of participants expressed that, individuals with higher SES, seem to favour collaboration with the police more than the residents who experience hardship. All the interviewees agreed that citizens with lower SES frequently suffer negative interactions with the police, whilst those with a better position have more resources 'to deal' with the police.

"People with greater economic capabilities exert more pressure. For example, in those neighbourhoods they report more, they even have a profile of more educated people who complain more. For this reason, the priority of the police is to respond, above all, to these people".

– Organisation B.

"The police officers had the perception that they had to take more care of the neighbourhoods that appeared to be of a higher socioeconomic level and, therefore, they gave more priority to establishing relationships with the residents of those neighbourhoods. On the contrary, the police did not give as much importance to neighbourhoods that appeared to be of lower socioeconomic status, nor to the relationship with their residents; or saw them as conflictive neighbourhoods". – Organisation H.

Interestingly, these findings support –to some extent– the quantitative results mentioned above on how 'Age' seems to be particularly relevant in shaping PCP, but not CP. As discussed above, a lack of PCP hinders CP. In addition, SES seems to favour PCP and CP, which is clearer for people in a better-off situation. These findings

are consistent with the results of some studies from the Global North (i.e. Brown and Benedict, 2002; Merry *et. al.*, 2012; Reisig and Parks, 2000) and one from Mexico (Caamal and Reyes, 2020), on how youths and individuals living in deprived areas are the demographic groups with the most strained relationships with the police. In this regard, McAra and McVie (2005: 6) have pointed out in a British context that, being from "a lower class or less affluent background", is one of the factors which increases the risk of teenagers of having an "adversarial contact" with the police. These findings thus suggest that younger people with low SES in the MMA, appear to be the least likely to establish close relationships with the police, which could explain their distrust in the police and low collaboration with them. In addition, these results also reinforce the view discussed above, that individuals living in worse-off conditions are the most likely to be victimised, as discussed below.

Contact with the police and victimisation

The findings discussed above strongly suggest that the participants have frequently heard of negative contacts with the police in several neighbourhoods. Half of them noted that such experiences tend to occur in poor areas, and the victimised are especially affected. As a result, the latter are reticent to reporting crimes to the police. In addition, they considered that police officers are unskilled to address certain situations, which require specialised procedures. For example, they recalled comments from the residents about the insensible and unfair treatment received from the police after reporting domestic violence. In these cases, the police end up revictimising them, as one interviewee depicted:

> *"There was a young woman who suffered domestic violence and one day a man tried to force her into a taxi. She reported it to the police as an attempted kidnapping and the police officers who responded to the report told her that maybe she had a fight with her boyfriend… These officers had no training in gender violence. They did not know how to act, as they were trained in the traditional policing approach. Instead of helping, the police officers end up revictimising people who ask for their help".* – Organisation C).

Such a view suggests that ‘contact with the police’ conveys to the citizens the extent of procedurally fair behaviour of police officers. Hence, this finding offers some support to findings of previous research (see: Pósch, 2020) on how PJ channels the impact of such a contact on the residents’ overall assessments of the police. The quote above also speaks to the interactional approach of McCluskey *et. al.* (1999: 392), that concerns of the rightness of police conduct in public encounters shape the extent of citizens’ acquiescence more than incentives related with potential punishments, which are typical of traditional policing. More importantly, this insight supports the results discussed above, on how the impact of contacting the police on the outcome variables seems to be stronger when the citizens involved have been victimised.

8.8. Conclusion

This chapter included the results of an analysis of the interplay among the central concepts of PJ theory which shapes PCP and CP. Due to the limited number of items used for operationalising such concepts in the quantitative analysis, this was complemented with qualitative data obtained from interviews to representatives of ten local organisations. With some caveats, the findings revealed a great extent of consistency with the evidence produced in the Global North, on most PJ foundations. For instance, in a context such as the MMA, where the police maintain strained relationships with the citizens and have failed to satisfy their basic security needs, it is understandable that ‘trust in police effectiveness’ has become more important than ‘trust in police fairness’ in eliciting PCP and CP. This first finding is consistent with previous research in some Global-South jurisdictions (i.e. Sun *et. al.*, 2017; Tankebe, 2009). According to the participants interviewed, instrumental aspects of trust such as ‘police presence’ and ‘police performance in tackling crime’, are more influential than the normative features of PJ theory in gaining people’s PCP and CP.

However, a second finding shows that, when ‘police legitimacy’ is considered in the analysis, ‘trust in police fairness’ can induce public perceptions of police legitimacy. In addition, their combined effect is stronger than that of ‘trust in police effectiveness’ with police legitimacy on PCP and CP. Relevant to this finding is that the qualitative analysis strongly suggests that ‘closeness’ –a form of ‘normative alignment’– is the central feature –and distinctive in the MMA context– of police legitimacy which ‘trust in

police fairness' seems to induce. Interestingly, the analysis also reveals that police corruption and –especially– police abuse are negative forms of normative considerations implicated in people's perceptions about the police. Such types of misconduct could undermine perceptions of 'trust in police fairness' and 'police legitimacy', thereby hindering PCP and CP. However, they have been largely neglected in Global-North research.

Thus, perceptions of 'fair treatment' and 'fair decision-making' from the police seem to weigh in more than the instrumental considerations mentioned above, for facilitating closer relationships with the citizens. These insights also mean that perceptions of 'police legitimacy' also mediate the relationships of the competing aspects of trust with PCP and CP. Overall, these results fail to support Hypothesis 1 of this thesis ('trust in police fairness' increases people's likelihood of considering the police legitimate, having PCP and expressing CP, more than 'trust in police effectiveness'), but they lend support to Hypothesis 2 (The joint influence of 'police legitimacy' and 'trust in police fairness' on PCP and CP is greater than the combined effect of 'police legitimacy' and 'trust in police effectiveness').Together, they respond to research question 2. Furthermore, the findings strongly suggest that, although the weight of instrumental and non-normative considerations is less relevant than that of normative aspects, it is non-negligible. This seems to be related to the reminiscences of an authoritarian political culture and to police misconduct, due to which people in a powerless position acquiesce "out of fear and desperation, rather than respect and duty" (Kochel *et. al.*, 2013: 896). These findings show the necessity of conducting further research to analyse the influence of the subconstructs implicated in trust and police legitimacy on PCP and CP.

A third finding indicates that PCP does have a mediating role in the relationship between 'police legitimacy' and CP. This has two implications. One is that 'closeness' appears to be a powerful normative element of police legitimacy for motivating PCP and CP. The other is that people can obey the police or cooperate with them for different reasons. In the MMA, it seems that having PCP could favour CP, but a lack of it could prevent collaboration. These findings thus fail to support Hypothesis 3 (PCP enhances the positive influence of 'police legitimacy' on CP), but they indicate the potential of PCP for favouring CP, thereby answering research question 3. They also expand the understandings about the hypothetical pathways among 'police legitimacy', PCP and CP, in a way which has not been analysed in previous PJ research.

The fourth and fifth findings consider an interplay which appears to exist between ‘contact with the police’ and ‘victimisation’. The insignificant effects of ‘contact with the police’ in the final model flow through victimisation. Although these results fail to support Hypothesis 4 (Individuals who had recent ‘contact with the police’ are more likely to express PCP and CP than those who had not), they do answer research question 4. Thus, victimised individuals seem to contact the police the most. The former also tend to report negative opinions of the latter due to such contacts. This finding could explain that the residents who had recently contacted the police are the least likely to have PCP and express their willingness of CP. These findings also speak to the differences that appear to exist between ‘intentions attitudes’ and ‘actual attitudes’ towards the police, as previously noted in Global-North research (Skogan, 1984, as cited in Kochel *et. al.*, 2013). Thus, the MMA residents might have a negative opinion of the police, but they would like to have a better relationship with them; that is, “a wish not for the police to go away entirely, but rather, to change their approach” (Gau, 2014: 203).

Altogether, these findings offer support to one of the five hypothetical pathways proposed for shaping PCP and CP. However, it was mentioned above that the models tested fail to satisfy the required goodness-of-fit indexes. It could be that there are other factors at the neighbourhood-level of analysis which have not been considered so far, and which might contribute to improve the fit indexes. This concern is addressed in Chapter 9, to which the discussion now turns.

Chapter 9. Neighbourhood-level explanations of PCP and CP

9.1. Introduction

Up to this point, the findings of this thesis have offered support to the view that the MMA residents' understandings of central concepts of PJ theory are closely similar to those documented in research conducted in Global-North jurisdictions –as discussed in Chapter 7. These findings have also yielded strong consistency with evidence produced in such contexts, on the interplay between 'trust in police fairness' and 'police legitimacy' in shaping PCP and CP –as discussed in Chapter 8. Notwithstanding the potential of these findings, there are two main concerns which must be addressed. First, the models tested in Chapter 8 failed to meet the required goodness-of-fit, according to the indexes considered. It could be that the analysis omitted neighbourhood-level explanations, which should have been included. As discussed in Chapter 2, previous research has shown uneven geographical distribution of crime and structural factors, which could shape attitudes towards the police. This thesis thus uses 'Neighbourhood Area' (NA) as the geographical unit where such structural factors and crime tend to concentrate. Second, the indicators used for measuring CONDIS failed to converge into a same latent variable –as explained in Chapter 6–, which indicates the necessity of considering them separately in subsequent analysis. Moreover, there are alternative indicators which could be more appropriate for operationalising CONDIS, as will be discussed below. Therefore, the aim of this chapter is to discuss the results from ML-SEM models, for answering research question 5 on whether concentrations of structural factors and crime have a negative influence on PCP and CP across NAs. In addition, these findings inform the degree of consistency of those discussed in Chapter 8.

This chapter is divided into four sections. The first one includes a univariate analysis which shows the distribution of the neighbourhood-level variables across the 337 NAs created –as outlined in Chapter 6. The second section consists of a bivariate analysis of these variables with PCP and CP. Then, the social ecology of PCP and CP is assessed in the third section, using ML-SEM models which analyse the relationships of individual and neighbourhood-level explanations with the outcome variables. Just as in Chapter 8, these results are once more complemented with qualitative data in the

fourth section. The interviews with representatives of local organisations expand the understandings of how neighbourhood-level explanations could shape PCP and CP.

9.2. Univariate analysis of neighbourhood-level variables

This section presents the descriptive statistics of the neighbourhood-level variables considered in subsequent analysis. Table 13 below includes additional indicators to those used for measuring CONDIS. As outlined in Chapter 4, crime, and other structural factors –such as 'residential instability' and 'immigrant concentration'– must be considered. Alternative measures for operationalising CONDIS are also included below. The statistics are estimated based on the averages of individual-level data per each NA created, as outlined in Chapter 6. All the indicators have a continuous level of measurement.

Table 13. Descriptive statistics of neighbourhood-level variables

Variable	Mean	Median	Variance	Std Dev	Range	CV
Proportion of indigenous population	0.007	0.004	0.000	0.010	0.064	1.428
Proportion without a park near, clean, good	0.111	0.000	0.035	0.188	1.000	1.693
Proportion of female-headed families	0.140	0.083	0.033	0.182	1.000	1.300
Proportion of unemployed population	0.048	0.000	0.013	0.115	0.667	2.395
Average Marginalisation	0.288	0.285	0.300	0.548	3.193	1.902
Average SES	0.076	0.024	0.288	0.536	3.029	7.052
Residential Instability	0.030	0.023	0.000	0.027	0.241	0.900
Immigrant concentration	0.003	0.002	0.000	0.006	0.081	2.000
Proportion of victimised individuals	0.114	0.000	0.024	0.154	0.750	1.350
Neighbourhood crime rate	1425.13	995.025	2,654,389	1629.23	11639.18	1.143

Source: *Así Vamos* 2018, CONAPO (2010) and NL State Police (2018).

As with the indicators used in Chapter 6 for measuring CONDIS, the additional measures based on individual-level data from '*Así Vamos* 2018' (residential instability, immigrant concentration, proportion of victimised individuals) exhibit right-skewed distributions. This is evidenced by their means being greater than their medians. In

addition, their low variances and standard deviations indicate slightly dispersed and spread-out distributions, which lean towards their respective means across different NAs. In contrast, the alternative measures of CONDIS (average marginalisation and average SES) and 'crime rate' seem to exhibit higher variances and standard deviations. Low variances and standard deviations are worrisome, as these suggest that the indicators are inappropriate neighbourhood-level explanations of PCP and CP. However, these could be misleading as the variables are measured in different units.

It is thus more appropriate to draw on the Coefficient of Variation (CV), given by dividing the standard deviation of each distribution by its mean. It indicates the extent of variability in relation to the mean of the population. The higher the CV, the greater the dispersion. A CV closer to, or greater than 1, indicates a high variation (see: Norris, 2009: 212). All these coefficients indicate large variations across NAs.

Nevertheless, it is worth noting the CV of 'Proportion of indigenous population', which is surprisingly higher than the CVs of 'Neighbourhood crime rate', 'Proportion of victimised individuals' and 'Residential stability'. This seems to be related to the fact that indigenous groups are concentrated mainly in a handful of neighbourhoods (around 5 or 6), which leads to an almost non-existent variance. Thus, there is clearly a considerable difference between its standard deviation (0.010) and its mean (0.007). As a result, the ratio of these parameters yields a relatively 'large' number (1.428), inflating the heterogeneity of the values of this variable across NAs in the whole MMA. As mentioned below in this chapter, 'Proportion of indigenous population' resulted to be a problematic predictor, as it created an artificial binary logistic effect, instead of being considered as a continuous variable in the estimation.

Except for 'Proportion of indigenous population', the figures in Table 13 lend support to the argument put forth in Chapters 2 and 3, about asymmetrical concentrations of crime and structural factors across neighbourhoods. Even so, it is necessary to provide further insights on whether these neighbourhood-level indicators are suitable for predicting the outcome variables.

9.3. Bivariate analysis of neighbourhood-level variables

The analysis presented in Chapter 8 suggests that key PJ measures 'contact with the police' and certain individual characteristics influence the variation of personal perceptions of PCP and CP. Nevertheless, it could be that these features work with

neighbourhood characteristics to influence the outcome variables. As discussed in Chapter 2, the literature points to neighbourhood properties (i.e. structural factors and crime) which might shape residents' attitudes towards the police (i.e. Brunton-Smith & Sturgis, 2011). This is even more relevant, considering the preliminary evidence – discussed in Chapter 3– suggesting that different policing approaches are implemented across neighbourhoods in the MMA, based on their characteristics. Therefore, this section tests the association of the neighbourhood-level variables with PCP and CP. Table 14 below, shows such associations, which provide an overview of the variation the outcome variables across NAs, according to their characteristics.

Table 14. Correlations between neighbourhood-level explanations and outcome variables°

Variables	PCP	CP	Unemployed individuals	NA development	Female-headed families	Indigenous population	Average SES	Average Marginalisation	Victimised individuals	Crime rate	Residential instability
Unemployed individuals	-.087***	-.073***	-	-	-	-	-	-	-	-	-
NA development	-.134***	-.144***	-.071***	-	-	-	-	-	-	-	-
Female-headed families	-.109***	-.131***	.017	.225***	-	-	-	-	-	-	-
Indigenous population	-.021	-.047*	-.039	.061**	.110***	-	-	-	-	-	-
Average SES	.235***	.302***	-.026	-.335***	-.276***	-.099***	-	-	-	-	-
Average marginalisation	-.141***	-.174***	-.006	.197***	.097***	.199***	-.542***	-	-	-	-
Victimised individuals	-.222***	-.155***	.048*	.068***	.022	.014	-.040*	.093***	-	-	-
Crime rate	-.105***	-.071***	-.044*	.020	.100***	.284***	-.202***	.337***	.113***	-	-
Residential instability	.048*	.106***	.022	-.107***	-.038	.394***	.301***	-.362***	-.044*	.204***	-
Immigration concentration	.122*	.143***	.026	.008	-.036	.186***	.382***	-.395***	-.102***	-.165***	.499***
Significance: (***) = p < .001 (**) = p < .01 (*) = p < .05											

Source: *Así Vamos* 2018. (°) = Pairwise computation in Stata.
Point-biserial coefficients are grey-shadowed.

Since the neighbourhood-level indicators are continuous and the outcome variables are dichotomous, Table 14 includes a combination of Pearson's r (continuous-continuous) and point-biserial (continuous-dichotomous) coefficients. The latter are grey shadowed for ease of distinction. All the coefficients indicate strength, direction, and level of significance. The first impression stemming from this table is that the associations between the possible neighbourhood-level explanations and the outcome variables are moderately weak or moderate, according to the conventions for correlations involving nominal data (Healey, 2015; Khamis, 2008). It is striking to observe that 'crime rate' shows weak negative associations with the outcome variables, as opposed to the findings documented in the literature. There are also weak positive correlations observed for residential instability and immigration concentration, with coefficients lower than 0.11 and 0.15, respectively. In addition, these correlations are positive and, thus, inconsistent with the expectations. However, most correlations are highly significant and show the expected directions, with some exceptions. For instance, individuals living in NAs with higher concentrations of indigenous population are more likely to express willingness of CP. This could be reasonable though. As mentioned in Chapter 8, there are social groups more vulnerable than others, which might explain their willingness of CP in a context of high crime and social hardship (Jackson *et. al.*, 2020).

A second impression is that the associations between both measures of crime and most measures of structural factors are positive and significant. According to the theoretical (i.e. Kubrin and Weitzer, 2003) and empirical expectations (i.e. Sampson *et. al.*, 1997; Brunton-Smith *et. al.*, 2013), NAs which experience forms of social hardship also concentrate higher crime rates and proportions of victimised individuals. These relationships are even clearer among crime rate, residential instability, and indigenous population since their coefficients are amongst the highest. As expected, crime rate also has a moderately strong and positive association with 'average marginalisation'; and a moderate and negative association with 'average SES'. These correlations suggest that, on average, the more concentrated the degree of marginalisation (or the lower the level of SES) within a NA, the higher the concentration of the crime rate. It is worth noting the strong and highly significant correlation (-.542***) between average marginalisation and average SES, as expected. A higher marginalisation mirrors a lower SES, and vice versa. However, average SES shows stronger associations with other structural factors and the outcome variables.

Interestingly, indigenous population has a moderately strong association with residential instability (.394***). This is reasonable considering the immigrant nature of indigenous people in some NAs, who come from other states. In addition, foreign 'immigrant concentration' does not seem to be related with higher concentrations of structural factors and crime, as evidenced by the negative (and highly significant) associations with average marginalisation and both crime measures. It seems that foreign immigrants tend to live in better-off NAs.

The third impression is that the indicators originally used for measuring CONDIS exhibit more correlation coefficients which are stronger and with higher significance than those presented in Table 9, in Chapter 6. This could be due to the data structure used here, averaged for each of the 337 NAs, in contrast to the individual-level data used before. These preliminary figures thus hint that such structural factors operate at the neighbourhood-level as previous research in the Global North (i.e. Sampson and Wikstrom, 2008) has indicated. Nonetheless, it is worth noting that most correlations among these indicators fall within the very weak threshold ($r < 0.20$) according to the conventions (Krehbiel, 2004; Rowntree, 2018). In addition, just as in Chapter 6, it is unexpected to observe a negative and significant association between unemployment and lacking a 'park near, clean and well-equipped'. The latter is also poorly associated with most of the other structural factors. Perhaps, it is not an appropriate measure of 'neighbourhood development' in the MMA. Casillas Zapata *et. al.* (2018) note that its urban growth has brought the reduction or disappearance of parks and green areas since the 1980s. Thus, the whole MMA seems to be similarly affected, regardless of NAs characteristics.

The correlations among the possible neighbourhood-level explanations, and between these and the outcome variables, thus show that they are not entirely consistent with the expectations. However, this bivariate analysis does not account for the potential influence of a third or more variables on PCP and CP across NAs. In addition, different factors at different levels of analysis could be working together to affect the outcome variables, as mentioned above. These concerns are addressed in subsequent analysis below, to which the discussion now turns.

9.4. The social ecology of PCP and CP

This section adds to the effects of differences in characteristics among NAs on the outcome variables. As explained in Chapter 5, disaggregating data for carrying out analysis with single-level techniques has limitations in terms of reliably accounting for the separate effects of neighbourhood-level explanations (Heck, 2016). Similarly, conducting neighbourhood-level analysis by aggregating individual-level data could lead to an ecological fallacy error (Snijders and Boskers, 2012). Therefore, ML-SEM is more appropriate for estimating accurate 'neighbourhood effects' on individual perceptions of PCP and CP. This approach prevents the risk of unreliable estimates by accounting for the variation at two different levels of analysis.

The results of the ML-SEM models estimated are reported in Table 15. These models explain the effects of neighbourhood-level predictors on PCP and CP across NAs in the MMA. As explained in Chapter 5, twenty imputed datasets were estimated using a Bayesian estimation method. Then, a MLR method was used for estimating the models. This method included Montecarlo simulations of 15,000 iterations performed for each of the twenty datasets. The results thus show the mean estimates of the coefficients, variances, and fit measures from the twenty imputed datasets. Such coefficients are the outcome of binary logistic regressions, with variations at individual and neighbourhood levels of analysis (see: Muthén, 2005).

9.4.1. The weight of 'neighbourhood effects'

The model of PCP and CP was built in six incremental steps, following the approach of Jackson *et. al.*, (2013: 190). First, to show the effects associated to neighbourhood level, Model 1 focuses on the variation in the outcome variables that occurs between NAs. This is the baseline or empty model. For example, one of the variances corresponds to the deviation of the specific log-odds of having PCP in a certain NA from the overall log-odds of having PCP across all neighbourhood areas. Such a variance equals 1.36 and it is significant. However, it is more intuitive to discuss variation between neighbourhoods in terms of the intra-class correlation coefficient (ICC). Therefore, the ICCs of the six models are included in Table 16.

Table 15. Results of multilevel models

Factors influencing PCP°

Model	1	2	3	4	5	6
Constant	-0.156	-0.157*	-0.144	-0.266**	3.340***	3.589***
	(0.087)	(0.069)	(0.073)	(0.077)	(0.219)	(0.232)
INDIVIDUAL LEVEL						
Age	-	-	0.338***	0.323***	0.307***	0.310***
			(0.055)	(0.056)	(0.069)	(0.072)
SES	-	-	0.233**	0.268*	0.203	0.229
			(0.095)	(0.105)	(0.107)	(0.119)
Police contact			-	-0.242	-	-
				(0.226)		
Victimisation	-	-	-	-0.970***	-0.571*	-0.625*
				(0.204)	(0.253)	(0.251)
Trust police effectiveness	-	-	-	-	2.702***	2.651***
					(0.182)	(0.184)
Trust police fairness	-	-	-	-	2.861***	2.323***
					(0.214)	(0.277)
Trust police effectiveness → Police legitimacy	-	-	-	-	-	1.091***
						(0.163)
Trust police fairness → Police legitimacy	-	-	-	-	-	3.947***
						(0.208)
Police legitimacy → PCP	-	-	-	-	-	0.887***
						(0.250)

Model	1	2	3	4	5	6
NEIGHBOURHOOD LEVEL						
Average Marginalisation	-	0.138 (0.181)	-	-	-	-
NA development	-	-0.703* (0.346)	-0.654 (0.356)	-	-	-
Proportion of female-headed Families	-	-0.523 (0.426)	-	-	-	-
Proportion of unemployed individuals	-	-2.231** (0.649)	-1.928** (0.682)	-1.849** (0.674)	-2.753** (0.833)	-2.710** (0.851)
Proportion of indigenous population	-	8.922*** (1.436)	4.315 (7.352)	5.657 (6.866)	4.504 (7.862)	-
Residential instability	-	-5.779 (3.632)	-	-	-	-
Immigration concentration	-	39.478*** (2.724)	20.132 (18.704)	-	-	-
Proportion of victimised individuals	-	-3.391*** (0.477)	-3.324*** (0.515)	-2.513*** (0.531)	-1.620** (0.603)	-1.447* (0.619)
Crime rate	-	0.000 (0.000)	-	-	-	-
Average SES	-	1.114*** (0.185)	0.869*** (0.202)	1.004*** (0.201)	0.381 (0.199)	0.283 (0.203)
BETWEEN VARIANCE	1.368*** (0.237)	0.609*** (0.137)	0.566*** (0.142)	0.618*** (0.152)	0.170 (0.135)	0.162 (0.139)
ICC (%)	29.4	15.6	14.7	15.8	4.9	4.7
Loglikelihood (H0 value)	-3064.079	-2919.162	-12667.475	-14119.175	-15918.630	-16503.044
AIC	6136.159	5886.324	25416.950	28324.350	31929.259	33106.088
BIC	6159.278	6025.041	25653.925	28572.885	32195.134	33395.083
Significance: *p < .05 **p < .01 ***p < .001						

Source: *Así Vamos* 2018.

Results show logit coefficients

(***Continue***)

Factors influencing CP°

Model	1	2	3	4	5	6
Constant	-0.154	-0.149	1.299***	1.334***	2.326***	2.963***
	(0.096)	(0.077)	(0.111)	(0.119)	(0.160)	(0.189)
INDIVIDUAL LEVEL						
Age	-	-	0.039	0.047	0.036	0.037
			(0.070)	(0.068)	(0.070)	(0.073)
SES	-	-	0.229	0.237*	0.208*	0.279*
			(0.129)	(0.118)	(0.098)	(0.110)
Police contact			-	0.150	-	-
				(0.253)		
Victimisation	-	-	-	0.125	0.325	0.194
				(0.221)	(0.241)	(0.240)
Trust police effectiveness	-	-	-	-	1.046***	0.964***
					(0.186)	(0.193)
Trust police fairness	-	-	-	-	1.665***	0.545*
					(0.187)	(0.229)
Trust police effectiveness → Police legitimacy	-	-	-	-	-	1.091***
						(0.163)
Trust police fairness → Police legitimacy	-	-	-	-	-	3.947***
						(0.208)
Police legitimacy → CP	-	-	-	-	-	2.038***
						(0.231)
PCP → CP	-	-	-	-	-	1.311***
						(0.197)

Model	1	2	3	4	5	6
NEIGHBOURHOOD LEVEL						
Average Marginalisation	-	-0.005 (0.195)	-	-	-	-
NA development	-	-0.451 (0.423)	-0.143 (0.466)	-	-	-
Proportion of female-headed Families	-	-0.800 (0.479)	-	-	-	-
Proportion of unemployed individuals	-	-1.338 (0.874)	-0.298 (0.870)	-0.249 (0.869)	-0.588 (0.948)	-0.450 (1.050)
Proportion of indigenous population	-	34.117*** (3.191)	34.333*** (9.553)	34.852 (9.427)***	38.887*** (10.262)	-
Residential instability	-	-5.858 (3.871)	-	-	-	-
Immigration concentration	-	33.543*** (5.401)	6.233 (22.687)	-	-	-
Proportion of victimised individuals	-	-2.328*** (0.516)	-0.819 (0.559)	-1.023 (0.577)	-0.877 (0.620)	-0.377 (0.665)
Crime rate	-	0.000 (0.000)	-	-	-	-
Average SES	-	1.578*** (0.211)	1.150*** (0.260)	1.175*** (0.220)	1.158*** (0.214)	0.940*** (0.229)
BETWEEN VARIANCE	1.755*** (0.311)	0.827*** (0.170)	0.666*** (0.183)	0.668*** (0.185)	0.821*** (0.221)	0.938*** (0.252)
ICC (%)	34.8	20.1	16.8	16.9	20.0	22.2
Loglikelihood (H0 value)	-3064.079	-2919.162	-12667.475	-14119.175	-15918.630	-16503.044
AIC	6136.159	5886.324	25416.950	28324.350	31929.259	33106.088
BIC	6159.278	6025.041	25653.925	28572.885	32195.134	33395.083
Significance: *p < .05 **p < .01 ***p < .001						

Source: *Así Vamos* 2018.

Results show logit coefficients

As mentioned in Chapter 5, ICC ranges from 0 to 1 and it is expected to be different from 0 if the cluster or group membership –in this case the NA– is relevant for the analysis. According to Hox (2017: 52), a minimum ICC of 0.05 would indicate that 5% of the chances of having PCP is explained by between-NA differences. It is also important to remember that the standard logistic distribution –approximately 3.29– was taken as the within-level variance, for calculating the ICC coefficients.

Table 16. Neighbourhood variation in PCP and CP in the MMA

Model	ICC for PCP	Between-variance explained (PCP)	ICC for CP	Between-variance explained (CP)
1	0.294	1.368***	0.348	1.755***
2	0.156	0.609***	0.201	0.827***
3	0.147	0.566***	0.168	0.666***
4	0.158	0.618***	0.169	0.668***
5	0.049	0.170	0.200	0.821***
6	0.047	0.162	0.222	0.938***

Source: *Así Vamos* 2018 (Cómo Vamos, 2018) | ***p<.001.

Hence, the ICC in Model 1 is different from zero and indicates that 29% of the variation of PCP and 35% of the variation of CP occur across NAs. The remaining variation is within-NA (individual) plus random error. According to Jackson *et. al.*, (2013: 162) an ICC around 0.30 reflects a "large amount of neighbourhood homogeneity" in people's perceptions. A positive ICC in this model also indicates the necessity of adding predictors at both levels of analysis.

A second step in Model 2 was to add all the neighbourhood-level predictors considered in this thesis (see Chapter 6), to analyse which could be significant explanations, before adding individual-level predictors in subsequent models. As shown above in Table 16, the ICC of PCP decreases to 16% and that of CP to 20%. Some structural factors exhibit insignificant coefficients, such as 'average marginalisation', 'proportion of individuals living in a female-headed household' and 'residential instability', which is consistent to a great extent with the bivariate analysis above. The first two are weakly associated with other structural factors and residential instability. This suggests that residents who arrived at the MMA from other states tend to live in NAs with lower concentrations of structural factors, where they are less likely

to be victimised. In contrast, the null coefficients of 'crime rate' are unexpected. On one hand, it showed weak associations with the outcome variables in the bivariate analysis. On the other hand, such correlations were highly significant. According to previous research (see Chapter 2), one would expect a high-crime context as the MMA to have a significant and, at least, moderate negative impact on PCP and CP. However, it does not seem to be a relevant neighbourhood-level explanation. Alternative models yielded the same results, although these were not included for reasons of space.

Model 3 excludes insignificant neighbourhood-level predictors and adds individual characteristics, except gender, which consistently rendered negligible coefficients in Chapter 8. As Jackson *et. al.* (2013) argue, the analysis must consider the relevant (significant) characteristics of the place where individuals live and their personal characteristics. The ICCs further decrease very sharply for PCP, indicating that 15% of the chances of having PCP and 17% of the chances of expressing willingness of CP could be explained by differences in characteristics between NAs. This model reveals that age and SES are significant but other structural factors, such 'neighbourhood development' and 'immigration concentration' are not. Consistently with the bivariate analysis above, these indicators might not reflect social hardship, or are inadequate for explaining the outcome variables. Therefore, these predictors were excluded from subsequent models.

Model 4 keeps relevant individual and neighbourhood characteristics. It also accounts for individuals' contact-based perceptions of PCP and CP, before moving forward to consider global perceptions about the police. This is analysed together with 'individual victimisation' since both explanations are intermingled, as discussed in Chapter 8. The inclusion of this individual predictors helps to explain a slight increase in between-NA variations of PCP (62%) and CP (67%). This model shows that 'contact with the police' is not significant for explaining the outcome variables, while 'victimisation' is only significant for explaining PCP.

Model 5 includes the significant predictors at both levels. It also adds 'trust in police fairness' and 'trust in police effectiveness' to account for global perceptions in addition to contact-based opinions (see: Gau, 2014). The ICCs show that the variation of PCP attributable to between-NA differences is insignificant and drops considerably to 5%, whereas that of CP is significant and increases to 20%. This difference in variations suggests two things. First, after accounting for the aspects of 'trust in the police', the within-perceptions of PCP become considerably heterogeneous across

NAs, while those of CP are more homogeneous. Second, adding the aspects of trust augments the variation of CP across NAs, while decreasing in more than two thirds the variation of PCP. This shows that only CP clusters at the neighbourhood-level, while 'neighbourhood effects' on PCP seem to run mostly via the aspects of trust.

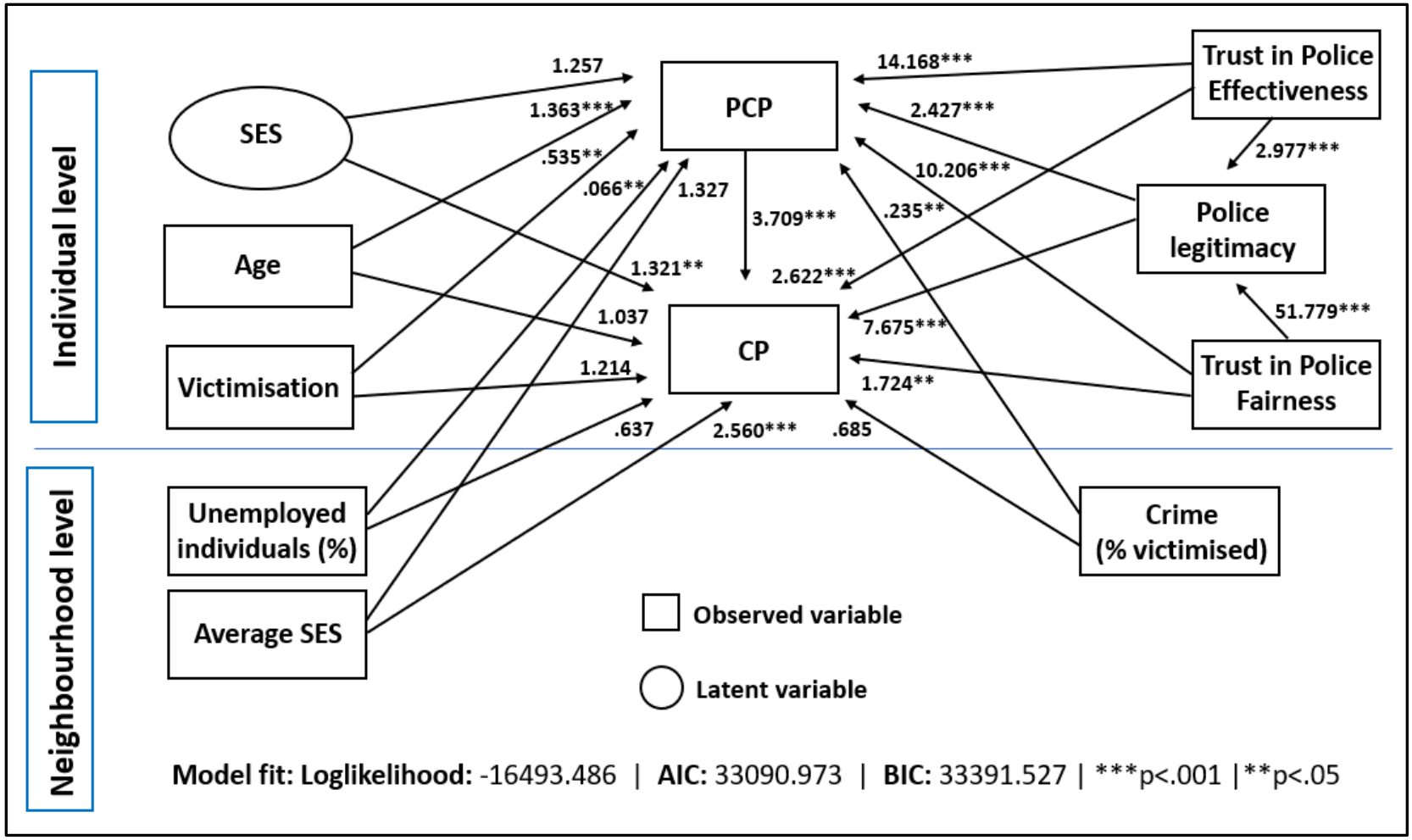
Model 6 adds 'police legitimacy', to expand global perceptions of PCP and CP. It reveals practically unaltered ICCs. This means that 'police legitimacy' does not seem helpful for explaining between-NA variation. Furthermore, within-NA perceptions of CP appear to be more similar than those of PCP. This finding supports the view of Jackson and colleagues (2020), that CP could act as a neighbourhood-based norm which influences individual willingness of CP. A possible reason of this is that people need to report crimes when they live in contexts (e.g. worse-off NAs) where social order is constantly under threat (Jackson *et. al.*, 2013: 167). Nonetheless, the inclusion of police legitimacy and the aspects of trust in the same model seems to better explain the interplay of judgments involved in people's perceptions of PCP and CP, accounting for individual and neighbourhood-level predictors.

Overall, these results strongly suggest that PCP is mostly shaped by individual perceptions. Importantly, the aspects of trust seem to attenuate the impact of neighbourhood characteristics. However, CP seems to consistently emerge as a collective property across NAs, despite their different levels of crime and social hardship. These findings support the view that people react to the characteristics of the neighbourhoods where they live, giving rise to 'neighbourhood effects' which influence people's perceptions of the police –especially their willingness of collaboration. Even so, it is necessary to clarify which of those characteristics could negatively affect the outcome variables and their specific effects, as discussed below.

9.4.2. Relevant neighbourhood characteristics in the MMA

Further to the between-NAs variation, it is worth expanding the discussion on the specific influence that neighbourhood characteristics could have. Figure 59 further below shows the final version of the incremental model built up, with the coefficients expressed in odds ratio for ease of interpretation. Firstly, the findings of this model show that geographically concentrated factors in the MMA could hamper the police efforts for gaining the public's confidence and cooperation. There are, however, distinct effects of such factors on PCP and CP.

Figure 59. Individual and neighbourhood-level predictors of PCP and CP



Source: *Así Vamos* 2018. | Sample size = 2,392 (20 imputed datasets).

From the measures of social hardship and crime included in Models 2 to 6, only 'proportion of unemployed', 'Average SES' and 'proportion of victimised' yielded significant results and were therefore suitable for the analysis. As their correlation coefficients are low, this prevents multicollinearity issues. The signs of such neighbourhood-level predictors are consistent with the expectations, according to research in the Global North (i.e. Sargeant, 2015), showing the negative impact of neighbourhood crime and social hardship on the residents' views of the police. Nonetheless, they have significant relationships only with one outcome variable. Higher levels of unemployment and victimisation in a NA tend to weaken PCP, while a higher average SES favours CP. For example, a one-unit increase in the 'proportion of victimised respondents' has a negative relationship with both outcome variables, as expected. It significantly reduces in 76% the odds of having PCP across NAs, but the 31.5%-decrease in the odds of CP is insignificant. Similarly, the ´proportion of unemployed' decreases in 36% the odds of CP and 93% the odds of having PCP, but only the latter is significant. Average SES shows an inverse behaviour, since a one-unit increase translates into more than a two-fold increase in the odds of CP, but its 33%-increase in the odds of having PCP is insignificant.

According to these findings, it seems that better living conditions are particularly important for encouraging collaboration between the residents and the police. In contrast, higher concentrations of 'proportion of unemployed' and 'proportion of victimised' seem to indicate that, although worse living conditions in a NA do not directly affect such collaboration in a significant way, they do affect PCP. These findings speak to those discussed in Chapter 8. On one hand, people with worse living conditions are vulnerable and in greater need of police help. Therefore, even if they distrust the police, they are more likely to cooperate with them. On the other hand, higher levels of SES, both individually and across NAs, favour CP perhaps since better-off residents have more resources to voice their demands and exert pressure on the police –as mentioned in Chapter 8. Another insight from these findings is that neighbourhood effects of higher concentrations of structural factors and crime might flow through PCP to affect CP. Worse living conditions might thus have significant negative impacts on CP, only when PCP is affected. This further supports the mediating relationship of PCP with CP; and expands its role to mediate, not only individual predictors, but also neighbourhood-level explanations.

Secondly, the coefficients of individual victimisation and SES show the same signs as those discussed in Chapter 8. However, they have lower effects on the outcome variables, and each of them is only significant either on PCP or CP, just as their neighbourhood-level counterparts. It could be that the model is benefited by considering two levels of analysis, to account for the potential error of the 'ecological fallacy' (Snijders and Boskers, 2012: 15, 83). Thus, correlations between neighbourhood-level predictors and the outcome variables cannot be used to make inferences about micro-level relationships between the same variables.

Thirdly, 'proportion of indigenous population' stands out as a measure with an atypical behaviour in the analysis. Even though it exhibited significant coefficients, it was excluded in the final version of Model 6. Prior analysis revealed extremely large odds ratio –especially for CP. This could occur due to the presence of outliers, a considerable number of missing values or strong correlations with the other predictors. Missing data is not an issue here since the analysis used imputed datasets. This variable also exhibits weak correlations with other significant predictors included in this model, as the bivariate analysis showed above.

It could thus be that outliers might be biasing the coefficients of this predictor. Its standard deviation is very low (0.010), but its distribution is highly right-skewed. A deeper analysis shows that the highest proportion of indigenous population in a NA reaches 6%, with 90% of the NAs having a proportion of 2% or less. Therefore, the predictor's coefficients seemed to reflect an artificial dichotomous behaviour, which led to non-reliable relationships. Its marginal correlation coefficients with the outcome variables (r =-.021 for PCP and r =-.047 for CP) further support that view.

Fourthly, adding the two aspects of trust in Model 5 mitigates the neighbourhood effects of victimisation levels and average SES. These effects further decrease, as well as that of 'proportion of unemployed', with the addition of 'police legitimacy' in Model 6. Consistently with the findings discussed in Chapter 8, the effects of 'trust in the police' and 'police legitimacy' are highly significant. This result reinforces the relevance of individual perceptions on such aspects in eliciting the outcome variables –especially PCP– despite crime and social hardship. As mentioned above, the ICC of PCP is lower than 5%, suggesting that, as the specific weight of each of those neighbourhood characteristics drops, the within-NA views on PCP become less homogeneous. Again, 'trust in police effectiveness' alone has stronger direct effects than 'trust in police fairness' on the outcome variables. However, the combined impact of 'trust in the police

fairness' and 'police legitimacy' stand out as the strongest in explaining PCP and CP. The highly significant coefficients of these mediated relationships are indicated below, in Table 17. According to these findings, neighbourhood characteristics are important in their own right for explaining the outcome variables, but a portion of their negative effects are attenuated by the combined influence of 'trust in police fairness' and 'police legitimacy'.

Table 17. Mediated effects by police legitimacy and PCP

Predictor	Mediator	Outcome	Effect
Trust in police effectiveness	Police legitimacy	PCP	2.630**
Trust in police fairness	Police legitimacy	PCP	33.049**
Trust in police effectiveness	Police legitimacy	CP	9.253***
Trust in police fairness	Police legitimacy	CP	3115.048***
Police legitimacy	PCP	CP	3.199**

Source: *Así Vamos* 2018 (Cómo Vamos, 2018).
Sample size = 2,392 (20 imputed datasets) | ***p<.001 **p<.01

Overall, the indicators of social hardship and crime which have been found to be significant, provide additional support to the relevance of 'neighbourhood effects' in the context of the MMA. Thus, neighbourhood characteristics not only vary across NAs, especially CP, but some of these –proportion of unemployed, proportion of victimised and average SES– appear to be particularly relevant. Therefore, these findings lend support to Hypothesis 5 of this thesis, according to which the residents of neighbourhoods with higher concentrations of crime and structural factors are less likely to express PCP and CP than those living in areas with lower concentrations. It is worth noting though that just the forms of social disadvantage mentioned above were significant, whilst residential instability and ethnic diversity were not.

9.4.3. Limitations of the quantitative analysis

The findings discussed so far offer a great degree of consistency with the evidence from the Global North, according to which "neighbourhood clustering seems to be a function of ecological context rather than differential sample composition" within NAs (Jackson *et. al.*, 2013: 163). This is clearer for CP than for PCP, as the ICCs

discussed above indicate. In addition, the characteristics of the NAs where citizens live appear to explain their perceptions of PCP and CP, after controlling for individual-level predictors. These findings offer support to Hypothesis 5 and answer research question 5 set out in Chapter 4. They are also consistent to a great extent with the results presented in Chapter 8, especially on the stronger combined effects of 'police legitimacy' with 'trust in police fairness' than with 'trust in police effectiveness' on the outcome variables.

Even so, some limitations must be acknowledged. For instance, the coefficient of the combined effect of 'trust in police fairness' and police legitimacy on CP appears to be excessively high (OR = 3115.04) as shown in Table 17. This is possibly due to the strong correlation of such predictors (r =.94), even though they measure different concepts, as discussed in Chapter 7. A possible reason behind such an unexpected coefficient is the structure of the '*Así Vamos* 2018' dataset. A combination of answers represented by categorical indicators among a small subsample of respondents, incorporated in a complex model, exacerbates the effect observed in the pathway 'trust in police fairness → police legitimacy → CP'. Another plausible explanation could be that certain measures used, or the lack of others, for operationalising central concepts of PJ theory affected model specification, to some extent. This complexity plus the impossibility of estimating models with alternative techniques, pose a caveat about the scope of these findings.

A second limitation is the exclusion of random slopes from the analysis. As discussed in Chapter 5, these allow the effect of individual-level predictors to vary between NAs (Snijder and Bokers, 2012: 77). Their inclusion could have helped to improve the specification of the model, although they would have added complexity to an already complex estimation. In addition, the size of the dataset is insufficient for fulfilling such a purpose. Alternative models –not included here due to space reasons– failed to converge due to identification issues associated to less degrees of freedom than required.

Considering these limitations, the models' robustness could be assessed by looking at their fit indexes. As discussed in Chapter 5, lower -2*Loglikelihood, AIC, and BIC coefficients indicate a better model fit. However, these indexes increase across models, in contrast to the expectations. This occurs because the incremental approach adopted involves adding parameters –especially in Models 5 and 6–, which increases the complexity of the estimations. Moreover, such indexes are not quite clear about

the model fit. Estimations with imputed datasets in Mplus 6.1 do not allow to run chi-square difference tests to compare models.

On top of these limitations, it is worth reminding the constraints involved in a cross-sectional study for making causal inference, as discussed in Chapter 5. As previous research suggests (i.e. Jackson *et. al.*, 2012; Skogan, 2009), it is necessary to conduct longitudinal or experimental studies to obtain more robust estimates, especially regarding the causal ordering issue.

Hence, these limitations could pose doubts to the findings discussed, despite their consistency and significance. For this reason, qualitative data is once more useful for illustrating whether and how neighbourhood effects may alter individual perceptions of PCP and CP across NAs in the MMA. The experiences of the representatives of ten local organisations contribute to expand such understandings, in order to enhance the findings of this study.

9.4.4. Illustrations of neighbourhood effects

Concentrated disadvantage

A majority of participants agreed that the type of relationship between the residents and the police was associated with neighbourhood characteristics, in most cases. For instance, they shared several experiences on how the treatment that the police gave to the residents varied according to the physical conditions of the neighbourhoods where they lived. As one participant exemplified:

> *"As one participant explained, from police officers' perspective, they had to 'take care' of the residents in newly created semi-gated neighbourhoods; While in the other neighbourhoods, where the residents lived in poorer conditions and lacked streetlights, the police did not treat them in the same way"*. – Organisation H.

In some neighbourhoods with lower SES levels, the police were absent most of the time. As mentioned in Chapter 8, these were peripherical neighbourhoods in the MMA where the residents "felt forgotten by the police" (Organisation E) and, therefore, left in a vulnerable state. In these conditions, it was difficult for both parties to establish

a relationship. Thus, CP was practically non-existent, and the residents' perceptions of PCP were generally low.

Interestingly, several participants noted that, in neighbourhoods with higher SES, especially middle class, the residents used to be better organised. This is consistent with the findings in Chapter 8, on the resourceful condition of individuals with higher SES for dealing with the police. It seems that residents of better-off NAs tend to have more capabilities for voicing their demands, than residents of worse-off NAs. As one participant explained:

> *"In these neighbourhoods, people demand the fulfilment of their rights, because they know that they pay their taxes, and if they need something, they demand it from the municipality. The police also know that they (the residents) know their rights, that they can complain and follow up on these. In contrast, in neighbourhoods with low SES, residents do not even know their rights well. Most of them dedicate their full time to work and earn money to survive on a day-to-day basis"* – Organisation D.

Perhaps, differences in organisational capabilities are less likely to develop in low-SES neighbourhoods since these face fractured settings, as discussed in Chapters 1 and 3. Their residents usually lack a sense of cohesion and are less inclined to commit to informal control practices based on self-regulation. The literature refers to this combination as Collective Efficacy (CE) (i.e. Sampson *et. al.*, 1997). This is, of course, beyond the scope of this research. However, it is worth noting that higher CE levels could 'cushion' the impact of low SES levels –and of other structural factors (Sampson, 2012). It thus deserves attention in future research.

In addition, the degree of organisational capabilities of a group of residents influences the way in which their relationship with the police occurs. Consistently with previous research in the Global North (i.e. Jackson *et. al.*, 2013: 194), this finding suggests that better organised residents are more likely to get the police to collaborate with them, to address an issue in the NAs where they live. In this scenario, high-SES levels empower the residents to seek CP, via their organisational capabilities to "push forward their demands and hold the police accountable" (Organisation B).

On a separate note, it stands out that the participants referred to a set of characteristics of the neighbourhoods to describe them as 'better-off vs. worse-off', or

'poor vs. middle class', rather than pointing to a single attribute. Their comments suggest that the choice of 'Average SES' seems an appropriate expression of CONDIS, which captures the conditions of NAs comprehensively.

Perceptions about crime

The generalised opinion of the interviewees was that structural factors are associated, not necessarily with objective crime measures but with concerns about crime and victimisation. The latter made the people in deprived neighbourhoods felt vulnerable. One possible result of these perceptions was a stigmatisation of such neighbourhoods due to their physical characteristics. As one participant exemplified:

> *"A group of people who used to drink on a very narrow street full of garbage, generated a perception of insecurity among the residents… In these neighbourhoods, past crimes and deprivation reproduced perceptions amongst their residents that those were insecure and conflictive places"*
>
> – Organisation C.

Another plausible outcome was that the residents in these neighbourhoods were keen to have more frequent interactions with the police. As another participant recalled:

> *"People reported crimes that occurred in their neighbourhood to the police, and they wanted them (police) to patrol the neighbourhood, because they felt unsafe"* – Organisation A.

This second finding is consistent with the results discussed above and in Chapter 8, about the impact of individual victimisation on CP. It is also consistent with some previous studies (i.e. Jackson *et. al.*, 2013: 194), on how the more fearful neighbourhoods are, the greater their residents' willingness of CP. However, it contradicts the findings discussed above on the influence of 'proportion of victimised' on CP (see Figure 39). Again, it seems that organisational capabilities are important in terms of supporting CP. The same participant from Organisation A mentioned that "the residents of 'neighbourhood3' were organised and demanded answers from the police. They reported crimes because of their need to feel safe". Therefore, the residents in

NAs most concerned or affected by crime might be more willing to collaborate with the police, but only when they are well organised.

The 'cushion effect' of PJ and police legitimacy

As discussed above, 'trust in police fairness' and 'police legitimacy' appear to mitigate the negative impacts of structural factors and crime on the outcome variables. In several examples, the participants implied that the residents living in deprived areas were less likely to have PCP and express willingness of CP, which was partially related to neighbourhood characteristics, but mostly due to perceptions among the residents that the police were unfair and illegitimate. For example, one participant mentioned:

> *"Residents of highly marginalised neighbourhoods had a fractured relationship with the police, although it should also be noted that the police used to act abusively or unprofessionally"* – Organisation G.

In contrast, perceptions of fair, reasonable and legitimate police behaviour were more likely to elicit PCP and CP, regardless of neighbourhood characteristics. One interviewee mentioned that in some poorer neighbourhoods there were more positive attitudes of their residents towards the police, than in middle-class neighbourhoods, as expressed in the following quote:

> *"In 'neighbourhood1' (poor), the relationship established with the police was more collaborative, largely due to the fact that residents perceived greater responsiveness and better treatment from them, in contrast to what residents of 'neighborhood2' (middle-class) perceived ".* – Organisation G.

According to these examples, the residents living in NAs with higher concentrations of structural factors and crime, who trust in police fairness and confer them with legitimacy are more likely to have PCP and willingness of CP. Hence, even in NAs with adverse living conditions, neighbourhood effects could partially flow via PJ and police legitimacy. These two evaluations of the police combine to elicit the outcome variables, while cushioning the negative impacts associated with living in NAs where crime and social hardship are pervasive.

Overall, these findings enhance the quantitative results discussed above and are consistent with previous research in Global-North jurisdictions, such as the UK and Australia (i.e. Jackson *et. al.*, 2013; Sargeant, 2015, *respectively*) on how vulnerable neighbourhoods could benefit the most from procedurally fair and lawful police behaviour, and which signals that they care about people's needs. Insofar as the residents perceive that the police are on their side and share the same interests, they feel that they can count on the police to maintain social order.

9.5. Conclusion

This chapter expanded the discussion of the findings of this thesis, by taking into account the separate contribution of 'neighbourhood effects' on PCP and CP. These findings revealed that differences in neighbourhood characteristics, accounting for individual predictors, explain CP more than PCP. It seems that individual perceptions about 'trust in the police' and 'police legitimacy' outweigh neighbourhood characteristics in influencing PCP. However, the findings offer support to the hypothetical pathway in which PCP influences CP, consistently with the discussion in Chapter 8.

As expected, higher concentrations of structural factors and crime have a negative influence on PCP and CP across NAs, although just some of them were significant. For instance, the results of ML-SEM models showed that 'proportion of unemployed' and 'proportion of victimised' are particularly important in hampering PCP, whereas average SES is more relevant in eliciting CP. What these findings appear to indicate is that people who live in worse-off NAs and more vulnerable to crime, are in greater need of the police to protect them. Thus, they might be keen to collaborate with the police, even if they distrust them. In addition, CP amongst residents of NAs with higher average SES levels seems to be the result of the pressure that they exert on the police to get them to address an issue. As they are more resourceful than residents of lower-SES NAs, they feel entitled to voice their demands. These findings support Hypothesis 5 which, in turn, answers research question 5. They also provide a great degree of consistency with the findings discussed in Chapter 8.

However, the quantitative results present some limitations about the robustness of the estimated models. Hence, the qualitative data obtained from interviews with representatives of ten local organisations was used once more for enhancing such

results. Two important findings stemmed from the qualitative analysis. First, neighbourhoods where their residents are better organised are more likely to express CP, although this tends to occur in high-SES neighbourhoods. Thus, organisational capabilities must be considered in future research. Second, the aspects of PJ (quality of treatment and decision-making) and police legitimacy could do much for mitigating the negative influence of structural factors and crime on residents' perceptions of PCP and CP. Even in NAs where crime and social hardship are pervasive, police behaviour, which is procedurally fair, lawful and conveys to the people that they have their interests at heart, could have a cushioning effect on PCP and CP.

Chapter 10. Conclusions

The reform process that the federal government has undertaken during the last fifteen years, motivated the research presented in this thesis, about whether the normative underpinnings of PJ theory –'trust in police fairness' and 'police legitimacy'– are more influential than instrumental concerns –such as 'trust in police effectiveness'– for enhancing PCP and CP, accounting for individual and neighbourhood characteristics. The analysis in this thesis sought to achieve two major objectives. First, to elucidate the extent to which the adoption of the PJ framework in the MMA yields similar results to those produced in the Global North, to understand if it fits this context. Second, to analyse if the interplay of 'trust in police fairness' with 'police legitimacy' weighs in more than the combined effect of the latter with 'trust in police effectiveness' for improving PCP and CP.

Overall, the findings show that, even in a jurisdiction with a less mature democracy, a political culture which reflects reminiscences of authoritarianism, where crime and social hardship are more unequally concentrated across the MMA, and their levels in worse-off neighbourhoods are higher than in Global-North jurisdictions, the underpinnings of PJ theory could enhance PCP and CP. The central normative elements of this framework –'trust in police fairness' and 'police legitimacy'– combine to have a stronger effect on the outcome variables than 'trust in police effectiveness' and other instrumental considerations. Thus, when the people trust that the police treat them with fairness, they are more prone to perceive them as a legitimate and, in turn, more likely to have PCP and willingness of CP.

This chapter draws together the results presented in Chapters 7 to 9. First, the key findings are summarised, highlighting similarities and differences with respect to the evidence produced in the Global North. Then, the implications of these findings for the PJ framework are discussed, noting that some of its underpinnings must be refined. The MMA residents prioritise normative and instrumental aspects of trust in different ways, partially shaped by the contextual characteristics where they live. The third section of this chapter outlines the limitations of this thesis. The fourth section discusses the implications of these findings for police reform pushed forward in recent years and, consequently, for policing in the MMA. Finally, the last section sums up the key findings and highlights the areas in which further research is needed.

10.1. Overview of the results

The results presented in this thesis have showed a great extent of consistency with the findings of PJ research conducted in the Global North. As expected, the normative features of police behaviour can be more relevant than instrumental concerns in influencing citizens' views of the police. Trusting police fairness in their proceedings is more relevant than trusting in their effectiveness, for generating positive perceptions about their legitimacy. Moreover, police legitimacy has a mediating role between such aspects of trust and the outcome variables. This shows that, when police legitimacy works together with 'trust in police fairness', it has a stronger positive effect than its combined effect with 'trust in police effectiveness', on PCP and CP. In addition, as people have PCP, this triggers in the people a normatively motivated willingness to collaborate with the police in solving problems that affect the social group to which both belong. These findings also show that 'contact with the police' is only relevant in affecting PCP and CP, when it interplays with 'victimisation'. Those who have been victimised are more prone to contact the police and most contacts tend to be negative. Therefore, they are the least likely to express PCP and CP. These findings hold true after accounting for neighbourhood characteristics, some of which showed to have a contribution in explaining the variation of the outcome variables.

10.1.1. How consistent are the understandings of the central concepts of PJ theory in the MMA with those of the Global North?

The extant research on PJ discussed in Chapter 2 has treated each of its key concepts as a construct made up of specific indicators. Most studies have assessed their internal consistency before analysing the relationships among them. A main concern raised in this thesis, was that the limited number of measures available in the *'Así Vamos* 2018' dataset, and other data sources impeded the evaluation of the psychometric properties of each construct. Therefore, the approach adopted in this study was to assess different combinations of the measures used for operationalising the key PJ concepts. The results of the CFA models presented in Chapter 7 showed that such combinations do not reflect a same latent variable in any case, which lends support to the discriminant validity among them. In addition, the exploration of vicarious experiences among the participants interviewed, provided useful insights about how

the MMA residents understand the key PJ concepts. The results showed consistent meanings with those captured by the measures used for operationalising key PJ concepts. Most understandings in the MMA also match the conceptualisations documented in the Global North, despite its different social conditions and democratic maturity. Even so, certain understandings among the MMA residents exhibit distinctive variants with respect to the conceptualisations developed in the PJ literature in Global-North jurisdictions.

Consistency between measures and understandings

Exploring understandings of key PJ concepts allowed a 'triangulation of measures' (Neuman, 2013: 166), that is, interpreting whether the quantitative measures taken from *'Así Vamos* 2018' reflected some of the notions expressed by the interviewees, on behalf of the MMA residents. In general, these findings support the choice of the measures used in the quantitative analysis. For instance, the MMA residents understand 'trust in police fairness' as 'respectful and just treatment' received by the police, which closely matches the conceptualisation of 'quality of treatment' in the PJ literature, both in the Global North and Global South. Any disrespectful, rude, or even mocking demeanours of police officers could severely worsen people's perceptions of police fairness. Similarly, 'trust in police effectiveness', the findings showed that the residents wish to have 'police presence' more often, as this helps to deter potential delinquents, and it conveys to the residents that the police are 'doing their job' (Wolfe *et. al.*, 2016). This understanding is consistent with the conceptualisation in the Global North, which have treated police visibility in instrumental terms for operationalising effectiveness of police performance.

Regarding 'police legitimacy', the most recent research on PJ has distinguished it from 'trust in the police'. It has been conceptualised in the Global North in normative terms, which involves not just the recognition, but also the justification of power and authority. One concern about the measure used for operationalising 'police legitimacy' ("Is the treatment of the citizen to the police officer respectful?") in the MMA was that it seemed to capture a wide range of understandings. The citizens could be respectful to the police for normative or non-normative reasons. The findings strongly suggest that the residents justify policy authority due to normative motivations, especially when they perceive that the police act in lawful ways because they care about people's

needs. The police are thus perceived to be “appropriate, right and ethical” (Murphy *et. al.*, 2009: 19). Interestingly, the findings show that, in Global South settings, ‘felt obligation to obey’ reflects a construct different from police legitimacy, and it must be better understood as an outcome. The findings also support the view that normative considerations increase the chances of obeying the police. Therefore, the latter reflects a form of compliance, rather than a ‘feeling of moral duty’ as it has been treated in most Global-North studies.

The understanding of non-measured subconstructs

The interviews also allowed to explore notions related with other subconstructs which could not be captured by the quantitative measures. The findings illustrate that ‘quality of decision-making’ is understood as ‘agreement with police decisions’ among the MMA residents. These understand it as one of the main attributes of ‘trust in in police fairness’ (the other is ‘quality of treatment’ mentioned above), consistently with the conceptualisation in the Global North. Accordingly, the police are perceived to behave fairly when individuals consider them to be impartial in their dealings with the citizens, pay attention to their requests and explain to them the reasons that lie behind their decisions.

The findings also show considerable similarities between instrumental concerns of ‘trust in police effectiveness’ documented in the PJ literature, and the references made by the participants. For example, the residents understand it as ‘preventing and tackling crime’, and ‘responsiveness of the police’, in addition to the notion of ‘police presence’ outlined above. Such subconstructs clearly match the conceptual definitions developed in the Global North (i.e. Nix *et. al*., 2015), according to which individuals trust police effectiveness when the latter are perceived to be technically competent in preventing and fighting crime and answer promptly to people’s emergencies. Importantly, ‘preventing and tackling crime’ also entails a distinctive notion that the police should ‘follow up reports’ previously made by the residents. In the MMA, the citizens consider that the police must keep them updated about the status of crime investigations or any other incidents reported to them, as part of their crime resolution duties. In addition, the findings are consistent with the choice of using ‘responsiveness of the police’ for operationalising ‘trust in police effectiveness’ in a few studies in the Global North (i.e. Jackson *et. al.*, 2013).

In addition, the references made by the participants strongly suggest that 'police legitimacy' is rooted in normative considerations, as mentioned above. There are, however, distinctive understandings that become relevant in the MMA context. For instance, the MMA residents understand 'legality of the police' as 'police abuse' and 'police corruption'. Therefore, 'illegality of the police' is a more appropriate conceptualisation for such normative features which are framed in negative terms. Importantly, these have been studied in Global-South jurisdictions (i.e. Tankebe, 2010; Jackson *et. al.*, 2020), in contrast to the research in the Global North where 'legality of the police' has been framed only in positive ways. Similarly, a sense of 'closeness' between the police and the citizens was a key reference to 'normative alignment', which conveys to the people that the police share the same 'sense of right and wrong' with them and are on their side (Jackson and Gau, 2016). Interestingly, 'closeness' has not been identified as a form of 'normative alignment' in previous studies in the Global North. It thus appears as a distinctive notion in the MMA, which implies that the police care about the residents' concerns and issues going on in their neighbourhoods.

10.1.2. Does 'police legitimacy' work together with 'trust in police fairness' more strongly than with 'trust in police effectiveness' for influencing PCP and CP?

The results presented in Chapter 8 support the hypothetical indirect relationships set out in Chapter 2 (Figure 3), whereby 'trust in police fairness' and 'trust in police effectiveness' generate 'police legitimacy' and, in turn, they work in tandem for influencing PCP and CP. Consistently with the evidence from the Global North, the findings show that PJ is the main antecedent of 'police legitimacy' and, thus, more relevant than any instrumental concern. However, the results also show that the direct effects of 'trust in police effectiveness' on the outcome variables are stronger than those of 'trust in police fairness'. This indicates that instrumental concerns, such as 'police presence', are prerequisites that the residents value and which must be satisfied. It is unsurprising that 'trust in police effectiveness' has its own stake of importance, in a context such as the MMA, characterised by higher concentrations of crime, where the institutions have failed to deliver a basic level of security and a considerable proportion of the citizens live in vulnerable social conditions. As in other settings in the Global South, the police in the MMA must demonstrate their usefulness, before being "caught up heavily" in 'trust in police fairness' (Jackson *et. al.*, 2013: 67).

Therefore, these findings partially support Hypothesis 1, since 'trust in police fairness' increases the likelihood of improving people's perceptions of police legitimacy more than 'trust in police effectiveness', but the latter weighs more in boosting PCP and CP.

The analysis in Chapter 8 also shows that 'trust in police fairness' works indirectly and together with 'police legitimacy' for shaping PCP and CP, which supports the view that PJ flows through 'police legitimacy' (Sunshine and Tyler, 2003). In addition, this finding strongly suggests that 'police legitimacy' mediates the relationships between the aspects of trust and the outcome variables. Moreover, 'police legitimacy' combines with 'trust in police fairness' more strongly than with 'trust in police effectiveness' for boosting PCP and CP. Trusting police fairness conveys to the residents that the police act out of good will and for the people's benefit. This perception implicitly justifies the police authority in the residents' eyes, thereby motivating their consensual deference and improving their perceptions of PCP and CP (Merry *et. al.*, 2012). These findings echo the discussion in Chapter 3 about the limitations of instrumentally led policing for improving people's views of the police. They also support Hypothesis 2 in the sense that the joined influence of 'police legitimacy' and 'trust in police fairness' is greater than that of the latter with 'trust in police effectiveness' for enhancing the outcome variables.

It is also worth noting that these results are consistent across respondents, despite their differences in gender, SES and age. As expected, older individuals with a higher SES tend to express PCP and CP, although age is only significantly associated with PCP. The findings also show that, as an individual characteristic, gender does not add any value to the analysis. Regarding 'contact with the police' and 'individual victimisation', these are considered further below, but it is important to note that these do not substantially alter the results. These are consistently reinforced by the findings presented in Chapter 9, which account for neighbourhood characteristics (Figure 13 in Chapter 4).

10.1.3. How does PCP affect the relationship of 'police legitimacy' with CP?

As discussed in Chapter 2, PCP results from the interplay of competing aspects of 'trust in the police' with 'police legitimacy'. The findings presented in Chapter 7 strongly suggest that normative considerations in the relationship between the citizens and the police are particularly important for eliciting PCP. This connection between

such considerations and PCP is expressed in the form of ‘closeness’, which make it more likely for the residents to express ‘overall trust in the police’. In turn, PCP triggers motivations on people’s minds which favour their collaboration with the police. This means that ‘police legitimacy’ could flow through PCP to favour CP. As suggested in Chapter 3, there appears to be a relationship between both outcome variables. The declining trend in PCP in Nuevo Leon since 2017 could explain the low citizen collaboration with the police –evidenced by the dark figure of crime.

The findings presented in Chapter 8 show that the direct effect of ‘police legitimacy’ on CP is larger than its indirect effect. This difference in magnitude signals the mediating role of PCP. However, this finding fails to support Hypothesis 3, according to which PCP enhances the positive association between ‘police legitimacy’ and CP. Although this result supports the view in favour of such an indirect pathway, PCP appears to work together with police legitimacy for moderating –not necessarily enhancing– the effect of ‘police legitimacy’ on CP. Despite this partial consistency with the expectations, it is worth noting two important implications of these results. First, the residents express more willingness of CP when they perceive the police to be legitimate. Nevertheless, it is not clear the extent to which CP is more related to normative than non-normative aspects of ‘police legitimacy’, due to the limited scope of the measure used (“Is the treatment of the citizen to the police officer respectful?”). Second, the results presented in Chapters 7 and 8 show that, although normative aspects –such as ‘closeness’– are powerful motivators of PCP and CP, there are non-normative concerns which also shape these outcome variables, but differently. The residents collaborate with the police for different reasons, but their perceptions of PCP in the police seem to be more closely related with normative considerations. It is understandable that dull compulsion or instrumental aspects might contribute to induce collaboration, while moderating PCP.

10.1.4. How does recent ‘contact with the police’ affects PCP and CP?

The discussion in Chapter 2 noted that PJ research has yielded mixed results about the influence of ‘contact with the police’ on moulding people’s opinions on PCP and CP. It was also outlined in Chapter 3 that the residents and the police have strained relationships, mainly related to the overlapping of conflicting policing approaches in the MMA, and a differentiated policing delivered across neighbourhoods, depending on

their living standards. The importance of studying this lies in the frequency with which the local police bodies –especially the municipal forces– have contact with the MMA residents.

The results in Chapter 8 indicate that 'contact with the police' initially affects PCP and CP in a negative way, consistently with the expectations and with the evidence from the Global North. However, it showed insignificant and marginal influence in subsequent models, notably due to the introduction of 'victimisation', which exhibited significant and negative effects on the outcome variables. It seems that victimisation 'captured' the initial effects of 'contact with the police'. This suggests that victims who reported crimes to the police were more likely to have experienced negative contacts with them and, in turn, less likely to express PCP and CP.

This finding also shows that, when the aspects of 'trust in the police' are considered in the analysis, these mitigate the negative effect of 'victimisation' on the outcome variables. Victimisation thus flows through them for affecting PCP and CP. A possible explanation is that individuals who contact the police and feel disrespectfully treated by them, are less likely to defer to them, possibly because mistreatment damages people's perceptions that the police have their interests at heart (Jackson *et. al.*, 2013). A lack of police presence or timely attention when individuals contact them seems to have a similar effect.

Thus, these findings fail to support Hypothesis 4, in the sense that individuals who had recent 'contact with the police' are more likely to express PCP and CP than those who had not. Nonetheless, they speak to the potential of PJ foundations for improving opinions among victimised individuals. If they perceive the police to be fair and legitimate, this could outweigh –at least to some extent– the negative effects of 'victimisation' on PCP and CP. This view is consistent with the research conducted in the Global North, on how the quality of treatment that the citizens receive when they contact the police, shapes their judgements and attitudes towards the police.

10.1.5. Do concentrations of structural factors and crime have a negative influence on PCP and CP across neighbourhood areas?

As discussed in Chapter 2, the most contemporary studies on PCP and CP have considered non-individual characteristics in their analyses. The evidence has shown that such features tend to concentrate unevenly across geographical units. Following

this consideration, the research on PJ has studied such concentrations with especial attention to 'neighbourhood effects', to study the separate effects of certain factors at this level of analysis on PCP and CP. Previous studies aggregated data and employed inappropriate techniques to account for the influence of neighbourhood-level indicators on the outcome variables. In contrast, this study used ML-SEM for producing reliable estimates and to account for the variation at two different levels of analysis.

It was described in Chapter 5 that NAs were created according to quantitative and qualitative criteria. These NAs, in turn, allowed the estimation of neighbourhood-level indicators, which were then used for estimating the ML-SEM models. The results of these estimations were presented in Chapter 9. According to these, 15% of the chances of having PCP and 20% of expressing CP are explained differences in neighbourhood characteristics across NAs. These variations moderately change when considering individual characteristics. However, when accounting the aspects of 'trust in the police', the variation of PCP drops substantially to 4.9% and that CP stays at 20%. Therefore, these results show that the neighbourhood level is relevant for the analysis. The 'neighbourhood effects' associated with concentrations of social hardship and crime shape the outcome variables, although only CP clusters at this level in a relevant way. This means that individual perceptions of CP in each NA seem to be more similar than those of PCP. In contrast, the 'neighbourhood effects' on PCP run mostly via 'trust in police fairness' and 'trust in police effectiveness'. The consideration of 'police legitimacy' in the analysis barely changed the variations of the outcome variables across NAs. This finding on the more similar opinions around CP than PCP among a group of residents is consistent with some views from the Global North (i.e. Jackson *et. al.*, 2013) on people's necessity to report crimes when they live in contexts where social order is constantly under threat (Jackson *et. al.*, 2013: 167). It also speaks to the view that CP could be understood as a neighbourhood-level norm which, in turn, might predispose individuals' willingness of CP (Jackson *et. al.*, 2020a).

More importantly, the findings lend a great extent of support to Hypothesis 5, in the sense that higher concentrations of structural factors (social disadvantage, residential instability, ethnic diversity) and crime are less likely to express PCP and CP than those living in areas with lower concentrations. However, not all the geographically concentrated factors significantly affect the outcome variables and in the same way. For instance, the indicators related with residential instability and ethnic diversity were insignificant or failed to add value to the analysis, in contrast to the

expectations and the evidence produced in the Global North. Similarly, it was surprising to observe that 'crime rate' rendered insignificant coefficients, in a context with considerably higher figures than in Global-North settings. Only three indicators out of all those considered yielded significant relationships, but each with just one outcome variable. For example, 'Average SES' only increases the likelihood of CP, 'proportion of unemployed' just decreases the likelihood of having PCP and 'proportion of victimised respondents' only has a negative effect on PCP. Even so, these relationships showed the expected directionalities, consistently with the literature (Sampson, 2012; Sargeant, 2015).

In addition, the findings show that higher levels of unemployment and victimisation reduce PCP, while a higher average SES favours CP. This suggests that better living conditions in a NA encourage the residents' collaboration with the police, but worse living standards do not affect such collaboration. In contrast, adverse neighbourhood characteristics appear to shape negative perceptions of PCP. These findings reinforce a remark made above, about how the residents collaborate with the police for multiple reasons. Those living in worse-off (and vulnerable) NAs express their willingness of CP out of necessity, even if they lack PCP. In addition, the likelihood of CP increases among individuals with a higher SES living in better-off NAs, since they are more resourceful for exerting pressure on the police to get them to address the residents' demands. This CP thus appears to be propitiated by the residents themselves.

It appears that considering certain variables at both levels of analysis also contributed to prevent and error of 'ecological fallacy', for example, by accounting for the effects of victimisation and SES at the individual and neighbourhood levels, separately. This two-level approach also appears to add robustness to the analysis of the interplay of the aspects of trust and police legitimacy with the outcome variables. The findings are consistent with those discussed above, on the stronger direct effects of 'trust in police effectiveness' than 'trust in police fairness' on PCP and CP, but a stronger combined effect of 'trust in the police fairness' and 'police legitimacy' in eliciting the outcome variables. Notwithstanding the relevance of 'neighbourhood effects' in their own right, a portion of their negative influence on PCP and CP seem to be mitigated by the joined influence of 'trust in police fairness' and police legitimacy. This strongly suggests that the residents living in the most vulnerable conditions could benefit the most from fair and legitimate police behaviour.

10.2. Implications for the PJ framework

The findings presented in this thesis support the main central tenets of PJ in a Global-South context, despite its higher concentrations of crime and social disadvantage. Importantly, normative and instrumental aspects of 'trust in the police' mould people's perceptions of 'police legitimacy'. These results also favour the view that such normative aspects work more strongly than instrumental concerns with 'police legitimacy' for motivating PCP and CP. On this account, it is worth noting some particular ways in which the MMA residents understand such conceptual relationships, according to the settings where they live.

Distinctive features of key concepts

A main feature observed in the MMA is that the residents internalise the belief that the police are on their side insofar as they have a close relationship with them. The police can achieve 'closeness' by treating the residents in procedurally fair ways. This is how the police symbolically convey their adherence to the group's norms and values. This perception among the residents that they share group membership with the police seems to be crucial for improving PCP and CP. Therefore, in this Global-South context, the notion of 'closeness' expresses people's judgements entailed in the concept of 'appropriateness of the police' developed in the Global North.

Another feature to highlight is 'police corruption' –one type of police misconduct. While 'police abuse' –its other typology– has attracted some attention in the Global North, 'police corruption' has not been sufficiently researched in such settings. Most studies have focused on measuring the extent to which a fair (or unfair) treatment favours (or prevents) the citizens' voluntary deference and perceptions that the police are appropriate. Yet, the results described show that 'police corruption' worsens the residents' attitudes towards the police. Analysing this typology could offer a broader picture about police conduct which could be more serious in the people's eyes. Thus far, 'police corruption' has been 'neglected' in the Global North, perhaps due to their more mature democratic institutions, hardly seen as dishonest. On the contrary, in Global-South settings, where instrumental priorities are more common, aggressive policing strategies are more likely to be intermingled with corruption and other misconduct practices. In these contexts, a concern that the police overstep the rightful

limits of their authority and fail to justify the exercise of their power has shown to hurt the police-citizens relationship (i.e. Bergman and Flom, 2012; Jackson *et. al.*, 2020; Tankebe, 2010).

Different reasons for obeying and complying

The findings in this thesis support the view of more recent research in the Global North (i.e. Gau, 2011; 2014), in the sense that 'obedience' is the result of positive perceptions of 'police legitimacy'. These concepts are thus separate from each other. Understanding 'obedience' in these terms implies that it is a form of compliance, motivated by the normative concerns that 'police legitimacy' encompasses. Even though normatively motivated compliance is more desirable and sustainable in the long term, the findings indicate that the MMA residents also obey for instrumental and non-normative reasons. The literature in the Global North has documented the superiority of normative features over non-normative and instrumental attributes for motivating obedience (i.e. Pósch *et. al.*, 2020). In contrast, this study shows that, in certain situations individuals obey the police out of 'risk of sanction', 'fear of the police' and 'dull compulsion'. As in other settings in the Global South (i.e. Jackson *et. al.*, 2020; Tankebe, 2009), deficits in police legitimacy deficit and circumstances in which the citizens are left in powerless or less resourceful positions for voicing their demands and preventing police abuse, are more likely to motivate obedience. This fact implies that normative considerations are not always superior, and the citizens might think only in instrumental or non-normative terms when they have no other choice.

Contact-based perceptions and vulnerable individuals

The extant literature in the Global North shows that 'contact with the police' does contribute to shape the citizens' opinions about them. These judgements tend to be negative or have small positive impact. In contrast, global perceptions are more stable over time, and seem to contribute to enhance PCP and CP. The findings in this thesis are consistent with that view. Global perceptions appear to be more relevant than contact-based opinions.

More importantly, the findings suggest that individuals in vulnerable positions tend to evaluate their contacts with the police in a negative way, across the eleven

municipalities considered. This occurs mostly in NAs with worse-off living conditions, which speaks to the findings mentioned above, on how people in vulnerable circumstances are more likely to experience some type of police misconduct. In line with the evidence from the Global North –especially anglophone countries–, individuals in vulnerable situations seem to form their judgements about the police differently than the general population, related to a great extent to the quality of contacts that they experience.

Neighbourhood effects and procedurally fair police behaviour

Thus far, there are no studies in Mexico about 'neighbourhood effects' on PCP and CP. This line of research has been mainly produced in anglophone countries in the Global North, fostered by the seminal work of Sampson and colleagues (i.e. Sampson, *et. al.*, 1997) in Chicago. The central argument of this research is that structural factors (i.e. concentrated disadvantage, ethnic diversity and residential instability) and crime tend to concentrate unevenly across NAs. In turn, higher concentrations give rise to neighbourhood-based processes that erode social control and favour worse views of the police among the residents. These claims find support in the results presented in this thesis. Worse concentrations of social hardship and crime reduce the likelihood of expressing PCP and CP across NAs. Higher levels of crime and social disadvantage in the MMA than in anglophone contexts was expected to hinder the improvement of the outcome variables.

However, other structural factors, such as residential instability and ethnic diversity, do not seem to be relevant in this context. This is not necessarily due to a theoretical incompatibility, but possibly to the characteristics of the MMA. The proportion of ethnic minorities (mainly indigenous) and foreign groups are considerably low in comparison with settings in the Global North. In addition, the findings suggest that residential instability is associated with people who arrived from other states to live in better-off areas, rather than reflecting disadvantaged NAs. The residents form their judgments about their neighbourhoods mainly based on concentrated disadvantage (e.g. 'Average SES').

Importantly, procedurally fair police conduct seems to be a valuable resource for enhancing PCP and CP, even in a setting where residents in worse-off NAs face severe living conditions. Just as in anglophone contexts (i.e. Reisig and Parks, 2000;

Jackson *et. al.*, 2013), the police demonstrate that they share the resident's values, by engaging in positive relationships with them. This propitiates a social mechanism of 'closeness' which favours PCP and the residents' willingness of CP in crime-reduction efforts. These results also support the findings described above on how police engagements with the public that hoist PJ principles cushion the negative impact of 'neighbourhood effects' on residents' perceptions of PCP and CP.

Alternatives for assessing PJ theory in the Global South

The prolific research on PJ in the Global North has heavily relied on survey data which offers a variety of indicators for testing its theoretical foundations. The analysis of this quantitative data has allowed the refinement of the key PJ-concepts. In turn, these have informed subsequent studies in some Global-South settings. Yet, survey data in these contexts is still scarce and, therefore, most of the few studies conducted have tested just some underpinnings of the PJ framework. Until recently, and to the best of the researcher's knowledge, there had been no attempts to draw on qualitative or mixed methods (see: Neuman, 2013) for expanding the understandings of conceptual relationships which were subject to a limited number of measures in the available datasets.

Precisely, the mixed-methods approach adopted in this thesis has sought to characterise analytical categories (DeCarlo, 2018), delimited by the PJ framework and the assessment of relationships among the measures available in the '*Así Vamos* 2018' dataset. Employing this multi-method strategy allowed this study to gain a better understanding on whether the key PJ concepts and the relationships amongst these in the MMA are similar to those documented in the Global North. This approach joins other strategies employed in earlier research in the 1990s in the U.S. (i.e. Mastrofski *et. al.*, 1996; McCluskey *et. al.*, 1999) and recent studies in the Global South (Jackson *et. al.*, 2020) which, due to scarce survey data, drew on qualitative methodologies for collecting data. However, the aim in this thesis was not to codify qualitative into quantitative data; but to set out analytical categories, to grasp broader definitions of the key PJ concepts in a context where these have been insufficiently studied.

Something similar could be said about the creation of NAs in the MMA. The even scarcer research on this matter in Latin America offered little guidance on the most appropriate criteria for delimiting such geographical units. An attempt to address this

difficulty was made by employing a methodological approach which considered the necessity to explore previously unexplored considerations. Hence, similar qualitative or mixed-methods strategies might be useful in other contexts in the Global South where data is scarce, for producing stepping-stone studies. These could then trigger the production of survey data and subsequent research focused on further testing of PJ constructs.

10.3. Limitations of this study

This thesis offers informative results which lend a great extent of support to the foundations of the PJ framework. They also favour the 'social ecology' perspective on shared views about PCP and CP according to certain neighbourhood characteristics. Despite the implications of these findings for PJ theory and policing in the MMA, there are some limitations outlined below.

The number of key measures available and their scales

The main limitation faced in this study was the limited number of indicators available for measuring the latent constructs corresponding to the key concepts of the PJ framework, which is a consequence of using an existing survey rather than constructing a bespoke study. In contrast to most prior research, the analysis in this thesis relied on single indicators for operationalising each concept, with implications for their validity and reliability. For instance, quantitative studies of PJ have typically used a number of survey items to measure the different latent constructs that underpin people's perceptions of the police. These PJ studies have thus assessed the psychometric properties of such latent constructs, to consider the complexity of attitudes and understandings involved in their composition, as well as to adequately measure the strength and nature of people's beliefs. As such, it is difficult to represent these beliefs with a single measure. Nor is it possible to know what other attitudes and understandings –not captured by the single indicators– could be more important than those considered in the analysis for eliciting PCP and CP. Therefore, as in previous PJ studies in the Global North, "convergent and discriminant validity" of latent constructs has yet to be stablished (Gau, 2014: 192). One important implication of this limitation is that concepts are not sufficiently distinguished from each other, which may lead to

content overlap among the indicators used to measure them. A second implication is that certain key notions touching on such latent concepts might be neglected, which could also result in inaccurate assessments.

This thesis strived to address these concerns by drawing on qualitative understandings, which showed analytical categories consistent with the wording used in the questions included in the '*Así Vamos* 2018' survey. Yet, one must be cautious in interpreting these single-item indicators, especially that of CP. As mentioned in Chapter 4, this could reflect other people's opinions, rather than the respondents' views. The indicator used for measuring CP is a good example, since this could refer to the perception that other people collaborate with the police rather than to a personally declared collaboration.

In addition, the scales of the key measures considered were dichotomous. This type of scale increases the complexity of the analysis and limits the scope of the results that can be obtained. For example, it would be more illustrative to know the different levels of the aspects of trust and police legitimacy that can produce different levels of PCP and CP rather than just binary combinations that produce sharp outcomes (i.e. expressing PCP and CP, or not). Furthermore, considering the limited functionalities of the software used for estimating the SEM and ML-SEM models in this thesis, dichotomous data turns more challenging the presentation of the results in ways easier to understand for a wider audience (i.e. policy-makers).

The nature of contact left unexplored

According to the results of this thesis, it is not quite clear that contact with the police has a significant role. However, prior research on PJ (Bradford *et. al.*, 2009; Bradford, 2014; Pósch *et. al.*, 2020) shows that it is how contact is experienced what matters the most, rather than just considering the mere fact of whether contact occurs. In other words, an individual's judgements about how such a contact with the police develops is what defines its significance. However, this could not be explored in this thesis, due to the limited number of measures available from the dataset.

Confounding effects of different police forces

The rationale of using survey data was to draw on certain indicators for capturing the phenomenon of interest. However, survey data offers just "snapshots of complex realities" (Jackson *et. al.*, 2012: 1061). On top the scarcity of indicators for measuring relevant key PJ concepts, the analysis in this thesis dealt with an inevitable overlapping of police forces across the whole MMA, since public security tasks are shared among the three levels of government. Choosing "an area covered by a single police force" would have been a better choice, to avoid localised effects by different policing policies between corporations (Bates, 2014: 81). This challenge underlines a fundamental point. The way in which the questions (items) were phrased in the '*Así Vamos* 2018' survey, did not distinguish between police forces, which made it impossible to separate the 'confounding effects' associated to the presence of two or more corporations in the same place.

The complexity of ML-SEM models

The estimation of ML-SEM models was one of the key challenges faced in this thesis. This was achieved only through Montecarlo simulations with twenty estimated datasets, which increased the complexity of the analysis. The main drawback of using this technique is the impossibility to obtain convincing measures about the robustness of the models. This means that, to some extent, there are no clear indications of how well an estimated model fits the data. In addition, given the complexity of the models, random slopes could not be estimated. The random slopes variances could have indicated deviations of the effects of the aspects of 'trust in the police' and 'police legitimacy' in each NA, from the overall effects of the same indicators across all NAs (Snijders and Boskers, 2012). In other words, it would have been possible to analyse within-NA effects in addition to between-NA effects.

Limited data for defining NAs and estimating indicators at this level

The Census data considered in the criteria for delimiting the NAs, offered incomplete data at the block-level. In addition, the '*Así Vamos* 2018' dataset included data about 991 neighbourhoods across the MMA. Most neighbourhoods were thus excluded from the survey, which inevitably left 'empty spaces' between

neighbourhoods. This lack of continuity in the social landscape impeded the use of more sophisticated statistical technique for creating NAs. For instance, a Bayesian technique could have been employed to identify steep changes in the spatial data, according to a reliable measure of social homogeneity, estimated with complete block-level data (Dean *et. al.*, 2018). It is worth noting that the reliability of the neighbourhood-level indicators used in the analysis, depend on the accuracy of the NA-boundaries defined. Perhaps, a more exact delimitation of NAs would have improved the appropriateness of the indicators estimated. In addition, the reference years of the datasets considered for calculating these indicators were different. In contrast to '*Así Vamos* 2018', the Census data reflects data collected in 2010, which might explain the poor association between the neighbourhood-level indicators estimated from the Census and the outcome variables obtained from the survey.

The cross-sectional nature of this analysis

As acknowledged in this thesis, cross-sectional data carries a 'causal-ordering challenge' between possible predictors and outcome variables (Chapter 4). There could be temporary variations in individual opinions. For example, PJ concepts, such as 'trust in police fairness' and 'police legitimacy' –on one side– and PCP –on the other side– can potentially feedback each other. As Bottoms and Tankebe (2012) argue, there is dialogic process involved in the formation of judgements about police legitimacy.

The scope of qualitative analysis

With more time and resources, it would have been useful to expand the exploration of the limits of different NAs, directly with groups of residents living there, as well as their understandings about PJ concepts. As noted above, in the previous section, specific views about the key concepts and the relationships among these, must be researched on different social groups. It would have been particularly useful to speak to hard-to-reach groups and individuals in vulnerable positions. Previous research (Jackson *et. al.*, 2012), has acknowledged that such social groups are usually underrepresented in sample surveys.

10.4. Implications for policing in the MMA

For many years, most police forces in Mexico prioritised instrumental aspects. The last three federal administrations have undertaken a series of reforms focused on the modernisation, professionalisation and standardisation of skills and operational protocols of the police forces. More recently, police forces have been steered towards the implementation of a 'social proximity' policing approach to improve their public image, gain the citizens' confidence, and their support in maintaining the public order. These police reforms and policy initiatives have occurred as a consequence of social and media pressure produced by the wave of violence that arouse in the MMA and other regions of the country.

It is worth noting that the policy-making process has been marked by political debates on the most appropriate strategies to reduce violence and provide security to citizens. An important implication of the decisions resulting from such political deliberations is the overreliance on the police as the solution to much of the problem. This expectation presents a pressing concern to local police corporations, especially municipal forces, which are mandated to implement new protocols for accomplishing the goals of the policy. In particular, municipal police forces, altogether, have the greatest territorial coverage in Mexico and, therefore, they also have more frequent contact with the citizens. These corporations are also responsible of most of day-to-day policing tasks. However, local police forces lack specific roadmaps based on evidence, to guide their operational activities and meet the expectations of the policy. In this regard, the findings of this thesis could be useful for informing everyday policing in the MMA. This study provides insights about the underlying aspects that favour closer relationships with the citizens, and the improvement of PCP and CP.

First, the findings support the tenets of 'social proximity' policing in the sense that certain necessities of the citizens are rooted in normative concerns, and these must be taken into account by the police. In fact, the findings brought up positive views among the residents about 'social proximity' policing. Thus, police officers must strive to behave fairly and provide clear explanations of their decisions and proceedings to the citizens, for encouraging closer relationships with them (Tyler and Huo, 2002). These conducts convey to the public the belief that the police are there to back them because they are on the same side. This is also how the police can demonstrate the democratic principles that the 'new police model' ought to represent (Loader, 2007).

Importantly, these police practices do not involve more officers and equipment, or more police visibility. Instead, they consist of how well the police respond to people's needs. This broader approach to policing in the MMA (and in Mexico) implies that the evaluation of police forces must consider, not just instrumental aspects, but also normative concerns related with PJ and police legitimacy. Thus far, the way of assessing police work has heavily focused on performance indicators of effectiveness in preventing and tackling crime, as well as general perceptions on whether the people trust the police and believe that these do a good job.

Second, this research shows the relevance of employing a more sophisticated analysis for grasping a more complete picture of the residents' opinions. The scarce studies available for Mexico have lacked appropriate specification of the relationships analysed. The techniques used in this thesis rendered results that can inform policy implementation and future policy-making. Nonetheless, these results also point out the necessity of collecting data on specific indicators for refining further analyses. For instance, it is necessary to measure the underlying concerns that affect PCP and CP in more robust ways, by relying on multiple indicators for operationalising each key concept. A survey-driven analysis could provide the local police forces with the type of knowledge they need for addressing the concerns that might affect the residents' perceptions about them. This involves working closely with the residents on the issues that matter most to them, as expected from a 'social proximity' approach.

Third, the analysis conducted in this thesis presents a departing point for understanding the relationships between key the PJ concepts. However, it also shows the need of exploring more in-depth the understandings among individuals in vulnerable positions. Studying perceptions of socially disadvantaged groups in Mexico has not attracted the attention that it has received in the Global North (Bradford, 2014). For instance, the findings strongly suggest that individuals who have been victimised, those living in NAs with higher concentrations of social hardship and crime, and social groups who are usually harder to reach (i.e. indigenous) could benefit even more than people in better social positions from a policing approach that employs the central tenets of PJ. In this regard, the police could further these understandings through partnerships with local organisations. These have demonstrated to act as gatekeepers in the past. They also have certain social skills in approaching and establishing close relationships with the people, from which police officers could learn to complement their capabilities of social proximity policing.

Fourth, this thesis offers support for considering NAs as relevant geographical units of analysis for policing. The concentrations of concentrated disadvantage and crime reflect that a group of residents share those social neighbourhood characteristics, which appear to impact PCP and CP. This is especially important, considering that 'social proximity' policing, like other citizen-oriented approaches, is anchored to specific neighbourhoods (or 'communities') served (Myhill and Quinton, 2010). An analysis across NAs could provide useful insights to local police forces about particular conditions in a setting that must be taken into consideration when deploying proximity policing officers. It is expected that drawing on NAs for complementing the geographical analysis currently done by the local police forces, will help the officers to choose the most appropriate course of action for strengthening the relationships with the residents.

10.5. Summing up and horizons for future research

This thesis sought to examine whether 'trust in police fairness' is more influential than 'trust in police effectiveness' in enhancing police legitimacy and if the combined effect of such normative considerations generates the strongest association with PCP and CP in the MMA, taking account of the concentration of crime and structural factors across Neighbourhood Areas. The analysis showed that, even in a city embedded in a less democratic political culture, with reminiscences of an authoritarian legacy, and where the concentrations of crime and social hardship in several neighbourhoods are pervasive and higher than in several Global-North jurisdictions, procedurally fair police behaviour and people's perceptions that the police act lawfully and care about their needs could do much for enhancing police legitimacy. These normative aspects could be more important than 'trust in police effectiveness' and other instrumental considerations for eliciting PCP and CP. Insofar as police legitimacy propitiates a closer relationship between them and the citizens, the latter are more likely to express PCP and CP. The analysis also revealed some evidence of the mediating role of PCP between police legitimacy and CP. Police legitimacy propitiates a sense of 'closeness' between both parties, which arouses the perception among the citizens that they can be confident in the police.

These views do not seem to be significantly altered by having contact with the police. Global opinions appear to be more important than contact-based perceptions. Nevertheless, those who do had recent contact with the police are more likely to experience police abuse or corruption and, thus, are more prone to express negative opinions of them. This might occur as such individuals tend to live in vulnerable or less favourable conditions, usually in neighbourhoods with higher concentrations of crime, where they are more likely to be victimised. Even so, if people trust in police fairness and perceive them to be legitimate, this could cushion the negative effect of high concentrations of crime and social disadvantage across Neighbourhood Areas on PCP and CP. Overall, the findings of this thesis are useful for informing PJ theory and policing in the MMA and Mexico, given the police reform in recent years.

Despite the contributions of this thesis, the limitations and considerations outlined above point to some directions for future research. First, future research must aim to use multiple indicators that could be relevant for measuring PJ constructs. Ordinal, instead for dichotomous scales, could be more useful for testing the internal consistency of such constructs, and for alleviating the complexity of estimations. Second, the confounding effect of different police forces shows the need of producing more comprehensive surveys mentioned above, which must include specific questions that allow the distinction between concepts and police forces. Surveys can be improved to offer "methodological tools that condense a wide range of opinions into an easily digestible nugget" (Jackson and Bradford, 2010: 247). Third, the complexity of ML-SEM models must be considered in future studies. A possible course of action could be to draw on a larger dataset. It seems that this could be helpful to address the complexity involved in a data-intensive analysis, such as ML-SEM (Kline, 2011; Muthén *et. al.*, 2011). For instance, more observations in the '*Así Vamos* 2018' dataset could have been helpful for employing a different technique in the estimations, that could have provided some indication of their robustness. Fourth, in defining NAs and estimating indicators at this level of analysis, researchers would like to analyse data from the latest 2020 National Census. This might be a useful data source for future studies. It is thus worthy of consideration, before disregarding it or choosing other indicators from other sources. Fifth, given the cross-sectional nature of this study, it would be useful to repeat this cross-sectional analysis across multiple years (Norris, 2009: 314). Another possibility is that future studies conduct longitudinal analyses, which could provide refined views of how people's perceptions on the key PJ concepts

change over time. The latter approach would also allow to clarify the causal direction between variables. Sixth, reaching under-represented groups in qualitative analysis is a concern which could be considered in future research for following up and complementing the results presented in this thesis.

Appendix 1. Measures of Trust in the Police, Police Legitimacy, PCP and CP

Table 1. Trust in Police Effectiveness

Australia: Sargeant, 2015	This study
"How good the police do in the community/neighbourhood at...? ***(1=very poor, 2=poor, 3=average, 4=good and 5=very good)*** 1) Solving crime 2) Dealing with problems that concern you 3) Preventing crime 4) Keeping order	**Question asked to all respondents** ***('1 = Yes' and '2 = No')*****:** "Is police presence in your neighbourhood sufficient?" **Those who had an encounter with the police within the last 12 months were asked (where '1 = Yes' and '2 = No')**: 1) Did the police arrive on time? 2) Did the police comply with their work?
United Kingdom: Jackson, *et. al.*, 2013	
"How effective do you believe the police are in…?" ***('1=Not at all well' to '7=very well')*** 1) Preventing terrorism 2) Policing major events 3) Responding to emergencies promptly 4) Supporting victims and witnesses 5) Tackling dangerous driving 6) Tackling gun crime 7) Providing a visible patrolling presence 8) Tackling drug dealing and drug use	
United States: Nix *et. al.*, 2015	
Not tested in the study	

Table 2. Trust in Police Fairness

Australia: Sargeant, 2015	This study
"How strongly do you agree (on a five-point scale) that…?" ***('1=strongly disagree' to '5=strongly agree')*** 1) Police treat people fairly 2) Police treat people with dignity and respect 3) Police are always polite when dealing with people 4) Police listen to people before making decisions 5) Police make decisions based upon facts, not their personal biases or opinions 6) Police respect people's rights when decisions are made	**Question asked to all respondents (*'1 = Yes' and '2 = No'):*** "Does the police officer gives a respectful treatment to the citizen?" **Those that had an encounter with the police were asked:** 1) Did the police ask for a payment (bribe)? 2) Did the police address to you with respect?
United Kingdom: Jackson, *et. al.*, 2013	
"To what extent do you believe that the police in this area…?" ***(1=strongly disagree to 5=strongly agree)*** **Fairness:** 1) Would treat you with respect if you had contact with them for any reason 2) Are friendly and approachable 3) Are helpful 4) Treat everyone friendly regardless of who they are **Shared values and interests:** 1) Are easy to contact 2) Understand the issues that affect the Community 3) Are dealing with the things that matter to people in this community 4) Listen to the concerns of local people 5) Can be relied on to deal with minor crimes	
United States: Nix *et. al.*, 2015	
"How strongly do you agree that the police in your neighbourhood…?" ***(1=strongly disagree to 4=strongly agree)*** **Fairness:** 1) Treat citizens with respect 2) Treat people fairly **Shared values and interests:** 3) Take the time to listen to people 4) Explain their decisions to people they deal with	

Table 3. Police Legitimacy	
United Kingdom: Jackson, *et. al.*, 2013	**This study**
Felt obligation to obey the police: **Three statements (where *1 = strongly agree and 4 = strongly disagree)*** 1. You should do what the police tell you to do even when you do not like the way they treat you 2. You should accept the decisions made by the police, even if you think they are wrong. 3. You should do what the police tell you to do even if you disagree. **Moral alignment with the police:** **Three statements (where *1 = strongly agree and 4 = strongly disagree)*** 1. My own feelings about what is right and wrong usually agree with the law. 2. The police can be trusted to make decisions that are right for people in my neighbourhood. 3. The police usually act in ways that are consistent with my own ideas about what is right and wrong.	**Question asked to all respondents (*'1 = Yes' and '2 = No'*):** "Is the treatment of the citizen to the police officer respectful?"

Table 4. Public Confidence in the Police	
Jackson and Bradford, 2010	**This study**
Three measures framed as "Taking everything into account…" 1. How good a job do you think the police in this area are doing? (where *1 = Excellent, 2 = Good, 3 = Fair, 4 = Poor, 5 = Very poor)* 2. I have a lot of confidence in the police in this area (*where 1 = Strongly agree, 2 = Tend to agree, 3 = Neither agree nor disagree, 4 = Tend to disagree, 5 = Strongly disagree*) 3. The police are dealing with the anti-social behaviour and crime issues that matter in this area (*where 1 = Strongly agree, 2 = Tend to agree, 3 = Neither agree nor disagree, 4 = Tend to disagree, 5 = Strongly disagree*)	**Question asked to all respondents (*'1 = Yes' and '2 = No'*):** "Do you have confidence in the police in your neighbourhood?"

Table 5. Cooperation with the Police	
Jackson and Bradford, 2010 **Jackson *et. al.*, 2013**	**This study**
Three measures framed as "If the situation arose, how likely is it that you would …" (Where '1 = very likely' and '4 = not at all likely') 1… call the police to report a crime you witnessed? 2… report suspicious activity near your house to the police? 3… provide information to the police to help find a suspected criminal?	**Question asked to all respondents (*'1 = Yes' and '2 = No'*):** "Do the citizens collaborate with the police to reduce crime incidence in the neighbourhood?"

Appendix 2. Participant Information Sheet

Research project title: "Public Confidence in Policing in Monterrey Metropolitan Neighbourhoods: the paths of effectiveness, fairness and legitimacy for gaining public confidence and cooperation for the police"

Researcher: Luis Alberto Reyes Figueroa

Instructions

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take some minutes to read the following information carefully. If there is anything that is not clear or if you would like more information, please let the responsible researcher know. Thank you for reading this.

What is this study about?

I am a post-graduate student from the Law School, at the University of Edinburgh. Currently, I am doing my doctoral research in criminology. My research topic is "Public Confidence in Policing in Monterrey Metropolitan Neighbourhoods: the paths of effectiveness, fairness and legitimacy for gaining public confidence and cooperation for the police." I will be doing online fieldwork in Monterrey during the month of June 2020, to collect data about conceptual elements or aspects of 'trust in the police' and 'police legitimacy' in the Monterrey Metropolitan Area. For this reason, I will conduct interviews with local organisations with experience in community interventions and fieldwork in different neighbourhoods. In this way, I expect to fulfil the aim of this fieldwork project:

- Investigate conceptual features of 'trust in the police' and 'police legitimacy' that shape individuals' confidence in the police and their willingness to cooperate with the police, in the Monterrey Metropolitan Area (MMA), Mexico.

The information that you provide will be very helpful for enhancing and illustrating the results that I obtain in my doctoral research. In this way, I will complement the analysis I have done so far, and I hope to obtain insights that will be useful as a reference in the future design or adjustment of police strategies in Mexico. The expectation is that these changes or adjustments will contribute to increase public confidence in police corporations and cooperation with them.

Why have I asked you to participate in this project?

I am interested in interviewing you, as this is useful to explore your views based on the relevant experience and knowledge that your organisation has accumulated in the field, working with the residents of different neighbourhoods. I will ask you questions on the following aspects:

- How has the relationship between the residents and the police been?
- What do the residents expect the police to do?
- Do the residents trust the police?
- From what you remember, what have the residents expressed as their main priorities when it comes to policing in their neighbourhood? What do the residents value most about the policing in their neighbourhood?
- To what extent the residents agree with the police actions or the way in which these make their decisions when doing their job in the neighbourhood?
- To what extent the residents recognise the police authority or agree with it?
- To what extent the residents obey the police or cooperate with them in some way? Do you remember any examples?
- Are there any differences among neighbourhoods on the relationships that their residents have with the police? If there are differences, are these related with socioeconomic characteristics or any other factors?

What does your participation in this project involve?

Based on the purpose of this research indicated above, I invite you to participate in an interview, to learn more about your opinions and experiences based on the work that your organization has done, on the subject outlined above. All interviews conducted as part of this fieldwork project are protected by ethical procedures for academic research at the University of Edinburgh Law School, as well as by applicable legislation in the United Kingdom. It is necessary to obtain the explicit consent of all the participants that will be interviewed, and to explain to them the way in which the information obtained through such interviews will be used.

What will happen to your answers?

Recorded interviews will be anonymised on transcriptions, which means that I will remove identifying details (e.g. your name, or references about your organization). The same procedure applies for interviews that are not recorded, but from which detailed notes are obtained. These notes will be used just by me (the researcher) and will not be shared with other parties, except the researcher's PhD supervisors. I expect to complete this research by the end of September 2020. I will be happy to send you a summary of my findings if you are interested in reviewing them. If you would be interested, please tick the appropriate box on the consent form.

Who has reviewed and approved this study?

The study has been approved by the Research Ethics and Integrity Committee (REIC) at the School of Law, The University of Edinburgh.

Further questions or concerns

If you have questions about this research, you can contact:

Researcher: Luis Alberto Reyes Figueroa

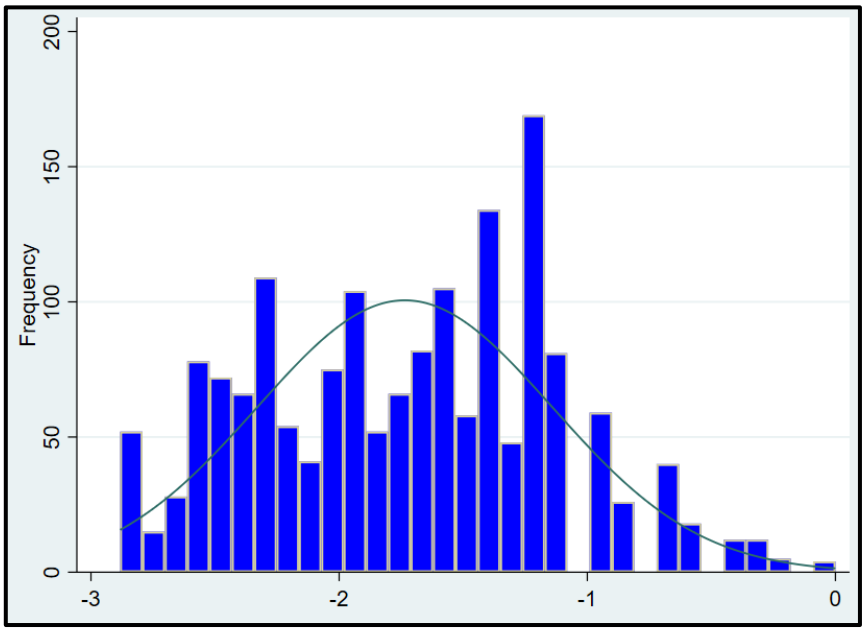
Mobile: +44 (0) 7954 018757

E-mail: Luis.Reyes@ed.ac.uk

If you are worried about this research, or if you are concerned about how it is being conducted, you can contact the Research Ethics and Integrity Committee (REIC) of the School of Law - University of Edinburgh, by email (law.research@ed.ac.uk).

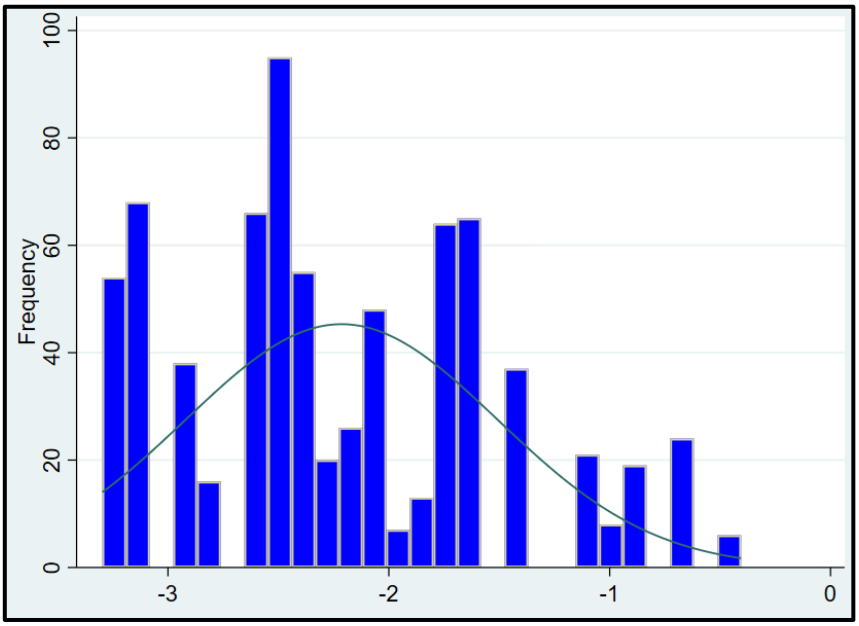
Appendix 3. Log-transformed distributions

Distribution of 'proportion of female-headed households'



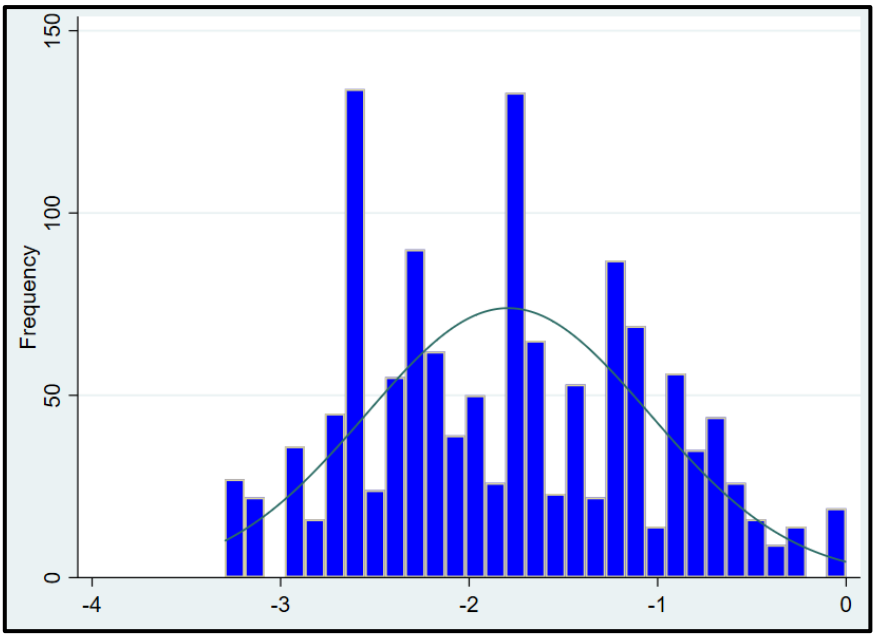
Source: elaboration with data from '*Así Vamos* 2018'.

Distribution of 'proportion of unemployed'



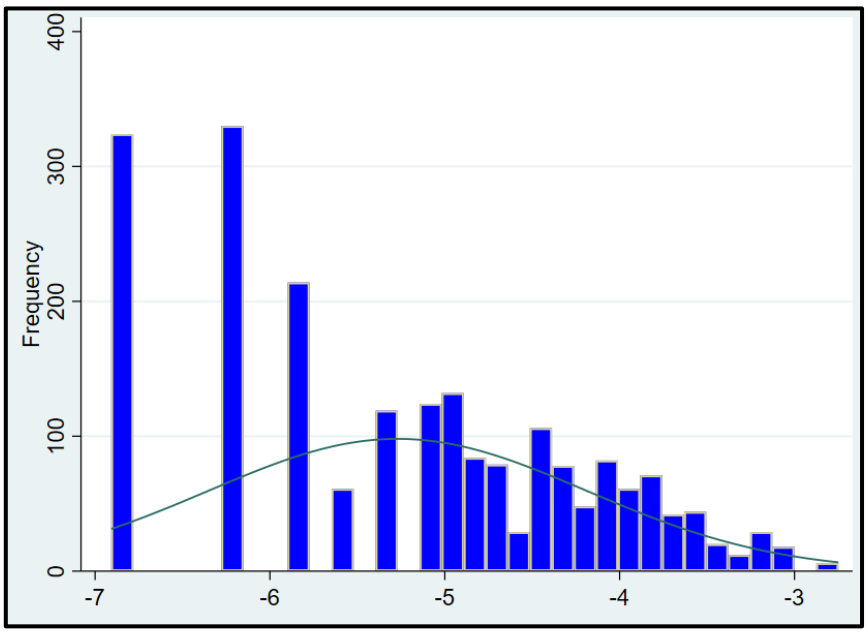
Source: elaboration with data from '*Así Vamos* 2018'.

Distribution of 'proportion of individuals living in a developed neighbourhood'



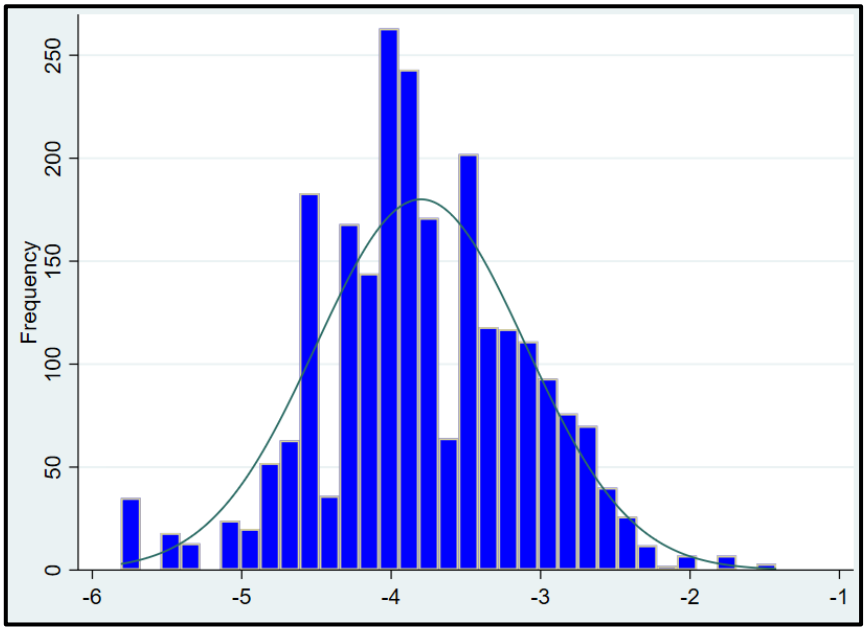
Source: elaboration with data from '*Así Vamos* 2018'.

Distribution of 'proportion of indigenous population'



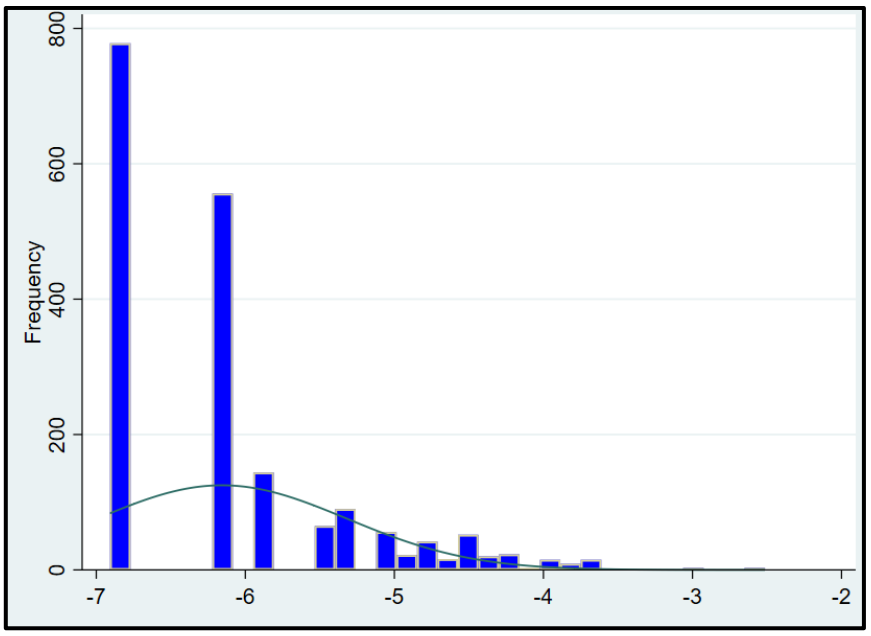
Source: elaboration with data from National Census (INEGI, 2010).

Distribution of residential instability



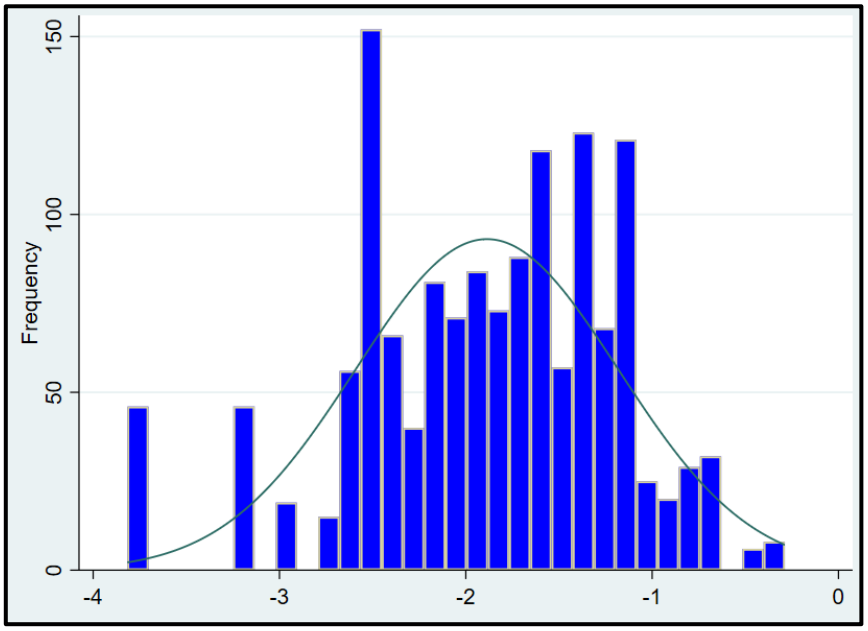
Source: elaboration with data from National Census (INEGI, 2010).

Distribution of immigrant concentration



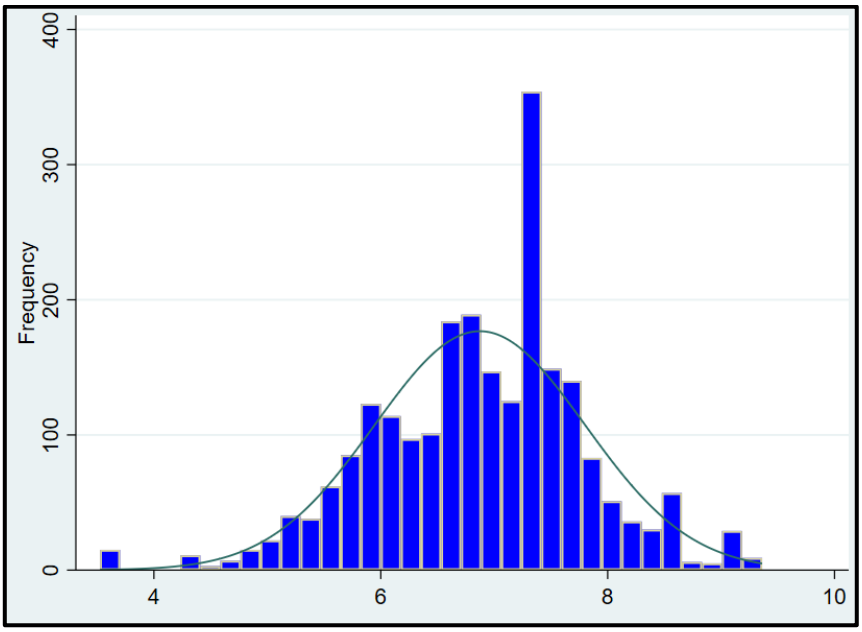
Source: elaboration with data from National Census (INEGI, 2010).

Distribution of 'proportion of victimised'



Source: elaboration with data from '*Así Vamos* 2018'.

Distribution of 'crime rate'



Source: elaboration with data from '*Así Vamos* 2018'.

Appendix 4. Results of individual-level models

Individual-level explanations of PCP°

Model	1	2	3	4	5
Constant	-0.083	-0.144*	-0.249***	3.036***	3.153***
	(0.059)	(0.062)	(0.064)	(0.161)	(0.155)
Age	0.313***	0.300***	0.286***	0.259***	0.275***
	(0.043)	(0.044)	(0.044)	(0.065)	(0.065)
Gender	0.027	0.075	0.060	0.118	-
	(0.084)	(0.088)	(0.089)	(0.124)	
SES	0.558***	0.572***	0.590***	0.320***	0.313***
	(0.051)	(0.052)	(0.051)	(0.076)	(0.080)
Police contact	-	-0.883***	-0.364	-0.430	-
		(0.171)	(0.187)	(0.244)	
Victimisation			-1.152***	-0.552**	-0.731***
			(0.156)	(0.200)	(0.198)
Trust police effectiveness	-	-	-	2.579***	2.345***
				(0.132)	(0.137)
Trust police fairness	-	-	-	2.507***	1.667***
				(0.156)	(0.140)
Trust in police effectiveness → Police legitimacy	-	-	-	-	0.929***
					(0.142)
Trust in police fairness → Police legitimacy	-	-	-	-	3.561***
					(0.140)
Police legitimacy → PCP	-	-	-	-	0.473***
					(0.092)
PCP → CP	-	-	-	-	0.566***
					(0.124)
CFI	0.892	0.894	0.900	0.813	0.897
TLI	0.817	0.826	0.837	0.702	0.832
RMSEA	0.093	0.082	0.072	0.071	0.064
Significance: *p < .05 **p < .01 ***p < .001					

Source: *Así Vamos* 2018 (Como Vamos, 2018).

°Results show logit coefficients

Individual-level explanations of CP°

Model	1	2	3	4	5
Constant	-0.059	-0.096	-0.155*	2.147	2.867***
	(0.060)	(0.064)	(0.065)	(0.131)	(0.190)
Age	0.187***	0.176***	0.163***	0.057	-0.024
	(0.044)	(0.046)	(0.046)	(0.056)	(0.072)
Gender	0.023	0.038	0.024	-0.041	-
	(0.036)	(0.089)	(0.091)	(0.112)	
SES	0.699***	0.710***	0.723***	0.574***	0.614***
	(0.049)	(0.051)	(0.051)	(0.072)	(0.097)
Police contact	-	-0.390**	-0.099	0.158	-
		(0.172)	(0.187)	(0.244)	
Victimisation			-0.606***	0.091	0.473*
			(0.155)	(0.176)	(0.216)
Trust police effectiveness	-	-	-	1.580***	0.510*
				(0.131)	(0.228)
Trust police fairness	-	-	-	1.969***	-0.678*
				(0.145)	(0.316)
Trust in police effectiveness → Police legitimacy	-	-	-	-	0.929***
					(0.142)
Trust in police fairness → Police legitimacy	-	-	-	-	3.561***
					(0.140)
Police legitimacy → CP	-	-	-	-	1.068***
					(0.129)
CFI	0.892	0.894	0.900	0.813	0.897
TLI	0.817	0.826	0.837	0.702	0.832
RMSEA	0.093	0.082	0.072	0.071	0.064
Significance: *p < .05 **p < .01 ***p < .001					

Source: *Así Vamos* 2018 (Como Vamos, 2018).

°Results show logit coefficients°

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