

UNEQUAL DISTRIBUTION OF ACCESS TO PUBLIC SAFETY

The case of local governments in Santiago de
Chile

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Abstract

Despite historical violence and urban inequalities in Latin America, including Chile, studies on the spatial distribution of crime and related perceptions, based on empirical support, only emerged in the last decades. As the focus predominantly viewed crime through a legal deviance lens, quantitative studies in this field are still limited. To address this deficit, this doctoral dissertation focused on unpacking and measuring the distribution of public safety across Santiago considered from a multidimensional approach: victimisation, fear of crime, and, confidence in the police.

The primary premise posits that public safety in Santiago, akin to education and healthcare services, exhibits inequality and spatial heterogeneity in its distribution. To investigate this assumption, a more granular examination was conducted, as national and regional surveys lacked the necessary depth. Using the first statistically representative Local Crime Survey in Chile at the municipal level, this thesis applied a set of analytical approaches, including spatial analysis, a multilevel approach guided by a random slope model, and cross-level interaction analysis.

Key findings affirm significant variations in fear of crime and confidence in the police among municipalities. Structural factors, particularly municipal budgets, and poverty, emerged as significant determinants of these disparities. The results unveiled spatial clustering in Santiago's eastern region, marked by the lowest fear of crime and the highest confidence in the police, where greater economic resources at the household and local government levels are concentrated.

While these results confirm studies showing the crucial role of social structures in shaping the experience and perception of public safety, this dissertation contributes to the field of Criminology by advancing our understanding of how public safety is distributed across municipal areas of Santiago. The empirical work in the thesis explores and measures the complex relationship between social structures and individual safety perceptions in a city characterised by spatial heterogeneity. Specifically, this research revealed that variables related to the perception of police services vary across municipal areas. Likewise, scholars should consider and test the mediating role of structural factors in the relationship of the individual-level variables. The results challenge the assumption of a uniform influence, such as social cohesion on police confidence, as it was demonstrated that poverty at the municipal level moderates this relationship. Consequently, assuming a policy promoting social cohesion will uniformly enhance police confidence across Santiago may be risky. Distinct strategies are necessary for affluent and disadvantaged municipal areas. Thus, this specificity of the empirical evidence could contribute to a more suitable and precise social ecology theory of perceptions for societies characterised by structural and historical inequalities

In conclusion, this thesis extends its influence on policy formulation, practical implementation, and future research. Policymakers should tailor interventions to suit different municipal areas, offering practitioners valuable insights for optimising safety strategies. Future research can build upon these findings to explore similar urban contexts, broadening the applicability of the theoretical and methodological approach pioneered in this thesis.

Declaration

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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Dedication

I dedicate this thesis to the most important people in my life, who have been with me on this journey.

First and foremost, to my parents, Carlos and Maria. They've supported me since the day I was born and always believed in me. I learned to read and write in their home, and now I'm writing this thesis in a different language.

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CHAPTER 1: Introduction.

1.1. Motivation: Why study the distribution of public safety in Santiago?

This thesis aims to enrich the criminological debate through an empirical study of the Santiago case. This city epitomises a country whose development model is deemed unique within the Latin American region, attaining top positions in social and economic indicators alongside lower levels of violence. However, as a pioneer in neoliberal reforms, Santiago grapples with the issue of inequality as a stumbling block to its advancement. With an economy and liberal state akin to cases observed in the USA and UK, where segregation is ingrained in urban development, Santiago also shares Latin American traits such as a profound and historical inequality in access to quality of social rights, and an institutional weakness expressed in the paucity of empirical knowledge on crime. In this regard, the purpose of this thesis is to contribute to knowledge by testing models that represent the liberal instruments in a shrinking central state and a prevailing trend towards delegation of responsibilities manifested in the municipalisation of security in Santiago. Exploring whether this model exacerbates inequality in access to public safety would help elucidate issues that other cities and countries may be experiencing. I will unpack this notion throughout this thesis.

Latin America is a region widely recognised for its high levels of violence. The intentional homicide rate in some Latin American subregions such as Central America and South America is more than four times the worldwide average. This region has 8% of the world's population but experiences 33% of global homicides (Abello et al., 2023).

Given these challenging circumstances, it's unsurprising that crime emerges as the primary concern among citizens and authorities across most Latin American countries (Latinobarómetro, 2020). Despite the persistent and complex nature of this challenge, the field of criminology has struggled to keep pace with the demands of public policy and law enforcement agencies. This situation is notably reflected in the scarcity of empirical research, predominantly characterised by essay-style studies entrenched within a legalistic research tradition (Galleguillos, 2023). A notable example is the absence of systematic surveys in Latin America that would enable the analysis of phenomena such as fear of crime and confidence in the police using instruments like spatial autocorrelation or multilevel models. Moreover,

as I will delve into it, there remains a dearth of empirical studies that offer insight into the impact of local governments on the variation in public safety and its perception.

Within the evolving landscape of criminological scholarship, initiatives like Southern Criminology (Carrington et al., 2018) have emerged, aiming to incorporate the Global South's unique historical, political, and cultural landscapes. In contrast to the theoretical frameworks predominantly shaped by Northern perspectives, Southern Criminology endeavours to establish their own theoretical approach. In this effort, empirical evidence might serve as a vital ally, providing substantiation and validation for the unique perspectives and insights offered by Southern Criminology.

Although in the last decades, significant progress in quantitative research has emerged in Latin America, there is still a problem accessing crime data, its quality is often questioned, and there is no common parameter across countries (Corbacho et al., 2015).

In light of prevalent violence, varied quality of information provision, and the need for empirical evidence, why is it relevant to explore the case of Santiago as a focal point for deeper criminological inquiry?

Two main aspects will be covered. First, greater institutional stability in Chile has created the conditions for a more systematic production of knowledge such as surveys and police records, which would allow for better possibilities to study how safety and perceptions are distributed, especially from a local perspective.

The main source of information for this thesis, a crime survey representative of the municipal areas of Santiago, is an example of this point. As most spatial analysis studies are based on police records due to the scarcity of surveys, this thesis presents an opportunity to conduct spatial analysis not only of victimisation experiences, but also of the fear of crime and confidence in the police. These aspects have a significant gap in sophisticated analysis from a spatial perspective.

Second, the justification for studying this case lies in the unique attributes of Chile and Santiago compared to other countries in the region and its shared characteristics with them. Thus, this examination might hold promise for generating insights that could apply to diverse contexts beyond Santiago. I will present a series of institutional, economic, social, and political indicators that highlight both the distinctive and common features of Santiago. Given that Santiago encompasses nearly half of Chile's population, many of the country's indicators align with the city. While the majority of international indicators are typically

reported at the national level, it is essential to provide data specific to Chile, bearing in mind that our empirical focus is on Santiago.

With a population exceeding 7 million inhabitants, Santiago, our unit of analysis, accounts for approximately 40% of the nation's total population. Structurally, Santiago comprises 34 communes or municipal areas, each managed by a mayor responsible for local governance. Despite its status as a benchmark for development among other Latin American cities, boasting modern public transport systems and high standards of living, Santiago grapples with issues of segregation and inclusivity (Yang, 2023).

The early 20th century witnessed rapid urbanisation in Santiago, driven by industrialisation and migration from rural areas. During the 1973, the military coup orchestrated by General Augusto Pinochet heralded the advent of neoliberal economic policies that exerted profound influence over Santiago. These policies, characterised by a focus on privatisation, and market-driven development, catalysed swift commercial expansion and infrastructural advancement but, at the same time, they intensified pre-existing socio-economic disparities, amplifying the marginalisation of low-income communities and perpetuating spatial inequalities (Silva & Vergara, 2021).

The first aspect to highlight in the case of Chile is the type of state. Following the most updated classifications of Latin American state typologies (Ferres, 2023), adhering to the framework developed by Esping-Andersen (1990), Chile stands out as a model itself: “Liberal Regime”. Despite its significant advancements in social policy investment, particularly in terms of coverage for vulnerable populations and the scale of such investments, Chile leads in terms of degree of inequity, notably in the unequal access to social rights, a phenomenon largely influenced by market dynamics.

Another set of international indicators consistently depict Chile, within the Latin America context, as prominent in various social and economic dimensions, such as the GDP per capita and Human Development Index (World Bank, 2018; United Nations Development Programme, 2018). In terms of public safety, Chile boasts one of the lowest homicide rates in the region (United Nations Office on Drugs and Crime, 2023) and is ranked as the most peaceful country according to the Global Peace Index. (Institute for Economics & Peace, 2018).

Additionally, this advantageous situation in terms of safety is complemented by institutional aspects. According to the Worldwide Governance Indicators (WGI), an instrument

developed by the World Bank, Chile is located in the top position within Latin-American countries (Kaufmann and Kraay, 2023). These indicators include government stability, regulatory efficiency, legal institutions, and corruption levels. Institutional stability is not a common pattern in a region often characterised by political and social uncertainty (Ahmad et al., 2011). In addition to this institutional strength, it is particularly the level of confidence maintained by Chileans in their police forces. Within Latin America, Chile's police force stands out consistently, earning high levels of public confidence (Latinobarometro, 2019). Studies on the perception of the police have highlighted the association between a country's institutional stability, general trust in institutions, and specific trust in the police (Cao, 2005; Salazar-Tobar and Rengifo, 2023)

Despite those favourable socio-criminal and institutional indicators, Chile presents an interesting case study due to its shared characteristic with other Latin American nations: historical and contemporary high levels of inequality. Chile is placed in the top 25 most unequal countries in the world (World Bank data 2023). Several scholars have linked this inequality to the extent and depth of neoliberal reforms instituted (McLean et al., 2019; Sabatini & Cáceres, 2001; Jiron, 2007) with Chile being at the global forefront of adopting such measures (Harvey, 2007). The extent of neoliberal policies is evidenced by Chile's prominent placement in international indicators focused on this economic model.

One mode of measuring the degree to which a country applies the principles of the neoliberal model is the ranking of the Index of Economic Freedom. This index assesses the economic freedom of countries around the world by evaluating various factors related to free-market principles, such as property rights protection, rule of law, government size, regulatory efficiency, and open markets. Chile ranks first in the Latin American region for this type of measure (The Heritage Foundation, 2023). In light of the pronounced liberal character of the Chilean State, this thesis will consistently draw comparisons with the UK and USA, regarded as prototypical examples of this form of social and economic organisation.

Despite Chile boasting privileged positions in social and criminal indicators, Chileans see crime as a predominant concern among its citizens (CEP, 2022) and register the highest levels of fear of being a victim of a crime in Latin America (Latinobarometro, 2018).

The case of Chile, and Santiago as the focus of this study, presents a compelling subject for criminological inquiry, as it offers an opportunity to untangle the complexities of a nation marked by numerous contradictions that may also resonate in other urban centres and countries. The seemingly successful development model, often viewed as a benchmark based

on the top position of international indicators, may, as this research will elucidate, anchor social policies and urban designs that hinder integration and equitable collective well-being. A supposedly successful country that has not been able to overcome degrees of inequality, suffering from fears of crime as if it were an extremely violent country, could be hiding behind a more complex, heterogeneous social landscape of experiences and perceptions mediated by entrenched social structures. This opens up interesting avenues of criminological research in terms of case studies.

In addition, the Santiago case study provides a valuable opportunity for testing theoretical models, given the local-level data available for a large urban area, facilitating a holistic and locally nuanced spatial analysis of the city. In this regard, with the focus on examining inequalities in access to public safety, theoretical frameworks such as social disorganisation theory, in conjunction with an ecological perspective, will be applied, comparing their findings with similar contexts from other countries. The objective is to fully leverage the available data to assess the extent of spatial heterogeneity in the distribution of public safety and its relationship with social structures.

Alongside this multidimensional approach, the Santiago case study presents an opportunity to evaluate models that elucidate some specific impacts of neoliberal reforms on processes of securitisation. Specifically, the investigation aims to understand how local governments, operating within a context of diminished central state authority and increased transference of security responsibilities, shape residents' perceptions and experiences of security. The available data allows for a glimpse into the dynamics of municipalisation of security within broader models of social and urban development, such as the Chilean model.

To advance criminological scholarship, the goal is to ascertain whether, within a nation demonstrating success in macro-level indicators, the process of municipalising security exacerbates disparities in public security access.

One of the most visible examples of this contradiction between a country with positive economic indicators according to national averages, yet affected by entrenched discontent among its citizens, occurred recently. During the year 2019, Chile emerged onto the global stage due to an unprecedented social disturbance that posed a threat to its democratic system. The widespread protests against entrenched neoliberal policies serve as a poignant critique of the tangible disconnect between macroeconomic success and the populace's quality of life (Yang, 2023). Diverse analysts sought to comprehend how this country used as a reference could, in just a matter of days, plunge into such a level of social chaos (Peña and Silva, 2022;

Ricci, 2021). Among the frequent demands during the protests emerged the idea of "eradicating inequality." While the complaints were primarily centred around economic inequality, manifested in varying levels of living standards among its population during the last two decades in different surveys, crime stands as the foremost concern for Chileans (CEP, 2022). This concern has prompted authorities across diverse political spectrums to confront this challenge.

Amidst this backdrop, an inquiry emerges that reflects the same concerns observed in domains like healthcare and education. Specifically, when it comes to access to public safety, despite Chile maintaining national average figures that portray it as a safer country compared to its neighbours, a deeper examination reveals a more complex reality. When these figures are disaggregated at the local level, we might encounter an assorted scenario. This reality points to a country, and its capital Santiago, being composed of various "mini-Chiles", each expressing a diverse and heterogeneous landscape.

Chile has undergone extensive scrutiny concerning its inequality from several perspectives. Various dimensions, such as income inequality, perceived social disparities, access to essential services, inequality of opportunity, fiscal redistribution, and inter-regional imbalances, have all been explored within the context of the nation (Palet and Aguirre, 2017). Despite this comprehensive examination, a critical gap persists, awaiting exploration - the investigation of inequality in public safety. Delving into this uncharted territory holds paramount importance to comprehend the complexity of safety distribution, incorporating diverse variables and their interactions occurring at different territorial levels allowing us to advance toward a criminological dissertation. As an unexplored avenue within the realm of inequality, this inquiry has the potential to enrich the criminological literature by unveiling the complex interplay between socio-economic disparities and safety provision.

With the focus of study in the city of Santiago, the fundamental research question of this thesis is addressed towards the extent, variability, form, and distribution of public safety, understanding public safety from a multidimensional angle: victimisation, fear of crime, and confidence in the police. Throughout its chapters, I display a systematic exploration of the distribution of public safety, with a specific emphasis on the multifaceted aspects within Santiago. The term "distribution of public safety" will refer to the spatial allocation of key variables (fear of crime, victimisation, and confidence in the police) across different municipal areas within Santiago. This analysis aims to identify patterns of concentration or

dispersion in the values of these variables, as well as their association with the distribution of structural and individual factors associated with public safety.

This endeavour converges elements of criminological inquiry, urban studies, socio-political analysis, and policy formulation, condensing a comprehensive examination of the enduring interaction between structural determinants such as socio-economic factors, perceptions of safety and the police, and geographic differences within Santiago's distinctive urban landscape. In a certain manner, I seek to address one of the fundamental concerns, which is the inequality, that exploded during the tumultuous events of 2019, contributing to a deeper understanding of the challenges facing Chilean society but that in other countries with similar characteristics could occur.

The rationale for delving into the distribution of public safety within Santiago is rooted in the convergence of historical, socio-economic, and political factors. Serving as the political and economic nucleus of Chile, Santiago embodies a microcosm of the nation's urban landscape, characterised by prominent spatial inequalities, historical legacies, and dynamic demographic shift, features that will be developed in section 3.3.

Methodologically, the study's landscape comprises a set of quantitative tools and spatial analyses. This methodological scope mirrors the evolving nature of criminological scholarship, harnessing statistical techniques to dissect the socio-spatial phenomena characterising Santiago's safety distribution. The pioneering use of the Chilean first Local Crime Survey data representative at the municipal level, presents an unprecedented opportunity to excavate localised safety nuances, discerning variations within Santiago's diverse municipal scenario.

In summation, this study's exploration of public safety distribution in Santiago as the unit of analysis, is a scholarly journey spanning diverse theoretical, methodological, and policy dimensions. This academic inquiry echoes through the urban facets of Santiago, resonating as a demand for targeted policy interventions, equitable governance, and the overarching well-being of Santiago's diverse population.

1.2. Purposes of the thesis

This research represents a multidimensional scholarly attempt intended to comprehensively address the unequal public safety distribution within Santiago. As I will explain in more detail

in the next session, the concept of public safety will be understood as the condition wherein individuals feel safe while walking in public spaces within the city, displaying confidence in the effectiveness and fairness of the police, and experiencing a lack of victimisation. This concept underscores its inherent public nature as a facet of state provision, its enduring relevance amidst shifting conceptual frameworks, and its direct correlation with the pivotal variables of safety explored in this thesis: fear of crime, confidence in law enforcement, and incidents of victimisation. Furthermore, its presence in the language of public policy emphasises its critical role in shaping governmental strategies and interventions aimed at safeguarding communities and promoting societal well-being.

Understanding the specific dimensions of safety disparities in Santiago holds the potential to significantly contribute to broader criminological and urban studies. It can illuminate the efficacy of policy interventions, the role of socioeconomic factors in shaping safety perceptions, and the potential consequences of unequal safety provisioning on social cohesion and well-being. As Santiago mirrors the interplay between safety and socioeconomic factors, the implications may extend well beyond its geographical boundaries.

This research aims to achieve three primary objectives.

The first objective of this doctoral thesis is addressed to understand the distribution of public safety, as operationalised by victimisation, fear of crime, and confidence in the police, across various municipal areas of Santiago. Specifically, I aim to elucidate some patterns of concentration in the values of these variables and to analyse the extent of differences and inequalities therein. In this line, the research seeks to identify which of these three variables exhibits the most pronounced disparities in the distribution.

Secondly, given the socio-economic landscape of a city like Santiago marked by stark inequalities, this thesis recognises the pivotal role of social structures in shaping these disparities. Therefore, the aim is to explore and test diverse conceptual models from a Social Ecology perspective that accounts for the variation in the dependent variable, in this case, the variable of public safety defined as the most unequally distributed. Our focus lies in adopting a multivariate perspective, whereby the influence of both individual and municipal-level variables is examined, with a particular focus on the influence of the municipalisation process in safety provision.

Thirdly, leveraging the ample local-level data available, the study will delve into potential spatial heterogeneity within Santiago, exploring how social structures interact with

individuals to create a nuanced and intricate landscape that transcends the limitations of conventional models where the effect of independent variables is constant across the territory. By discerning these intricacies, the goal is to provide valuable information to enable the design of public policies that are more precisely tailored, moving away from one-size-fits-all approaches towards more targeted interventions.

In summary, this thesis capitalizes on the wealth of local-level data available to explore the distribution of public safety in Santiago, intending to understand how social structures shape perceptions and experiences of safety. By examining the impact of neoliberal reforms, notably the municipalisation of safety, the study seeks to shed light on the spatial disparities in access to safety provision. Through this analysis, the research contributes to a deeper comprehension of the intricate interplay between social structures and individual experiences in shaping public safety outcomes.

1.3. Structure of the thesis

Rooted in a multidisciplinary theoretical framework, this research undertakes a constructed methodological route, deploying a set of advanced statistical methodologies and analytical tools. Spanning across its chapters, the study pilots through the theoretical constructs, empirical insights, and their consequential implications, graphing a comprehensive picture of the factors underlying the distribution of public safety in Santiago.

Chapter 2 serves as a conceptual scope, guiding us through the theoretical underpinnings that substantiate the investigation. Deploying theories such as Social Disorganisation, the concept of Local Crime Government, and conceptual models that explain citizen confidence in the police, this section traverses the dimensions of safety distribution, exploring the relevance of their uneven dispersion within the urban setting. Chapter 2 delves further into the amalgamation of inequality and crime theories, shedding light on the interaction between urban segregation, the marketisation of security, studies about spatial analysis, and the complex provisioning of safety resources. This chapter not only sets the stage for the empirical journey ahead, but also lays the foundational elements bare that drive the unequal distribution of public safety.

Chapter 3 introduces a geographical context, shifting our gaze towards Chile and, more specifically, Santiago as unit of analysis. In this section, the narrative unfolds the nuances of

Chile's unique position within the Latin American context, unravelling its socio-economic and political elements. The discussion on urban segregation in Santiago provides a backdrop to the subsequent exploration, while the search for the role of local governance adds a crucial layer of understanding to the public policies underpinning crime prevention and policing.

The methodological framework, established in Chapter 4, reveals the planning and execution that underpin this scholarly endeavour. Through exposition, the chapter unveils an ensemble of methodological tools employed to decipher the panorama of public safety distribution. At its heart, the Chilean Local Crime Survey emerges as a principal instrument, capturing the interplay of variables that contribute to the unequal distribution of safety within Santiago. The selection of data sources and assembled sample participants illustrates the approach taken to ensure a representative and insightful exploration.

In the empirical chapters of this thesis, Chapters 5, 6, and 7 emerge as pivotal stages, guiding an in-depth exploration into public perceptions of public safety in Santiago with a special focus on the police. These chapters employ a systematic approach that delves into the dynamics of safety and confidence in the police.

Chapter 5 aims to investigate and quantify disparities in the distribution of public safety, focusing on victimisation, fear of crime, and confidence in the police. This chapter marks a significant turning point in this empirical investigation, where a detailed exploration reveals distinct patterns in the distribution of victimisation, fear of crime, and confidence across various municipal areas of Santiago. Statistical methodologies, crucial for analysing public safety distribution in Santiago, are employed. The primary tool used is the Gini index, traditionally used for assessing income distribution but adaptable for evaluating the concentration of crime, fear, and confidence in the police across different geographic areas. This quantitative approach provides insights into the uneven dispersion of crime-related phenomena. Additionally, spatial autocorrelation analysis is utilised to assess the degree of spatial clustering of variable values within municipal areas. Through comprehensive analysis, this chapter identifies the leading degree of variation which is confidence in the police. The empirical findings presented in Chapter 5 seamlessly intertwine with the theoretical framework, facilitating a connection between abstract theoretical concepts and concrete empirical evidence.

As the inquiry advances into Chapter 6, the exploration delves into factors shaping confidence in the police. A Hierarchical Linear Model (Multilevel) explores a set of conceptual models with variables at the individual and municipal levels. Multilevel models

may be beneficial because they can handle data with a hierarchical or nested structure, such as individuals nested within municipal areas. By accounting for this hierarchical structure, these models can capture the variations of the studied variable at different levels, providing more accurate and robust estimates (Snijders and Bosker, 1999; Steele 2008). Moreover, by considering both individual and contextual factors, multilevel models can help disentangle the effects of individual characteristics from the influence of the municipal area in shaping confidence in the police. Thus, interconnecting individual experiences with the broader societal context, this chapter dissects the web of interactions contributing to the formation of perceptions toward police forces. This holistic approach sheds light on the multifaceted nature of confidence dynamics, considering both contextual nuances and personal influences that collectively contribute to public confidence.

Chapter 7 embodies the apex of this research endeavour, signifying the culmination of aligning theoretical frameworks with empirical findings. This chapter provides empirical elements strengthening a social ecology theory for the Chilean case—a framework that systematically unveils the multi-layered elements of the public’s confidence in the police force in Santiago. In this chapter I explore the possibility that the effect of predictor variables on the outcome of safety might be diverse across municipal areas of Santiago. Moreover, I examine whether structural variables might be mediating the relationship between individual-level predictor variables such as perceptions and individual-level dependent variable. For the mentioned challenges, I introduce alternative methodologies. These include the Chow test and Geographically Weighted Regression (GWR) for exploring differential effects of independent variables across population subgroups and geographical areas, respectively. The study also utilises a Random Slope Model to assess variation in intercepts and slopes across municipalities, aiding in understanding the specific influence of predictors on safety levels for each municipality. Moreover, cross-level interaction analyses are employed to examine how level 2 variables moderate variations in level 1 effects across groups. These methodologies provide a robust framework for investigating the complex interplay between structural factors, individual perceptions, and safety outcomes.

The significant insight gleaned from the synthesis can be a strategic anchor when designing adequate public policies. By harnessing the contours of spatial heterogeneity, policy interventions can be tailored to address the specific trust elements prevalent in different municipal areas. These targeted policies, informed by the diverse mosaic of factors, can foster tailored approaches to enhance public confidence.

The concluding Chapter 8, serves as a scholarly reflection, extracting the empirical drive into a concise summary while extrapolating the far-reaching implications of the findings for policy formulation. This thesis, characterised by its combination of theory, empirical exploration, and policy relevance, weaves an urban mosaic that unravels the layers underpinning public safety distribution in Santiago. This scholarly work augments empirical understanding, furnishing a robust foundation for evidence-based policy interventions that address the components of public safety distribution in an urban context marked by socio-economic disparities as in the case of Santiago.

CHAPTER 2: Theoretical Framework

CHAPTER OVERVIEW

The main interest of this thesis is about the extent, form, and variability of the distribution of public safety across municipal areas of Santiago. This focus reflects Chile and Santiago as unit of analysis within Latin America, but at the same time shares similar characteristics with other countries in terms of inequality. Whilst the core focus is the distribution of public safety, this cannot be understood without bearing in mind the socio-economic and political components that shape the city. Thus, this dissertation highlights structural factors in its theoretical framework which will be complemented in Chapter 3 which is dedicated to explaining the specific context of Chile and Santiago.

The present chapter involves exploring a set of theoretical approaches that support why I expect the distribution of access to public safety to vary across Santiago. Public safety will be understood from a multidimensional perspective, consisting of an objective dimension like victimisation but also from a subjective dimension based on perceptions of safety. Elements of the Social Disorganisation Theory (Jackson et al., 2012; Sampson and Bartusch, 1998; Sabatini & Cáceres, 2001; Jiron, 2007; Bruinsma and Johnson, 2018; Sharkey, 2018; Tompson, 2016) are highlighted to comprehend the concentration of crime risk factors in certain areas of the city, where income by segregation is a crucial component to grasp the Santiago case. Furthermore, building on the Crime Pattern Theory (Brantingham & Brantingham, 1993), I give particular attention to the city's division into boundaries that exhibit an uneven distribution of crime. This division reflects how the effectiveness of security guards and companies (professionals, municipal security guards and the police) can be attributed to the social and economic attributes of residents, but mainly to the resources available to municipalities. Because of that, the concept of a Local Crime Government is incorporated as a theoretical and empirical framework to comprehend the varying levels of public safety. In addition, I reviewed the latest published papers on spatial analysis using cutting-edge instruments encompassing both the Anglo-Saxon context and a few experiences in Latin America. Lastly, recognising the importance of the police as direct representatives of safety on the street, this chapter delves into models that explain citizen confidence in the police and why it is relevant to incorporate multilevel models. I consider this type of model not only by the key role of structural variables but also, I posit a potential diverse influence of variables associated with confidence in the police across Santiago. This possible spatial effect is translated into the concept of spatial heterogeneity which compels us to think about

the necessity of focused and specialised policies, especially in a context of high level of inequality.

2.1. Defining public safety and relevance of its distribution

Why is crime one of the most relevant problems for citizens and governments in many countries? More specifically, why is crime the most important problem for Chileans despite maintaining the lowest homicide rates and the highest indicators of well-being in the Latin American region? The concern about crime among Chileans poses a significant interrogation for researchers in criminology. One of the clues to answering this question is that worry about crime, possibly, transcends the experience of being a victim of crime.

This concern, as I will pose throughout this thesis, is rooted in the experiences and perceptions of citizens about the police, the experiences and perceptions within urban environments and its threats, and, ultimately their relationship with the state and the quality, provision, and distribution of public services. These aspects, as I will expose, are deeply intertwined with structural and historical conditions characterised by inequality and segregation.

However, before delving into aspects such as inequality in terms of safety, it is necessary to establish a conceptual framework that addresses the multidimensional scope of this thesis concerning crime and its perceptions in the streets of Santiago. In this context, the concept of public safety has been chosen because it captures more appropriately the key variables of this research: fear of crime, confidence in the police, and experiences of victimisation.

In the realm of academic discourse, it is acknowledged that public safety defies singular and universally accepted definitions, it rather exists a broad range of concepts subject to varied interpretations (Friedman, 2022; Nilson, 2018; Maurice et al., 2001; Jaramillo 2002). Nonetheless, a shared element across diverse definitions is that safety encompasses more than the mere absence of intentional or unintentional harm; it also entails a perception of being shielded from potential threats. A second element shared by different authors is referred to as public safety, and encompasses two dimensions: an objective aspect, measured through quantifiable indicators of crime rates, and a subjective dimension assessed through perceptions of safety and evaluation of institutions in charge of safety (Nilson 2018; Abizanda, 2012).

In the framework of this thesis, public safety is conceptualised as the outcome of coordinated measures and policies aimed at diminishing the perceived risk of victimisation within public spaces, enhancing confidence in the police, and reducing actual instances of crime in urban environments. This definition underscores the interconnected nature of subjective perceptions, institutional confidence, and experiences of victimisation. Effective strategies not only address crime rates and law enforcement capacities but also tackle underlying factors such as social disparities, community cohesion, and access to support services.

Why I chose the concept of *public safety* over other concepts such as security, human security or community safety will be reviewed below.

First, this thesis focuses on the provision of *public* services by the state, whether at the central or local level. Therefore, it is the responsibility of the state to safeguard individuals from becoming victims of crime, to create conditions for them to feel safe in public spaces, and to ensure the delivery of efficient police services and appropriate treatment. I recognise the significance of broader concepts such as security (Smith and Brooks, 2012), which encompass areas like private security, a key aspect in contemporary urban design and its diverse service types (Rachamim et al. 2023). However, I have decided to narrow our focus to *public safety* as the central realm of this study, excluding the concept of security, which can be related to private security as well. Since public safety is our dependent variable, it might allow for a more targeted examination of the state's role and responsibility in ensuring safety within public spaces.

The second aspect underscores the necessity of adopting a concept rooted in history, capable of withstanding shifts in theoretical perspectives and public discourse influenced by political or policy agendas. From the Enlightenment era to the ideologies of the founders of the United States and various Latin American nations, the enduring concept of public safety has maintained its relevance (Friedman, 2022). It is distinguished by its expansive scope and direct linkage to fundamental principles, notably safeguarding individuals and their property from harm, particularly violent crimes. This historical continuity of public safety as both a historical and contemporary concept enables us to dismiss alternative concepts such as community safety.

The concept of community safety arises from the extensive body of work by criminologists with an emphasis on community participation in creating safe environments conducive to crime prevention. Theories such as *Collective Efficacy* (Sampson et al. 1997) and *Breaking*

Window (Wilson and Kelling, 1982) have developed an extensive conceptual apparatus with a direct link to the implementation of policies that apply their main assumptions. In this context, some translations of community safety into policy can often be located to specific political spectrums. As Linning (et al., 2022) points out for the British case, that position can be closer to progressive values, particularly gaining impetus towards the end of the nineties. A clear example is demonstrated by the definition cited by Squire (2006, p 239): *“the use of concept of community safety rather than crime prevention was deliberate, in order to set the agenda in a positive way, emphasising people rather than property, and the roles of local authorities, community, and tenants’ groups rather than the police”*.

This type of perspective, focused on the participation of community and local authorities, may be put under ongoing scrutiny of its underpinnings. Concepts and theoretical frameworks, like community safety, are in significant ways products of their times and with the benefit of hindsight may be subject to important qualification and revision (Hughes, 2013). Currently, some authors question the validity of empirical evidence regarding the efficacy of informal social control in reducing crime rates, suggesting a reliance and assumption on political or voluntary aspirations rather than concrete scientific facts. Ecological metaphors, such as the notion of the community contributing to building security are defined as *“sets of stories that have helped guide research, but they are not scientific facts* (Linning, 2022, p. 40)*”*.

An analogous critique, with a specific focus on the concept of community policing, is underscored by Blair et al. (2021). They highlight the absence of systematic evidence regarding whether community policing effectively fosters trust in law enforcement and diminishes crime rates in countries of the Global South, despite the presence of evidence supporting its positive outcomes in affluent nations. Consequently, the presumed impacts of heightened community engagement are once more brought into question.

An illustration of the influence of concepts such as community safety in shaping public policy and research agendas is found in documents issued by international organisations like the Inter-American Development Bank, whose influence extends across the entire American continent (Abizanda et al., 2012), and the International Center Prevention Crime (CIPC, 2016), with a clear recommendation toward the implementation of projects with a focus on the active role of the community.

Lastly, the concept of community safety tends to target intervention within specific communities, addressing localised issues without necessarily taking into account the larger, complex, and porous boundaries of the city. Despite this thesis's aims to investigate territorial specificities through the concept of spatial heterogeneity, it seeks to examine Santiago as a cohesive whole—a city shaped by diverse interventions, and histories, and comprising multiple municipal and neighbourhood areas. In this regard, the concept of public safety is better suited for holistic examination under this comprehensive lens.

Another concept that was discarded is *citizen security*. Its nature like community safety is rooted in a historical context and whose impact extends beyond academia. Unlike community safety, this concept has predominantly been utilized and propagated in Latin America (Muggah and Aguirre, 2013), arising in response to police repression, military dictatorships, punitive justice, and severe incarceration practices prevalent throughout the region. Its prominence grew during the 1990s and 2000s, coinciding with the consolidation of democracy in Latin America and the Caribbean.

At its core, citizen security emphasises the responsible state and active citizenship. In practical terms, it includes a range of ideas and practices designed to prevent and reduce violence, promote public security and access to justice, strengthen social cohesion, and reinforce the mutual rights and obligations of states and citizens. It is distinct from and broader than national “law and order” approaches to policing and controlling crime (Muggah and Tobón, 2022).

During the early 2000s, this concept held sway in the region, with significant public programs and institutions being consolidated under the banner of citizen security (Dammert, 2007). Chile was not unsusceptible to this trend, as evidenced by the institution responsible for safety policies, which was named the Citizen Security Division. However, starting in the 2010s, the concept gradually lost its influence, leading to the renaming of the institution as the Division of Public Safety (Universidad Alberto Hurtado, 2018). Presently, while a handful of municipalities still employ the term citizen security, the majority have shifted towards public safety.

Having reviewed the nature of public service provision with greater durability over time, a third reason for utilising the concept of public safety is *its narrower focus on safety issues* and its direct link with our three dependent variables of victimisation, fear of crime, and confidence in the police. In this sense, another concept that was discarded despite being widely used in

different countries is *human security*. It extends beyond the variables that will be explored in this thesis. The broad conception of human security is concerned with human vulnerability overall and therefore encompasses all forms of threats from all sources (Fukuda and Messineo, 2012). The traditional understanding of security based on the absence of violence and crimes against property and persons overlooks other crucial dimensions such as food security, public health, economic stability, and environmental security, key ambits for the human security approach.

I find a similar situation with the concept of *security* which can encompass more dimensions than the variables that are considered in this thesis. Some scholars argue for treating security as a science, which includes disciplines like criminology and public safety within their multiple dimensions (Smith and Brooks, 2012). A fuller understanding of security includes knowledge categories such as security management, security technologies, business, industrial security, and risk management. These areas go beyond the scope of this research.

Finally, a fourth rationale for selecting the concept of public safety lies in its prominent position within the discourse of public policy, particularly evident in the formulation and implementation of local or national safety strategies. A compelling illustration of this point can be found in the Canada Public Safety Plan, which addresses critical domains including urban design aimed at enhancing safety, law enforcement practices, perceptions of safety, and crime prevention measures¹. Similarly, in the United States, certain states such as Mississippi², Georgia³, Alabama⁴, Iowa⁵ and others, boast dedicated public safety departments, underscoring the significance attributed to this domain at the state level.

In the case of Chile, the current national plan has been designated as the "Plan de Seguridad Pública 2022-2026"⁶ (Public Safety Plan) underscoring the comprehensive and prioritised approach to addressing this aspect of public policy.

In essence, public safety is a multidimensional concept defined as the condition wherein individuals feel safe while walking public spaces within the city, displaying confidence in the effectiveness and fairness of the police, and experiencing a lack of victimisation. This concept

¹ See in <https://www.publicsafety.gc.ca/cnt/rsrscs/pblctns/dprtmntl-pln-2022-23/index-en.aspx>

² See in <https://www.dps.ms.gov/>

³ See in <https://dps.georgia.gov/>

⁴ See in <https://www.alea.gov/dps>

⁵ See in <https://dps.iowa.gov/>

⁶ See in <https://observatorioterritorialdeseg.cl/wp-content/uploads/2022/11/Plan-Nacional-de-Seguridad-Publica-2022-2026.pdf>

underscores its inherent public nature as a facet of state provision, its enduring relevance amidst shifting conceptual frameworks, and its direct correlation with the pivotal variables of safety explored in this thesis: fear of crime, confidence in law enforcement, and incidents of victimisation. Furthermore, its presence in the language of public policy emphasises its critical role in shaping governmental strategies and interventions aimed at safeguarding communities and promoting societal well-being.

Therefore, in this thesis the distribution of public safety will be defined as how the variables of interest (fear of crime, victimisation and confidence in the police) are spatially distributed among the various municipal areas of Santiago, identifying the presence of concentration or dispersion of the values of these variables, as well as their relationship with the distribution of the structural and individual variables associated with public safety.

Because of the above, this dissertation will assume a multidimensional conception of safety consisting of victimisation but also of a subjective dimension based on perceptions. In section 2.3, I will analyse the concepts of fear of crime and confidence in the police in more detail, and in section 4.4, both concepts are operationalised giving methodologic features about their construction as variables and indicators.

The importance of the concept of safety for this thesis lies not only in its multidimensional and complex nature but also in how access to safety is distributed among people and in the cities they inhabit. This distribution becomes problematic because of the constant threat of being a victim of a crime, the perception of police service and the fear of crime are not distributed randomly but are largely concentrated in people with a low socioeconomic profile and where they live. This condition of risk will be central in understanding the case of Chile and Santiago. This topic is addressed in Chapter 3.

At this point, the question arises as to why it is important to study the distribution of safety. Understanding the distribution of public safety is fundamental to promoting equity and social justice. Public safety has a significant influence on vulnerable populations, including low-income individuals, minority communities, and marginalised groups (Jaitman and Ajzenman, 2016). In the same vein, examining the distribution of public safety resources can shed light on the extent to which these populations face heightened jeopardies. This knowledge can address targeted interventions and resource allocation to protect and support these communities. By identifying areas with higher levels of crime and lower access to safety

measures, policymakers can assign resources where they are most needed, ensuring a more efficient and effective use of limited resources (Homel, 2015).

The elements of social and criminological theory allow us to understand the causes and consequences of this distribution of safety are addressed in the following sections.

2.2. Inequality and Crime: Theories and Approaches

Like poverty and other social problems, crime is not equally spread throughout society but focused in specific social and geographical areas. Those who are most likely to be victims of crime are the most prone to be affected by other social problems, such as social exclusion and restricted access to high-quality education and health services, leading to a sense of long-term vulnerability (Crawford, 1997; Bruinsma and Johnson, 2018). These elements of social vulnerability concentrated in limited spaces tie into segregation concepts, broadly understood as dividing or isolating a race, class, or ethnic group (Marshall & Scott, 1998). However, to understand the case of Santiago, this research mainly focuses on income segregation. This type of segregation results in unequal access to the housing market and a significant inequality in income within a capitalist labour market (Bourne & Walks, 2011).

In this sense, explanations rooted in the Social Disorganisation Theory and Environmental Criminology are considered to frame our understanding of the distribution of public safety and segregation in Santiago. Since segregation and crime distribution cannot be read in isolation from the socio-economic and political contexts influencing the city, this dissertation incorporates structural factors in its theoretical approach. Specifically, neoliberalism reforms and their consequences. The process of securitisation like emergence of the marketisation of security services and the concept of Local Governance of Crime, will be crucial elements to contextualise the Chilean case using Santiago as focus of study.

Social Disorganisation Theory suggests that urban planning and housing policies (Sampson and Wilson, 2007; Sabatini & Cáceres, 2001; Jiron, 2007) can result in the forced migration of vulnerable populations to the peripheries of urban areas. This process is characterised by poverty, high population density, low educational levels, single-parent families, and residential mobility (Bruinsma and Johnson, 2018; Sharkey, 2018; Tompson, 2016; Sampson et al., 1997). As I will explain in detail in the following section, continuous references will be

made to the cases of the UK and USA as liberal models of urban design and public policies similar to the Chilean one.

From a critical perspective, Crawford (1997, p. 286) underscores, particularly in the context of the UK, that the uneven distribution of crime, including violent crime, is not simply a happenstance, but rather the outcome of deliberate and sometimes unconscious policy decisions. This implies that the design and implementation of policies by policymakers play a crucial role in shaping the spatial and social dynamics that contribute to crime patterns. Such policies may inadvertently exacerbate existing inequalities or fail to address underlying structural issues, thereby perpetuating disparities in crime rates across different communities.

In the USA, the configuration of many neighbourhoods, including their housing stock, street layouts, and zoning regulations, is largely influenced by external forces such as property developers, public housing agencies, and historical discrimination. These factors, shaped by political decisions, significantly impact the distribution of crime within communities (agency, Linning, and Mandensen, 2023).

Similarly, in the Latin American region, security provision has historically been characterised by repressive and militarised strategies. However, policymakers have begun integrating law enforcement measures with crime prevention initiatives and enhancement programmes, highlighting their pivotal role (Abello, et al., 2023).

In both cases, political authorities and private actors contribute to the concentration of crime in certain areas of the city. Policies favouring public housing in urban peripheries exacerbate segregation, while rising land prices due to real estate speculation further compound these issues (McClure, 2008; Perez, 2011).

This urbanisation process, as it will be observed in Santiago, highlights the phenomenon of segregation (empirical chapters 5, 6, and 7). These chapters demonstrate how certain areas of the city exhibit a high level of confidence in the police and a low fear of crime and victimisation, contrasting with the peripheral regions of Santiago characterised by impoverished security and safety conditions. Within the framework of Environmental Criminology, particularly Crime Pattern Theory, the spatial distribution of crime is examined. This theory suggests that crime patterns are not random but rather follow predictable patterns influenced by interactions between offenders, potential targets, and guardians within the environment (Brantingham & Brantingham, 1993). Segregation, as observed in Santiago,

plays a crucial role in shaping these crime patterns. Disadvantaged areas with limited access to public safety resources may lack capable guardians, weakening social controls and increasing vulnerability to victimisation. Factors such as unequal allocation of police patrols, limited surveillance systems, and lack of community engagement in crime prevention efforts exacerbate these disparities (Clarke, 1995).

By ensuring a more equitable allocation of resources, providing training and support for capable guardians, and fostering community involvement in crime prevention, it becomes possible to enhance the overall effectiveness of crime prevention efforts and mitigate disparities in public safety across different areas.

Additionally, Crime Pattern Theory underscores the significance of awareness and activity spaces, as well as perceptions of safety. In Santiago, distinct socio-demographic characteristics may delineate different districts, each perceived as either "safe" or "dangerous" by residents. This aspect will be empirically examined in Chapter 5, which analyses the concentration of zones of fear of crime across Santiago

The preceding theories were considered to trace an assembly between segregation and crime distribution. However, how a city is structured should not ignore the influence of political and economic contexts. In particular, the influence of neoliberal reforms that are vital in the case of Chile. The following section covers these dimensions.

2.3. Distribution of crime, segregation and the marketization of security

The connection between the neoliberal model- as a form of organising society, the state, and the economy- and crime has been extensively studied. However, in this thesis I aim to focus on two dimensions. Firstly, I will explore how this economic and social model has affected urban planning and the distribution of crime within cities. Secondly, I will examine how neoliberal reforms have impacted policies at the local level, considering the trend towards greater delegation of responsibilities to local authorities amidst efforts by the central state to reduce its size. The analysis of the security municipalization process for the case of Chile will be developed in depth in section 3.3.

Before exploring the outcomes of neoliberalism reforms, it is essential to understand the various typologies of states that exist. In his seminal work "The Three Worlds of Welfare

Capitalism" (1990), Esping-Andersen outlined three main types of welfare states, providing a framework for understanding variations in social policy across different countries. The conservative welfare state places importance on traditional family structures and social insurance schemes. While there is some state intervention, it is less pronounced compared to social democratic models. Countries like Germany and France typically embody this approach, with moderate levels of social spending and a balance between means-testing and universality in welfare provision.

Esping-Andersen also highlighted the social democratic welfare state, which prioritises universal welfare provision and strong state intervention. This model aims to provide comprehensive coverage to all citizens, funded through progressive taxation and promotes equality and social solidarity. Nordic countries such as Sweden and Denmark are notable examples, with extensive social welfare programs and a commitment to reducing social inequalities through redistribution and public provision of services.

Third, and with more relevance for this thesis, is the liberal welfare state. In this type, the role of the state is limited, with minimal intervention in labour markets and social services. The emphasis lies on market mechanisms for welfare provision and the benefits are often means-tested and targeted towards those deemed most in need. The United States and the United Kingdom exemplify this model.

In Chapter 3, it becomes imperative to thoroughly examine the characteristics of the liberal model. Within a classification akin to Esping-Andersen's but tailored for Latin American nations, Chile emerges as the sole liberal state (Ferre, 2023). The Index of Economic Freedom, established by The Heritage Foundation⁷, serves as a vital instrument for gauging the extent of economic freedom globally which is associated with liberal regimes. Chile is positioned closely alongside the USA and the UK, ranking among the top 20 countries in this assessment.

In light of the shared characteristics and policy frameworks evident in Chile, the USA, and the UK, both countries will serve as reference cases. The rationale behind this approach lies in the opportunity to draw parallels and contrasts, allowing us to gain valuable insights into how neoliberal policies and the process of securitisation have impacted Chile

Indeed, if there is a correlation between crime and liberal state and their expressions like neoliberalism reforms, it is often mediated by varying degrees of inequality. Neoliberalism

⁷ To deep in more about this index, see <https://www.heritage.org/index/pages/all-country-scores>

alone cannot fully account for variations in crime rates, but it can elucidate how this economic system generates inequalities that may contribute to poverty, which in turn impacts the rise of crime, especially violent crime (Mc Lean, 2019). In this context, it is not surprising that among developed countries, the USA and the UK exhibit some of the highest levels of inequality according to the Gini index (World Bank, 2020) and a high level of homicides, especially for the USA case.

Neoliberal processes emerge as a key driver of urban securitisation in both the Global North and South. Inter-urban competition, financialization of local economies, and urban regeneration projects spearheaded by coalitions of public actors and investors have led to extreme social segregation (Abello Colak et al., 2023).

I will start with examples from the Global North. The evidence for the USA and the UK shows that marketisation or commodification of security have significant consequences on the configuration of social identities, which defines how cities are organised and crime distributed. This process affects the forms in which communities, groups and organisations constitute their boundaries, select their members, exclude others, and construct a sense of membership (Sharkey, 2018; Young, 2002; Crawford, 1997), which is also reflected in crime prevention strategies (Sampson et al. 2002). If the capability to avoid the risks of being a victim of crimes depends on individual responsibility and purchasing power, security access can emerge as a new form of inequality. This inequality is embodied in forming areas with high security (surveillance cameras, walled surroundings, and security devices), separating wealthy and vulnerable zones.

The security differential, molded by neoliberalism reforms, echoes how socioeconomic disparities influence an individual's ability to access and benefit from security measures. It underscores how wealth, power, and status characteristics become determining factors in shaping the relationship between people and safety, further exacerbating social inequalities. The influence of neoliberalism reforms can be observed in different fields (Vitale, 2021). The promotion of the privatisation of security services, leading to the outsourcing of public safety functions to private companies. Besides, neoliberalism's emphasis on limited government intervention may result in a reduced police presence and resources in disadvantaged communities.

On the other hand, neoliberalism often involves cuts to social welfare programs, which can have indirect implications for public safety. Cutbacks in vital services like mental health

assistance, substance abuse treatment, and social support networks can be linked to a rise in criminal activity and the emergence of safety concerns among people. The implementation of neoliberal policies, which prioritise privatised spaces and gated communities in urban developments, can further exacerbate the fragmentation of communities. This division often gives rise to enclaves characterised by heightened security measures, while neighbouring areas face a dearth of public safety resources and diminished social cohesion (Hackworth, 2019). In addition, situational crime prevention elements such as specific features of target hardening like gated communities, CCTV, and other such features (Clarke, 1995) might be differently distributed due to the marketisation of crime control and prevention (Neocleous, 2007; Spitzer, 1979) contributing to a divided city.

The examination of how liberal reforms influence urban planning underscores the spatial dimension of crime and its correlates. Central to crime analysis are the considerations of crime concentration, dispersion, and the investigation of both focal and adjacent areas (Ahmar and Aidid, 2018). While Chapter 4 will provide an in-depth discussion on methodology, including the delineation of tools such as spatial autocorrelation and spatial regression, it is pertinent to underscore the theoretical realms that these analytical instruments can encompass.

Scholarly analyses exploring the criminological landscapes of the UK and the USA unveil spatial distributions in crimes such as homicides and robberies, demonstrating associations with indicators of social disorganization approach marked by segregation.

For instance, Zhou et al. (2023) employed spatial regression models to investigate the spatial dynamics of crime rates in London, assessing their relationship with socio-economic factors across different areas of the city. Utilising 2015 London crime data alongside socio-economic datasets, the study unveiled distinct patterns of crime clustering at the ward level, with central areas exhibiting higher concentrations of crime. The analysis underscored the spatial variability across London of significant variables to explain crime such as the percentage of children aged 0 to 15 and employment rates. While the overall influence of employment rates on crime rates appeared positive, the magnitude and direction of this impact varied spatially. Notably, regions in north-western London experienced a significant positive association between employment rates and crime, contrasting with the negative impact observed in eastern parts of the city.

Focusing on the spatial and temporal nature of crime, Li et al.(2022) delineated various crime typologies within Manchester, each exhibiting a distinct degree of spatial autocorrelation. These phenomena were characterised by a pronounced set of local concentrations within the urban setting. An exception to this spatial coherence was noted in the case of antisocial behaviour, which exhibited a dispersed distribution devoid of clear spatial trends.

In the case of USA, Contreras and Hipp (2020) examined the influence of drug activity on crime rates at a granular spatial and temporal level using data from Miami. Their findings revealed that drug activity on a block in one month led to increased assaultive violence in surrounding blocks the following month. Additionally, the results suggested that economic conditions and the stability of the wider social environment, specifically the surrounding quarter-mile area, played a role in influencing how drug activity affected crime rates at the level of individual blocks.

Continuing with data from USA counties, Maskuta et al. (2024) investigated the spatial determinants of police-involved homicides. The study underscored the need to recognise the diversity of causal processes across different locations, highlighting the pivotal role of space and place in shaping police actions, including stops, citations, and police-involved homicides.

Drawing from social disorganisation theory and utilising data from Detroit, Amaoko (2021) applied spatial regression techniques to explore the influence of socioeconomic factors on violent crime rates. The study highlighted that in the presence of spatial dependence, ordinary least squares estimation yielded inefficient parameter estimates. Consequently, spatial autoregressive models employing maximum likelihood estimation offered consistent results, showcasing neighbourhood effects on violent crime rates within each block group unit.

In conclusion, these studies demonstrate the significance of spatial analysis in understanding crime patterns and their socio-economic determinants. By employing spatial regression models and examining spatial dynamics, researchers gain valuable insights into the complex interplay between social factors and crime rates. The findings underscore the stark reality of segregation, as evidenced by the spatial clustering of crimes in areas marked by social disorganisation and economic deprivation.

What about Latin America in terms of spatial analysis and segregation?

In Latin America, there are a few examples of research focusing on spatial analysis. Broadly, these studies replicate theories of social disorganisation and confirm that variables such as concentrations of social disadvantages, poverty and low education, are spatially associated with violent crimes. Contrasting with the UK and the USA, Latin America exhibits higher levels of violent crime (the highest rate across the world), as well as heightened levels of poverty and inequality (expressed in GDP per capita and Gini Index).

In Fortaleza, Brazil, Dantas and Fabarin (2021) conducted a spatial analysis revealing that areas with the highest levels of violence tend to coincide with neighbourhoods characterised by high vulnerability and urban disorder. This research also supports the association between violence concentration and income inequality, situational factors such as disorder, and the spillover effect of violence. Micro-territories with high levels of violence were found to be spatially close to other high-violence micro-territories in Fortaleza, highlighting the interconnectedness of crime within the city.

Similarly, in Santa Fe, Argentina, a study spanning from 2001 to 2020 revealed a concentrated spatial distribution of homicides (Hoet, 2023). While most micro-units remained homicide-free, a small subset bore a disproportionate burden of violent crimes. Local Moran's I analysis identified high-high areas indicating concentrated homicide clusters, particularly in specific regions such as the city's western areas and northeast. This spatial clustering underscores the need for targeted interventions in these high-risk areas to address underlying factors contributing to violence.

In Mexico City, Vilalta et al. (2021) provide evidence of the spread of homicidal violence across neighbourhoods, particularly in areas characterised by high levels of drug crime and concentrated disadvantage. This spatial spillover effect highlights the interrelation of criminal activities and their impact on local crime patterns. Moreover, the findings underscore the significance of social disorganisation theory in elucidating the spatial diffusion of homicides. This approach emerged as a robust predictor of spatial processes in homicidal violence, providing valuable perspectives on the spatial dynamics of crime.

The findings provided by studies in Fortaleza, Santa Fe, and Mexico City align with the relevance of social disorganisation theory, shedding light on the complicated relationship between crime patterns, urban planning, and segregation in Latin America. Despite the presence of different types of segregation in Latin America (Sabatinni, 2006), they share common features. Legacy urban planning and post-independence initiatives have established

distinct boundaries that reflect socio-economic disparities. As a result, crime tends to concentrate in these areas, driven by limited opportunities and increased vulnerabilities. Urbanisation has further exacerbated segregation, creating pockets of affluence and deprivation.

In this context, the strain theory in criminology offers insights into the dynamics underlying crime patterns in these segregated areas. According to this approach, individuals experience strain or pressure when they are unable to achieve culturally prescribed goals through legitimate means (Agnew, 2017). In Latin America, where socio-economic disparities are pronounced and opportunities for upward mobility may be limited, individuals facing strain may turn to criminal behaviour as a means of achieving their goals or alleviating their frustrations.

Against this backdrop, security measures, such as the proliferation of gated communities, may inadvertently reinforce segregation by creating physical barriers between affluent and disadvantaged neighborhoods. This spatial manifestation of social disorganisation further exacerbates feelings of alienation and exclusion among marginalised communities, potentially fuelling criminal activity.

Portes and Martinez's (2019) examination of neoliberal reforms in the 1980s underscores how market forces and security dynamics have exacerbated social fragmentation and income segregation. The resultant rise in inequality, poverty, and unemployment has not only fuelled property crime but also led to the displacement of vulnerable populations to peripheral areas, perpetuating spatial segregation. This phenomenon is further compounded by the emergence of gated communities, reflecting a spatial manifestation of social disorganisation. As Frühling (2009) observes, such urban planning strategies contribute to the erosion of social cohesion and deteriorate the relationship between communities and law enforcement.

Moreover, the securitisation processes highlighted by Abello Colak et al. (2023) intersect with issues of governance and citizenship struggles, further exacerbating social inequality and undermining principles of urban democratic governance. This shift towards securitisation signifies a departure from a rights-based approach, with exceptional security measures prioritised over addressing underlying social disorganisation, perpetuating cycles of inequality and spatial segregation in Latin American cities.

Given the spatial analysis studies in both the Global North and South, although with some nuances, the presence of factors such as social disorganisation and vulnerability are found to influence crime concentration, segregation, and urban planning. Therefore, I would expect a similar scenario to be present in the case of Santiago. The connection between people and security is mediated by wealth, power, and status characteristics, shaping a “security differential”. However, as I explained in Section 2.1, the emphasis of this thesis is from a multidimensional perspective not reduced to the variation of crime. In fact,

The spatial studies analysed are predominantly based on police statistics, offering a limited perspective on crime as phenomena. A comprehensive understanding of facets such as victimisation, confidence in the police, fear of crime, and related aspects like social cohesion and satisfaction with local security services from local governments necessitates robust crime surveys with appropriate statistical representativeness. Because of this, there is scarce research exploring these dimensions using advanced methods like spatial autocorrelation or spatial regression. This research gap underscores the critical value of the local crime survey employed in this thesis.

The inclusion of dimensions such as fear and confidence in a survey would facilitate a more nuanced analysis of the "security differential" offering insights into the multifaceted nature of public safety distribution. According to this logic, individuals with greater resources may access enhanced security measures and superior police services. They are likely to experience reduced fear of crime, higher levels of social cohesion, greater community organisation capacity, and reside in areas with better municipal resources.

Firstly, fear of crime is analysed. Numerous studies indicate that there is a greater fear of crime among vulnerable social groups. Various studies confirm greater fear in lower-income groups or excluded areas (Scott, 2003; Warr & Ellison, 2000; Patanzis, 2000). For example, fear of crime is considered one of the main reasons for not using public transport (Violet & Smith, 2015). However, for people from vulnerable areas it is difficult to avoid this type of transport, leading to greater fear. Besides, these vulnerable places would also hold high physical incivilities that impact fear levels (Taylor and Covington, 1993; Kohm, 2009; Solymosi, 2017).

Regarding spatial analysis, Kronkvist (2022) investigated the spatial concentrations and temporal patterns of unsafe locations in Malmö, Sweden, utilising a detailed survey approach. The study revealed that unsafe locations are highly concentrated in specific micro-places,

with 2.3% of grid cells accounting for 25% of unsafe location counts, and 7.5% for 50% over three years. The results underscore significant spatial clustering, indicated by a Moran's I value of 0.30. These findings suggest that perceptions of unsafety are linked to particular features of micro-places, which persist over time.

In contrast, Alkimim et al. (2013) focused on Viçosa, Brazil, where the fear of crime appears evenly distributed among residents, regardless of socio-economic status or urban planning quality. Despite high crime rates in certain areas, the study found that the spatial pattern of fear did not show significant clustering, as indicated by a non-significant Moran's I value (z-score of 1.30). This suggests that the fear of crime is a persistent issue across different neighbourhoods, affecting both affluent and deprived areas uniformly.

What about confidence in the police? Numerous studies have applied regression analysis to understand its variation and the factors influencing it. Evidence from the UK and the USA indicates that confidence and satisfaction with the police are lower in vulnerable areas compared to the general population (Wu et al., 2009; Sampson and Bartusch, 1998; Reisig and Park, 2000; Sharkey, 2018; Bowling et al., 2016; Sampson and Wilson, 2007).

While police-recorded data are relatively straightforward to geocode and map, facilitating advanced geographical analyses through crime maps with a high degree of spatial accuracy (Hutt et al., 2018), measuring confidence in policing presents a challenge. This is because confidence in the police cannot be directly observed and is primarily captured through crime surveys. Consequently, advanced statistical methods are required to produce reliable estimates of survey-recorded confidence in the police, enabling a more comprehensive understanding of public trust in policing.

Buil-Gil et al. (2020) introduce the Spatial Empirical Best Linear Unbiased Predictor (SEBLUP), which improves the reliability of small area estimation models by integrating spatial random effects. This method is particularly advantageous in areas with high spatial autocorrelation. In Central London, confidence in the police is notably higher north of the River Thames, in areas such as Westminster, Kensington, and Chelsea, compared to the southern counterparts. Despite higher crime rates in the north, factors like unemployment and minority concentration, prevalent in the south, better elucidate the disparities in confidence. Unemployment rates and the concentration of ethnic minorities emerge as the principal factors influencing confidence in the police across London. Elevated levels of

unemployment and ethnic segregation may lead to diminished trust and cooperation with the police and other governmental services.

Williams et al. (2019) employs a spatiotemporal Bayesian hierarchical approach to scrutinise public confidence in the police at the neighbourhood level. Their research underscores the inadequacies of conventional methodologies in accounting for geographic and temporal variations. Analysing data spanning 2006 to 2013, they demonstrate that their model furnishes stable and reliable estimates despite challenges associated with small-area data. Their findings underscore the close association between public confidence in the police and neighbourhood deprivation levels.

Apart from variations in the police relationship and fear of crime, discrepancies in the capabilities of community organizations and local governments to deter crime would also be noticeable. Crawford (1997) claims that communities with lower crime levels in their neighbourhoods, already organised, well-resourced, and culturally homogenous, will be more successful in applying community initiatives. Similarly, Calaresu and Tebaldi (2015) affirm that the high-income level and quality of life at the municipal level are more interested in keeping security pacts and have more organisational capacity defensive strategies. Following the Social Disorganization Theory approach, Sampson (et al. 2002) asserts that *Collective Efficacy* based on informal control and social cohesion works better in environments with sufficient socioeconomic resources and residential stability. In turn, greater social cohesion could reduce the fear of crime, improving people's quality of life (Greenberg et al., 1982). Therefore, since connection and trust among individuals might facilitate coordination and cooperation for solving problems such as public order and crime control (Putman, 2000; Sampson et al., 1997), its absence would mean these initiatives will not be applicable.

The recent findings of Chouhy and Unnever (2023) provide a more nuanced understanding of collective efficacy, revealing its mediation by complex factors. Their research unveils a racialisation of social processes within neighbourhoods, wherein discrimination undermines collective efficacy. This highlights the imperative to address racial dynamics in community cohesion efforts. These insights align with the propositions of Linning et al. (2022), who advocate for a paradigm shift in criminology from traditional social disorganisation theory towards the NOPE (Neighborhoods Out of Places Explanation) framework.

Traditional approaches often overlook the broader socio-economic context driving crime and disorder, instead focusing on neighbourhood-level factors. Linning et al. (2022) argue

for a more nuanced perspective that recognises the intentional control exerted by property creators in shaping crime opportunities and community dynamics. By shifting the focus from neighbourhoods to property parcels, the NOPE framework encourages researchers and policymakers to consider the political economy of urban spaces and address socio-economic inequalities at the micro-level.

In this context, crime prevention programs focusing on the community, such as “appeal to the community “, have spread across countries, financed in many cases by international institutions but supported by local government implementation (UN-Habitat, 2019). Hence, the role of local government is crucial in this type of initiative, making the concept of the Local Governance of Crime (Crawford, 1997) useful because it is closest to the people and reaches a better understanding of the territorial problems. However, as Crawford (1997) argues, the governance of crime in the neoliberalism reform context gives individuals greater responsibility to control risks like crime. Moreover, not all local governments have the same financial and human capacity to deal with crime. In this manner, both individuals and local governments must assume an intricate responsibility in societies where differences in power and resources should be recognised when public policies are designed.

To sum up, the analysis of segregation, distribution of crime, and community initiatives are essential and have implications for the citizens’ experience of crime and their perception. However, since violent crime is concentrated in specific areas and fear of crime follows a similar pattern (Acevedo, 2008), policing understood as an institution close to the people whose presence is associated with greater safety, is an area of study in Chile that lacks approaches that allow analysing a potential unequal distribution of its services. Confidence in the police holds significant importance as it serves as a vital measure of democratic progress and the effectiveness of the criminal justice system. It implies the confidence individuals have in their police force, which in turn influences their willingness to report crimes and actively participate in maintaining public safety. (Cao and Zhao, 2005). These elements are the basis to justify why studying confidence in the police is a crucial dimension. The next section covers the theories and factors behind this phenomenon.

2.4. Individual and Structural Drivers of Confidence in the Police

In this section, I will explore various dimensions of confidence in the police. Initially, I will engage in a conceptual debate to justify why confidence is the appropriate concept for this research. Subsequently, the focus will shift to the principal individual and contextual variables and conceptual models that explain the variation in confidence, concerning studies from the UK, the USA, and Latin America. The section concludes by underscoring the importance of the interaction between individuals, their perceptions of the police, and their interaction with social structures, topic that will be further addressed in the following section.

The police are the most visible emblem of the state and regime power on the streets and among people. Scholars and policymakers have shown attentiveness to knowing citizens' confidence in the police because they are the consumers of police services, and their opinions are relevant, especially in a democratic society (Kwak and McNeeley, 2019).

For that reason, public perception of the police can be represented as an indicator of the government's progress in meeting popular interests and needs (Cao and Zhao, 2005). The problem arises when this progress is not distributed equally among the population. As Cao and Zhao (2005, p 405) underline, when the state provides differential access to law, the government can lose legitimacy among groups with power deficits, and, consequently, a lack of legitimacy and confidence entails the need for the state to intensify coercion to maintain order, which in turn affects their relationships with the population. In the case of confidence in the police in the UK and the USA, the evidence shows lower levels in vulnerable areas than for the rest of the population (Wu et al., 2009; Sampson and Bartusch, 1998; Reisig and Park, 2000; Sharkey, 2018; Bowling et al., 2016; Sampson and Wilson, 2007).

In criminology, various concepts are intertwined with individuals' perceptions of police actions. While legitimacy, procedural justice, trust, and satisfaction, all offer valuable insights, this research focuses exclusively on confidence. This focus arises from the specific questions available in the survey used for this thesis and the analytical potential to interpret the findings. Therefore, the research begins by defining confidence in the police and distinguishing it from trust.

The concept of confidence, as adopted in this research based on Bradford and Jackson's definition (2010), encompasses a broader spectrum of attitudes towards the police institution

compared to trust. While trust primarily captures the interpersonal relationship between citizens and individual police officers, confidence extends to encompass attitudes towards the police as an institution. There are two predominant approaches to defining and measuring public perception of the police. The first approach simplifies public confidence to concepts like general satisfaction with services or overall support. Conversely, the second, more complex approach employs multiple measures that allow respondents to express varying opinions about different aspects of policing, resulting in comprehensive indexes (Jackson et al., 2012). This research aligns with the latter approach, defining confidence in the police through various items, which offers a richer understanding of how people perceive a broad range of police activities. However, it's important to note that the concept of confidence in this research is limited by the availability of survey questions, excluding key concepts like legitimacy and procedural justice.

Confidence in this research is broader than approaches solely focused on police effectiveness or satisfaction with police. While satisfaction typically denotes the immediate response to services provided by the police, reflecting how well expectations are met in specific interactions, confidence entails a more enduring belief in the police's ability to perform their duties effectively and fairly. This broader perspective allows for a more nuanced understanding of public attitudes, encompassing elements such as trust in the institution, perceptions of fairness, and expectations of future performance.

As I will demonstrate in Chapter 4 on Methodology, confidence in the police is a multifaceted concept encompassing various aspects of police performance. Individuals evaluate the police's coordination with local government, the treatment and respect shown towards community members, and the police's effectiveness in controlling crime, such as drug trafficking. Variations in these assessments highlight the complex nature of confidence, with respondents expressing high confidence in certain aspects of police conduct while being critical of others.

Secondly, confidence differs distinctly from legitimacy. It constitutes a perceptual phenomenon reflecting people's views on whether legal institutions possess the right to assert authority (Maguire, 2022). Legitimacy often occupies an intermediate position in a causal sequence, beginning with antecedents like procedural and distributive justice and leading to downstream outcomes such as cooperation with police and compliance with the law (Tyler et al., 2015). Tyler et al. (2014) define legitimacy as comprising three components: a basic

obligation to obey, trust and confidence in the police, and a sense that authorities share values with the community. This theory suggests that when police treat people in a procedurally just manner, citizens are more likely to view the police and the law as legitimate, thereby influencing their willingness to cooperate with and obey the police (Tyler & Trinkner, 2018).

While confidence and legitimacy are akin and interrelated concepts, it is crucial to delineate between them, particularly within a causal framework. Confidence serves as an antecedent to legitimacy, focusing on attitudes toward the police as an institution and its various functions. In contrast, legitimacy encompasses a broader spectrum of perceptions, including moral alignment and perceived legality of police actions (Jackson et al., 2011). Jackson et al. (2012a) argues that certain types of confidence, such as procedural fairness and police effectiveness, serve as antecedents to legitimacy rather than components of it. Confidence constitutes a subjective judgment at the micro-level between citizens and the police, whereas legitimacy indicates the belief in the rightful exercise of power by the police (Jackson et al., 2012a).

In summary, confidence relates to the attitudes individuals hold towards the police institution, reflecting their beliefs about the police's ability to perform their duties effectively, maintain order, and uphold the rule of law. Essentially, confidence embodies a sense of belief and assurance in the police's capacity to serve and protect the community. On the other hand, legitimacy encompasses a broader array of perceptions that extend beyond mere confidence. While confidence focuses on the institutional aspects of the police, legitimacy delves deeper into the moral and ethical dimensions of police authority. It involves considerations of procedural justice, distributive fairness, and the alignment of police actions with community values and norms. Legitimacy reflects not only people's confidence in the police but also their sense of the police's rightful authority to enforce laws and maintain social order.

Within a causal framework, confidence can be viewed as an antecedent to legitimacy. Individuals' perceptions of the police institution, shaped by their confidence in its effectiveness and fairness, lay the foundation for their broader judgments of legitimacy. When individuals have confidence in the police, they are more likely to perceive their actions as legitimate and morally justified. Conversely, a lack of confidence in the police can undermine perceptions of legitimacy, leading to distrust and resistance to police authority.

Having established that confidence is the most pertinent concept based on the survey items provided, which form the foundation of this study, I will now explore the various dimensions of confidence in greater detail. First, it can be associated with assessing people regarding the effectiveness of the police in reaching their duties, like reducing crime in a delimited area (Jackson et al., 2009, citing Reiner, 2000). Second, confidence includes a vision where the police should know and understand the needs of the public, where the community receives dignified and fair treatment and can raise and communicate the local issues they face daily (Jackson et al., 2009; Jackson and Sunshine, 2007; Jackson and Bradford 2008). Indeed, with the above, it would be possible to find more than one dimension behind the concept of confidence in the police, dimensions that can be associated but do not represent the same aspect. For instance, effective police success through crime reduction does not necessarily imply progress in their type of relationship with the community. Despite the relevance of this point to illuminate the concept of confidence, in Latin America and Chile, research on confidence has not been focused on determining whether there are different dimensions behind this concept, providing a significant investigative gap. For this reason, Chapter 6 first seeks to respond to the case of confidence in the Chilean police if there is more than one dimension that better explains confidence, one latent dimension for police effectiveness and another for communication with the community

The concept of confidence in the police has been scrutinised through various lenses, primarily focusing on individual and structural variables. In early studies, the emphasis was predominantly on individual-level factors such as demographic and socio-economic characteristics. However, a growing body of literature recognises the importance of incorporating structural factors to provide a more comprehensive understanding of public confidence in the police.

Cao (2022) critiques the frequent neglect of economic and ethnic-racial structures in empirical studies on police legitimacy and procedural justice. This oversight often limits the applicability of findings across diverse contexts. Scholars such as Jackson et al. (2012) and Sampson and Bartusch (1998) have highlighted the role of structural factors, conceptualising them as part of the social ecology of trust in the police. This shift acknowledges that public perceptions of the police are not solely influenced by individual experiences but are also shaped by broader socio-economic and racial dynamics.

Various conceptual models consider both individual and contextual variables to explain the variation in confidence in the police. Empirical evidence from studies conducted in the United States and the United Kingdom supports these models. In terms of individual variables, higher levels of education, income, social cohesion, and satisfaction with municipal services are associated with greater confidence in the police (Wu et al., 2009; Sampson and Bartusch, 1998; Reisig and Park, 2000; Kwak and McNeeley, 2019; Cao and Zhao, 2005; Lai and Zhao, 2018; Skogan, 2009). Conversely, belonging to a minority ethnic group, perceiving high levels of social disorder, experiencing high levels of poverty, and victimisation in local areas tend to reduce confidence in the police.

In terms of perceptions about the social context, Reisig and Park (2000) developed the quality-of-life model, which links perceptions of local area conditions—such as social disorder, fear of crime, and social cohesion—with evaluations of police performance. They found that lower confidence in the police is associated with low social cohesion and high perceptions of crime and disorder. This correlation is supported by other scholars (Cao et al., 1996; Merry et al., 2012; Kwak and McNeeley, 2019). In a study distinguishing between confidence in police effectiveness and the nature of police treatment, Jackson et al. (2012) found that collective efficacy is the most significant predictor of both types of trust.

The need for a multilevel approach is underscored by the complexities of studying the impact of social environments on confidence using solely individual-level analyses. Scholars advocate for the inclusion of macro-level factors in these models (Wu et al., 2009; Sampson and Bartusch, 1998; Reisig and Park, 2000). Factors such as neighbourhood disadvantage, racial composition, levels of violence and victimisation, and city size are crucial in shaping public confidence in the police. Additionally, the presence of more police officers in local areas can enhance confidence and satisfaction due to increased police visibility and perceived crime reduction efforts (Lai and Zhao, 2018; Skogan, 2009).

The findings of Silva et al. (2022) shed further light on the relationship between local government, policing, and public confidence. Their research shows that confidence in local government is closely linked to perceptions of police performance and racial experiences. They argue that the success of local governments relies on perceived fairness and effectiveness in policing, which fosters trust and cooperation among residents. They also highlight significant disparities in trust levels between racial groups, with African Americans showing greater distrust towards both police and local government officials.

In conclusion, conceptual models and empirical findings suggest that personal characteristics, local area conditions, and broader socio-economic and racial structures all play significant roles in shaping public perceptions of the police.

What about in Latin America?

Research on policing in Latin America has not seen significant development compared to countries like the UK and the USA. Being one of the most violent regions globally, with low confidence in its police and severe corruption cases, Latin America still lacks extensive research in this area (Ahmad et al., 2011; Dammert, 2014; Cao and Zhao, 2005).

Studies examining trust in Latin American police often adopt analytic models from the Anglophone world. Key determinants of low police confidence in Latin America include personal victimisation, negative perceptions of police performance, experiences of police corruption, urbanisation, and trust in political and legal systems (Alda et al., 2017; Bergman and Flom, 2012; Cao and Zhao, 2005).

However, these studies often overlook a multilevel approach, failing to consider environmental factors such as crime rates and poverty at the municipality or neighbourhood level. While some studies incorporate variables reflecting environmental contexts, these are often measured as individual-level perceptions, potentially violating regression analysis assumptions (Wu et al., 2002).

Moreover, critical variables such as quality of life models and instrumental and expressive factors are typically not included in Latin American studies, except for some exceptions like Alda et al. (2017), who incorporated social cohesion into their analysis. Intriguingly, individuals with higher incomes tend to have less confidence in the police, suggesting differing dynamics in trust in law enforcement across regions (Bergman and Flom, 2012; Cao and Zhao, 2005; Ahmad et al., 2011).

Salazar-Tobar and Rengifo (2023) address the gap in the multilevel approach by investigating the determinants of trust in the police in Latin America. Their findings reveal that individuals with higher confidence in their government report greater trust in the police, and those who have not experienced victimisation or bribery, or who anticipate faster police response times, also exhibit higher levels of trust. This aligns with the institutional and experiential models of trust, linking perceptions of law enforcement to government quality and personal

experiences with crime and police interaction. Their findings highlight significant variations in trust across Latin American countries, with Chile exhibiting the highest levels of confidence and Guyana the lowest. Despite limitations such as not employing cross-level interactions or random slope models, the research stresses the importance of adopting multilevel methodologies and conducting context-sensitive studies in the Global South to capture complex police perceptions effectively.

Blair et al. (2021) critically examine the effectiveness of community policing in the Global South, including Latin America, and identify common challenges such as insufficient commitment from police leadership, frequent police rotations, and lack of resources. Despite increased community engagement, significant improvements in key areas like citizen-police relations, crime victimisation, and perceptions of police abuse were not observed. The study highlights uneven implementation and inconsistent outcomes, suggesting that community policing faces similar issues globally. It emphasises the need for tailored and context-sensitive approaches to build trust and reduce crime in the Global South.

Boateng's (2018) research on police legitimacy in Africa reinforces the importance of considering both individual and country-level variables. His findings demonstrate the significant impact of the democratic quality and peacefulness of nations on citizens' opinions of police legitimacy. Trust in the police in Africa, much like in Latin America, is shaped by factors such as democracy, crime rates, and institutional corruption.

In conclusion, adopting multilevel methodologies and developing theoretical frameworks specific to the socio-political dynamics of the Global South are essential for gaining a deeper understanding of police legitimacy and informing more effective policy interventions

What about Chile?

Chile is a particular case in the region because it holds the highest confidence in its police in Latin America (Dammert, 2016; Bonner, 2013) but is not free from one of the main structural obstacles in the region, which is inequality and segregation. In addition to the mentioned structural variables, in Chile, the role of local governments in public safety has substantially increased in the last 20 years, sparking a clustered security distribution. This clustering of security distribution implies that safety outcomes are not uniform and can vary significantly based on the characteristics of different localities within the same city. Thus, any study of public safety in Chile, including confidence in the police, should include the impact of

municipalities, even more so when considering the limited statistical knowledge of this aspect. In methodological terms, multilevel studies are still low in Chile and Latin America, especially in policing and its association with municipalities.

To fill a crucial gap in this realm, research in Chapter 6 will seek to define whether structural variables at the municipal level are significant in explaining the variance of police confidence controlling for individual variables. Moreover, the chapter will endeavour to establish which conceptual model, based on individual and municipal variables, explains better the confidence variance in the police. The explanations and details of statement of problems and research questions of the thesis will be developed in Section 3.6.

2.5. Exploring Spatial Heterogeneity: Implications for an Ecological Approach to Policing Confidence

One of the persistent questions of social science disciplines like Criminology is how the social environment shapes human attitudes and perceptions and, vice versa, how the social environment arises from human actions. The investigation of context effects, where environmental features like characteristics of a neighbourhood or district affect processes at a lower level (e.g., that of the individual), is therefore central to this approach (Heisig & Schaeffer 2019).

Within the main theoretical points of this thesis is the recognition of the overlap between individuals and the social structures created by themselves and how these structures shape them through territory and space. A Theory of Social Ecology of Confidence in the Police can support this perspective. Rooted in the field of criminology, this approach encompasses various socio-cultural, economic, and spatial dimensions that collectively shape individual perceptions and attitudes toward the police. At its core, this approach acknowledges that confidence in the police is not solely determined by law enforcement actions but is intricately intertwined with broader societal dynamics. It posits that factors such as socio-economic disparities, historical experiences with police, community engagement initiatives, and media representation play pivotal roles in shaping an individual's trust in the police forces (Skogan, 2009; Tyler, 2014).

As individuals navigate their daily lives within these contexts, their perceptions of safety, justice, and the efficacy of law enforcement are influenced by these interconnected factors. The place or territory where people live is crucial to structuring their perceptions regarding daily life, interaction with other people and neighbours, public services provided by the state, and, indeed, with the police. Put another way, police practices and citizen perceptions associated with them vary, at least to some extent, from one location to another (Jackson et al., 2012). Such variations are shaped, in part, by ecological conditions such as socioeconomic status (Gau, 2012). It appears that residents of diverse neighbourhoods and local areas carry different universes of meaning and perceptions regarding the police derived from personal and vicarious experiences and observations of police practices. One influence on these experiences and observations might be social disadvantages in the local area, which act as "ecological contamination" (Sampson & Bartusch, 1998).

Following this logic, the concept of spatial heterogeneity is suitable because it refers to the variability and diversity of crime patterns and perceptions across different geographic areas within a specific area. This concept recognises that factors such as neighbourhood characteristics, physical environments, social structures, and economic conditions can influence crime differently in different areas (Weisburd and Bernasco, 2009).

The previous arguments addressed the interaction between individuals and social structures, demanding the need for a multilevel approach. As I presented in the last section, the first stage of studies on confidence in the police was focused on determining the effects of individual background characteristics on confidence. Low police confidence is linked to low education and income, being male and young, and belonging to specific racial groups, particularly Blacks and Hispanics (Skogan, 1978; Carter, 1985; Thurman, 1996). Additionally, experiences of victimisation and police harassment contribute to low confidence (Homant et al., 1984; Correia et al., 1996).

In the last three decades, alongside individual variables as predictors of confidence in the police, scholars have started to analyse the impact of social context. Some scholars conceptualised this approach as a social ecology of trust in the police (Jackson et al., 2012; Sampson and Bartusch, 1998). An adequate understanding of this impact should consider the objective and subjective characteristics of peoples' social environments as potential predictors. Thus, the theoretical models might be constructed considering the explanatory capacity of individual features, their perceptions about the social context, and the objective conditions of the place.

Scholars have criticised the micro-level approach, highlighting the importance of incorporating macro-level factors (Wu et al., 2009; Reisig and Park, 2000). They argue that studies often violate the assumption of independence in regression analysis because respondents within the same local area tend to be correlated. This oversight can lead to inaccurate conclusions by overestimating the strength of individual variables. Multilevel models, which account for the nested structure of data, can better examine the impact of both individual and community-level variables on perceptions of safety, addressing these concerns (Wu et al., 2009).

Furthermore, multilevel models recognise individual variables' effects, but they report that their explanatory weight may be decreased by including contextual variables. One potent case of this point is ethnicity. African Americans are significantly more likely than Whites to assess police work as unfavourable only when neighbourhood contextual factors are not controlled (Wu et al., 2009). When local characteristics, such as racial composition, are kept constant, the effect of race turns non-significant or decreases (Sampson and Bartusch, 1998; Reisig and Park, 2000). In terms of socioeconomic factors, Wu (et al. 2009) found that neighbourhood class status, rather than individual class status, matters more for satisfaction with police.

In the realm of quantitative criminology, understanding spatial heterogeneity is crucial for grasping how public perceptions of the police are shaped by the socio-spatial context. Recent studies emphasise the significance of employing advanced statistical models that consider spatial dependencies and variations across different geographical scales.

Now, integrating the insights from recent studies by Jackson et al. (2021), Amoako (2021), and Zhou et al. (2023) into our discussion, we can further elaborate on the influence of spatial factors on public perceptions of the police. Jackson et al. (2021) highlights the pivotal role of neighbourhood-level social norms in shaping individuals' willingness to cooperate with the police. The impact of police legitimacy varies significantly across neighbourhoods, suggesting that the socio-spatial context plays a critical role. This challenges theories like Procedural Justice Theory (PJT), which often treat communities as homogeneous entities.

Moreover, complementing Jackson et al.'s focus on social norms, Amoako's (2021) study in Detroit and Zhou et al.'s (2023) analysis of crime patterns in London underscores the importance of spatial regression techniques in understanding crime dynamics. Amoako demonstrates how socioeconomic factors predict violent crime rates using spatial lag and

spatial error models, advocating for spatial autoregressive models over traditional regression methods. Similarly, Zhou et al.'s research reveals significant spatial clusters of crime, highlighting the necessity of spatial regression techniques like geographically weighted regression models.

By integrating these recent findings into our discussion, I can deepen our understanding of how spatial heterogeneity influences public perceptions of the police. These studies not only emphasise the importance of considering spatial dependencies but also underscore the need for context-specific policy interventions informed by spatially informed analyses.

To sum up, this section underscores the complex relationship between social structures, spatial configurations, and individual perceptions in shaping attitudes towards police forces. By integrating insights from diverse theoretical perspectives and recent empirical studies, I have elucidated the significance of considering spatial heterogeneity and contextual factors in understanding public perceptions of the police. Moving beyond traditional micro-level analyses, this exploration highlights the imperative for a multilevel approach that encompasses both individual characteristics and broader socio-spatial dynamics. Moreover, the advocacy for spatial regression techniques underscores the need for context-specific policy interventions informed by spatially informed analyses.

2.6. Conclusion Chapter Two

The dissertation's main motivation is the distribution of public safety across Santiago. This chapter explored a set of theoretical approaches to understand the expected variations in this distribution of public safety, which is examined from objective and subjective dimensions. The vision of social disorganisation theory was employed to comprehend the concentration of crime risk factors in specific areas, with income segregation playing a crucial role in the Chilean context. Crime pattern theory is also utilised to examine the uneven distribution of crime across the city's boundaries. The effectiveness of guardians, including community members and their social cohesion, municipal guardians, and the police, is influenced by the social and economic characteristics of residents and the available resources of municipalities. The concept of local crime government is integrated as a relevant theoretical and empirical framework to understand the varying levels of public safety.

Furthermore, this chapter emphasised the importance of citizen confidence in the police, considering them as direct representatives of safety on the street and the core of the State. I explored models that explain this confidence, highlighting the significance of multilevel approaches that account for structural variables and recognise the potential diverse effects of these variables on confidence levels across different areas of Santiago. In this aspect, the concept of spatial heterogeneity will be crucial to highlight the spatial variation in these effects, underscoring the need for targeted and specialised policies.

By establishing a solid theoretical and conceptual foundation that explores the factors contributing to an uneven distribution of safety, with a particular emphasis on police confidence and the interplay of individual and structural variables, the subsequent section delves into the case study of Chile and its capital, Santiago, explaining why it is relevant to study this case.

CHAPTER 3: Explaining the context of Chile and Santiago

CHAPTER OVERVIEW

This section aims to highlight the relevance of studying Santiago within the field of criminology, taking into account both historical and structural elements, as well as empirical data. While Chile and Santiago stand as a distinctive case in Latin America, they also share a prevalent structural characteristic of the region, specifically, inequality. The history and causes of segregation in Santiago are analysed in light of the aftermath of neoliberal reforms in city planning. In relation with segregation, the key role of municipalities is examined to understand why I might expect the distribution of safety to respond to a dissimilar provision, and how this type of distribution is part of the process of the municipalisation of public safety.

Consequently, by presenting an analytical framework and details about the context of Santiago, the results of this thesis would serve as a point of reference for other cities facing similar challenges

3.1. Chile: A Particular Case in Latin America

Studying the case of Santiago presents a unique opportunity to delve into its successful macro-level dynamics within a distinctly unequal liberal regime. By utilising locally representative surveys, I seek to contribute to criminological debate challenging the prevailing assumption of spatial homogeneity between variables. This approach acknowledges that one variable may exert a heterogeneous influence on another across different spatial contexts. Additionally, there is a notable gap in research concerning the influence of local government in accessing public safety, thereby amplifying existing inequalities. Therefore, this thesis holds the potential to illuminate critical aspects overlooked by existing studies, enriching our understanding of the nuanced interplay between governance, safety, and inequality.

Although the unit of analysis is Santiago, I will review a series of national-level data, as many of these indicators are only available at this level. Moreover, given that Santiago accounts for nearly half of Chile's total population, it serves as an appropriate proxy to associate the data of Chile as a country with Santiago as its capital.

Chile represents a distinctive case in Latin America (Ferre, 2023). In terms of the welfare regime, this country is characterised by its liberal approach. Unlike other countries in the region, which generally follow conservative–corporatist or mixed models, Chile relies heavily on market mechanisms for social service delivery. Ferre (2023) classifies welfare regimes based on inclusion, generosity, and equity. While many Latin American countries have improved on inclusion and generosity, equity remains a significant challenge. Chile's liberal regime leads to a dual system where high-quality private services are accessible to those who can afford them, while public assistance remains minimal and targeted to the poor. This stark contrast makes Chile a critical subject for examining how market-driven approaches impact social equity.

Most Latin American countries developed their welfare policies in the mid-20th century, adhering to a conservative—corporatist model. Filgueira (1998) categorised these countries into mainly 3 different types: stratified universalist (Argentina, Uruguay), dual (Brazil, Mexico), and exclusionary (Bolivia, Ecuador, Guatemala, Honduras, Nicaragua, El Salvador, Peru). Chile, however, diverged significantly during the neoliberal reforms under Pinochet, which privatised the pension, health, and education systems. Despite being considered a leader in welfare policy, Chile faces high inequality due to its market-driven approach, a factor contributing to the 2019 social unrest (Ferre 2023). This juxtaposition of macro-level success and micro-level disparity provides an opportunity to study the relationship between social policies and inequality.

Chile consistently ranks highly in international social and economic dimensions within the Latin American context, with indicators such as GDP per capita and the Human Development Index (World Bank, 2018; United Nations Development Programme, 2018). In terms of public safety, Chile boasts one of the lowest homicide rates in the region (United Nations Office on Drugs and Crime, 2023) and is ranked as the most peaceful country according to the Global Peace Index (Institute for Economics & Peace, 2018). This favourable safety situation is complemented by institutional factors. According to the Worldwide Governance Indicators (WGI) developed by the World Bank, Chile ranks at the top among Latin American countries. These indicators encompass government stability, regulatory efficiency, legal institutions, and corruption levels (Kaufmann and Kraay, 2023). Institutional stability is uncommon in a region often characterised by political and social uncertainty (Ahmad et al., 2011). Additionally, the Chilean police force consistently garners high levels of public confidence (Latinobarometro, 2019).

Despite these favourable socio-criminal and institutional indicators, Chile presents an intriguing case study due to its historical and contemporary high levels of inequality, a trait shared with other Latin American nations. Chile ranks among the top 25 most unequal countries globally (World Bank data, 2023). Scholars have linked this inequality to the extent of neoliberal reforms (McLean et al., 2019; Sabatini & Cáceres, 2001; Jiron, 2007), with Chile at the forefront of such measures (Harvey, 2007). The extent of neoliberal policies is evident in Chile's prominent placement in international indicators focused on this economic model. The Index of Economic Freedom, which evaluates economic freedom by assessing factors such as property rights protection and regulatory efficiency, ranks Chile first in the Latin American region for this measure (The Heritage Foundation, 2023). Given Chile's pronounced liberal state character, this study will consistently draw comparisons with the UK and USA, considered prototypical examples of this form of social and economic organisation.

Despite Chile's favourable positions in social and criminal indicators, crime remains a significant concern among its citizens (CEP, 2022), registering the highest levels of fear of being a crime victim in Latin America (Latinobarometro, 2018). The case of Chile, with Santiago as the focal point of study, presents a compelling subject for criminological inquiry. Santiago, home to nearly half of Chile's population, exemplifies the nation's urban and social dynamics. With over 7 million inhabitants, Santiago is divided into 34 communes, each governed by a mayor responsible for local governance. Despite its modern public transport systems and high living standards, the city faces significant segregation and inclusivity issues (Yang, 2023). Rapid urbanization in the early 20th century, driven by industrialization and rural migration, was followed by neoliberal economic policies post-1973 coup under General Augusto Pinochet. These policies spurred commercial expansion and infrastructural development while exacerbating socio-economic disparities and spatial inequalities (Silva & Vergara, 2021).

On the other hand, Chile's greater institutional stability has facilitated the systematic generation of knowledge through surveys and police records, enhancing opportunities to study safety distribution and perceptions, particularly at the local level. The key data source for this study, a crime survey representative of Santiago's municipal areas, allows us to challenge the homogeneous spatial relationship between variables by highlighting spatial heterogeneity. This spatial heterogeneity tests the assumption of a uniform relationship between variables, underscoring the importance of considering local contexts in

understanding social phenomena. Thus, this study aims to shed light on Santiago's apparently successful development model, which may inadvertently perpetuate social policies and urban designs hindering integration and equitable collective well-being. By leveraging Santiago's local-level data for a large urban area, I seek to assess the extent of spatial heterogeneity in public safety distribution and its relationship with social structures.

Furthermore, the Santiago case study allows for the evaluation of models elucidating the specific impacts of neoliberal reforms on securitisation processes. The investigation aims to understand how local governments, operating within a context of diminished central state authority and increased transfer of security responsibilities, shape residents' perceptions and experiences of safety. By examining the dynamics of security municipalisation within broader models of social and urban development, such as the Chilean model, this study seeks to ascertain whether, within a nation demonstrating success in macro-level indicators, the process of municipalising security exacerbates disparities in public security access.

In conclusion, the discussed elements offer empirical evidence for a theory of social ecology regarding perceptions of police and safety, rooted in spatial heterogeneity. This underscores the necessity for models integrating the role of local governments in safety provision and how their finances exacerbate inequality, contributing to the on going debate in the field of criminology.

3.2. Segregation in Santiago

Another peculiarity of the Chilean case is considered one of the main 'laboratories' for neoliberal reforms worldwide (Parraguez-Camus, 2017; Harvey, 2007; French-Davis, 2003; Han, 2012). These reforms were implemented during the military dictatorship of Pinochet from 1973-1989, whose measures were imposed without open democratic debate or any political opposition because the national congress was closed. Considering the type of consequences shaped by neoliberalism reforms, as described in the above theoretical framework, I might expect to find inequality. Indeed, using the Gini Coefficient to measure income inequality (where 1 represents perfect inequality and 0 represents perfect equality), Chile scored 0.488 in 2020, while the Latin American average was 0.463 (CEPAL, 2020). Europe scored 0.301 (Eurostat, 2020). For Santiago de Chile, data is available only for 2017, with a coefficient of 0.50 (CASEN, 2017). It's noteworthy that detailed Gini coefficient data

for smaller geographic areas, such as neighborhoods or municipal areas, are not available. While it is true that levels of inequality are a historical feature of Chile, the Gini coefficient increased by ten percentage points during Pinochet's dictatorship (1973-1989). Chile is indeed a remarkable case in Latin America regarding a significant poverty reduction since the return to democracy in 1990 with 68% of people living below the poverty line to 9% in 2017. Nevertheless, the problem of inequality remains high until the present day. The wealthiest 1% of the population captures 33% of the economy's total income (United Nations Development Programme, 2017). Portes and Martinez (2019) emphasise the significance of the Chilean case, where property crimes increased despite a substantial reduction in poverty rates across Latin America. This phenomenon is intricately linked to the persistent level of inequality. The implementation of neoliberal reforms brought about the emergence of an informal and vulnerable working class. A segment of this demographic, primarily composed of economically disadvantaged young men who are disconnected from the formal employment network, turned to property crimes as a means of navigating the absolute and relative deprivations fostered by free-market capitalism and its associated reforms. As a consequence, the affluent areas bore the brunt of this crime surge due to a phenomenon known as crime displacement (Portes and Roberts, 2005).

Similar to the scenario observed in Mexico City, Santiago exhibited an urban landscape organised along lines of segregation. The spatial distribution of wealth and resources translated into spatial variations in crime patterns and victimisation, creating a distinctly urban environment characterised by pronounced disparities. Therefore, economic inequality has significantly shaped the capital, Santiago. Sabatini and Salcedo (2007) claim that the causes of segregation by income in Santiago were due to neoliberalism reform, precisely during the Pinochet regime. In this period, the government taking advantage of the violence of an authoritarian regime, began a forced migration of poor dwellers living close to affluent and middle-class neighbourhoods to peripheral areas of Santiago. This migration meant a loss of social networks among dwellers, greater residential instability, concentration of poverty, and more social problems (Rojas, 1984). Thus, segregation in Santiago has concentrated risk factors associated with crime and violence described by Social Disorganization Theory which was examined in Chapter 2. Regarding environmental measures, to protect themselves against crime, citizens turned to target hardening measures in Chile. One such measure was the creation of "security enclaves" (Sabatini and Salcedo, 2007), "fortified zones" (Perez, 2011), or "gated communities" (Portes and Martinez, 2019). However, these can amplify distrust and a lack of connection with other social realities (Low,

2004). While in Santiago, upper-income groups are concentrated in a delimited area, lower-income groups live in an agglomeration of poverty in the urban periphery with a low quality of life, fewer employment opportunities, and scarce social contact with people from diverse social backgrounds (Sabatini et al. 2001). In other words, the scale of segregation increased because the distances between affluent and vulnerable families increased, forming wealthy and impoverished districts. As I will discuss later in the thesis, the map in Appendix 1 is illustrative of the segregation of Santiago in terms of key variables.

Additionally, in Chile, the application of inferential techniques that incorporate spatial analysis remains almost non-existent, making this study a significant contribution to the field by employing such methods in a recent analysis. The study by Cadena et al. (2022) provides further insight into crime patterns in the Metropolitan Region. They employ a spatial panel model with fixed effects to investigate crime patterns and find that factors like poverty and green areas significantly influence crime rates.

Their research also highlights a notable trend of crime displacement toward neighbouring areas. This displacement is closely linked to the segregation observed in Santiago, where socio-economic disparities create distinct urban environments. The wealthier areas, often better protected and with more resources, may push criminal activities into poorer, less protected neighbouring areas.

However, it is important to note that their analysis relies solely on police records, which do not capture declared victimisation rates, including unreported crimes, and perceptions such as fear of crime and confidence in the police. This limitation underscores the need for comprehensive approaches to understanding crime dynamics, particularly in contexts of socio-economic inequality and segregation, where official records may not fully represent the experiences of all residents.

To sum up, studying segregation by income in countries like Chile that have undergone profound neoliberalism reforms is relevant in understanding how these policies shape the distribution of public safety, exacerbate social inequalities, and influence the well-being and cohesion of communities that are central aspects of this thesis. This provides valuable insights into the complex interplay between socio-economic factors, public safety outcomes, and the broader social and political implications of neoliberal reforms. The next section explains how the changes are intensified in a political context where the local governments have assumed a key responsibility to face crime and the demand for security from people.

3.3. The Role of local government in Chilean public policies

Considering the inequality described, I suggest that, in terms of quality of life, levels of crime and its perceptions, and access to public safety represented by the police and municipal services, Chile could be seen as “many Chiles”. There are relevant reasons why it is necessary to study the implications of local governments in order to respond to the main interest of this thesis, which is the distribution of public safety.

First of all, there is a political and administrative aspect. In the case of Chile, the municipality is the institution representing the State closest to the people, the lowest local administrative structure where different public services converge. This proximity leads people to perceive that municipalities should provide safety. Indeed, the influence of local areas is echoed among Chileans as 80% think that safety is the local government’s responsibility (Universidad Católica, 2016). Furthermore, national public safety plans from the centre-left government (2014-2018) and right government (2018-2022) stated that the community and municipalities must be considered key actors in preventing crime (Under Secretary of Crime Prevention of Chile, 2014 a, 2018). Therefore, given the crucial role of municipalities in Chile managing security, the concept of Local Governance of Crime (Crawford, 1997) revised in Chapter 2 contributes to the analysis.

As noted by Crawford, at the local level, many cities have suffered significant rearrangements in their municipal norms to adapt to new forms of public-private partnerships to deal with public safety. Indeed, at the more local, ‘everyday’ level, security concerns also now influence the way one understands and act as ourselves, our families, and our communities, as we are increasingly encouraged to become responsible for our own and others’ safety. The point of discussion is whether there is an equality of conditions and resources among people to take on this responsibility.

Regarding crime prevention policies at the local level, in Chile, municipalities have assumed security functions such as emergency phone services, installing CCTV, municipal security booths, and programs oriented toward “Community Safety” (AMUCH 2017). Furthermore, the municipalities can constitute security councils and coordinate tasks with the police in their tasks. Nevertheless, legally, they cannot assume police functions such as carrying firearms or making arrests. There are no municipal police where the mayor can manage and

lead the police (SUBDERE, 2018). While in other Latin American countries, such as Mexico and Colombia, there is a federal or municipal police (Fondevila and Meneses Reyes, 2017; Rojas and Méndez, 2007), in Chile, the police are administered only at the national level.

The problem with this approach is the inequality of income and resources among the municipalities in Chile. The neoliberal reforms sought to reduce the central state's size generating greater autonomy for the municipalities but with the high cost of increasing inequality among them (Henriquez et al. 2011).

In this context, I expect that since municipal resources are different, municipalization processes that take responsibility for providing safety are diverse, and heterogeneous and can even exacerbate the disparity among people. At the moment that municipalities provide public safety, significant municipal management problems emerged, from financial aspects to specialist knowledge and sectorial management.

In this thesis, I will analyse how the municipalisation processes are heterogeneous in providing public safety, precisely since municipality resources differ, affecting the access to the distribution of public safety. The next section provides more institutional and public policies elements to comprehend the connection between distribution of safety and local governments.

3.4. Public Policies on Crime Prevention and policing in Chile

This section briefly explores Chile's citizen security policies to understand the process in which the municipalisation of safety in Chile is implemented, a process that might be affecting the inequality rooted in Chile even more. Thus, I examine the historical development and structural transformation during the State's modernization and democratization period. In addition, the Chilean people have been witnessing significant reforms in policing fields, changes that, notwithstanding have not achieved a generalised satisfaction among the population.

The implementation of citizen security policies beyond the criminal control system is relatively recent (Zuñiga, 2010; Dammert, 2004). Notably, security policies started incorporating local governments, civil society, and community capacities in the 90s and 00s (Garland, 2001). During the 90s, efforts focused on shifting from a military dictatorship's 'national security' doctrine to a 'public security' approach, limiting the role of armed forces

(Dammert, 2004). Police modernization included the 'Plan of Preventive Security,' aiming to enhance preventive tasks at the local level. However, its success in strengthening community links was limited due to the lack of structural reforms (Labra, 2011).

In subsequent years, citizen security gained prominence in the government agenda, leading to significant institutional reforms and crime prevention policies (Dammert, 2004). The 'National Survey of Urban Safety' (ENUSC) in 2003 and the Division of Citizen Security (DSC) in 2011 emphasized local management and community participation (INE, 2011).

Post-2005, the National Citizen Security Policies and 'district plans' consolidated further. The 'National Policy of Citizen Security' in 2005 (Mertz, 2013; Manzano, 2006) and subsequent strategies like 'Chile Seguro' (Safe Chile) and 'Seguridad para todos' (Safety for Everyone) marked important steps.

Chile's public security policies evolved from a military dictatorship's internal security to a democratic public security approach (Mertz, 2013). Successes include balancing control and prevention measures, emphasizing local management and community participation (Dammert, 2004). Nevertheless, challenges persist due to factors like centralism, program discontinuity, and limited resources, elements that can put together, reinforce the assumption of how the municipalisation of security is directly associated with the scenario of inequality.

In the domain of law enforcement, the 2004 Policy set forth the objective of "Modernizing the Police," driven by the perceived necessity to adapt policing practices in response to the challenges posed by the gradual implementation of the penal procedural reform. Notably, the expansion of Carabineros de Chile (Police Force) "Plan Cuadrante" (Quadrant Plan) was anticipated with considerable expectations. A comprehensive assessment acknowledges that police forces assimilated and incorporated new protocols of operational procedures, crime scene preservation, evidence chain of custody, and related aspects, aligning them with the evolving justice administration system.

Nevertheless, concerning the Plan Cuadrante, its effectiveness remains a subject of dispute. While it prospered by implementing a community policing strategy, which garnered favourable public reception, this perception is not transversal among the population. Indeed, in the context of "social unrest" in Chile during 2019 (Maguire, 2021), within the main social

demands on the street, the need for fair treatment between the police and people from different social backgrounds emerged as a critical requirement.

Despite the centrality of the role of local government and police in understanding inequality in public safety provision at the municipal level, this dimension remains unexplored from a quantitative approach with adequate tools to measure and to seize their scope. In this context, this thesis aims to address this gap in analysing public safety like other services such as education, health, or pensions, which have obtained public and academic attention. Since the research question seeks differences in safety at the level of municipal areas, considering the role of local governments and police will be key to understanding their variations, so they will be present in the statistical models that will be tested in Chapters 5, 6 and 7.

3.5. Conclusions Chapter Three

The chapter aimed to provide elements to justify why it is relevant to study Chile and its capital Santiago within the field of Criminology, considering historical and structural elements, as well as empirical data. Even though Chile is in the top position in various social and economic dimensions (GDP per capita and the Human Development Index), and presents the lowest homicide rates in Latin America, this country has not been capable of overcoming one historical and structural condition of this region: the unequal distribution of income among population. This inequality was connected to the history and causes of segregation in Santiago which was analysed considering the aftermath of neoliberal reforms in urban city planning. In this context, the role of municipalities in relation to segregation was examined to understand why I might expect that the distribution of safety is unequal and how this type of distribution would be part of the process of the municipalisation of public safety. However, to date, there has been no victimisation survey representative at the municipality level. Using the first Local Crime Survey as statistically representative at the municipality level, this thesis will respond the question about distribution of safety.

As a result, by presenting an analytical framework and providing details about the context of Santiago, the findings of this thesis might serve as a point of reference for other cities and countries that faced similar challenges.

This thesis aims to contribute significantly to the field of criminology by addressing several critical gaps in the empirical research on public safety in Latin America. Given the scarcity of empirical criminological studies in Latin America, notably in the context of fear of crime and public confidence in the police, this thesis fills several significant gaps. First, it leverages local-level data from Santiago to conduct a detailed spatial analysis of public safety, which includes not only victimisation experiences but also perceptions such as fear of crime and confidence in the police. By focusing on a city with a unique combination of neoliberal reforms and deep-seated inequality, this research offers valuable insights into the spatial heterogeneity of public safety distribution, an area that remains underexplored in the region.

The first objective of this thesis is to understand the distribution of public safety across various municipal areas of Santiago. This involves identifying patterns of concentration and analysing disparities in victimisation, fear of crime, and confidence in the police. By highlighting which variable exhibits the most pronounced inequalities, the research addresses the gap in empirical studies on the spatial aspects of public safety.

Secondly, the thesis aims to explore and test theoretical models from a Social Ecology perspective. By examining how social structures at both individual and municipal levels influence public safety, it addresses the gap in understanding the role of socio-economic factors in shaping safety perceptions and experiences. The focus on the municipalisation of security within the broader neoliberal framework is particularly pertinent, given the paucity of studies examining the impacts of local governance on public safety in Latin America.

Thirdly, this research delves into the spatial heterogeneity within Santiago, exploring how social structures interact with individuals to create a nuanced landscape of public safety. By moving beyond conventional models that assume uniform effects of independent variables across territories, it provides a more detailed understanding of the dynamics at play. This nuanced approach not only enriches the criminological literature but also offers practical insights for designing more targeted and effective public policies.

3.6. Statement of problems and research questions of thesis

Chile, and Santiago as the unit of analysis, stands out as a distinctive case within the Latin American context. Despite registering the lowest homicide rates and being regarded as the most peaceful country in the region, crime has consistently remained the primary concern

for Chilean citizens over the past 15 years, even surpassing health, and education on their list of concerns. Behind these seemingly successful national averages, a closer examination reveals significant variations in the quality of life at the local level, akin to numerous "mini countries" within Chile and its capital Santiago.

The concept of inequality assumes critical importance for this thesis. Although Chile performs well in crime statistics like homicide, it ranks among the top 25 most unequal countries in the world when it comes to economic inequality (World Bank data 2018). While the impact of inequality on access to essential services like education and health is well-documented, less is known about the extent of variability in the distribution of public safety. Therefore, to accurately grasp the intricacies of the Chilean case, there is a need to address the insufficiency of measuring the distribution of public services, specifically, associated safety dimensions.

Since the UNDP report (1998) shed light on safety in Chile, a paradigm shift occurred, recognising the subjective dimension as crucial. This dimension incorporates the perceptions and feelings of individuals, extending beyond mere objective crime indicators. Consequently, to enrich the analysis of crime distribution and its impact on people, it is crucial to adopt a multidimensional approach to safety, one that encompasses its nuances and goes beyond focusing solely on victimisation figures.

To explore and enhance this approach, crime surveys representative of a municipal level rather than relying solely on regional and national data, are fundamental tools. However, up to date, in Chile there has been no victimisation survey representative at the municipal level, which comprehensively covers safety from various angles. This absence hinders the ability to conduct thorough spatial analysis of perceptions and constrains the depth of insight into the distribution of public safety concerns.

Moreover, the reliance on police cases alone limits the scope of understanding regarding crime and safety perceptions. Police data often reflect reported incidents, which may not fully capture the breadth of individuals' experiences and feelings regarding safety. Therefore, the absence of robust surveys further compounds the challenge of comprehensively studying public safety perceptions at the local level. Precisely, this study aims to explore and quantify inequality and variability in victimisation, fear of crime, and confidence in the police across Greater Santiago.

Due to previous antecedents about domains of knowledge not filled from current literature about Chile, Chapter 5, first, will respond to the following research question:

What is the extent of inequality and differences among municipal areas of Santiago in terms of public safety (victimisation, fear of crime, and confidence in the police)?

In order to theoretically grasp the distribution of public safety and segregation in Santiago, I considered explanations rooted in Environmental Criminology. Elements of Social Disorganisation Theory are highlighted to comprehend the concentration of crime risk factors and the degree of social cohesion and informal control in certain areas of the city, where segregation by income is a crucial component to grasp the case of Santiago. Furthermore, building on the Crime Pattern Theory, I give particular attention to the city's division into boundaries that exhibit an uneven distribution of crime. This division reflects how the effectiveness of guardians (professionals, municipal security guards, and the police) can be linked to the social and economic attributes of residents.

However, the formation of segregation and crime distribution cannot be read in isolation from structural factors, such as socio-economic and political contexts. For this reason, to adequately respond to the question of the distribution of safety, I considered a set of consequences derived from neoliberal reforms carried out in Chile. The emergence of the marketisation of security and the role of municipalities are elements to grasp these consequences since they are useful to contextualise how the distribution of safety has taken shape in the city. Indeed, the concept of Local Governance of Crime (Crawford, 1997) plays a crucial role in understanding both the way the municipalities actually work in the Chilean case and the social conflicts implied. As local governance is closest to the people and reaches a better understanding of the territorial problems, the governance of crime in the aftermath of the neoliberal reforms gives individuals greater responsibility to control risks like crime, as Crawford (1997) has argued.

Considering the conceptual references developed above, a second knowledge deficit to be filled is regarding the connection between the access to public safety and structural and individual factors linked to Environmental Criminology, connection positioned in a socio-economic context of neoliberalism reforms.

Hence, Chapter 5 also aims to understand the context of this inequality, specifically looking at the influence of municipal features relating to 'security enclaves' (poverty, municipal

budget, and municipal services) and social features such as social cohesion and informal control using descriptive analysis, answering the question:

Are social cohesion, informal control, poverty and municipal budget, and satisfaction with municipal services associated with public safety (victimisation, fear of crime, and confidence in the police) among municipalities areas in Santiago?

Following the conception of this thesis regarding public safety based on a multidimensional perspective, to apprehend the complexity and particularity of a country like Chile, it is vital to know and measure the distribution of crime, fear of crime, and confidence in the police. This distribution is particular since Chile holds outstanding macro-level economic and social indicators but, at the same time, shows a meshing of multiple local realities resulting from their structural inequality. Although few studies are acknowledged that understand and measure the concentration of violent crime (Sabatini and Salcedo, 2007; Tapia et al, 2014) and how social groups are very affected by the fear of crime (Acevedo, 2008), there is still a significant gap in the field of policing. Particularly, statistical studies on the potential unequal distribution of its services and perceptions and associated confidence. This is objective of Chapter 6.

The relevance of studying confidence in the police responds to many motivations. The police represent the prominent symbol of state and regime authority in public spaces and among the population. Scholars and policymakers have expressed interest in understanding citizens' confidence in the police, as they are the recipients of police services, and their viewpoints hold significance, particularly in a democratic society (Kwak and McNeeley, 2019). Consequently, the public perception of the police serves as an indicator of the government's efficacy in addressing the preferences and requirements of the public (Cao and Zhao, 2005).

In this context, confidence can be viewed from various perspectives. Firstly, it is associated with the assessment of police performance in fulfilling their duties, such as reducing crime within specific areas. Secondly, confidence encompasses a broader vision wherein the police are expected to understand the needs of the people, treating the community with dignity and fairness, and fostering an environment where local issues can be openly raised and communicated. It is important to recognise that the concept of confidence in the police entails multiple dimensions, which may be related but do not necessarily indicate the same aspect. For instance, the success of police in effectively reducing crime does not mechanically imply progress in their relationship with the community.

The significance of this aspect in elucidating the concept of confidence remains notable; however, in Latin America and specifically in Chile, research on confidence has not primarily been aimed to identify potential underlying dimensions, thus revealing a significant gap in investigation. Therefore, the first task of this Chapter 6 is to respond to the following research question:

Is there more than one dimension that better describes confidence in the police, one latent dimension for police effectiveness, and another for communication with the community?

On the other hand, in the realm of confidence in the police, researchers have undertaken extensive investigations to identify the variables that exert significant explanatory power for this concept. Initially, the studies primarily concentrated on individual factors such as demographic and socioeconomic variables. However, in recent decades, scholars have increasingly emphasised the influence of structural factors on the perceptions, an idea encapsulated as the social ecology of confidence in the police (Jackson et al., 2012; Sampson and Bartusch, 1998). A multilevel model emerged to respond to this necessity for an analytic framework.

Notable advances in research of policing have emerged in countries like the UK and the USA. In the case of Latin America is seriously affected by structural fragility, high levels of violence, low confidence in the police (Ahmad et al., 2011; Dammert, 2014), and significant instances of corruption (Cao and Zhao, 2005), the progress in the field of knowledge has remained limited.

In the context of Latin America, Chile stands out as a particular case with its police force garnering the highest public confidence levels. However, the country shares prevalent challenges of inequality and segregation with the region. Moreover, Chilean local governments have played an increasingly significant role in public safety, resulting in a potential clustered distribution of safety. Therefore, research on public safety in Chile, including the examination of confidence in the police, should consider the influence of municipalities, particularly due to the limited statistical information available in this area.

Taking into account the aforementioned limitations, in the pursuit of comprehending the variations in confidence in the police among different municipal areas of Santiago, I will test conceptual models including, first, variables at the individual level such as social cohesion, informal control, perception of municipal services, and social order. Given the significant

impact of structural factors, moreover, I will also test, models that encompass municipal-level variables, including poverty, the number of police officers, and the municipal budget. These combined factors may provide a more comprehensive understanding of the intricate dynamics influencing confidence in the police at the municipal level.

As multilevel models are adequate to achieve this approach, and since these models remain relatively underdeveloped in Chile and Latin America, the second objective of Chapter 6 is to address this research gap, focusing on the following research question:

Are structural variables at the municipal level significant in describing the variance of police confidence controlling for individual variables? Which conceptual model, based on individual and municipal variables, better describes the confidence variance in the police?

Once the most suitable model for comprehending the variations in confidence in the police is defined then the challenge of comprehending the mechanism behind this distribution of confidence emerges; to know its complexities from a spatial perspective. Employing the concept of spatial heterogeneity, Chapter 7 will delve into spatial nuances of the distribution of confidence and the necessity to design tailored public policies according to specific municipal areas. Considering spatial disparities in police resources and the confidence associated with them can inform evidence-based strategies to ensure equitable access to safety resources in urban environments for all municipal areas of Santiago.

Before delving into this matter, it is worth noting the emergence of an incipient body of studies incorporating spatial elements in their models. This nascent set of research could serve as a valuable template for testing within the Chilean context. I postulate two premises to address spatial heterogeneity: the relationship between confidence in the police and their associated variables are not constant across Santiago; and confidence might be shaped from an interaction between individual-level variables and structural variables.

These assumptions build on the theoretical review already presented in Chapter 2 and 3 in which safety might not be unequally distributed; neoliberal reforms further aggravated segregation by income in Santiago; municipal resources affect perceptions of safety and police services; and the influence of individual variables cannot be measured without considering municipal-level variables.

While it is true that diverse studies from multilevel models have shown relevant empirical evidence to comprehend variation in confidence, most of them implicitly assume that the influence of associated variables on confidence might be similar across all areas studied. This thesis advocates to test whether associated variables on confidence in the police may vary in their effects across different municipal councils, enabling a more polished empirical base to foster a theory on the social ecology of confidence for the Chilean police.

In this context, I posit a potential risk of assuming a constant relationship between predictor variables and outcomes. For instance, the influence of social cohesion on confidence may not be the same in all municipal areas of Santiago. While social cohesion might increase confidence in some areas, its influence could vary across different regions. Therefore, if a public policy aims to invest in promoting social cohesion to enhance confidence in the police, it is essential to consider that the result may be strong in some areas, but only moderate in others. Failing to acknowledge this variability in the influence of predictor variables could lead to policies not achieving a tailored design that responds to a particularity of one municipal area. The panorama of social cohesion might be replicated for the positive influence of informal social control, and satisfaction with municipal services on the confidence of the police as well as of personal variables, such as ethnicity, gender, age, and socioeconomic level whose influence on confidence, aspects detailed in Section 2.4.

To unravel these theoretical and methodological tasks, Chapter 7 will respond to the following research questions:

Does the influence of perception regarding local areas on the confidence in the police vary across municipal areas of Santiago?

Specifically: Does the negative influence of the perception of social disorder on the confidence of the police vary across municipal areas of Santiago? Does the positive influence of perception of informal social control, social cohesion, and satisfaction with the security of local government on the confidence in the police vary across municipal areas of Santiago? Does the influence of personal characteristics, such as ethnicity, gender, age, and socioeconomic level, on the confidence in the police vary across municipal areas of Santiago?

The other important realm to achieve a finer analysis in the spatial heterogeneity of confidence in the police is the interaction between variables at different levels. As I emphasised in Section 2.5., it should be of criminological interest to investigate context effect

in confidence in the police, recognising the interplay between individuals and the social structures they create, with a focus on how these structures shape perceptions and attitudes through territory and places. For example, the influence of social cohesion on confidence may differ according to municipal budget, number of police officers or level of poverty at the municipal area. The same scenario might be with individual level such as socioeconomic level, belonging to an ethnic group, perception of social disorder.

Hence, the interaction between variables from different levels is crucial to grasp a more refined vision of distribution of confidence in the police. Chapter 7 will respond to the

*Do structural factors at the municipal level interact in the relationship between confidence in the police and variables at the individual level?*⁸

Specifically:

Does the municipal budget moderate the positive influence of the satisfaction with municipal security services on the confidence in the police? Does the municipal budget moderate the negative influence of the perception of social disorder and belonging to an ethnic group on the confidence in the police? Does the number of police officers in the municipal area and the poverty level moderate the positive influence of social cohesion on the confidence in the police? Does the municipal budget moderate the influence of socioeconomic level from home on the confidence in the police?

⁸ As we will discuss in more detail in chapter 7, in this thesis I assume that contextual level variables influence a dependent variable in the field of criminology. However, I further assume that these contextual variables may exert an interacting or moderating role on the relationship between a predictor and an outcome, both at the individual level. In other words, interactions occur when the influence of a level-1 variable on the outcome differs depending on the value of the level-2 predictor (Finch et al., 2019). Finally, it is necessary to clarify that while in this thesis the concept of interaction and the moderating role of contextual variables will be used, this concept is distinct from mediation. While cross-level interaction focuses on how the relationship between variables changes across different levels of analysis within a hierarchical structure, mediation focuses (within the same level of analysis) on the mechanism through which one variable influence another via an intervening variable exploring its indirect effect.

CHAPTER 4: Methodology framework: data and methods

4.1. Introduction:

This chapter provides an overview of the data and methods used in this research. The unit of analysis is Santiago using a Local Crime Survey, a distinctive departure from the conventional national perspective on safety. This section highlights the approach of adopting a localised viewpoint, which enhances the depth and specificity of the analysis of safety dynamics within Santiago.

The chapter proceeds to elucidate the critical aspects of data sources and sample selection. I explicate the rationale behind the chosen sources and the process involved in constituting a representative sample. This sample selection contributes to the precision and validity of the collected data, thereby bolstering the overall robustness of the study. Furthermore, the selection of variables is expounded upon. This section provides insights into the considerations underlying the choice of variables, enhancing the coherence and relevance of the subsequent analysis. The overall research and analytical approach provide a comprehensive overview of the strategies and methodologies employed to respond to the research questions on the distribution of safety across Santiago.

4.2. Chilean Crime Survey: surpassing the national conception of safety

The data source to address the research questions in this thesis is the municipal crime survey conducted in Santiago during the year 2016. However, to underscore the significance of achieving a survey at the local level, I briefly outline the trajectory of national crime surveys in the Latin American context, as well as in Chile specifically.

The first crime surveys in Latin America emerged in the 1970s and 1980s as part of pilot experiences carried out in countries such as Mexico, Brazil, Venezuela, and Panama. However, these initiatives lacked institutional support to maintain periodic measurements (Aebi and Linde, 2012). During the 1990s, the International Crime Victim Survey (ICVS), designed by a group of European criminologists and led by Jan Van Dijk, had a crucial impact on Latin America. Several countries followed and replicated its questionnaire and modules but, once again, the absence of continuous measurement persisted, especially at the

national level. The only exceptions were in Chile and Mexico in 2000 when both countries began a process of continuous measurement of crime at the national and regional/federal level (Aebi and Linde, 2012).

In the Mexican case, the first national survey took place in 2002. Nevertheless, the questionnaire was modified and updated in 2011 generating a break in the series and its comparability. Thus, the new survey called the National Survey on Victimisation and Perception of Public Security (ENVIPE- Encuesta Nacional de Victimization y Percepcion sobre Seguridad Publica), started in 2012 and is annually implemented until the present therefore it represents a crucial instrument in analysing changes of trends over time in the region.

On the other hand, Chile presents the longest-running continuous crime survey in Latin America with an extension of almost 20 years. The National Urban Survey on Citizens Security (ENUSC- Encuesta Nacional Urbana de Seguridad Ciudadana) is the responsibility of the Ministry of Interior and the National Institute of Statistics of Chile. The first version was in 2003 and has been implemented annually since 2005 to date. The interviews are conducted face to face with persons aged 15 or over, presenting an important growth in sample size from 16,289 cases (in 2003) to 23,180 (2021).

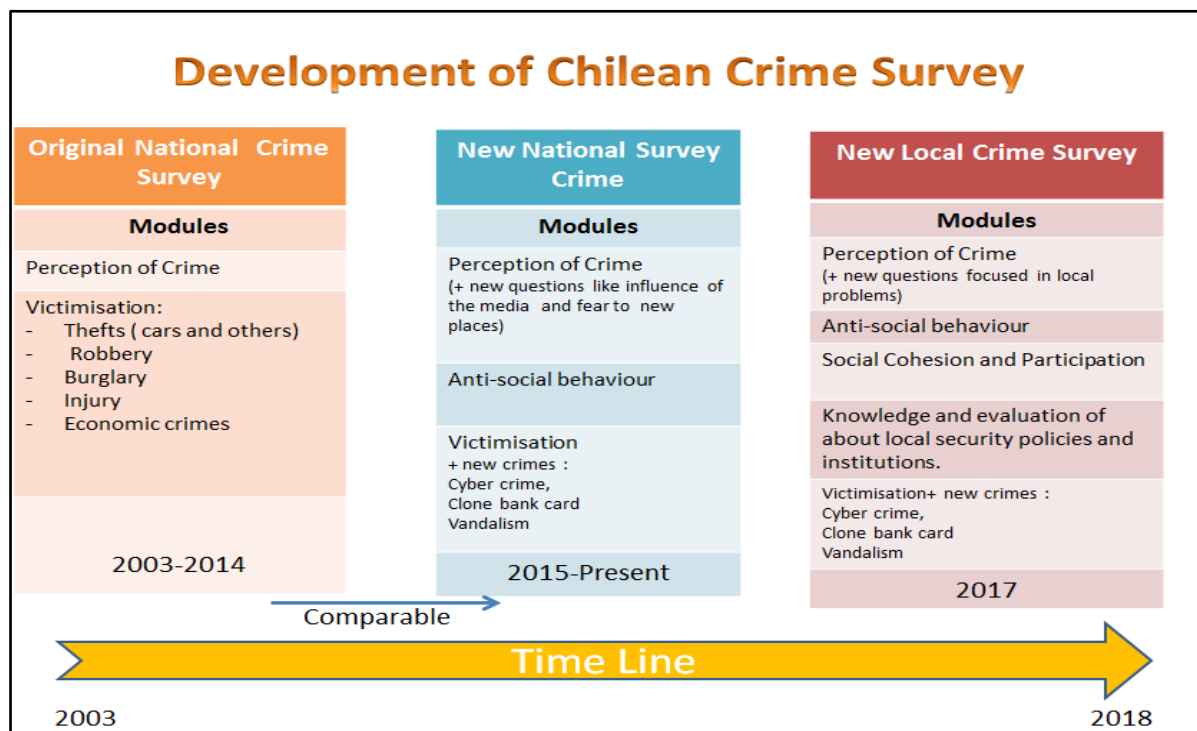
The stability over time of this Chilean survey represents an exception within the Latin American context characterised by institutional, economic, and political instability that hinders long-term policies. Its contribution to monitoring crime trends and the extended use of the data by police, policy makers, mayors, and civil society may explain that stability. Nevertheless, from a statistical approach, it presents a significant limitation: its levels of representativeness (Under Secretary of Crime Prevention of Chile, 2014 b).

For 10 years, the ENUSC was used to estimate data at national, regional, and municipal levels. Nonetheless, the use of ENUSC posed a continuous risk when utilising this data for crafting municipal-level reports. There was a pronounced disparity in the sample sizes of municipal areas, along with their confidence intervals and sampling errors, which consequently led to reporting municipal data with a notable level of bias. This circumstance facilitated the dissemination of imprecise information for making well-informed decisions.

In 2014, to update the ENUSC (National Urban Survey on Citizens Security) after 10 years of development, the Ministry of Interior of Chile convoked an expert panel composed of universities, think tanks, and experts in surveys (Under Secretary of Crime Prevention of

Chile, 2014 b). Part of the conclusions of that meeting was the need to update the questionnaire with new questions such as on cybercrimes, antisocial behaviours, and influence of the media, among others, but without affecting the comparability of the ENUSC series. Furthermore, in an agreement between the experts, to discontinue the publication of ENUSC data at the local (municipal) level due to the unreliability of their estimates was recommended. In this logic, it was suggested that local surveys should be implemented to improve local diagnosis through an adequate sample size. Both decisions marked a milestone in the progression of Chilean victimisation surveys, which is summarized in the following table.

Figure 1 Development of Chilean Crime Survey



Source: Own elaboration based on information from the Under Secretary of Crime Prevention of Chile

As the Figure 1 shows, the local crime survey represents a stage in a process towards instruments focused on the spatial or territorial diversity of crime and the perceptions related to it. In that regard, Van Dijk (1991) highlights the advantages of using local surveys in comparison with the national level. Instruments at the local level have important operational utilities for local government in terms of the assessment of policies and their effectiveness. For example, to obtain more exact locations geographically allowing them to analyse possible

changes in a reduced place intervened by policies or programs. Furthermore, local surveys measure not only crime but also consider other social services provided by local governments.

Interesting European experiences of evaluation have used local surveys. In the United Kingdom, the case of the borough of Islington in London represents an important example of how local surveys provide detailed information that national surveys could not reach, especially on the distribution of crime on a small scale and the attitudes of the police to specific groups (Maclean, 1993). The case of the city of Barcelona, Spain, also shows how it is possible to capture information in very sensitive dimensions to the influence of local factors like the relationship between the use of public space and fear of crime (Lahosa, 2010).

The dimensions covered by British and Spanish surveys were also considered in the Chilean local survey which will be analysed in the next section. Through this instrument with a sample size of 1,000 cases per municipal area, the levels of statistical accuracy increased, and new horizons of local themes can be explored.

Although there are indeed several local survey experiences in Latin America and Europe, many of them are discontinuous over time or are only carried out in large cities with a high budget. In other cases, within the same country, the cities apply different questionnaires which hinders comparability. In this sense, the Chilean experience of local survey is remarkable. It represents an important endeavour to apply the same questionnaire not only in large and strategic cities but also in those that do not have the resources to implement such instruments.

4.3. Data source and sample

The data utilised in this thesis originates from the "Encuestas Comunes" of 2016, a local survey specifically developed to address representativeness issues at the local level. This survey was designed as a response to challenges identified within the national crime survey of Chile, known as ENUSC (Encuesta Nacional de Seguridad Urbana).

With an average sampling error among municipalities of 3.4% and a sample size of around 900 cases per municipality, this instrument is the largest Chilean Crime Survey to date. The focus of this study was 26 municipalities in Santiago, providing a sample of 23,265

respondents with valid cases⁹, conducted using face-to-face interviews from a sample selected using a probability stratified sampling of three-stage of selections. In the first stage, in each municipal area, a determined amount was randomly chosen to represent that local area from the total blocks of its territory. Then, from each chosen block, four households were randomly chosen. Finally, one person per household was randomly chosen from the chosen households who responded to the survey. However, as we do not have any information for each selection stage, we do not use the complex sample analysis. Thus, the estimation of standard error could be underestimated.

On the other hand, the average response rate of the survey process was 79%, with no significant differences between municipal areas. I use a weight because each municipality has the same sample of around 900 cases despite having a diverse population size. This weight adjusts the sample to each municipality's population size and its composition of gender and age. The population's characteristic was taken from the population projections prepared by the Chilean Institute of Statistics for 2016 (INE).

Finally, I use additional social and administrative data from the Socioeconomic Characterization Survey (CASEN) (Ministerio de Desarrollo Social) and municipality information centralised by Central Government (Subsecretaria de Desarrollo Regional y Administrativo).

4.4. Selection of variables.

Based on the theoretical background reviewed in Chapter 2 and details of the context of Chile in Chapter 3, the main question of this thesis is whether public safety in Santiago is characterised by inequality and spatial heterogeneity in its distribution.

All the variables that are used in the analyses are described below and will allow us to respond to the research questions in the empirical chapters.

The selection of variables that addresses the research questions is guided by both theoretical and practical considerations. The Social Disorganisation Theory provides the main

⁹ The original sample was 26,075 but, in this research, we worked with 23,265 cases. The key variables (dependent and predictors) for our analysis are composed of a series of items. However, in some cases the respondents *in all the items* had missing values or answered with the category “ I do not know” . We decided to eliminate these cases because, as will be detailed later, as it is not possible to estimate their values using methods such as maximum likelihood.

theoretical basis for expecting an unequal distribution of safety (Bruinsma and Johnson, 2018, Sharkey, 2018; Tompson, 2016; Sampson et al., 1997). Variables such as poverty at the local level, social cohesion, perceptions of social disorder, and informal social control are fundamental components of this theoretical perspective. Furthermore, considering the increasing role of local governments in security matters, the concept of Local Governance of Crime (Crawford, 1997) has been incorporated into the study, highlighting the significance of variables like municipal budget and perception of municipal security services.

Socio-demographic variables, such as age, education, socio-economic status, and gender, align with theoretical frameworks associated with studies about fear of crime (Scott, 2003; Warr & Ellison, 2000; Patanzis, 2000) and confidence in the police (Wu et al., 2009; Sampson and Bartusch, 1998; Reisig and Park, 2000; Sharkey, 2018; Bowling et al., 2016; Sampson and Wilson, 2007). Additionally, the number of police emerges as a potential factor that could contribute to variations in confidence in the police (Lai and Zhao, 2018; Skogan, 2009).

By integrating these theoretically driven variables, the research seeks to gain comprehensive insights into the complex dynamics of safety distribution and its implications. It aims to shed light on the multifaceted interplay between social disorganisation, local governance, socio-demographics, and the perception of police, ultimately contributing to a deeper understanding of safety, perceptions and its distribution and informing evidence-based policy interventions.

Finally, the selection of variables in this study is contingent on the availability of data and its limitations. All individual-level variables are derived from the local crime survey detailed earlier. Consequently, any variables not present in this data source were excluded from consideration. Similarly, the municipal-level variables rely on secondary information, and their inclusion is subject to data availability at the municipal level. In some cases, certain variables, such as the exclusive municipal budget for security, were not directly accessible in the data. As a substitute, a proxy variable was utilised, which represents the total budget of the municipality. These adjustments were made to work within the constraints of the data available, ensuring that the research remains robust and informative despite the inherent limitations in data collection.

4.4.1. Variables at the individual level

Age

This variable is declared by each respondent. It was classified into the following categories:

15-29 years, 30-44 years, 45-59 years, and 60 or more years.

Sex

This variable is declared by the respondents. It was classified as male and female.

Educational Level

This variable is the maximum educational level reached by the respondents. It was classified as primary school, secondary school, and university.

Socioeconomic Level

This variable is a classification prepared by the company that carries out the survey following the criteria of the *World association for market, social, and opinion research* (ESOMAR)¹⁰ This classification is based on the level of education achieved by the head of the household, type of employment, and material goods. The socioeconomic levels are low, middle, and high.

Ethnicity

This variable was recoded as a dummy variable, coding 1 when the responder declares belonging to an indigenous ethnic group in Chile¹¹ and 0 when they do not belong.

Victimisation

¹⁰ <https://www.esomar.org/>

¹¹ In Chile, 9 types of indigenous ethnic groups are recognized, Mapuche ethnic group is the largest.

This variable was from the question, “Has the victim suffered from any of the following crimes in the last 12 months: violent robbery, snatching, theft from person, burglary, injury, theft from car and accessories of the car”? A dummy variable was recoded, coding 1 as victimisation in any of these crime types, 0 where the respondents experienced no victimisation at all. It is important to note that this construct does not distinguish between specific types of crimes (such as violent and non-violent), which limits its ability to capture nuances in criminal activities. Nonetheless, similar to the constructs of fear of crime and confidence in the police, this approach was chosen to provide a broader perspective on the phenomenon.

3.5

4.4.2. Derived variables at the individual level from latent scores:

Fear of crime

This variable was built from 6 items related to the perception of safety in various types of places in the municipal area. The places are parks, sports locations, city centre, at bus stops, bus stations, and health centres. Response categories include very safe, safe, unsafe, and very unsafe. Cronbach’s alpha = 0.9 indicates excellent internal reliability in this measure.

Among the categories of the items that make up the above dimensions, the answers “I do not know” was treated as a missing value. However, by using the Maximum Likelihood estimator, we can manage these missing values, using information about missing values based on non-missing values to reach unbiased latent score estimates (Buil-Gil, Medina & Shlomo et al. 2019; Schlomer, Bauman, & Card 2010). Then, all the scores were shifted to a positive range from 0 to 1 to simplify the interpretation of the result. The procedure in which was computed the latent scores was from Confirmatory Factor Analysis (CFA).

The formula was $\left(\frac{F_i - (F)}{(F) - (F)}\right)$ where F_i is the latent score for unit i . This process is shown in table 1.

Table 1 Summary of latent scores and shifted latent scores of the fear of crime

| | | Min | Max | Mean | SD |
|---------------|-------------------|--------|-------|--------|-------|
| Fear of Crime | Latent score | -1.551 | 2.112 | -0.012 | 0.726 |
| | 0-1 Latent scores | 0.000 | 1.000 | 0.421 | 0.198 |

Table 1 presents a summary of latent scores and shifted latent scores of the variable fear of crime.

In the analysis for this thesis, I will use Latent Score (from 0 to 1 value) because it is a helpful practice to facilitate the interpretation of results, as values closer to 0 indicate lower levels of the variable, while values closer to 1 indicate higher levels.

The use of the Maximum Likelihood estimator to manage these missing values, based on non-missing values to reach unbiased scores to simplify the interpretation of the result is also applied to the variables: confidence in the police, social cohesion, informal social control, and satisfaction of security municipal services. These variables are constructed from Likert scaled items, responding to the same logic of fear of crime.

In this context, by applying this transformation latent score estimates and the shift of (from 0 to 1), these different variables are now on the same scale, making it easier to interpret and compare their effects on the outcome of interest. This transformation also helps to avoid issues related to different units of measurement and ensures that all variables are treated equally.

All the variables under consideration are formulated using items integrated into the design of the local survey upon which this thesis is anchored. While this survey does not explicitly align with any theory, the formulation of these items is informed by survey methodologies employed in previous research endeavours, such as those conducted by Sampson et al. (1997), Jackson et al. (2012), and Cao et al. (2012).

Confidence in the Police

This variable was built from 7 items measuring people’s confidence in the following police services covered by this survey: police patrol frequency, response time to calls, treatment and respect with neighbours, ability to stop offenders, coordination with the local government,

communication and coordination with neighbours and capability to control drug trafficking. Response categories include very bad, bad, neither bad nor good, good, and very good. Cronbach's alpha = 0.9 indicates excellent internal reliability in this measure. I used the same procedure as Fear of Crime to obtain the latent scores.

While it is acknowledged that these items may not encompass the entirety of the police-persons relationship, including aspects such as the provision of attention by the police, they nevertheless cover multiple dimensions of confidence. This comprehensive approach provides a holistic understanding of individual perceptions and attitudes towards law enforcement, contributing valuable insights to the study of this complex dynamic.

I chose the concept of confidence based on the definition of Bradford and Jackson (2010). While trust might capture the interpersonal relationship between citizens and individual police officers, *confidence* might be more of a set of attitudes towards the police as an *institution*. A more detailed explanation regarding this distinction is provided in Chapter 2 and 6.

Social Cohesion and Informal social control

Following criticism of Sampson's (1997) approach to uniting social cohesion and informal control into one construct of Collective Efficacy, I separated these two distinct concepts. According to some authors (Rhineberger-Dunn and Carlson, 2009; Manzano, 2018) Collective Efficacy is a multi-dimensional concept, such that social cohesion and informal control are associated but they are not a part of a single construct. Thus, 'Social cohesion' and 'Informal control' might exert different effects on our variables of safety: victimisation, fear of crime and confidence in the police. Both concepts are outlined below.

Social Cohesion

This variable was built from 4 items in which responders assess social cohesion and shared identity in the neighbourhood in 4 aspects: "People in this neighbourhood are reliable", "People in this neighbourhood are willing to help each other", "This is the close-knit neighbourhood", "People in this neighbourhood share the same values". Response categories include strongly disagree, disagree, agree, and strongly agree. Cronbach's alpha = 0.9 indicates excellent internal reliability in this measure. I used the same procedure as Fear of Crime to obtain the latent scores.

Informal social control

This variable was built from 5 items in which responders assess the following aspects: “Discuss with young people who consume alcohol or drugs in public spaces”, “Intervene in conflicts between neighbours”, “They coordinate to carry out surveillance in the streets”, “They take care of the neighbours’ house when they are away, “Call the police when there are crimes or disorders”. Response categories include never, rarely, often, and always. Cronbach’s alpha = 0.73 indicates acceptable internal reliability in this measure. I used the same procedure as Fear of Crime to obtain the latent scores.

Satisfaction with municipal security services

This variable was built from 4 items measuring satisfaction with security services offered by the Local Government: control of illegal commerce, control of the operation and legality of bars and nightclubs, control of selling of alcohol, and security in parks. Response categories include very unsatisfied, unsatisfied, neither satisfied nor unsatisfied, satisfied, and very satisfied. Cronbach’s alpha =0.89 indicates excellent internal reliability in this measure. I used the same procedure as Fear of Crime to obtain the latent scores.

This variable holds crucial significance in the context of studying the unequal distribution of public safety in Chile. As explained in Section 3.3., the local government plays a key role in addressing crime and ensuring public safety, residents' satisfaction with the security services provided becomes a pivotal indicator of service efficacy. High satisfaction levels might reflect confidence in police, fostering community cooperation and active engagement in crime prevention efforts. On the other hand, low satisfaction levels may signal service shortcomings, potentially eroding confidence and impacting public safety outcomes. Considering this variable this thesis provides a comprehensive and multilevel analysis, shedding light on the complexities of public safety dynamics and guiding policy interventions at the local level to improve security services and address inequalities effectively.

Perception of social disorder

This variable was built from an additive scale of 16 items in which responders assess the presence of different types of disorder and violence in their neighbourhood during the last 12 months: abandoned places and rubbish, annoying noises, graffiti, damage to private property, presence of people sleeping on the street (homelessness), damage to public property, consumption of alcohol and drugs on the streets, sexual harassment, illegal commerce and sale of alcohol, prostitution on the streets, drug sales, threats between neighbours, presence of gangs, streetfighters, assaults on the streets and hearing gunshots. The inclusion of multiple items ensures a nuanced and comprehensive assessment of the local area disorganisation, enabling researchers to account for various aspects of disorder. Response categories include: 1 = never, 2 = rarely, 3 = often, 4 = always. The magnitude of internal consistency indicates a high level of reliability (Cronbach's alpha = .92). I used the same procedure as Fear of Crime to obtain the latent scores.

By incorporating this variable, the thesis gains valuable insights into how perceived disorder contributes to the unequal distribution of public safety (Taylor, 1997; Skogan, 1992). This variable might allow to enrich multilevel analysis, where individual perceptions are examined alongside municipal areas characteristics and local government responses. Understanding the impact of social disorder perceptions on public safety outcomes can support in formulating targeted policies and interventions to address safety concerns and inequalities effectively in different municipal areas.

4.4.3. Variables at the municipal level:

By taking a comprehensive approach and analysing the interplay between the following structural variables, this thesis can provide a nuanced understanding of the factors contributing to unequal levels of public safety in different municipal areas across Santiago. This insight is crucial for policymakers, law enforcement agencies, and community stakeholders when developing targeted strategies and interventions to address safety disparities, enhance social well-being, and foster a safer and more secure society for all residents. These variables can also contribute to multilevel analysis since the measurement of the influence of individual variables on the outcome can be refined. Finally, these variables are important as I will attempt to lay the empirical foundations for a potential social ecology theory of confidence in the Chilean police.

Victimisation at the municipal level

This variable is the percentage of self-reported victimisation at the municipal level. In other words, this variable is the number of persons who have been victims in the total population in a specific municipal area. This variable was operationalised from the question, “Have you suffered from any of the following crimes in the last 12 months: violent robbery, snatching, theft from persons, burglary, injury, car theft and accessories from the car”? The following was recoded as a dummy variable, coding 1 as victimisation in any of these crime types, 0 where the respondents experienced no victimisation at all. It is important to note that this construct does not distinguish between specific types of crimes, such as violent and not violent, limiting its ability to capture nuances in criminal activities. Nonetheless, similar to the constructs of fear of crime and confidence in the police, this approach was chosen to provide a broader and more comprehensive perspective on the phenomenon.

Besides the local crime survey, this chapter (like the previous one), utilised auxiliary data at the municipal level from different sources:

Police officers per capita

The number of police officers for each municipality is divided by its population, obtaining the value per capita. This data was obtained from a report by the Chilean Police.

This variable might shed light on the level of law enforcement presence in each municipal area. Zones with a higher number of police officers per capita may experience more frequent patrolling, proactive crime prevention efforts, and quicker response times to reported incidents. Consequently, increased police presence might deter criminal activity and contribute to a higher sense of security among residents. On the other hand, areas with limited police resources might struggle to address crime effectively, leading to potential safety concerns and disparities in safety outcomes.

Multidimensional Poverty

The percentage of residents at the municipality level living under the poverty line is defined by 5 dimensions: health, education, social security, the housing environment, and social network. This data is used from the Socioeconomic Characterization Survey of Chile (CASEN¹²).

Municipal budget per capita

The budget of each local government is divided by its population obtaining the value per capita (in Chilean Pesos). This data was obtained from the central Government of Chile.

In Chile it is not possible to obtain specific data on how much each municipality spends on security; I use the general budget as a proxy assuming it as an indicator of investment in security measures.

A higher budget per capita might enable local governments to invest in various crime prevention programs, community engagement initiatives, and infrastructure improvements. These efforts can foster a safer environment, enhancing cooperation between municipal security and police forces and positively impact residents' perceptions of safety. Conversely, municipalities with limited budgets might face challenges in implementing effective safety measures, potentially resulting in varying levels of public safety across different areas.

The following table summarises the main descriptive statistics of the variables that are part of this thesis.

12 Information available at <http://www.ministeriodesarrollosocial.gob.cl/>

Table 2 Descriptive statistics of the variables

| | Frequency (%) | Min | Max | Mean | SD | N |
|---|---------------|---------|-----------|---------|---------|--------|
| Variables at the individual level | | | | | | 23,265 |
| Low Socioeconomic Level | (34.9) | | | | | 23,265 |
| Middle Socioeconomic Level | (51.1) | | | | | 23,265 |
| High Socioeconomic Level | (14) | | | | | 23,265 |
| Primary School | (20.6) | | | | | 23,265 |
| Secondary School | (45.2) | | | | | 23,265 |
| University | (34.2) | | | | | 23,265 |
| Age 15-29 | (20.4) | | | | | 23,265 |
| 30-44 | (22.8) | | | | | 23,265 |
| 45-59 | (25.5) | | | | | 23,265 |
| 60 or more | (31.3) | | | | | 23,265 |
| Ethnicity Belong to an ethnic group | (4.3) | | | | | 23,265 |
| Do Not belong to an ethnic group | (95.7) | | | | | 23,265 |
| Male | (45) | | | | | 23,265 |
| Female | (55) | | | | | 23,265 |
| Not Victim of crime | (73.8) | | | | | 23,265 |
| Victim of crime | (26.2) | | | | | 23,265 |
| Fear of Crime (Latent score transformed to 0-1) | | 0.00 | 1.00 | 0.420 | 0.199 | 23,265 |
| Confidence in the Police (Latent score transformed to 0-1) | | 0.00 | 1.00 | 0.444 | 0.211 | 23,265 |
| Social Cohesion (Latent score transformed to 0-1) | | 0.00 | 1.00 | 0.586 | 0.222 | 23,265 |
| Informal Social Control (Latent score transformed to 0-1) | | 0.00 | 1.00 | 0.236 | 0.213 | 23,265 |
| Perception Social Disorder (Latent score transformed to 0-1) | | 0.00 | 1.00 | 0.318 | 0.231 | 23,265 |
| Satisfaction with municipal security (Latent score transformed to 0-1) | | 0.00 | 1.00 | 0.493 | 0.214 | 23,265 |
| Variables at the municipal level | | | | | | |
| Multidimensional poverty | | 3.24 | 41.16 | 20.62 | 10.42 | 26 |
| Police/citizen Rate | | 108 | 326 | 157 | 48 | 26 |
| Victimisation municipal area | | 18.21 | 34.67 | 25.62 | 3.94 | 26 |
| Municipal budget per capita (\$ Chilean Pesos) | | 131,852 | 1,098,417 | 343,325 | 279,879 | 26 |

4.5. Analytical approach.

In terms of the type of research, this thesis can be classified as quantitative, non-experimental, and relational. The quantitative approach is not only determined by the nature of the information and the method used but also by the deductive perspective of the investigator. According to Sampieri (2007), based on a specific theoretical framework, the researcher approaches a specific social phenomenon, identifies potential explanatory variables, tries to measure them, examines their relationships, and seeks results. In other words, the investigator preliminarily assumes one or more hypotheses and tries to confirm or refute them through the statistical analysis of data previously collected.

Regarding the purposes around which social research is developed, according to the typology of Straits and Singleton (2011), this research can be classified as a “Test of theoretical associations”. Relational studies seek to identify associations between concepts, dimensions, or variables. These associations have been previously established within a specific theoretical framework and can be structured around questions and hypotheses, which will be answered throughout empirical research.

Based on the theoretical background revised in Chapter 2 and details on the Chilean context in Chapter 3, the data and methods employed in this thesis are addressed to test the main assumption of this thesis which is that public safety in Santiago might be characterised by inequality and spatial heterogeneity in its distribution.

For each empirical chapter, I expect to fill three knowledge gaps in current Criminology in Chile and Latin America. The following instruments and methodologies will be applied.

4.5.1. Chapter 5

In this chapter, each of these variables is a municipal average. As this is the first empirical chapter, I chose to focus on values at the municipal council level, as it allows us to explore and understand a first approximation of the diversity of municipal areas across Santiago. Although the primary objective is to investigate the spatial distribution of security, I do not have access to the location data of individuals due to confidentiality information protected by law. Therefore, I employ these municipal averages to gain insights into the broader patterns of public safety distribution. The details of the operationalisation of these variables were explained in Section 4.4.

The distribution of access to public safety is not equitable among different social groups. Recognising this, significant efforts are being made to measure this distribution using adequate tools that allow for detecting patterns and the intensity of crime concentration or dispersion and the perceptions associated with it. Therefore, Chapter 5 aims to explore and quantify inequality in the distribution of public safety. This exploration is operationalised in three dimensions: victimisation, fear of crime, and confidence in the police.

Primarily, the Gini index is employed to measure the distribution of public safety within Santiago. Although it is conventionally used to assess income distribution, this tool's versatility extends to evaluating the concentration of crime and related phenomena across different geographical areas. By applying the Gini index, we can quantify the extent to which crime, fear of crime, and confidence in the police are unevenly distributed across various regions. This measure helps in identifying areas with high concentrations of these phenomena and assessing the overall inequality in their distribution (Giorgi, 2019).

The Gini index allows us to quantify the disparities in public safety across Santiago. By computing the Gini coefficient for victimisation, fear of crime, and confidence in the police, we gain insights into the level of inequality in these dimensions. For example, a higher Gini coefficient for victimisation would indicate that crime is concentrated in specific areas, while a lower coefficient would suggest a more even distribution. This analysis aids in understanding the specific distributional patterns of public safety.

In addition to the Gini index, Spatial autocorrelation is utilised to describe the degree to which the values of a variable in one municipal area are related to the values of the same variable in adjacent areas. This method assesses the tendency of similar values to cluster together in space. By applying spatial autocorrelation, we can detect patterns and understand the spatial dynamics of crime, fear of crime, and confidence in the police. This tool is crucial for identifying hotspots and areas where these phenomena are more prevalent or less prevalent than expected by chance (Haining, 2009).

Spatial autocorrelation is measured using statistics such as Moran's I, which provide a quantitative assessment of spatial clustering. Moran's I, for example, ranges from -1 to 1, where values close to 1 indicate strong positive spatial autocorrelation (i.e., similar values cluster together), values close to -1 indicate strong negative spatial autocorrelation (i.e., dissimilar values cluster together), and values near 0 suggest no spatial autocorrelation. By applying these statistics, we can identify significant clusters of high or low values for victimisation, fear of crime, and confidence in the police. This analysis enables us to map the

spatial distribution of these phenomena and identify areas that require targeted interventions to improve public safety and trust in law enforcement.

More details and limitations of both instruments are developed in Chapter 5. This detailed exploration provides a comprehensive understanding of the spatial distribution of public safety, enabling the development of informed policies and strategies to address the identified disparities. By leveraging the Gini index and Spatial autocorrelation, Chapter 5 aims to contribute to the literature on public safety and inform practical interventions in Santiago's diverse socio-economic landscape.

4.5.2. Chapter 6

Firstly, to explore the dimensions underlying the items that constitute confidence in the police, I will employ confirmatory factor analysis (CFA). CFA is a statistical technique used in research to assess the measurement model's fit to the observed data and determine the underlying latent constructs or dimensions represented by the observed variables. By using CFA, we aim to validate the proposed theoretical structure and investigate how well the observed items align with the hypothesized dimensions of confidence in the police. This approach allows us to gain a deeper understanding of the underlying factors contributing to individuals' perceptions of police confidence and might supports to establish the construct's validity and reliability in the context of the study.

Secondly, as I previously described, a model explaining the variance of the confidence in the police in a more proper form should include a multilevel approach for theoretical and statistical reasons. Conceptually, models should incorporate variables at the individual level that are crucial in explaining variances in policing, like age, socioeconomic status, or ethnicity, but also consider the approach of the *social ecology of confidence in the police*, which includes variables at the structural level such as poverty or local level of crime. Considering the case of Chile, characterised by inequality and segregation, a *clustered nature of the perception of the police* may be assumed as those who are naturally nested in the same local area are often correlated with each other in specific ways.

From a statistical perspective, the multilevel model was precisely developed in response to the challenge of adequately analysing clustered data while keeping the original data structure (i.e., individual-level variables need not be aggregated to group means) while modelling the

within-group homogeneity of errors by allowing the estimation of error terms for both the individual and the group (Krull and MacKinnon, 2001). Due to the complex structure of the model and the nature of the error terms, multilevel models are estimated using iterative maximum likelihood techniques rather than the OLS (Ordinary Least Square) methods typically employed to estimate the parameters of single-level models. In criminology, scholars have emphasised the need to include macro-level factors in the models (Sampson and Bartusch, 1998; Reiss and Park 2000), and have been critical of a single-level approach like OLS as it fails to measure neighbourhood characteristics' independent effects and adjusting all individual predictors (Wu et al. 2009). Therefore, the multilevel analysis provides more robust estimates than the analyses based on OLS regressions or at a single level, allowing us to observe dissimilarities between and within groups (Paterson and Goldstein 1991).

To sum up, as the data of this thesis has a hierarchical structure, the confidence in the police associated with structural factors needs to be considered to avoid an underestimation of the standard errors (Snijders & Bosker 2011), which in turn might lead to an incorrect assessment of the significance of the estimates of the effects of the predictors in the model.

Finally, the data of the thesis accomplishes the sufficient units of analysis required for multilevel models. A sample is 900 cases for each municipality at the individual level, becoming the largest sample ever reached in Chile. The available information from a local survey of 26 municipalities. Goldstein and Silver (1989) suggest that the threshold necessary for groups to undertake a multilevel analysis must be set at around twenty-five cases.

A two-level Hierarchical Linear Model in this research is presented using the following equations:

Level 1

$$\begin{aligned}
 Y (\textit{Perceived Effectiveness of Police})_{ij} = & \beta_{0j} + \\
 & \beta_{1j}(\textit{Socioeconomic Level})_{ij} + \beta_{2j}(\textit{Education Level})_{ij} \\
 & + \beta_{3j}(\textit{Age})_{ij} + \beta_{4j}(\textit{Ethnicity})_{ij} + \beta_{5j}(\textit{Gender})_{ij} + \beta_{6j}(\textit{Victimization})_{ij} \\
 & + \beta_{7j}(\textit{Fear of Crime})_{ij} + \beta_{8j}(\textit{Social Cohesion})_{ij} + \beta_{9j}(\textit{Informal Control})_{ij} \\
 & + \beta_{10j}(\textit{Satisfaction with municipal security})_{ij} + e_{ij}
 \end{aligned}$$

Level 2

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\textit{Municipal Budget}) + \gamma_{02}(\textit{Poverty}) + \gamma_{03}(\textit{Citizen Rate Police}) + \gamma_{04}(\textit{Victimisation municipal area}) + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + u_{1j}$$

$$\dots$$

$$\beta_{10j} = \gamma_{100} + u_{10j}$$

At Level 1, β_{0j} is the intercept of the Level 1 dependent variable Y_{ij} , and β_{1j} is the slope or effect of the Level 1 predictors or independent variables. At level 2, β_{0j} is the Level 1 intercept in the Level 2-unit j ; γ_{00} is the mean value of the Level 1 dependent variable, controlling for Level2 predictors; $\gamma_{01}, \gamma_{02}, \gamma_{03}, \gamma_{04}, \gamma_{05}$ are the slopes of the Level 2 predictors. Both e_{ij} (at Level1) and $(u_{0j}, u_{1j}, \dots, u_{10j}$ at Level 2) are random effects.

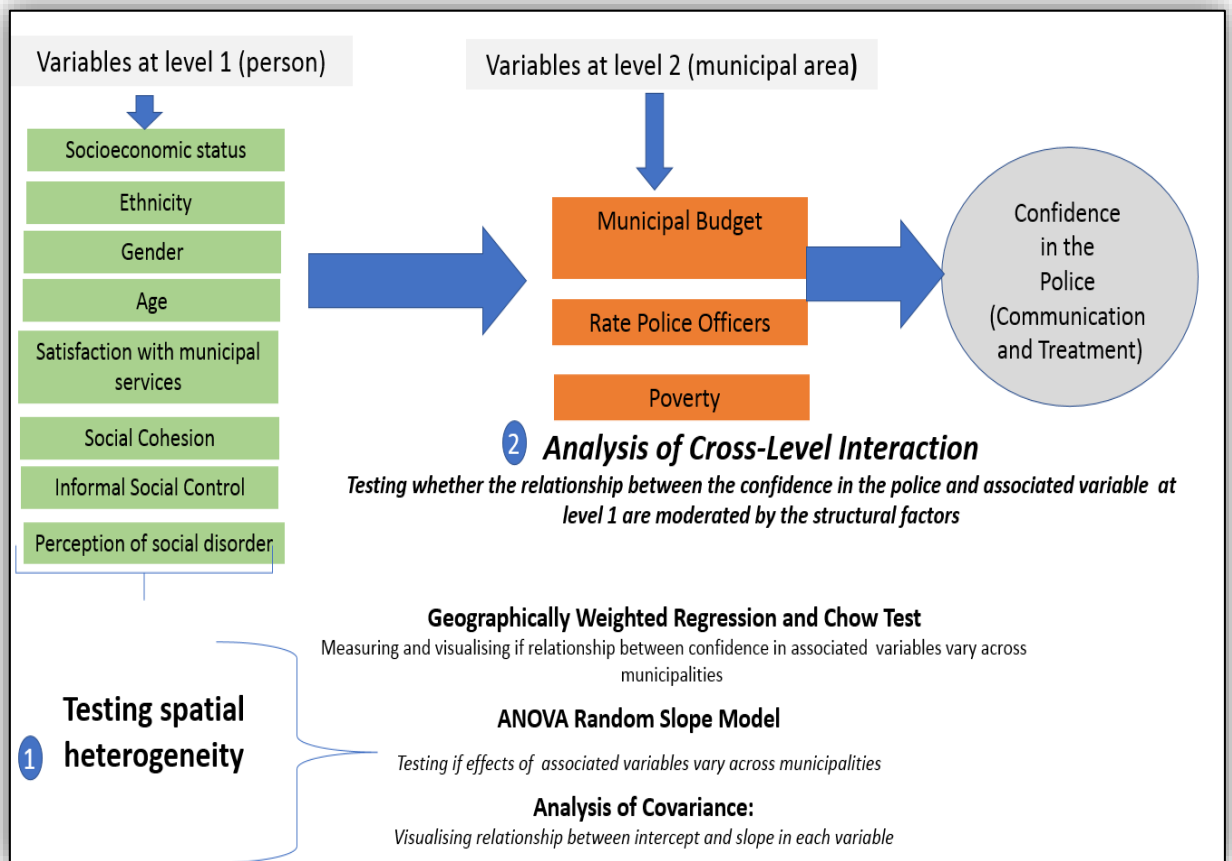
The previous equation referred to the first model on perceived effectiveness of police. The second model, perceived treatment of police, follows the same procedure.

4.5.3. Chapter 7

This chapter is dedicated to the pursuit of two primary objectives: first, to delineate the distinct influences of various predictors on confidence in law enforcement agencies; and second, to investigate the mediating role played by social structures in these multifaceted and intricate relationships. Central to this inquiry is the fundamental concept of spatial heterogeneity, which emerges as a pivotal element within the overarching theme of societal inequality¹³.

¹³ In this chapter, the variables victimisation and fear of crime are not included in the analysis because of their important correlation with confidence, the analysis of spatial heterogeneity makes their interpretation difficult.

Figure 2 Analysis plan



The schematic representation of the analytical framework is encapsulated in Figure 2, illustrating the hierarchical arrangement of variables at two distinct levels, namely the individual (Level 1) and the municipal area (Level 2), and subsequently outlining the methodological trajectory of the investigation.

The explanation and operationalisation of variables were developed in detail in Section 4.4.

One analytical task encompassing an inquiry into whether the nexus between confidence in the police and associated individual-level variables is subject to moderation by structural factors operating at the municipal level. To achieve this goal, I applied cross-level interactions. This tool provides deeper insights into how individual-level factors and contextual factors interact to shape outcomes, thereby enhancing our understanding of the underlying mechanisms driving relationships within multilevel data structures.

The second analytical task extends to the assessment of spatial heterogeneity, a facet that is probed through methodological tools such as Geographically Weighted Regression and the

Chow Test. These techniques serve as instruments for both measurement and visualization, enabling the detection of potential variations in the dynamics between confidence and its associated variables across diverse municipal jurisdictions.

Furthermore, the analytical framework entails the application of an ANOVA Random Slope Model, designed to ascertain the existence of disparities in the effects of associated variables across distinct municipalities. In turn, an Analysis of Covariance is attached to offer a visual exposition of the interplay between intercept and slope within each variable, thus affording insight into potential variations across discrete geographic regions.

4.5.4. Testing spatial heterogeneity: Chow Test and Geographically Weighted Regression

The following tools are used to answer the first research question concerning whether the influence of both local area perceptions and personal characteristics on confidence in the police exhibit divergent variations across the different municipal areas of Santiago.

Firstly, I will test the influence on confidence in the police of variables that were significant in the Chapter 6. Specifically, the purpose is to examine whether the influence of perception regarding social disorder, social cohesion, informal social control, and satisfaction with local government and sociodemographic characteristics of individuals (age, gender, socioeconomic status, and ethnicity) on confidence in the police *vary differently across municipalities of Santiago*.

The first step will be using the Chow Test, which seeks to statistically verify the potentially dynamic and changing relationship between each predictor and outcome. This test is a tool used in econometrics to assess whether the effect of independent variables differs among various subgroups within the population (Anselin, 2007). In simple terms, it means comparing a simple model (with a constant relationship between predictor X and outcome Y) with a model that allows variability of that relationship between the subgroups. The answer tells us whether spatial variation can affect the relationship between predictors and the outcome. Ultimately, the Chow Test allows to challenge the assumption of universality of the predictor effect on the outcome, under the approach of classical linear regression because this approach would consider that *the space keeps a neutral role in the relationship between confidence in their predictors*. Intending to unravel this assumption, the Chow Test provides a first step.

In addition to the above, spatial variation can be explored by descriptive visualisation of model results across Santiago by Geographically Weighted Regression (GWR). GWR is an instrument that explores how the relationship between a dependent variable (confidence in the police) and one or more independent variables might vary geographically (Anselin, 2007). This objective is achieved by constructing separate equations and incorporating the dependent and explanatory variables of the features falling within the municipal area of each target feature. Instead of assuming that a single model can be fitted to the entire study region, it looks for geographical differences in the relationship. The GWR will be used for descriptive purposes, exploring through a map of residuals and the coefficient of the main predictor variables of the model. A calculation yields individual coefficient values for each location, which can then be mapped. It is expected that GWR would reveal that the models with the predictors that explain confidence in the police are unstable over the space of Santiago. In some areas, we might find an overestimation of the confidence value (positive residual), while in other areas an underestimation of the value or negative residual may be found. A potential result would be to demonstrate the level of spatial variability of confidence in the police where the models that explain confidence in the police in Santiago holds a differentiated power according to municipal areas.

To sum up, the use of previous instruments to investigate spatial heterogeneity, and provide visualization techniques, might untangle the intricate interaction between determinants at the individual level whose influence might be not uniform across Santiago, a topic covered by the first research question.

4.5.5. Testing the degree of influence of predictors on confidence in the police and the mediator role of structural factors: analysis of covariance and cross-level interactions

The next step is quantifying and explaining spatial heterogeneity. The random slope model will be assessed by analysing covariance (intercept and slope). Thus, the spatial heterogeneity will be quantified in terms of the differentiated influence of the predictors on the outcome (slope), allowing us to identify which municipalities are influenced the most. In other words, municipalities most associated with a particular predictor will be revealed using the covariance analysis. For instance, social cohesion could significantly influence a defined profile of municipalities more, such as disadvantaged areas. Therefore, results from this

methodology are essential for public policies addressed at enhancing the confidence in the police in Santiago according to determined patterns of spatial heterogeneity.

The next research question is about how the mediation influence of structural factors at the municipal level come into play in the association between individual-level variables and confidence in the police. Because Chapter 6 showed the significance of structural factors such as municipal budgets and poverty on the variation of confidence in the police, using the cross-level interaction, I will examine whether these factors mediate the relationship between predictors at the individual level and the outcome. The results of this process are fundamental because they will allow us to comprehend whether structural factors could act as enabler elements or acts as a constraint that restricts, for example, a positive influence of informal social control on confidence mediated by poverty. Once more, the results from this methodology are helpful for public policies addressed to enhance confidence according to determined patterns of spatial heterogeneity.

4.5.6. The multilevel model-building process

Following Aguinis et al. (2013), the multilevel model-building process involves three consecutive steps. The relevance of each step will be explained, covering the limitations, and highlighting their contribution to this chapter.

- **Random intercept and fixed slope model:** show the limits of a traditional regression to demonstrate the component of spatial heterogeneity between an outcome and its predictors.
- **Random intercept and random slope model and an analysis of covariance between slope and intercept:** show the analytic strength to locate each one of municipalities according to the influence of predictor.
- **Cross-level interaction model:** shows how individual-level variables vary across level 2 units (structural factors) and are mediated by them.

The fixed slope model was developed in Chapter 6, but this section will show its limitations. The random slope model and cross-level interaction are applied to respond to the research question of the current chapter.

Limitations of Random intercept and Fixed slope models:

In order to understand why the random slope model and cross-level interactions are suitable for this study, firstly, I began by considering a single linear regression to address the elements of techniques that will finally be developed.

In terms of the equation, the single-level regression has the following components:

$$Y_i = \beta_0 + \beta X_i + r_i \quad (1)$$

Where βX_i describes a line with a slope, β_0 as intercept, and r_i is the difference between actual and predicted values of the dependent variable Y_i . Since it is an equation at a single

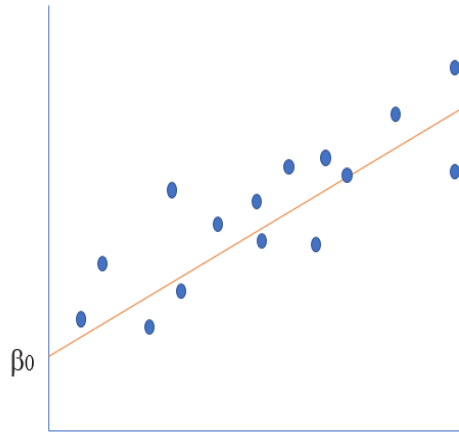
level, the equation is a function of the individual i . However, as I explained in Chapter 6, single-level regression can fail to measure contextual characteristics' independent effects, adjusting all individual predictors (Wu et al. 2009). As Figure 3 Graph A shows, all individuals are adjusted to the same line.

Therefore, single-level linear regression supports the assumption that the relationship is constant over time and place (Zuur, et al. 2009). Unlike the above, I assume *a clustered nature of the perception of the police* because those who are naturally nested in the same local area are often correlated with each other in specific ways. In fact, Chapter 6 showed an ICC (Intra-Class Correlations) of 11%. The ICC can be defined as the proportion of the total variance attributable to between-group variation (Goldstein et al., 2002). Within social sciences, ICC values between 5 and 20 per cent are considered relevant (Raudenbush & Bryk, 2002), so the models obtained respond to nested phenomena.

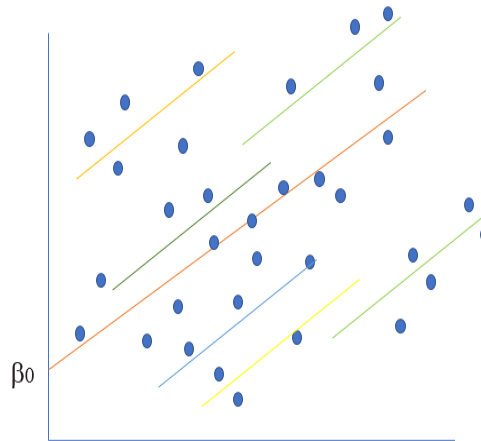
The previous approach assumed a *random intercept model and fixed slope model, which is based on each municipality having its line* in the graph of the relationship between the confidence in the police and predictors (Steele, 2008). However, the municipality lines have the exact slope parallel to the overall average line (see Graph b in Figure 3). Therefore, considering the fixed slope model, the influence of the explanatory variables on the response is the same for each municipality.

Figure 3 Type of regression

A: Single Level Regression Model



B: Fixed Slope Model



Source: Own elaboration based on documents from Centre for Multilevel Modelling, University of Bristol

The *Model of random intercept and fixed slope model* is presented using the following equations:

$$\text{Level 1: } Y_{ij} = \beta_{0j} + \beta x_{ij} + r_{ij} \quad (2)$$

At Level 1, the equation is almost the same as single-level regression but with the difference that now individual i belongs to municipality j . Specifically, Y_{ij} is the dependent variable for the i th person in municipality j , β_{0j} is the intercept parameter for municipality j , βx_{ij} is the slope parameter for municipality j and individual i . The term r_{ij} is the residual term at level 1, reflecting individual-level differences in confidence in the police around the predicted confidence for persons within each municipality.

$$\text{Level 2: } \beta_{0j} = \gamma_{00} + \gamma_{01} + u_{0j} \quad (3)$$

At Level 2, the municipality's intercepts are shown to be a function of the grand mean (averaged across all municipalities) intercept γ_{00} and a residual term u_{0j} that describes how municipalities deviate from the grand mean after controlling for predictor at level 2

(contextual variable). γ_{01} is interpreted as the amount of change in a municipality's average confidence score associated with a 1-unit increase in predictor at level 2. In this model, the *slopes are not allowed to vary across municipalities* which leads to the following combined model:

$$\text{Combined } Y_{ij} = \underbrace{\gamma_{00} + \gamma_{10}}_{\text{Fixed part}} + \underbrace{\gamma_{01}}_{\text{Random part}} + u_{0j} + r_{ij} \quad (4)$$

This last equation is called a random intercept and fixed slope model because it allows intercepts (i.e., mean scores) to vary across municipalities by including u_{0j} (Aguinis et al.,2013). As shown in Equation 4, one fixed value for the slope of confidence on predictor at level 1 scores (i.e., γ_{10}) is used for all individuals regardless of which municipality they belong to. Put another way, the strength and direction of the relationship *between predictor at level 1 and confidence is assumed to be identical across all municipalities*.

The equation predicts individual confidence scores based on a common intercept, γ_{00} , individual scores at level 1 predictor reflected by the coefficient γ_{10} , and at level 2 predictor reflected by the coefficient γ_{01} assess the possible presence of a cross-level direct effect (contextual factor on confidence in the police) controlling for predictors at level 1 score.

In sum, γ_{00} , represents mean confidence for a municipality with a predictor at level 2, and γ_{01} which is the amount of change in a municipality's average confidence score associated with a 1-unit increase in predictor at level 2, and u_{0j} is a residual term in predicting municipality's average confidence after controlling for predictor at level 2 and r_{ij} is the difference between actual and predicted values of the dependent variable Y_{ij} .

To summarise, although the fixed slope model allows each municipality to vary with its intercept, including the influence of structural factors, this model assumes that the slope (effect of x on y) is the same for all the municipalities. Therefore, this limitation does not allow us to unravel spatial differences in the distribution of confidence in the police, which makes it necessary to explore models with random slopes.

Random slope model and its analytical opportunities:

Considering the theoretical approach of this chapter centred on the spatial component of perception of police, I expect that the explanatory variables could have a large effect on the response for some groups, and for others, it could be moderate or with a small effect. So, with its parallel-group lines, the random intercepts and fixed slope model became a limited model to understand the dynamics of the differentiated influence of the predictors under the concept of *spatial heterogeneity*.

In that sense, the focus is on insight into whether the variance of slopes across groups is different from zero. This chapter proposes to answer whether the relationship between the predictors of our model and confidence varies across municipalities.

As a solution, unlike a fixed slope model, a random slope model *allows each group (municipal area) line to have a different slope* enabling the explanatory variable to have a different influence. In this case, we might observe a different strength or direction to the relationship for each municipality. While the fixed slope model, we have β_0 , $\beta_1 x_1$, u_0 , and r_{0j} , in the random slope model we add a random term to the coefficient of x_1 so that it can be different for each group which is $u_1 x_1$. This u_1 is different for every municipality, which means that this coefficient can be different, indicating differing relationships between x_1 and y for every group.

In terms of the equation, the model building process starts with the Level 1 equation:

$$\text{Level 1: } Y_{ij} = \beta_{0j} + \beta_{1j} x_{1j} + r_{ij} \quad (5)$$

Then, we allow both intercepts and slopes to vary across municipalities as follows:

$$\text{Level 2: } \beta_{0j} = \gamma_{00} + \gamma_{01} + u_{0j} \quad (6)$$

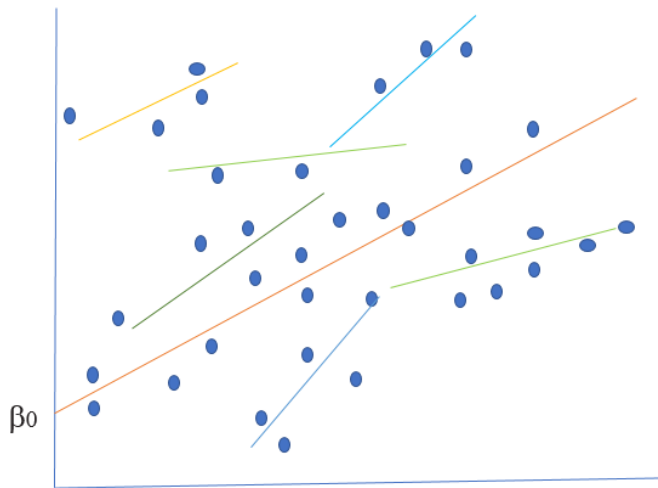
$$\text{Level 2: } \beta_{1j} = \gamma_{10} + u_{1j} \quad (7)$$

In Equation 7, the slope of the predictor level 1 is a function of the grand mean (estimated across all municipalities) slope γ_{10} and a residual term u_{1j} that describes how municipality slopes differ from the pooled slope across municipalities. Substituting Equations 6 and 7 into Equation 8 yields the combined Random Intercept and Slope Model as follows:

$$\text{Combined: } Y_{ij} = \underbrace{\gamma_{00} + \gamma_{01} + \gamma_{10}}_{\text{Fixed part}} + \underbrace{u_{0j} + u_{1j} + \epsilon_{ij}}_{\text{Random part}} \quad (8)$$

Figure 4 shows a hypothetical example of a random slope model. A comparison between the combined Fixed Slope Model (Equation 4) and Random Slope Model (Equation 8) suggests that the only difference is that the latter allows the slope of the predictor at level 1 to vary across municipalities by including the slope of u_{1j} and its variance t_{11} . However, one additional parameter estimate is not explicit in the model: the covariance between intercepts and slopes, indicated by t_{01} (Aguinis, Gottfredson, & Culpepper, 2013; Steele, 2008). Thus, the Random Slope Model includes two parameters that are not part of the Fixed Slope Model: t_{11} and t_{01} . This last element is the entry point to the analysis of covariance, which is detailed in the following section.

Figure 4 Random Slope Model



Source: Own elaboration based on documents from Centre for Multilevel Modelling, University of Bristol

Because it is necessary to test whether the variance of slope across municipalities is different from zero, I must compare the fixed slope model (wherein every municipality, the relationship between the explanatory variables and the outcome is the same) and the random

slope model (that allows the explanatory variable to have a different effect for each municipality). For that, a test of ANOVA will be used to compare both models (Steele, 2008).

Building upon the rationale for employing the random slope model, the equation in this chapter's model will adhere to the outlined procedure. Thus, if the random slope model diverges from the fixed slope model in the ANOVA test, a comparative analysis will be conducted for each variable of interest. This analysis will focus on variables that could potentially exhibit varying effects across different areas. Therefore, the number of models that will be tested is equivalent to the number of variables of interest that could vary in each municipality. Unlike the Chow Test, in which we evaluate whether the effect of a specific variable varies across the municipal areas of Santiago, the ANOVA test will use all variables that are part of the model, comparing a fixed with random effect of the variable of interest.

The variables' selection to test according to a random slope model responds to two reasons. Firstly, only the significant variables in the Chow Test will be tested because they show that its influence differs across municipal areas and merits being tested in a model where the slope can vary. Secondly, the variables selected are an essential part of the literature focused on confidence in the police, whose features are widely explained in Sections 2.4 and 2.5. Thus, the expected results of a diverse influence of the predictors (random slope model) seek to reinforce the concept of Social Ecology of Confidence in the Police in Chile, whose assumption basis is spatial heterogeneity.

The variables to be examined are Socioeconomic Status, Level of educational reached, Age, Ethnicity, Gender, Social Cohesion, Informal Social Control, Perception of Social Disorder, and Satisfaction with municipal security.

By way of example, the following equation shows the random slope model for satisfaction with municipal services. Note that what makes that slope become random is the sign μ_j at the end of the equation (the underlined part).

(9)

$$Y \text{ (Confidence in the Police)}_{ij} = \beta_0_j + \beta_1 \text{ (Socioeconomic Level)}_{ij} + \beta_2 \text{ (EducationLevel)}_{ij} + \beta_3 \text{ (Age)}_{ij} + \beta_4 \text{ (Ethnicity)}_{ij} + \beta_5 \text{ (Gender)}_{ij} + \beta_6 \text{ (Informal Social Control)}_{ij} + \beta_7 \text{ (Social Cohesion)}_{ij} + \beta_8 \text{ (Social Cohesion)}_{ij} + \beta_9 \text{ (Satisfaction with municipal security)} + \beta_{10} \text{ (Municipal Budget)}_j + \beta_{11} \text{ (Poverty)}_j + \beta_{12} \text{ (Citizen Rate Police)}_j + \mu_j$$

$$\beta_{13}(\text{Victimisation municipal area})_j + \mu_{0j} + \mu_{1j}(\text{Satisfaction with municipal security}) + r_{ij}$$

The models with the rest of the variables will test with the same procedure. In essence, the utilization of these methodologies aims to enhance our understanding of the intricate dynamics underlying police perceptions and their diverse distribution across Santiago. This analytical sophistication is geared towards addressing the research query regarding the varied impact of territorially linked variables on confidence.

The contribution of the analysis of covariance

Following with the aim to respond to the first research question, whether the influence of perception regarding local areas on the confidence of the police varies across municipal areas of Santiago, the analysis of covariance provides a crucial contribution to the component of spatial heterogeneity.

The advantage of the Random Slope Model is that it allows intercepts and slopes to vary across municipalities. The relationship between both elements is displayed in the analysis of covariance. It is a practical tool that locates the groups (in our case, municipalities) in a quadrant according to the values they have in the intercept (level of confidence) but, in turn, to know the specific influence of each predictor (their slope) on confidence for each municipality. The types of covariances will depend on the value of covariance (correlation between slope and intercept), which can be positive or negative, and on the direction of the relationship between the predictor and outcome (once again, can be positive or negative) (Steele, 2008).

Identifying each municipality in a quadrant can highlight which predictor influences confidence variation more, differentiating between municipalities with low confidence (below the average) or high confidence. In addition, the covariance analysis is a practical tool because it allows to consider differentiated policies according to the profile of each municipal area. Finally, the covariance analysis might demonstrate the nature of spatial heterogeneity in the form of distribution of confidence in the police in Santiago, responding to our research objectives and theoretical assumption.

Cross-level interaction

In order to respond to the third research question of whether structural factors at the municipal level mediate the relationship between confidence in the police in Santiago and predictor variables at the individual level, I employ the analysis of cross-level interaction.

I describe the equation of cross-level interactions and their contribution. Cross-level interaction involves understanding whether a specific level 2 variable can explain at least part of the variance in slopes across groups. This approach helps answer questions like why individual-level effects vary across level 2 units; they explicitly model variation in level 1 random coefficients as a product of level 2 group characteristics (Johnson, 2010).

In this sense, this investigation offers valuable insights into how the interplay of structural factors and individual characteristics influences public confidence in the police across distinct municipal areas. Specifically, the interest is in knowing whether the condition of the municipal areas (poverty, budget, and number of police officers per capita) moderates the relationship between perception of local areas and personal characteristics and confidence in the police across Santiago. To do so, we built the *cross-level interaction model* with Equation 11 (identical to Equation 1):

$$\text{Cross-Level Interaction Model (Level 1): } Y_{ij} = \beta_0_j + \beta_1_j + r_{ij} \quad (11)$$

Then, we allow both intercepts and slopes to vary across teams as follows:

$$\text{Cross-Level Interaction Model (Level 2): } \beta_0_j = \gamma_{00} + \gamma_{01} + \mu_{0j} \quad (12)$$

$$\text{Cross-Level Interaction Model (Level 2): } \beta_1_j = \gamma_{10} + \gamma_{11}X + \mu_{1j} \quad (13)$$

The distinction between Equation 13 (cross-level interaction model) and Equation 7 (random slope model) is that Equation 13 includes the level 2 predictor hypothesised to play a moderating role. The interest of this chapter, thus, is not merely to know whether there is variance in slopes across municipalities—that was the purpose of the previous step. Now, it is necessary to understand whether such variance can be explained by a level 2 particular predictor (i.e., municipal budget).

In Equation 13, the moderating influence of, for example, the municipal budget on the relationship between satisfaction with municipal services and confidence is captured by γ_{11} . Equally, γ_{11} is the cross-level interaction of satisfaction in municipal services and budget on confidence. That γ_{11} signifies the change in the slope of confidence in the police on satisfaction in municipal service scores across municipal areas when the municipal budget increases by 1 million Chilean pesos. For instance, a result that γ_{11} is positive means that satisfaction with municipal services is more strongly related to confidence in municipal areas with high municipal budgets compared to municipalities with low budgets.

Substituting level 2 Equations 12 and 13 into Level 1, Equation 11 leads to a combined model as follows:

Cross-Level Interaction Model (Combined):

$$Y_{ij} = \underbrace{\gamma_{00} + \gamma_{01} + \gamma_{10}}_{\text{Fixed part}} + \underbrace{\gamma_{11} + u_{0j} + u_{1j} + r_{ij}}_{\text{Random part}} \quad (14)$$

Equation 14 includes the terms involving u_{0j} and u_{1j} , which vary across level 2 units, and as stated before, therefore, they are labelled *random effects*. On the other hand, γ_{00} , γ_{01} , γ_{10} , and γ_{11} are constant across L2 units, so they are labelled *fixed effects*.

Before reviewing the interactions that will be tested, the predictor variables will be centred (Johnson, 2010; Steele, 2008). Centring on the multilevel framework is no different than in ordinary multiple regression. However, it offers crucial analytical advantages, making model intercepts more interpretable, making main effects more meaningful when interactions are included, reducing collinearity associated with polynomials and interactions, and simplifying graphical displays of outputs. Thus, the formula will be that for each case with a specific value in a variable X, the average of all the cases in that variable X will be subtracted: $(X_{ij} - \bar{X})$.

The cross-level interactions that will be tested are directly linked to the theoretical framework developed Chapters 2 and the results obtained in Chapter 5 and 6. In these chapters, structural factors like the municipal budget and multidimensional poverty were significantly associated with confidence in the police, equally or even more than individual factors such

as social cohesion and informal social control. This finding highlighted the pivotal role of structural factors in understanding confidence in the police.

Firstly, the pivotal role of the local government in Chile is remarked on, specifically its municipal budget on public safety. The financial resources capacity of the municipality conditions the quality of public services and the quality of life that citizens have and their perceptions on safety. For that reason, it is essential to examine if the municipal budget influences and mediates the relationship between confidence in the following variables:

a) Satisfaction with municipal security * Municipal budget

I expect that the positive influence of satisfaction with municipal security services on the confidence of the police will increase when the municipal budget improves. In other words, the municipal budget can enable even more influence of satisfaction with municipal services in the perception of police services.

b) Perception Social Disorder * Municipal Budget

I expect that the negative influence of the perception of social disorder on the confidence of the police could be reduced when the municipal budget increases. In other words, the municipal budget might shrink that effect, acting as a protector element.

c) Ethnicity * Municipal Budget

I expect that the negative impact of belonging to an ethnic group regarding confidence in the police could be diminished when the municipal budget increases. As in the previous interaction, the municipal budget might shrink that effect, acting as a protector element.

d) Socioeconomic Level * Municipal Budget

It is expected that the negative influence of having a low socioeconomic status on confidence in the police could shrink when the municipal budget increases. In other words, living in a municipal area with an expansive budget could reduce the chance of losing confidence despite belonging to a disadvantaged socioeconomic status.

The second structural factor to be tested will be the number of police officers per capita in the municipal area. In Chapter 6, unexpectedly, the number of police officers was not significant to explain the variation of confidence in the police, even though some literature highlights their contribution. For that reason, in this chapter, I will examine whether the number of police is significant when interacting with variables at the individual level that increases confidence, specifically with social cohesion and informal social control. A municipal area with a significant number of police officers could favour a better impact from social cohesion.

e) Social Cohesion * Rate Police Officers

I expect that the positive influence of social cohesion on the confidence in the police will increase even more if the number of police officers expands. In other words, the number of police can enable even more influence of social cohesion in the perception of police services.

f) Informal Social Control * Rate Police Officers

Because of similarity with social cohesion, the expected results are the same.

Finally, multidimensional poverty is a variable highlighted by the literature and the findings from Chapters 5 and 6. From its beginnings at the School of Chicago until the Collective Efficacy approach, the social disorganisation theory has always situated poverty as a difficulty to social cohesion.

g) Social Cohesion * Multidimensional Poverty

I expect that the positive influence of social cohesion on the confidence of the police may deteriorate when the level of poverty increases. In other words, poverty as a structural condition can interfere with the positive influence of social cohesion to foster confidence in the police.

The formula will be as follows for each one of the interactions mentioned. In this case, the example is the interaction between satisfaction with municipal security and Municipal Budget.

$$\begin{aligned}
 Y(\text{Confidence in the Police})_{ij} = & \beta_{0j} + \beta_1(\text{Socioeconomic Level})_{ij} + \\
 & \beta_2(\text{EducationLevel})_{ij} + \beta_3(\text{Age})_{ij} + \beta_4(\text{Ethnicity})_{ij} + \beta_5(\text{Gender})_{ij} + \\
 & \beta_6(\text{Victimisation})_{ij} + \beta_7(\text{Informal Social Control})_{ij} + \beta_8(\text{Social Cohesion})_{ij} \\
 & + \beta_8(\text{Social Cohesion})_{ij} + \beta_{10}(\text{Satisfaction with municipal security}) + \\
 & \beta_{11}(\text{Municipal Budget})_j + \beta_{12}(\text{Poverty})_j + \beta_{13}(\text{Citizen Rate Police})_j + \\
 & \beta_{14}(\text{Satisfaction with municipal security} * \text{Municipal Budget})_j + \mu_{0j} + \mu_{1j} \\
 & \underline{j}(\text{Satisfaction with municipal security}) + \epsilon_i
 \end{aligned}$$

In summary, the chapter's methodological approach, encompassing cross-level analyses, meticulous examination of spatial heterogeneity, and adept utilisation of visualisation techniques, represents a determined effort to delve into the intricate and multifaceted interrelationship existing between individual-level determinants and the overarching structural factors at the municipal level. By adopting these advanced analytical tools, Chapter 7 seeks to illuminate the intricate patterns of influence, causal mechanisms, and potential moderating effects that contribute to shaping perceptions of the police across Santiago's diverse geographic and socio-economic landscape. This holistic exploration aims to unveil the nuanced and non-uniform dynamics that underlie the complex configuration of public confidence in the Police within Santiago, thus contributing to a more comprehensive understanding of the intricate interplay between individual and contextual forces.

CHAPTER 5: Clustered distribution of public safety: Exploring the extent of inequality and variation of experiences and perceptions in Santiago de Chile

5.1. Introduction

The unit of analysis for this chapter and the entire thesis is Santiago. The contribution of this chapter is two-fold. Firstly, it introduces novel insights into the spatial distribution of public safety measures such as victimisation rates, fear of crime, and confidence in the police across Santiago at the municipal level. This addresses a significant gap in empirical evidence in Chile and Latin America, where surveys at this level are scarce, and there is underutilisation of statistical tools for studying spatial phenomena. Second, certain dimensions linked to Social Disorder Theory as Collective Efficacy and socio-economic disadvantages are considered in terms of their possible influence on this inequality and segregation. The analysis reveals the crucial role of local governments and their services in understanding this uneven distribution of public safety in Santiago. As a result, I suggest the need for a multidimensional approach to public safety, surpassing the vision focused only on victimisation figures, and a recommendation to consider a targeted allocation of public resources to the more vulnerable municipalities in Santiago. Explaining the mechanisms behind the inequality within Santiago and how this might influence people's experiences with crime, police, and an unequal perception of safety, this chapter explores results from a representative survey questionnaire deployed at the municipality level across Santiago to quantify and visualise differences in public safety distribution before considering possible safety correlations. Finally, the chapter concludes by evaluating these results for policy, practice, and future research.

5.2. Motivation for research questions

With the focus of study in the city of Santiago, the fundamental research question of this chapter is addressed towards the extent, variability, form, and distribution of public safety, understanding public safety from a multidimensional angle: victimisation, fear of crime, and confidence in the police. The term "distribution of public safety" is referred to the spatial allocation of key variables (fear of crime, victimisation, and confidence in the police) across different municipal areas within Santiago. This analysis aims to identify patterns of

concentration or dispersion in the values of these variables, as well as their association with the distribution of structural and individual factors associated with public safety.

In this context, this research seeks to fill a significant research gap by conducting a municipal-level crime survey and employing advanced spatial analysis techniques. These methods will not only examine the distribution of violent crime reports but also assess fear of crime and confidence in the police. This approach is essential because relying solely on police statistics provides limited perspectives, highlighting the need for comprehensive surveys to fully understand these dimensions.

The study draws on various theories and concepts to guide its exploration. It anticipates that both the objective (crime rates) and subjective (confidence and fear) aspects of public safety will exhibit patterns of inequality, akin to disparities observed in other public services.

As I justified in Section 2.2., Social Disorganisation Theory would allow to untangle distribution of public safety and segregation in Santiago. Crime, like poverty and other social issues, does not evenly permeate society but instead concentrates in specific social and geographic regions (Crawford, 1997; Bruinsma and Johnson, 2018). The individuals most susceptible to becoming victims of crime are also more likely to face other social challenges, such as social exclusion and limited access to quality education and healthcare, which contribute to a persistent state of vulnerability. These aspects might be intertwined with the broader concept of segregation, but for the case of Chile, the focus is on segregation by income, which results from disparities in housing market access and significant income inequality within a capitalist labour market (Bourne & Walks, 2011).

From a structural perspective, scholars point out that while segregation in Santiago has been present throughout the 20th century, it was during the neoliberal reforms that its extension and aftermath became more severe (Sabatini and Salcedo, 2007). During this period, the government exploited the violence of the authoritarian regime to forcibly move low-income residents away from affluent and middle-class neighbourhoods to the peripheries of Santiago. This large-scale migration had detrimental effects, including the breakdown of social networks among residents, heightened residential instability, a clustering of poverty, and a surge in social problems (Rojas, 1984). In contrast, to protect themselves against crime, citizens from affluent areas turned to hardening measures, concepts like “security enclaves” (Sabatini and Salcedo, 2007), “fortified zones” (Perez, 2011), or “gated communities” emerged (Portes and Martínez, 2019).

Within the significant scale of income-based segregation, the impact of neoliberal reforms extended to the administrative realm as well. With the central state's shrinking role, municipalities were burdened with more responsibilities. However, due to varying budgets, municipalities' ability to provide services differed, leading to disparities in service quality. In this context of inequality, local governments must assume a crucial role in ensuring the security of their citizens, but these disparities might potentially influence the distribution of security. Environmental Criminology may provide some cues to grasp this scenario since the effect of guardianship, like municipal guards, in deterring criminal activities and a perception of crime, might contribute to explaining the unequal distribution of public safety.

In addition to differences in local government resources, the capacity of community organizations to prevent crime might also fluctuate. Communities with lower crime rates, strong organization, and adequate resources tend to be more successful in implementing community initiatives (Calaresu and Tebaldi, 2015). Municipalities with higher income levels and a better quality of life in their inhabitants also show more interest in maintaining security pacts and have greater organizational capacity for defensive strategies. Thus, Collective Efficacy (Sampson et al. 2002), based on social cohesion, may work more efficiently in crime prevention efforts in affluent areas.

The theoretical concepts elucidated earlier will be translated into measurable variables obtained from both the local crime survey and secondary sources of information pertaining to the municipal level. Within our multidimensional framework of public safety, the focus is on three key variables: victimisation, fear of crime, and confidence in the police. The specifics of how these variables are operationalised are elaborated in Section 4.4.

The concepts linked to the Social Disorganisation Theory and municipal services are operationalised in the variables Social Cohesion, Informal Social Control and Multidimensional Poverty. The concepts linked to the approach of Local Governance of Crime are the Municipal budget per capita and Satisfaction with security municipal services.

Chile is recognised for its low homicide rates and relatively peaceful state within Latin America. However, despite this status, crime continues to be a significant concern for Chilean citizens. The underlying issue lies in the country's considerable level of inequality, placing it among the top 25 most unequal nations worldwide. To gain a comprehensive understanding of the situation, it is crucial to adopt a multidimensional approach to public safety, considering both subjective perceptions and objective experiences of crime. The approach to this notion of safety should be driven by a more granulated scale of

representativeness like crime surveys at the municipal level. Nevertheless, in Chile studies at a municipal level have not been conducted to date. In light of these factors, this chapter, through a local crime survey, will explore and quantify inequality and its variability in victimisation, fear of crime, and confidence in the police, responding to the following research question:

What is the extent of inequality and differences in terms of public safety (victimisation, fear of crime, and confidence in the police) among municipalities of Santiago?

Having answered the question regarding distribution, the next step is to know what the social factors underlying this providing of objective and subjective safety are. For this phase dimensions from Social Disorder Theory, such as Collective Efficacy and socio-economic disadvantages are included to understand their potential impact on inequality and segregation. These theories are utilized to demonstrate that crime distribution and segregation cannot be isolated from structural factors, including socio-economic and political contexts. Particularly, the influence of Chile's neoliberal reforms and their consequences, such as Local Governance of Crime (Crawford, 1997), are vital in contextualizing the Chilean case. This concept plays a crucial role in assimilating how municipalities operate and what social disparities are involved. After the neoliberal reforms, local governance shifted more responsibility to individuals and their municipalities to deal with crime.

Considering the above, this chapter aims to understand the context of this inequality in terms of public safety as well, specifically looking at the influence of municipal features relating to 'security enclaves' (poverty, municipal budget, and municipal services) and social features such as social cohesion and informal control using descriptive analysis, to answer the question:

Are social cohesion, informal control, poverty and municipal budget, and satisfaction with municipal services associated with public safety (victimisation, fear of crime, and confidence in the police) in municipal areas in Santiago?

5.4. Variables of interest

The variables have been selected based on the literature detailed in Chapter 2 and reinforced in Chapter 3 for the context of Chile. In this Chapter, each of these variables is a municipal average. As this is the first empirical chapter, I chose to focus on values at the municipal council level, as it allows us to explore and understand a first approximation of the diversity of municipal areas across Santiago. Although the primary objective is to investigate the spatial distribution of security, I do not have access to the location data of individuals due to confidentiality information protected by law. Therefore, I employ these municipal averages to gain insights into the broader patterns of public safety distribution¹⁴. The details of operationaliation of these variables were explained in Section 4.4.

In this chapter, **public safety** is operationalied in terms of:

- **Victimisation:** the experience of being a victim of a crime
- **Fear of crime**
- **Confidence in the police.**

Factors associated with public safety

The concepts linked to Social Disorganisation Theory and municipal services are operationalised in the following variables:

- **Social Cohesion:**
- **Informal social control:**
- **Satisfaction with municipal security services:**

¹⁴ Variables as personal characteristics such age, gender, ethnicity, education, and socioeconomic level are excluded from this chapter.

Besides a local crime survey, auxiliary data was taken from two sources:

- **Multidimensional Poverty:**
- **Municipal budget per capita:**

A descriptive table with all the values of our variables is presented in Table 3.

Table 3 Descriptive statistics for variables

| Variables | Min | Max | Mean | SD | N |
|---|---------|-----------|---------|---------|----|
| Municipal averages: | | | | | |
| <i>Variables of interest</i> | | | | | |
| Fear of crime | 0.32 | 0.58 | 0.62 | 0.06 | 26 |
| Victimisation | 15.5 | 34.6 | 24.9 | 4.11 | 26 |
| Police Confidence | 0.32 | 0.62 | 0.42 | 0.05 | 26 |
| <i>Associated factors.</i> | | | | | |
| Satisfaction with municipality security services | 0.38 | 0.70 | 0.48 | 0.09 | 26 |
| Social cohesion | 0.52 | 0.67 | 0.58 | 0.04 | 26 |
| Informal social control | 0.17 | 0.32 | 0.23 | 0.04 | 26 |
| Multidimensional poverty | 3.2 | 41.1 | 20.7 | 9.85 | 26 |
| Municipality budget per capita in each borough (\$ Chilean Pesos) | 129,373 | 1,098,417 | 327,949 | 263,208 | 26 |

Table 3 shows a range of descriptive statistics that provide valuable insights into the variables measured at the municipal level. These statistics allow us to analyse and understand the distribution and variability of the studied variables in a more analytical manner.

For the variables that show dimensions of public safety, fear of crime exhibits a relatively narrow range, with values ranging from 0.32 to 0.58, and a mean of 0.62. This suggests that, on average, individuals in the municipalities experience a moderate level of fear regarding crime. In contrast, the variable victimisation shows a wider range, spanning from 15.5 to 34.6, with an average of 24.9. The standard deviation of 4.11 indicates some variability in the number of victimisations across the municipalities. This variability could indicate differing levels of crime incidents and safety challenges faced by residents in different areas. Regarding confidence in the police, the values range from 0.32 to 0.62, with a mean of 0.42. The

relatively low mean and narrow range suggest a moderate level of confidence in police services among the municipalities.

A cautioning point is that standard deviation interpretation should focus on understanding the level of variability or spread of data points within each variable. Although it is a powerful tool to assess the consistency or diversity of observations within a specific variable it should not be used to directly compare different variables with dissimilar units or scales, as in this case, victimisation with fear of crime and victimisation. A more substantial analysis of variability will be performed on the results through the ANOVA test, Gini Test and Spatial Autocorrelation tools.

Turning to the associated factors to public safety, satisfaction with security municipality services has values ranging from 0.38 to 0.70, with an average of 0.48. The standard deviation of 0.09 indicates a considerable variation in the level of satisfaction with security-related services provided by the municipalities. This variation may be influenced by the adequacy and accessibility of security services in each area. In contrast, social cohesion, which reflects the sense of community and cooperation, shows a relatively narrow range and low standard deviation of 0.04 suggesting a relatively steady level of social cohesion among the municipalities. A similar behaviour shows informal social control, with the standard deviation of 0.04.

Regarding structural variables, multidimensional poverty shows a wide range, from 3.2 to 41.1, with an average of 20.7. The standard deviation of 9.85 highlights significant variability in the level of poverty experienced by individuals within each municipality, considering various dimensions beyond just income. Lastly, the municipality budget per capita in each borough displays a substantial range, from 129,373 to 1,098,417 Chilean Pesos, with an average of 327,949. The high standard deviation of 263,208 indicates significant disparities in the financial resources allocated to each borough within the municipalities.

Analytical approach

Chapter 5 presents an exploratory data analysis to empirically demonstrate, for the first time, the extent of variability and inequality in public safety across 26 municipalities across Santiago. Public safety is operationalised in this research as victimisation, fear of crime, and

confidence in the police. To analyse the distribution of these variables, I employed three approaches. First, to examine differences between the means of the municipalities in our variables of interest, I used Analyses of One-Way Variance (ANOVA).

Subsequently, I calculated the Gini index to quantify the extent of any inequality. This index ranges between 0 (denoting perfect equality) and 1 (indicating maximum inequality) (Giorgi, 2019). The "ineq" package from the R program was utilised for this calculation. It serves as a comprehensive toolbox for measuring, analysing, and interpreting inequality in distributions, offering diverse functions and visualisation tools that empower researchers to gain deeper insights into the dynamics of inequality. Using the "ineq" package, I employed the `Gini()` function to calculate the Gini Index for each of the variables, with the function taking a numeric vector as its argument.

To identify potential spatial patterns in the distribution of public safety, I tested for spatial autocorrelation. This statistic measures the degree of dependency among observations in geographic space (Haining, 2009), indicating whether their values are determined by the relative location proximity of the objects to which the data refer. I examined global spatial autocorrelation to assess the degree to which areas near each other tend to be more alike. Similar to a traditional correlation, the value is bounded between 1 (indicating similar values clustering together) and -1 (indicating dissimilar values clustering together). To detect the specific locations of clusters, I tested for local autocorrelation.

Finally, I used the Pearson correlation to determine whether factors described in the literature as associated with public safety can affect this inequality scenario. This type of correlation was chosen because all our variables are continuous. It measures the linear correlation between two variables, determining their strength and direction (Denis, 2020).

The details of each analytical instrument used in this chapter are described in Section 4.3.

5.5. Results

Exploring the extent of inequality and differences in variables of interest among municipalities of Greater Santiago:

According to chapter 2 and 3, I expect to find differences and inequality in the distribution of the three variables that define public safety: victimisation, fear of crime, and confidence in the police across Santiago. Firstly, I describe and map these variables.

Figure 5 *Victimisation across Greater Santiago*

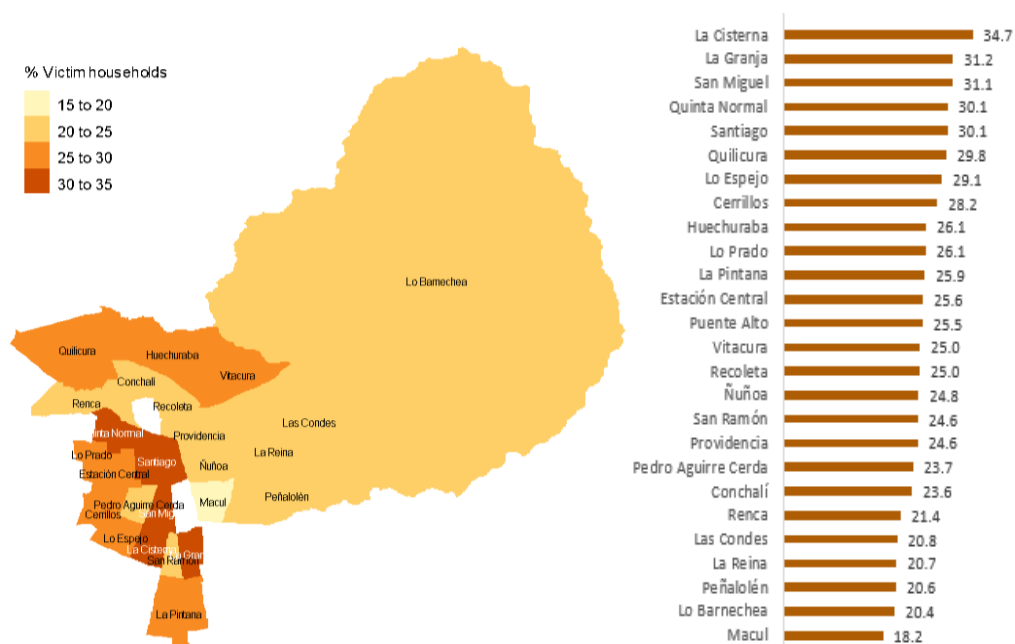
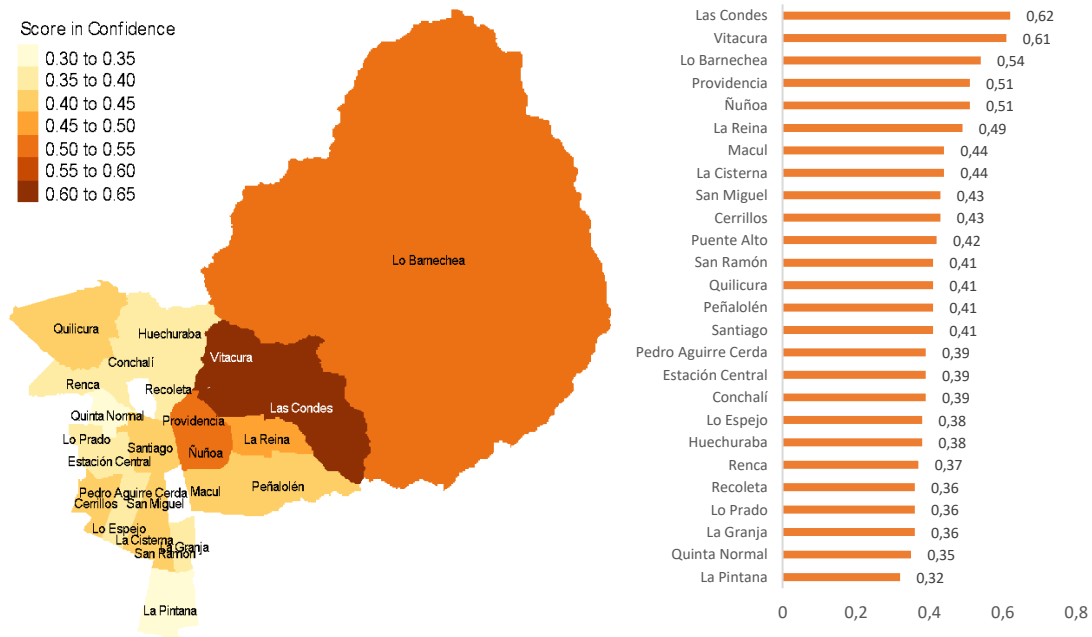


Figure 5 shows that high victimisation rates (above 30% of the population experienced victimisation) are in the centre and south of Santiago. However, eastern and some western municipalities have the lowest rates.

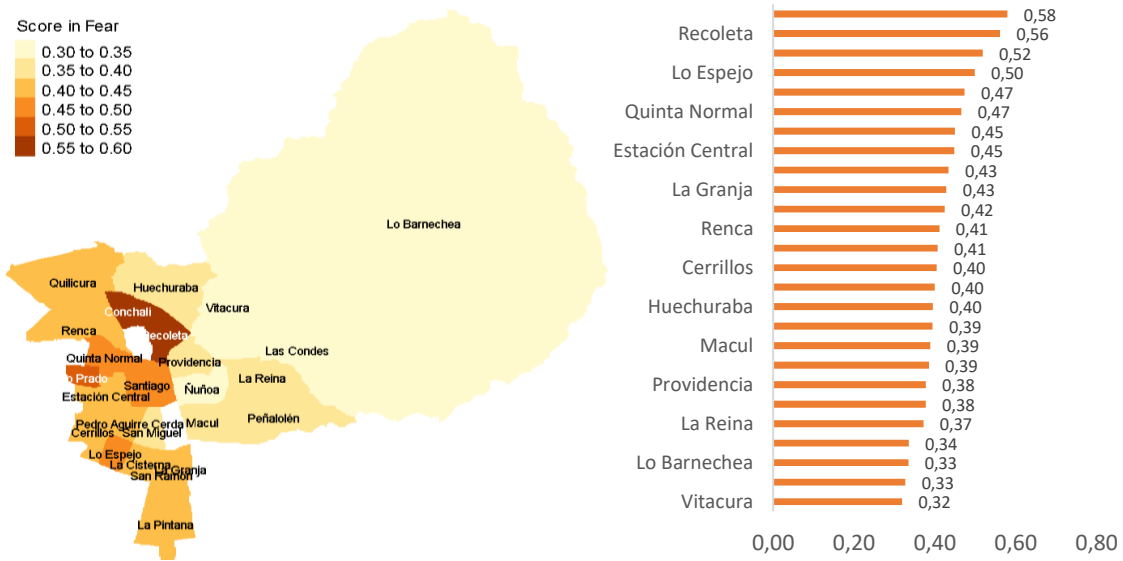
There is a different situation in confidence in the police, which is the average score at the municipal level. This map (Figure 5) reveals the highest confidence in the eastern zone, specifically in the municipalities of Vitacura, Las Condes, and Lo Barnechea. Conversely, in the north and south, municipalities like Conchalí, Recoleta, and La Pintana show the lowest level of police confidence

Figure 6 Confidence in the police across Greater Santiago



I observe a similar situation of differences in the map of the distribution of fear of crime (Figure 6). The lowest values of fear of crime are in the eastern zone. It is the same zone where I find the highest confidence level in the police. The northwest of the city shows the highest level of fear of crime.

Figure 7 Fear of crime across Greater Santiago



ANOVA results confirm these differences in fear of crime, confidence in the police, and victimisation between the municipalities (Table 3). F test's highest values indicate that the variance between municipalities is higher than within municipalities and it is found in police confidence, fear of crime, and victimisation. In addition, I ran a Post Hoc Multiple Comparison with Tukey. I found significant differences in almost every combination of municipalities in the 3 variables analysed. The only exceptions were 3 pairs of municipalities in fear of crime and 2 in police confidence.

Table 4 One-way ANOVA

| | | Mean Square | F | Sig. |
|-------------------|----------------|-------------|-------|------|
| Victimisation | Between Groups | 1.7 | 8.7 | 0.01 |
| | Within Groups | 0.2 | | |
| Police Confidence | Between Groups | 3731.8 | 127.5 | 0.01 |
| | Within Groups | 29.3 | | |
| Fear of crime | Between Groups | 2018.8 | 117.7 | 0.01 |
| | Within Groups | 17.1 | | |

What is the inequality in the distribution of public safety? I evaluate the inequality by calculating a Gini Index¹⁵ for the outcome variables of public safety between municipalities.

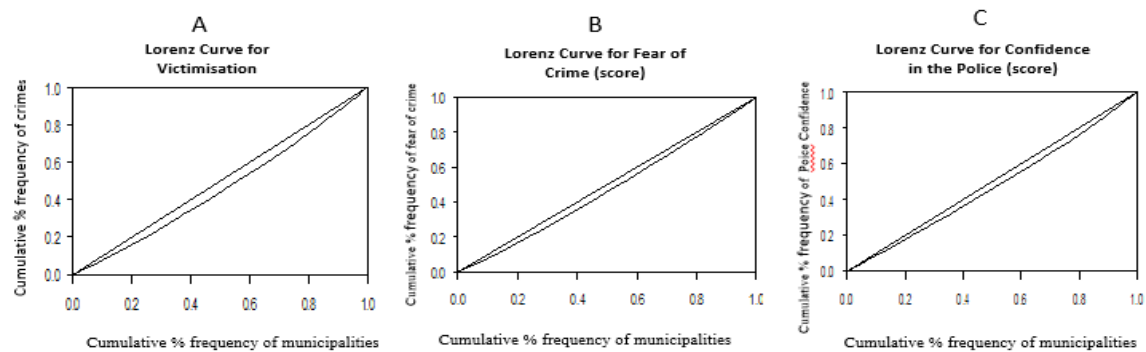
¹⁵ The information is placed in the methodological section, the Gini index ranges between 0 (denoting the case of perfect equality) and 1 (referring to the case of maximum inequality).

Table 5 shows low values of inequality in the distribution of variables among the municipalities of Santiago. The variable most unequally distributed is *victimisation* (Gini value 0.086) followed by confidence in the police and fear of crime (0.061 and 0.059, respectively).

Table 5 Gini Index

| N: 26 municipalities | Gini Index Value |
|--------------------------|------------------|
| Victimisation | 0.086 |
| Fear of Crime | 0.061 |
| Confidence in the police | 0.059 |

Figure 8 Lorenz curve for variables of interest



The Lorenz Curve is the tool to graph the degree of inequality in the distribution of the analysed variables. Figure 8 (A, B, C) illustrates that the distribution of public safety among the municipalities does not present very steep levels of inequality. The most unequal variable is victimisation: 90% of the municipalities concentrate 80% of the total victims, but the remaining 10% concentrate 20% of the total victims. It might imply a presumable concentration of crime and victims in some municipalities of Santiago. In the case of fear of crime and confidence in the police, the distribution shows greater equality when considering the municipalities as the unit of analysis.

Once it was visualised and tested that public safety shows significant variability among municipalities, but with low inequality according to the Gini Index, the focus was on testing

whether there was a cluster in that distribution. For that purpose, I tested *spatial autocorrelation*¹⁶.

Firstly, I examined the global spatial autocorrelation because I was interested in the degree of clustering across Santiago. Table 6 shows that all our variables are statistically significantly autocorrelated. It means that the values of these variables are not randomly distributed across space; they present clusters in their distribution. Moreover, Table 5 indicates the strength of each variable's autocorrelation (Moran's I)¹⁷. This suggests that the variables "Victimisation," "Fear of crime," and "Confidence in the police" exhibit positive spatial autocorrelation, with similar values being geographically clustered within the study area.

The associated p-values demonstrate the significance of the spatial autocorrelation results. All p-values are reported as 0.01, indicating strong statistical significance. Thus, the observed spatial patterns are unlikely to be the result of chance, confirming the presence of a genuine spatial structure in the data. Police confidence displays a higher degree of concentration of this attribute in certain zones of Santiago (0.49), followed by fear of crime (0.39) and victimisation (0.29).

¹⁶ The contiguity weights of global autocorrelation were defined using the queen criterion. All statistical analyses and maps were done in R (R Core Team, 2018).

¹⁷ Moran's I, ranging from -1 to 1, serves as a measure to identify spatial autocorrelation. Values close to 1 signify strong positive spatial autocorrelation, indicating that similar values tend to cluster together in space. Conversely, values close to -1 imply strong negative spatial autocorrelation, indicating that dissimilar values tend to cluster together. Values near 0 indicate no spatial autocorrelation, signifying random distribution across space.

Table 6 Moran's test of global autocorrelation

| | Moran's I | p-value | Monte Carlo Simulation |
|---------------------------------|-----------|---------|------------------------|
| Variables of interest | | | |
| <i>Victimisation</i> | 0.29 | 0.01 | |
| <i>Fear of crime</i> | 0.39 | 0.01 | 100 (99+1) |
| <i>Confidence in the police</i> | 0.49 | 0.01 | |

The Monte Carlo Simulation, with results presented as “100 (99+1),” further supports the spatial autocorrelation findings. Among the 100 simulations performed, 99 resulted in positive spatial autocorrelation patterns (similar values clustering together), while one simulation displayed negative spatial autocorrelation (dissimilar values clustering together).

In order to identify and locate the presence of clusters, I applied *local* spatial autocorrelation. Figure 6 presents a LISA map, where each municipality is classified, taking into account two criteria: the municipality's value in the variables analysed and the average values of their *surrounding* municipalities. A LISA map helps visualize and interpret the spatial patterns and clusters of high or low values for a specific variable, providing valuable insights into the geographic distribution and relationships within the study area.

Figure 9 Local Spatial Autocorrelation, LISA map of confidence in the police

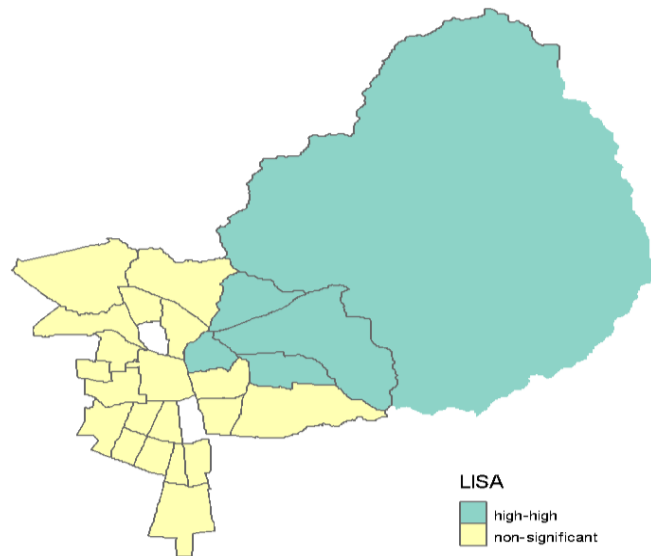


Figure 9 shows that the highest confidence in police clusters is concentrated in the east zone of Santiago, but also these municipalities are surrounded by other municipalities that have above average confidence (category “high-high”). Hence, we may empirically confirm the existence of a demarcated zone in Santiago where the population perceived the police serve at a high-quality standard.

In the case of fear of crime, the data reveal a similar situation but with a difference where the eastern zone displays the lowest level of fear of crime, but these municipalities are surrounded by neighbouring municipalities that hold a high level of fear (Figure 10). So, even though they benefit from living with a low perception of unsafety, if they enter a neighbouring municipality, they may find a zone with a high level of fear.

Figure 10 Local Spatial Autocorrelation, LISA map of fear of crime

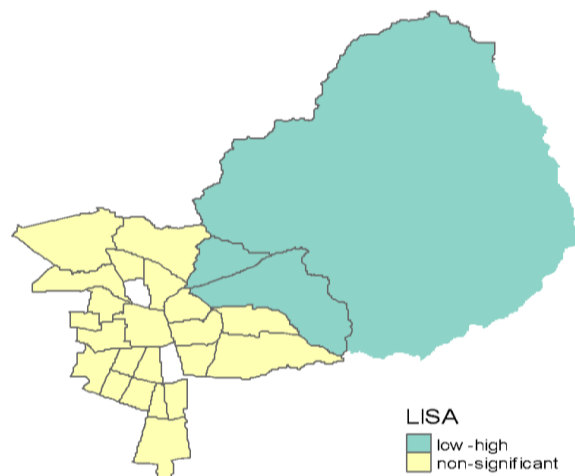


Figure 11 Local Spatial Autocorrelation, LISA map of victimisation

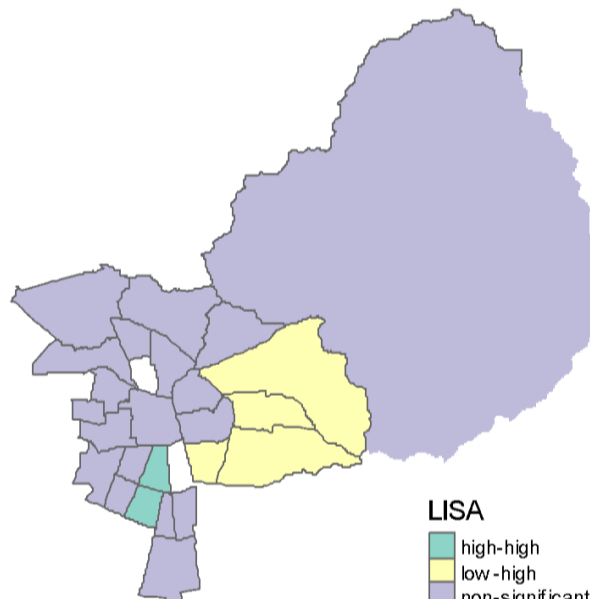


Figure 11 shows that victimisation follows a different pattern. In the south of Santiago, San Miguel’s and La Cisterna’s municipalities are classified as “high-high”, which means high victimisation rates, neighbouring other municipalities that also present a high level of victimisation, indicating a “hot-spot”. Four municipalities are classified as “low-high” in the southeast of Santiago. Their inhabitants report low levels of victimisation in this zone, but the municipalities surrounding them display high victimisation. It is noted that only two belong to the eastern zone of the four municipalities. Therefore, bearing in mind the first descriptive maps where the eastern zone holds a privileged situation in fear and police confidence. It is possible to affirm that the concentration of victimisation does not align with fear of crime and confidence in the police.

Variables associated with public safety

Based on previous research detailed in Section 2.2., I expect to observe an association between the three variables of public safety (victimisation, fear of crime, and confidence in the police) and five variables linked to Social Disorganisation Theory and municipal services. To explore these associations, the following table presents a Pearson correlation matrix. As the units of analysis are the municipalities, the values presented in the matrix are based on the municipal averages.

Table 7 Matrix of correlation

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|-------------------|-------------------|----------------------|------------------|-------------------|-------------------|------------------|---|
| Fear of crime [1] | 1 | | | | | | | |
| Confidence in the Police (2) | -.852** (.000) | 1 | | | | | | |
| Victimisation (3) | 0.339 (.0.00) | -0.343 (.086) | 1 | | | | | |
| Informal social control (4) | -0.131 (0.251) | 0.266 (.190) | - 0.334 (.095) | 1 | | | | |
| Social cohesion (5) | -.784** (.000) | .893** (.000) | - 0.402 (.044) | 0.252 (.117) | 1 | | | |
| Satisfaction security municipality services (6) | -.843** (.000) | .919** (.000) | -.425* (.030) | 0.222 (.181) | .882** (.000) | 1 | | |
| Multidimensional poverty (7) | .565** (.001) | -.752** (.222) | .248 (.217) | -0.420 (.091) | -.593** (.002) | -.688** (.000) | 1 | |
| Municipal budget per capita (8) | -.290** (.000) | .618** (.000) | .157 (.068) | 0.356 (.473) | .128 (.0401) | .508* (.000) | -.515* (.001) | 1 |

The variable with the highest correlation coefficient to all the variables of public safety (fear of crime, victimisation, and police confidence) is *satisfaction with municipal security* followed by *social cohesion*, although this latter was not significantly associated with victimisation. In specific terms, the highest correlations of fear of crime are the perception of municipal security (-0.843) and social cohesion (-0.784). This negative correlation shows that an increase in municipal security and social cohesion might be associated with a low fear of crime.

In the case of confidence in the police, an increase in satisfaction with municipal security (0.919), as well as social cohesion (0.893) might influence the confidence but multidimensional poverty (-0.752), might be associated with a diminution in it. Hence, to understand the variation of police confidence, the role of the variables of individual perceptions (about municipal services and shared values by the community -social cohesion-) and contextual variables (poverty) are crucial. The high correlation between the perception of the police and the municipal services (0.955) is particularly interesting since they are two autonomous institutions (i.e., independent from each other) with a different scope of their services: while the police focus on all citizens of the entire city, municipalities are focused only on their own territory or municipal area.

Victimisation on municipal average shows an association only with the perception of municipal security services (-0.425), indicating that municipal areas with larger victimisation rates show lower satisfaction with security services. However, there is no clear relationship between victimisation and any other variables we would expect, such as cohesion, informal control, and even municipal budget.

5.6. Discussion

This chapter addressed a significant gap in the existing literature by providing a spatial analysis that encompasses not only crime incidents but also public perceptions of safety. Traditionally, spatial studies have relied predominantly on police statistics, which offer a limited perspective on crime. To gain a comprehensive understanding of public safety, it is essential to consider multiple facets such as victimisation, confidence in the police, and fear of crime, alongside aspects like social cohesion and satisfaction with local security services. These dimensions necessitate robust crime surveys with appropriate statistical representativeness, a methodology notably absent in current research, especially in Latin America.

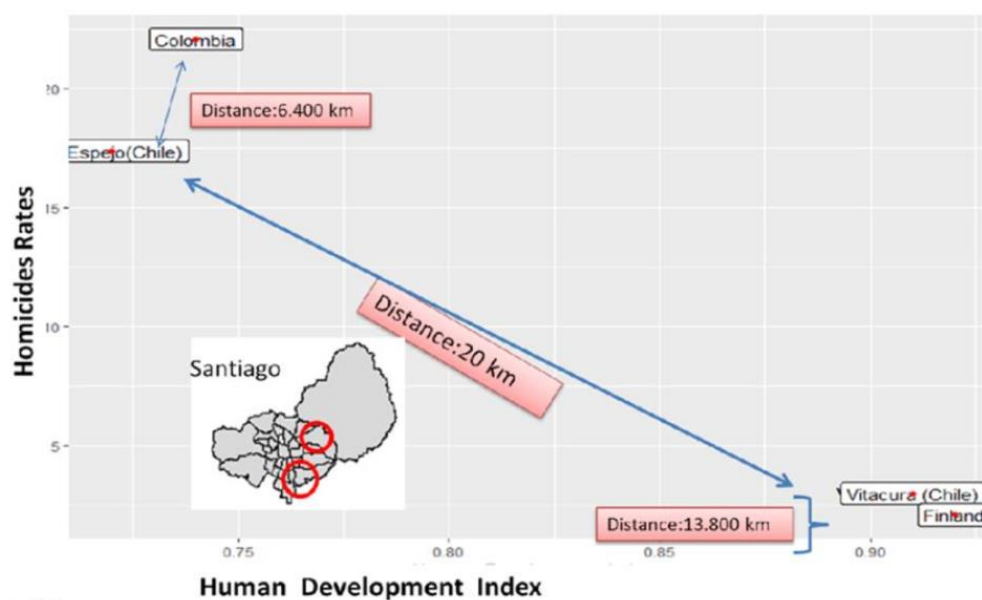
The local crime survey employed in this thesis fills this critical gap by using advanced spatial analysis techniques like spatial autocorrelation. It contributes valuable insights into the multifaceted nature of public safety distribution in Santiago. Including fear and confidence as variables in the survey allows for a nuanced analysis of the "security differential" highlighting how public safety varies across different areas and socio-economic groups.

An underlying assumption of this research is that individuals with greater resources are likely to access superior police services, resulting in reduced fear of crime, higher levels of social cohesion, and residence in areas with better municipal resources. The results of the study confirmed these assumptions.

As a pedagogical illustration, the following comparison highlights the striking disparities within the city of Santiago, where different "countries" seemingly coexist in the form of two municipal areas: Vitacura and Lo Espejo. To understand the social and security conditions that these areas represent, they are juxtaposed with two countries: Colombia and Finland. The data was derived from different studies.

Vitacura enjoys a privileged situation, boasting a human development index and homicide rate comparable to that of Finland, a country known for its high levels of well-being and security. However, the situation drastically changes within a mere 10 kilometres, as Lo Espejo exhibits human development and homicide rates more akin to those of Colombia, a country with distinct challenges in well-being and security. This stark contrast within one city illustrates the coexistence of Chileans living in areas with living conditions reminiscent of countries with vastly different levels of well-being and safety. This visual representation serves as a poignant reminder of the inequalities that can exist within urban settings, even within the same metropolitan region.

Figure 12 Santiago, One city many countries



Source: own elaboration, data taken from Fuentes (2018)

Returning to the results from the local crime survey, the research question at the heart of this chapter is— ‘What is the extent of inequality and differences among municipalities in Santiago in terms of public safety?’ This reflects an interest in Santiago as a special case within Latin America but one that shares similar characteristics with other countries in terms of inequality. Understanding the distribution of safety is crucial for promoting equity and social justice. Public safety significantly impacts vulnerable populations, including low-income individuals, minority communities, and marginalized groups (Jaitman and Ajzenman, 2016).

Chile's economic model has led to significant macroeconomic growth and stability but also substantial socio-economic disparities. These inequalities are starkly evident in urban areas, where neoliberal policies have intensified segregation. Affluent neighbourhoods enjoy superior services and security measures, while low-income areas face higher crime rates and reduced access to quality services, creating a stark contrast within cities like Santiago.

From police statistics data, the spatial analysis in Santiago reveals a pattern similar to that observed in many global urban centres, where crime is concentrated in economically disadvantaged areas. However, by using crime surveys, this study goes beyond traditional police statistics by incorporating variables such as fear of crime, victimisation, and confidence in the police, which add nuance to the traditional spatial concentration analysis of crime. This comprehensive approach highlights not only the disparities in crime distribution but also the differential perceptions and experiences of security among various socio-economic groups.

This chapter shows a heterogeneous distribution of the three elements of public safety considered in this thesis. In general terms, among the three variables related to public safety—victimisation, fear of crime, and confidence in the police—the latter exhibits the most significant variability across different municipal areas in Santiago. This observation is confirmed by the ANOVA analysis, which reveals that the variance between municipalities is considerably higher than the variance within municipalities for confidence in the police.

Furthermore, when examining spatial autocorrelation, it becomes evident that confidence in the police also demonstrates the highest level of clustering in its values. Certain zones in Santiago, reminiscent of a “feudal” style arrangement stand out with consistently high levels of confidence in the police, a characteristic not shared by the rest of the city.

When examining spatial autocorrelation, it becomes evident that confidence in the police demonstrates the highest level of clustering in Santiago. Certain zones in this city, reminiscent of a “feudal” style arrangement, stand out with consistently high levels of confidence in the police, a characteristic not shared by the rest of the city. Specifically, spatial clustering of low fear of crime and high confidence in the police are observed in the eastern side of Santiago, areas that have benefitted from the unequal distribution of wealth and resources introduced by neoliberal reforms (Parraguez-Camus, 2017; Harvey, 2007; French-Davis, 2003; Han, 2012; Portes and Martinez, 2019). This zone contains the municipalities (Vitacura, Las Condes, and Lo Barnechea) with the least multidimensional poverty and the most extensive municipal budget per capita across the city (see maps of both variables in Appendix 1).

Conversely, in the north and south of Santiago, the municipalities with modest municipal budgets and high poverty levels (Conchalí, Recoleta, and La Pintana) show the lowest confidence in the police and the highest fear of crime. This finding aligns with the reality of other countries where unequal confidence in the police correlates with broader social problems (Bowling et al., 2016; Wu et al., 2009; Sampson and Bartusch, 1998; Reisig and Park, 2000; Sun et al., 2004).

Given the spatial analysis studies in both the Global North and South, although with some nuances, the presence of factors such as social disorganisation and vulnerability are found to influence crime concentration, segregation, and urban planning. Therefore, I would expect and, in fact, I found a similar scenario to be present in Santiago.

The findings from Santiago resonate with data from London. Buil-Gil et al. (2020) revealed that confidence in the police is higher in affluent areas north of the River Thames in Central London, despite higher crime rates. This trend is primarily attributed to socio-economic factors such as unemployment. Similarly, Williams et al. (2019) underscored the correlation between public confidence in the police and levels of neighbourhood deprivation in their spatiotemporal analysis of London. These studies underscore the significance of socio-economic factors in shaping public perceptions of safety, a correlation also observed in Santiago

In terms of fear of crime, Santiago shares more similarities with findings from Malmö, Sweden than with Viçosa, Brazil. Kronkvist (2022) examined spatial concentrations and temporal patterns of unsafe locations in Malmö, revealing significant clustering of unsafe areas, similar to Santiago. This suggests that perceptions of unsafety are closely linked to specific micro-geographical features. In contrast, Alkimim et al. (2013) found in Viçosa, Brazil, that fear of crime is evenly distributed among residents, irrespective of socio-economic status or urban planning quality. This indicates a more uniform distribution of fear of crime across neighbourhoods. These findings suggest that fear of crime impacts all residents, regardless of socio-economic condition. Moreover, this finding aligns with international evidence that a greater fear is located in lower-income or excluded areas (Scott, 2003; Warr & Ellison, 2000; Patanzis, 2000).

Although more sophisticated techniques such as spatial autocorrelation yield similar results to more traditional techniques, such as greater fear in more vulnerable areas, a finer spatial analysis, as shown in this chapter, is able to provide greater nuance in understanding the dynamics of the intensity and spatial distribution of fear. The particular case of low fear of crime in the eastern areas surrounded by higher fear of crime areas, such as the municipality of Recoleta, can be tied in with the argument of place-based territoriality. In this territory edges and boundaries in geographic and social terms are formed (Brantingham & Brantingham, 1993), creating “security enclaves” and segregated areas classified as “dangerous” through the marketisation of security (Reiner 1992; Neocleous, 2007; Spitzer, 1979). These results are consistent with the evidence provided by Social Disorganisation Theory where the process of forced migration of vulnerable population to the periphery and market liberation in house price, both can furnish segregation and concentration of risk factors of crime (Sampson and Wilson, 2007; Bruinsma and Johnson, 2018, Tompson, 2016; Sampson et al. 1997). This kind of forced migration has occurred in Chile as well (Rojas, 1984). Furthermore, the findings are coherent with evidence for Santiago upon increasing segregation after neoliberalism reform (Sabatini et al. 2001, Sabatini and Salcedo 2007; Perez, 2011; Portes and Martinez, 2019). This process provoked the concentrations of homogeneous groups separated by greater distances to other groups, shaping a city of enclaves.

The spatial analysis of crime in Santiago reveals complex patterns that challenge conventional knowledge about crime distribution. While studies like those by Portes and Martinez (2019) suggest a concentration of victimisation in affluent areas due to neoliberal reforms and the emergence of an informal working class, our findings show a more nuanced picture. Wealthy municipalities in Santiago exhibit comparable levels of victimisation to other areas, indicating that crime is not necessarily displaced solely to affluent zones.

However, it's important to note that studies examining spatial displacement of crime, such as those focusing on violent crimes and police reports in cities like London and Manchester, may not directly align with Santiago's approach. Santiago's victimisation data is derived from surveys capturing a range of offenses from violent robberies to petty thefts, which could introduce complexities and variations not captured in police-reported data. This methodological difference highlights a potential limitation in directly comparing victimisation experiences across cities.

In cities studied like London and Manchester, crime tends to concentrate in socio-economically disadvantaged neighbourhoods, influenced by factors such as unemployment rates and poverty (Zhou et al., 2023). Similarly, studies in Latin American cities such as Fortaleza (Dantas and Fabarin, 2021) and Mexico City (Vilalta et al., 2021) underscore the concentrated nature of crime in disadvantaged neighbourhoods marked by social disorganisation and economic deprivation

In Santiago, while victimisation levels may not vary significantly between affluent and less affluent areas, the distribution of fear of crime and confidence in the police reveals distinct spatial disparities. Areas with higher socio-economic status tend to exhibit greater confidence in the police and lower fear of crime, reflecting broader inequalities in access to public safety resources. This suggests that while victimisation rates may not show stark differences, perceptions of safety and confidence in law enforcement are markedly stratified along socio-economic lines.

These findings highlight the need for nuanced approaches in defining public safety policies in Santiago. Simply targeting high victimisation areas may overlook disparities in fear and confidence that exacerbate socio-economic inequalities. In a similar form in which the studies of poverty evolved from measuring poverty based on incomes to a multidimensional approach (Madden, 2006), it is fundamental to develop a multidimensional conception of public safety for Chile not reduced to the experience of being a victim of a crime. The results of this chapter confirm the need to consider a *broader concept of the victims* in which future policies should focus not only on victims of crimes but also on sufferers or “victims” from a high fear of crime and low confidence in the police.

When examining the correlation among these three indicators of public safety, the findings indicate that satisfaction with municipal security services, followed by social cohesion, demonstrates the strongest associations with fear of crime and confidence in the police. Additionally, contextual factors such as municipal budget and poverty exhibit notable correlations.

In contrast, as I mentioned previously, this thesis considers a broader concept of victimisation that includes various types of crimes, rather than focusing solely on violent crimes as explored by Sampson et al. (1998). This distinction is pivotal as it challenges conventional associations of victimisation with low social cohesion and informal social control. The lack of significant association between victimisation and these variables in this

research underscores the complexities inherent in understanding victimisation as a multifaceted experience encompassing diverse forms of crime, not exclusively violent incidents.

This finding underscores the necessity for future research to explore the intricacies of victimisation as a multidimensional phenomenon that spans a wide spectrum of criminal activities. Such investigations are crucial for developing nuanced public safety policies that address the diverse experiences and perceptions of crime within urban settings like Santiago. Moreover, general victimisation may affect a larger segment of the population, thereby rendering it a globally significant phenomenon with substantial implications for public policy formulation.

In this context, security services and social cohesion are highlighted due to theoretical implications. Firstly, it corroborated the hypothesis of a positive association between social cohesion with confidence in the police as an institutional assessment (Sun et al. 2004) and a negative association with fear of crime (Greenberg, 1982). Beyond these social cohesion benefits for public safety, critical reading concerning this type of social cohesion should be not overlooked. If crime is one of the focuses for building community acting as “defensiveness solidarities” (Crawford, 1997), this could mean that the unifying factor of social cohesion is not what people positively share but, inversely, what they are against. Hence, commonality becomes their defensiveness. In the context of segregation, the defensiveness factor affects the forms in which communities, groups, and organisations establish their boundaries (Sharkey, 2018; Young, 2002). Therefore, most social cohesion in Santiago might also maintain a segregated and divided city between “security enclaves” and ghettos or vulnerable areas. Although it only considered victimisation, Santiago’s eastern zone is not entirely isolated from this problem.

Within policies focused on segregation, some have opted to deconcentrate poverty, for instance, limiting the percentage of very low-income households in a single housing project through subsidy (McClure, 2008). This type of measurement might be applicable to the Chilean case as the benefits are promising, such as reducing criminal behaviour, higher school performance, and employment opportunities through contact with people from diverse social backgrounds (Sabatini and Salcedo, 2007).

Secondly, one of the main contributions of this chapter to criminological knowledge of Chile was to measure, for the first time, the impact of local government on public safety. The

strong correlation between municipal services and public safety reveals a scenario of deep inequality among municipalities. The causes of this scenario are linked with neoliberalism reforms that sought to reduce the central state's size, leading to greater autonomy of the municipalities but with the cost of an increment of inequality among them (Henriquez et al., 2011). Despite this unfair starting point, Chilean policies focused their efforts on broadening the responsibility of local governments to prevent crime (model of Local Governance of Crime) (AMUCH 2017). Local governments can indeed constitute security councils, but they cannot assume police functions. Therefore, the municipalities only depend on their administration and resources. In that sense, it is expected that municipalities from the eastern zone with a better situation of public safety are, at the same time, those that hold the highest satisfaction with municipal services (see map in appendix). Consequently, in a country like Chile marked by inequality at household (United Nations Development Programme, 2018) and municipality levels (Henriquez et al. 2011), the confidence placed in the municipalities by the Local Governance of Crime model should be reconsidered. Due to this scenario, I give particular attention, from the Crime Pattern Theory, to the city's division into boundaries that exhibits an uneven distribution of crime. This division reflects how the effectiveness of guardians (municipal guardians) can be attributed to the social and economic attributes of residents, but mainly to resources available to municipalities.

Finally, we acknowledge that there are limitations associated with this research. This chapter was the first look at Santiago's unequal access to public safety, so aggregated variables were used at the municipality level. However, some results must be viewed with some precaution. The findings note that while the ANOVA analysis showed significant differences among the municipalities of Santiago, the Gini Index did not indicate inequality in the distribution of outcome variables. This result might be associated with the fact that this chapter had the municipalities as the unit of analysis, so it worked with a small sample size of only 26 municipalities and with a narrow range of variability in the outcome variables compared to variables such as income traditionally used for the Gini Index analysis (Giles, 2005). Moreover, the focus on general victimisation, encompassing a wide range of offenses from minor thefts to more serious crimes, may obscure nuanced patterns that could be revealed by disaggregating specific crime types. By treating victimisation as a composite measure, the study might overlook variations in the spatial distribution and socio-economic correlates of different crime categories within Santiago

Future research should incorporate methodologies that consider contextual variables and municipal averages but also include the individual level of the variables and their richness of data that will be discussed in Chapter 6. This type of methodology can be applied mainly to understand the confidence in the Chilean police, the most clustered variable of public safety analysed by this study. Indeed, this topic will also be covered in the next chapter. Despite the limitation described above, this research has contributed by providing a theoretical framework and empirical evidence to understand how Chile, one of the countries “most safe and prosperous” of Latin America, hides multiple local realities in its capital where public safety is distributed in a clustered form and associated with variables like social cohesion and structural condition like municipal budget and poverty. From public policies, by examining the distribution of public safety resources, we can gain insight into the extent to which these populations face heightened risks and barriers to safety. This knowledge can inform on targeted interventions and resource allocation to protect and support these communities, ensuring a more efficient and effective use of limited resources, directing them towards areas with the greatest safety challenges.

CHAPTER 6: Triggers of confidence in the police in Santiago: exploring individual and contextual factors

6.1. Introduction

The main research question of Chapter 5 was ‘What is the extent of inequality and its variability among municipalities in Santiago in terms of public safety?’ The variable that displays the most significant variability across different municipal areas in Santiago was confidence in the police, out of the three public safety-related variables (victimisation, fear of crime, and confidence in the police). This is supported by the ANOVA analysis, which confirmed that the differences between municipalities in terms of confidence in the police are more substantial than the differences within municipalities. Furthermore, when examining spatial autocorrelation, confidence in the police also exhibited the highest degree of clustering in its values. Certain zones in Santiago clearly stand out with consistently high levels of confidence in the police, creating a distinct "feudal" style arrangement that is not present in the rest of the city.

In this context, confidence in the police emerges as a crucial variable, displaying considerable variations and concentrated patterns across municipal areas in Santiago. These findings highlight the significance of police-citizen relations within different zones of the city and prompt further inquiry into the factors contributing to these variations in police confidence. This is the topic that will be addressed in the current Chapter 6.

In addition to the fact that confidence in the police was the most unequal variable in its distribution, there is also a need to study what the response is to strategic guidelines on public safety. The police serve as a prominent symbol of state and regime authority in public spaces and among the population. Scholars and policymakers have shown keen interests in comprehending citizens' confidence in the police, as they are the ones receiving police services, and their perspectives carry particular importance in a democratic society (Kwak and McNeeley, 2019). Hence, public perception of the police serves as an indicator of the government's effectiveness in addressing the needs and expectations of the public (Cao and Zhao, 2005). Finally, the success of criminal justice depends on people trusting their police enough to report crimes (Sun, et.al, 2004).

The progression of studies about confidence in the police was detailed in depth in section 2.4. In brief, an initial phase of research on confidence in the police focused on understanding individual factors, such as demographics and socioeconomic variables, that contribute to differences in this perception. However, in recent decades, scholars have emphasized the impact of structural factors on such perceptions, particularly in the context of the social ecology of trust in the police (Jackson et al., 2012; Sampson and Bartusch, 1998). Despite significant progress in research in countries like the UK and the USA, where the effects of both individual and structural variables on police perception have been recognised, Latin America has not experienced similar developments. This disparity persists, even though the region has consistently shown signs of being one of the most violent regions globally, with high homicide and violent robbery rates (International Centre for the Prevention of Crime, 2008; United Nations Office on Drugs and Crime, 2013). Moreover, confidence in the police remains low in the region (Ahmad et al., 2011; Dammert, 2014), with this situation being associated with corruption, management inefficiency, and a history of complicity with military dictatorships (Cao and Zhao, 2005).

Why it is important to study confidence in the police for the Chilean case? Chile stands out as a unique case in the region. While it is perceived as having the highest confidence in its police (Ahmad et al., 2011; Dammert, 2016; Cao and Zhao, 2005), a closer examination of the data as in Chapter 5, reveals a noticeable pattern of segregation and variation in the distribution of public safety. This context of inequality and segregation suggests that confidence in the police might cluster in specific local areas where people reside, with both individual and local-level variables potentially influencing this phenomenon. However, multilevel studies, particularly concerning policing, are limited in Chile, as well as in Latin America as a whole. Consequently, this research will employ a Hierarchical Linear Model to explore the relationship between confidence and a range of conceptual models based on perceptions of local area variables, characteristics of the local government, and structural factors at the municipal level. The underlying idea is to explore individual variables that are associated with confidence in the police, as well as structural variables that interact in this diversity of factors influencing confidence.

In addition, this chapter will address the need to understand the different dimensions of confidence in the police in Chile, especially considering that these different dimensions have

not been addressed. An understanding of the presence and role of more than one dimension of confidence incorporating individual and structural elements highlighting the fact that even though they are intimately related, the evaluation of one dimension might not coincide with the other, and they could even be in conflict will be considered in detail below. As Engel et al. (2015) have suggested, effective police success through crime reduction does not imply progress in its relationship with the community. An efficient police rate of arrests could represent a decline in its relations with the community or with a specific group.

6.2. Theoretical framework

The sections 2.4 and 2.5 emphasised the multidimensional nature of police confidence, encompassing crime control effectiveness and community relations. Effective crime control doesn't always mean strong community ties. Factors influencing police confidence include education, income, social cohesion, and satisfaction with municipal services (Wu et al., 2009; Sampson and Bartusch, 1998; Reisig and Park, 2000; Kwak and McNeeley, 2019; Cao and Zhao, 2005; Lai and Zhao, 2018; Skogan, 2009). Conversely, ethnic minority status, social disorder perception, local poverty, and victimisation can decrease confidence (Cao and Zhao, 2005; Lai and Zhao, 2018).

In Latin America, Chile shows the highest police confidence (Ahmad et al., 2011; Dammert, 2016; Bonner, 2013), exceeding regional averages (Latinobarómetro, 2018). Confidence has declined recently due to legitimacy issues and judicial investigations (CEP, 2018; Duce and Dammert, 2019). Studies on Chilean police confidence variations are limited but show socioeconomic factors influence confidence (Dammert, 2014; Poblete and Moraleda, 2016). Higher income correlates with higher crime reporting (Benavente and Cortes, 2006).

Taking into account the aforementioned theoretical and empirical elements associated with confidence in the police, this chapter tests various conceptual models that could explain its variation.

Figure 5 Theoretical models to test confidence in the police

| | Model 1: Individual Characteristic | Model 2: Quality of life | Model 3: Local Government | Model 4: Characteristics at the municipality level |
|------------------------|---|-------------------------------------|--|---|
| LEVEL 1: INDIVIDUAL | Gender | Gender | Gender | Gender |
| | Age | Age | Age | Age |
| | Education Level | Education Level | Education Level | Education Level |
| | Ethnicity | Ethnicity | Ethnicity | Ethnicity |
| | Victimisation | Victimisation | Victimisation | Victimisation |
| | Socioeconomic level | Socioeconomic level | Socioeconomic level | Socioeconomic level |
| | | Fear of Crime | Fear of Crime | Fear of Crime |
| | | Perception of Social Disorder | Perception of Social Disorder | Perception of Social Disorder |
| | | Social Cohesion | Social Cohesion | Social Cohesion |
| | | Informal Social Control | Informal Social Control | Informal Social Control |
| LEVEL 2: MUNICIPAL | | | Satisfaction with municipal security | Satisfaction with municipal security |
| | | | Municipal Budget | Municipal Budget |
| | | | | Multidimensional Poverty |
| | | | | Victimisation rate |
| | | | | Police Officer Rate |

Figure 13 represents four theoretical models that will be tested to analyse the factors influencing confidence in the police. By using a multilevel analysis approach, the diagram illustrates how individual-level factors (level 1), and municipal-level factors (level 2) are considered together to understand the complex interplay of variables influencing confidence in the police.

Model 1 Individual Characteristics: This model includes demographic variables such as gender, age, education level, ethnicity, victimisation experiences, and socioeconomic level.

These variables are considered at the individual level and may influence an individual's perception of police confidence.

Model 2 Quality of Life: This model incorporates additional individual-level variables related to quality of life, such as fear of crime, perception of social disorder, social cohesion, and informal social control. These factors are relevant as they may shape an individual's overall perception of safety and security, which can influence confidence in the police (Reisig and Park 2000).

Model 3: Local Government: This model introduces variables related to the performance and characteristics of the local government, such as satisfaction with municipal security which reflects how the local government's actions might impact public perception of the police. This also includes the municipal budget representing the financial resources allocated by the municipality for public safety.

Model 4 Characteristics at the Municipality Level: This model includes variables such as multidimensional poverty, victimisation rate, and police officer rate. These factors may capture the structural context in which individuals live, influencing their perception of police services.

This chapter aims to contribute to the understanding of confidence in the police, foster a model slightly explored as the local government model. In the case of Chile, this model would be relevant because, as explained in section 3.3 and confirmed empirically in the correlation results in Chapter 5, to understand the distribution of public safety it is necessary to take into account the role of municipalities.

6.3. Motivation for research questions

The concept of confidence in the police is vital as it serves as an indicator of progress in democratic societies and the effectiveness of the criminal justice system. It can be viewed from different perspectives, such as evaluating police effectiveness in reducing crime and ensuring fair treatment and communication with the community. There might be multiple dimensions underlying confidence, but research in Latin America and Chile has not yet explored these dimensions, leading to a significant gap in the investigation.

For this reason, this chapter first seeks to respond to the case of confidence in the Chilean police, the following research question: *Is there more than one dimension that better explains confidence, one latent dimension for police effectiveness, and another for communication with the community?*

Furthermore, if it is verified that both dimensions statistically fit better than one, *are there distinct significant variables for a model that explain police effectiveness, and others based on communication with the community?*

In addition to the dimensions of confidence, researchers have delved into the exploration of variables that robustly explain the concept of confidence in the police. Initially, the focus was on individual factors, such as demographic and socioeconomic variables. However, more recently, scholars have emphasized the role of structural factors in understanding this phenomenon, often referred to as the social ecology of trust in the police (Jackson et al., 2012; Sampson and Bartusch, 1998). The role of structural factors is relevant to grasp the Chilean case.

Despite Chile standing out as an exceptional case in Latin America, with the highest levels of confidence in its police, this country still faces challenges in inequality and segregation. The increasing role of local governments in public safety has led to the clustered distribution of safety, making it essential to consider municipalities in studies on public safety and police confidence. Unfortunately, there is limited understanding of this aspect, and multilevel studies, especially involving policing and municipalities, are underdeveloped in Chile and Latin America. To fill this gap this chapter focuses on the following research questions:

Are structural variables significant in explaining the variance of police confidence controlling for individual variables at the municipal level? Which conceptual model, based on individual and municipal variables, explains the confidence variance in the police more?

6.4. Method

6.4.1 Selection of Variables

Dependent variable: confidence in the police

As noted in the literature review, this research chose the concept of confidence based on the definition of Bradford and Jackson (2010). While trust might capture the interpersonal relationship between citizens and individual police officers, *confidence* might be more of a set of attitudes toward the police as an *institution*. Moreover, there are two main approaches for definition and measurement in the literature about the police's perception. A first angle conceives public confidence related to a simple concept, such as general satisfaction with services or general support. The second approach uses a more complex set of measures: respondents are allowed to vary their opinions about different aspects of policing. Researchers use multiple measures and combine opinions across various areas to create overall indexes (Jackson et al., 2012). Therefore, this research belongs to this second approach because it defines confidence in the police based on various items reaching a better richness to understand how people conceive a broad range of police activities. Finally, this concept of confidence has limitations as it depends on the availability of questions in the survey on which this research is based. Key concepts such as legitimacy and procedural justice (Tyler & Fischer, 2014) present in the literature are not considered because they do not belong to the questionnaire of the local crime survey.

Regarding definitions, the conception of confidence considered in this research is broader than the approach focused just on the effectiveness of the police. The following table describes the items and categories that make up the variable confidence in the police.

Table 7 presents respondent evaluations on various aspects related to their confidence in the police within a specific municipal area. The data reveals that respondent assessments vary across different items. While some aspects receive relatively balanced evaluations, others show more polarized responses. For example, respondents express higher satisfaction with aspects like coordination with the local government and treatment/respect for neighbours, while the capability to control drug trafficking receives a higher proportion of negative assessments.

Understanding these differences is critical for policymakers and law enforcement agencies to address specific areas to improve and enhance public trust in the police. Additionally, the table highlights the complexity of public perceptions towards the police and emphasises the need for targeted strategies to address these varying dimensions of confidence.

Table 8 Frequency of items of confidence in the police

| <i>Item</i> | <i>How do you assess the police in your municipal area in the following fields?</i> | | Very bad | Bad | Neither bad nor good | Good | Very Good | "I do not know." |
|-------------|---|------------------|----------|-------|----------------------|--------|-----------|------------------|
| 1 | Police patrol frequency | <i>Frequency</i> | 2,379 | 6,558 | 6,184 | 7,061 | 943 | 140 |
| | | <i>%</i> | 10.2 | 28.2 | 26.6 | 30.4 | 4.1 | 0.6 |
| 2 | Response time to calls | <i>Frequency</i> | 3,451 | 6,548 | 5,784 | 5,132 | 676 | 1,674 |
| | | <i>%</i> | 14.8 | 28.1 | 24.9 | 22.1 | 2.9 | 7.2 |
| 3 | Treatment and respect of neighbours | <i>Frequency</i> | 965 | 2,701 | 5,587 | 11,351 | 1,818 | 843 |
| | | <i>%</i> | 4.1 | 11.6 | 24 | 48.8 | 7.8 | 3.6 |
| 4 | Ability to stop offenders | <i>Frequency</i> | 2,654 | 6,655 | 6,323 | 5,901 | 686 | 1,046 |
| | | <i>%</i> | 11.4 | 28.6 | 27.2 | 25.4 | 2.9 | 4.5 |
| 5 | Coordination with the local government | <i>Frequency</i> | 2,099 | 5,315 | 6,363 | 4,473 | 534 | 4,481 |
| | | <i>%</i> | 9 | 22.8 | 27.4 | 19.2 | 2.3 | 19.3 |
| 6 | Communication and coordination with neighbours | <i>Frequency</i> | 2,384 | 6,472 | 6,195 | 4,971 | 623 | 2,620 |
| | | <i>%</i> | 10.2 | 27.8 | 26.6 | 21.4 | 2.7 | 11.3 |
| 7 | Capability to control drug trafficking | <i>Frequency</i> | 5,423 | 7,302 | 4,992 | 3,245 | 408 | 1,895 |
| | | <i>%</i> | 23.3 | 31.4 | 21.5 | 13.9 | 1.8 | 8.1 |

According to Jackson (et al., 2012), we could find more than one dimension behind the items that measure confidence in the police. In the case of this study, the first dimension is related to the effectiveness of the police, which means how different police actions can control the level of crime taking place on the street at the municipal level. Another dimension is associated with the type of treatment and coordination received by the police, indicating the relationship quality among both actors.

Why is this distinction relevant? By examining the two dimensions of confidence in the police separately, researchers gain valuable insights into the multifaceted nature of this concept.

Understanding how individuals perceive the effectiveness of the police in crime control and the quality of the relationship between the police and the community can provide a deeper understanding of the drivers of public confidence in law enforcement.

By considering these different dimensions separately, policymakers can develop targeted strategies to address the specific drivers of low confidence in the police within different communities. This approach is particularly relevant in addressing the complexities of police-community relations in diverse neighbourhoods and regions, where varying factors may influence confidence levels. Hence, this comprehensive analysis of confidence in the police can lead to evidence-based policy interventions that improve public perceptions of law enforcement, promote community cooperation, and eventually contribute to more effective and reliable policing practices.

Due to the above, one task in this chapter is to test whether two dimensions of confidence fit better than one dimension, which means that both dimensions better explain the variance of confidence.

Independent variables at the individual level

The following is a list of the variables that will be incorporated in the analysis. Their operationalisation and conceptual implications were detailed deep in the section 4.4.

The variables are

Age
Sex
Educational Level
Socioeconomic Level
Ethnicity
Victimisation
Fear of crime
Social Cohesion
Informal social control
Satisfaction with municipal security services:
Perception of social disorder

Independent Variables at the municipal level

Victimisation at the municipal level:
Police officer per capita
Multidimensional Poverty:
Municipal budget per capita

Table 9 Descriptive statistics of the variables

| | Frequency (%) | Min | Max | Mean | SD | N |
|---|---------------|------|------|-------|-------|--------|
| Dependent Variable | | | | | | |
| Perception of Effectiveness of the police (sub dimension) (Latent score transformed to 0-1) | | 0.00 | 1.00 | 0.437 | 0.210 | 23,265 |
| Perception of Treatment and communication of the police (Latent score transformed to 0-1) (sub dimension) | | 0.00 | 1.00 | 0.452 | 0.212 | 23,265 |
| Predictor at the individual level | | | | | | |
| Low Socioeconomic Level | (34.9) | | | | | 23,265 |
| Middle Socioeconomic Level | (51.1) | | | | | 23,265 |
| High Socioeconomic Level | (14) | | | | | 23,265 |
| Primary School | (20.6) | | | | | 23,265 |
| Education achieved High School | (45.2) | | | | | 23,265 |
| University | (34.2) | | | | | 23,265 |
| Age 15-29 | (20.4) | | | | | 23,265 |
| 30-44 | (22.8) | | | | | 23,265 |
| 45-59 | (25.5) | | | | | 23,265 |
| 60 or more | (31.3) | | | | | 23,265 |
| Ethnicity Belong to an ethnic group | (4.3) | | | | | 23,265 |
| Not belong to an ethnic group | (95.7) | | | | | 23,265 |
| Male | (45) | | | | | 23,265 |
| Female | (55) | | | | | 23,265 |
| Not Victim of crime | (73.8) | | | | | 23,265 |
| Victim of crime | (26.2) | | | | | 23,265 |
| Fear of Crime (Latent score transformed to 0-1) | | 0.00 | 1.00 | 0.420 | 0.199 | 23,265 |
| Social Cohesion (Latent score transformed to 0-1) | | 0.00 | 1.00 | 0.586 | 0.222 | 23,265 |
| Informal Social Control (Latent score transformed to 0-1) | | 0.00 | 1.00 | 0.236 | 0.213 | 23,265 |
| Perception Social Disorder (Latent score transformed to 0-1) | | 0.00 | 1.00 | 0.318 | 0.231 | 23,265 |
| Satisfaction with municipal security (Latent score transformed to 0-1) | | 0.00 | 1.00 | 0.493 | 0.214 | 23,265 |

| Predictor at the municipal level | | | | | |
|---|---------|-----------|---------|---------|----|
| Multidimensional poverty | 3.24 | 41.16 | 20.62 | 10.42 | 26 |
| Rate Police/citizen | 108 | 326 | 157 | 48 | 26 |
| Victimisation municipal area | 18.21 | 34.67 | 25.62 | 3.94 | 26 |
| Municipal budget per capita (\$ Chilean Pesos) | 131,852 | 1,098,417 | 343,325 | 279,879 | 26 |

Table 9 presents descriptive statistics for the variables used in the study. As the assumption is that there are two dimensions behind confidence in the police, I will run two separate models with the same set of predictors variables. First model for "Perception of Effectiveness of the police" and second model "Perception of Treatment and communication of the police." In the next pages, I will give details of the construction of both variables. Their values which are derived from latent score and then are transformed into a scale of 0 to 1, representing respondents' perceptions of police effectiveness and communication. On average, respondents perceive the police to be somewhat effective (mean = 0.437) and communicative (mean = 0.452).

The predictor variables at the individual level include socioeconomic level, education level, age, ethnicity, gender, victimisation status, fear of crime, social cohesion, informal social control, perception of social disorder, and satisfaction with municipal security. At the municipal level, the predictor variables include Multidimensional poverty, Rate Police/citizen, Victimisation municipal area, and Municipal budget per capita. These variables will be part of testing conceptual models.

This information provides insights into respondents' perceptions of the police and their demographic characteristics, as well as factors at the individual and municipal levels. It is crucial to understand the relationships between these variables and their implications for variation and confidence in the police.

6.5. Analytical approach

Firstly, in order to explore the dimensions underlying the items that constitute confidence in the police, I will employ confirmatory factor analysis (CFA). CFA is a statistical technique used in research to assess the measurement model's fit to the observed data and determine

the underlying latent constructs or dimensions represented by the observed variables. By using CFA, we aim to validate the proposed theoretical structure and investigate how well the observed items align with the hypothesized dimensions of confidence in the police. This approach allows us to gain a deeper understanding of the underlying factors contributing to individuals' perceptions of police confidence and might supports to establish the construct's validity and reliability in the context of the study.

A second gap to be filled is about the scarcity of models including variables at different levels. In a country affected by a structural inequality like Chile that has moulded segregated cities like Santiago, studies on individual phenomena such as perceptions of the police should include structural variables to achieve an improved untangling of their variability.

Section 2.4 provides an emphasis on the influence of structural factors on the distribution of public safety. Hence, in this thesis, the analysis should not only include variables at the individual level like perceptions regarding local area but also variables at the municipal level such as poverty and municipal resources. This task will be developed in Chapter 6. A Hierarchical Linear Model (Multilevel) will explore a set of conceptual models with variables at the individual and municipal levels. Multilevel models may be beneficial because they can handle data with a hierarchical or nested structure, such as individuals nested within municipal areas. By accounting for this hierarchical structure, these models can capture the variations of the studied variable at different levels, providing more accurate and robust estimates (Snijders and Bosker, 1999; Steele 2008). Moreover, by considering both individual and contextual factors, multilevel models can help disentangle the effects of individual characteristics from the influence of the municipal area in shaping confidence in the police. More details of these models were developed in Chapter 4.

6.6. Results

Confirmatory Factorial Analysis of Confidence in the police

Considering the potential presence of two dimensions within confidence in the police, I tested if one dimension, made up of the following seven items, could fit better than two dimensions. The components of the two potential dimensions tested are the following:

Dimension 1: Effectiveness:

- Item 1 Police patrol frequency
- Item 2 Response time to calls
- Item 4 Ability to stop offenders
- Item 7 Capability to control drug traffic

Dimension 2: Treatment and Communication:

- Item 3 Treatment and respect with neighbours
- Item 5 Coordination with the local government
- Item 6 Communication and coordination with neighbours

Table 10 Fit statistics for confirmatory factor analysis of confidence in the police

| | RMSA | SMSR | TLI | CFI |
|---|-------|-------|-------|-------|
| Model A (1 dimension of confidence in the police) | 0.117 | 0.036 | 0.914 | 0.942 |
| Model B (2 dimensions: effectiveness and treatment) | 0.104 | 0.033 | 0.932 | 0.958 |
| Model C (2 dimensions: effectiveness and treatment with specification). | 0.085 | 0.024 | 0.96 | 0.979 |

Table 10, which represents the Goodness-of-fit indicators, suggests that two factors or dimensions of confidence in the police (effectiveness and treatment) are the best-fitting CFA solution. Measures of Root Mean Square Error of Approximation (RMSEA) and Standardised Root Mean Square Residual (SMSR) are slightly smaller for two-dimension solutions than the one dimension. The Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) of factoring reliability are higher for two dimensions. Following this analysis, using the Modification Index (MI, also called a LaGrange Multiplier or Score Test), I re-specify the model to attain a better (Model C). In light of a larger chi-square indicating that the model does not fit properly, MI estimates how the chi-square would be reduced. In our analysis, the MI suggests that items 1 and 2 are highly correlated and theoretically related; so, I decided to correlate the error of both items. The result is model C which fits better than model A and B. Therefore, model C will be used to obtain the latent scores for each dimension

(perception of treatment and effectiveness by the police) and then what predictors could be behind the variance of both latent dimensions was evaluated.

The latent scores were subtracted based on the Full Information Maximum Likelihood estimator, which produces maximal use of all data available from every respondent. Among the categories of the items that make up the above dimensions, the answer “I do not know” was treated as a missing value, and it represents a considerable frequency in some items. This category represents a portion of respondents who either lack sufficient information or are unsure about providing an assessment. This suggests that there may be a need for better communication and transparency from the police in certain areas to address public uncertainty and improve confidence. However, using the Maximum Likelihood estimator, we can manage these missing values, using information about missing values based on non-missing values to reach unbiased latent score estimates (Buil-Gil, Medina & Shlomo et al. 2019; Schlomer, Bauman, & Card 2010). All the scores were shifted to a positive range from 0 to 1 to facilitate the interpretation of the results and the next model. ¹⁸The formula was $\left(\frac{Fi-(F)}{(F)-(F)}\right)$, where Fi is the latent score for unit i. This process is shown in Table 6.3.

Table 11 Summary of latent scores and shifted latent scores of dimensions of confidence in the police

| | | Min | Max | Mean | SD |
|---|-------------------|--------|-------|--------|-------|
| Perception of Treatment and communication | Latent score | -1.082 | 1.307 | -0.002 | 0.505 |
| | 0-1 Latent scores | 0.000 | 1.000 | 0.452 | 0.212 |
| Perception of Effectiveness | Latent score | -1.527 | 1.959 | -0.004 | 0.733 |
| | 0-1 Latent scores | 0.000 | 1.000 | 0.437 | 0.210 |

Perception of Treatment and Communication:

- Latent Score: This represents the raw scores derived from the CFA model, reflecting respondents' perceptions of how they are treated and communicated with by the police.
- Latent Scores: These scores are transformed to a 0-1 scale for easier interpretation. They reflect the same construct as the latent score but are rescaled to fit within a range of 0 to 1.

¹⁸ As a measure of verification, subsequent regression analyses were also employed with the original latent values. However, the results were similar in terms of significant variables. Therefore, the 0 to 1 transformation option was kept in the sense that it facilitates interpretation

Perception of Effectiveness:

- Latent Score: This represents the raw scores derived from the CFA model, indicating respondents' perceptions of the effectiveness of the police in maintaining order and preventing crime.
- Latent Scores: These scores are transformed to a 0-1 scale for easier interpretation. They reflect the same construct as the latent score but are rescaled to fit within a range of 0 to 1.

Finally, I decided to eliminate all cases where the variable confidence in the police in *all the items* had a missing value because no value can be estimated. This procedure was repeated in predictor variables based on items: fear of crime, social cohesion, informal social control, perception of disorder, and satisfaction with municipal security services.

Figure 6 Loadings and uniqueness for each item of the latent score of the dimension effectiveness and dimension treatment of the police

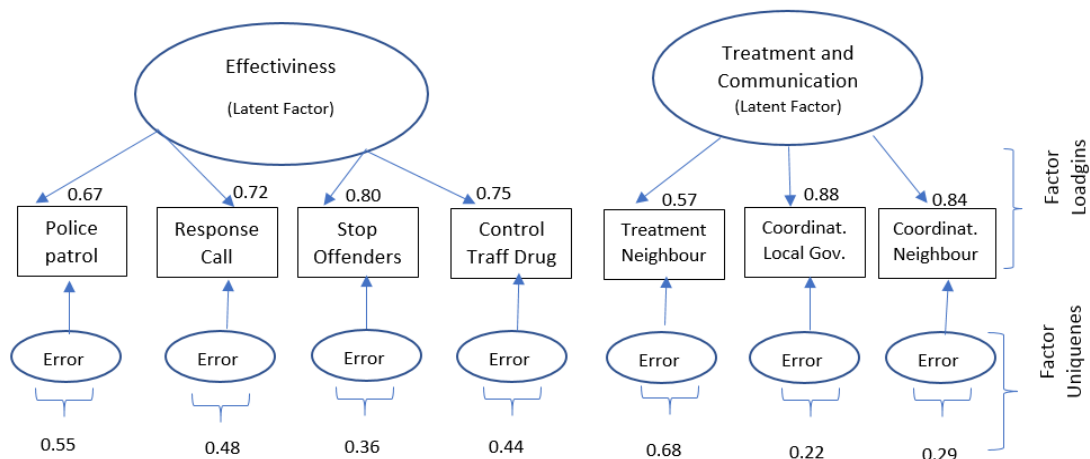


Figure 14 shows standardised loadings of the two latent dimensions of confidence in the police. It represents how the items are weighted in each latent factor and uniqueness values that depict the proportion of the common variable variance unrelated to the factor. The items that have the lowest loading are frequency of police patrol in the dimension of effectiveness and treatment and respect with neighbours in the dimension of treatment and communication. In contrast, stop offenders and coordination with local government represent the highest loading for the mentioned dimensions.

Analysing collinearity of the predictors

The diagnosis of collinearity of predictors is essential in the context of multilevel analysis to ensure the validity and reliability of the model's results. Collinearity refers to a high degree of correlation between predictor variables, which can lead to unstable and unreliable estimates of their effects on the outcome variable. In the case of multilevel analysis, where there are multiple levels of data nested within each other (e.g., individuals nested within groups or neighbourhoods), collinearity can be particularly problematic. Collinearity might introduce instability in the model estimates, making it sensitive to small changes in the data, and can even lead to model convergence issues, making it difficult to obtain reliable estimates.

To address collinearity in multilevel analysis, researchers often employ various techniques, such as examining correlation matrices and variance inflation factors (VIFs) to identify highly correlated predictors.

Table 12 Diagnosis of collinearity of predictors

| Predictors | Variance Inflation Factors (VIF) |
|--------------------------------------|---|
| Socioeconomic Level | 1.98 |
| Level educational reached | 2.05 |
| Age | 1.11 |
| Sex | 1.01 |
| Ethnicity | 1 |
| Victimisation | 1.04 |
| Fear of Crime | 1.18 |
| Social_Cohesion | 1.18 |
| Informal Social Control | 1.13 |
| Perception Social Disorder | 1.19 |
| Satisfaction with municipal security | 1.17 |
| Rate Num. community organisations | 1.44 |
| Multidimensional poverty | 1.76 |
| Rate Police | 1.85 |
| Victimisation municipal area | 1.64 |
| Municipal Budget | 2.25 |

The VIF (Variance Inflation Factor) scores express how much of the proportion of the variance of one variable is explained by its association with another independent variable in

the model. Table 12 shows no collinearity between the predictor variables since all the VIF scores are less than 3 (Tabachnick and Fidell, 1996). All the VIF scores in Table 12 are less than 3, indicating that there is no substantial collinearity between the predictor variables. This is a positive finding as it suggests that each predictor variable is providing unique and independent information about the outcome variable, and there is no high correlation among the predictors that could potentially lead to biased estimates or unstable model results.

Results of the multilevel linear regression for two dimensions of confidence in the police: perception of effectiveness of police and communication-treatment.

Taking into account theoretical and empirical element associated with confidence in the police detailed in section 2.4., this chapter tests a set of conceptual models that could explain its variation.

In the following hierarchical linear model for two outcome variables (effectiveness and treatment), four different models were tested:

- Null model: This model serves as the baseline or initial model against which other more complex models are compared. The null model is also known as the empty model or unconditional model because it contains no predictors or explanatory variables at any level. The purpose of the null model is to estimate the amount of variance in the outcome variable that can be attributed to the different levels (e.g., individual, group, or cluster levels) without considering any predictor variables. In other words, it allows us to assess the proportion of variance in the outcome variable that exists between different levels, such as between individuals and the groups they belong to, without accounting for any specific predictors.
- Model 1: adding individual sociodemographic characteristics. This model includes demographic variables such as gender, age, education level, ethnicity, victimisation experiences, and socioeconomic level. These variables are considered at the individual level and may influence an individual's perception of police confidence.
- Model 2: adding variables of perception about the local area. This mode (Quality of Life) incorporates additional individual-level variables related to quality of life, such as fear of crime, perception of social disorder, social cohesion, and informal social control. These factors are relevant as they may shape an individual's overall perception in the police (Reisig and Park 2000).
- Model 3: adding variables of the model of local government. This model introduces variables related to the performance and characteristics of the local government, such as satisfaction with municipal security which reflects how the local government's actions

might impact public perception of the police. It also includes the municipal budget representing the financial resources allocated by the municipality for public safety.

- Model 4: adding structural factors at the municipal level. This model includes variables such as multidimensional poverty, victimisation rate, and police officer rate. These factors may capture the structural context in which individuals live, influencing their perception of police services.

Table 13 Municipal variation in perception of effectiveness and treatment of the police in Greater Santiago

| | ICC % (Intra Class Correlation) | | Variance Explained (% Conditional R2) | |
|---|------------------------------------|---|--|---|
| | Effectiveness of the Police | Treatment and Communication of the Police | Effectiveness of the Police | Treatment and Communication of the Police |
| Empty Model | 11.0 | 11.0 | 11.5 | 10.7 |
| Model of individual sociodemographic characteristics | 9.0 | 9.0 | 11.3 | 10.4 |
| Model of Quality of life (perception about the local area) | 3.0 | 5.0 | 22.4 | 21.3 |
| Model of Local Government | 1.0 | 1.0 | 34.1 | 33.3 |
| Model of structural factors at the municipal level | 1.0 | 1.0 | 34.4 | 33.4 |

Table 13 presents intra-class correlations (ICC) from five fitted multilevel models. The ICC can be defined as the proportion of the total variance attributable to between-group variation (Goldstein et al., 2002). Essentially, it tells us how much perceptions of the police vary across different municipal areas.

The empty model, which includes no covariates, reveals that 11% of the variation in both effectiveness of police and treatment occurs between municipalities (the rest is individual, that is, within-municipal variation, plus random error). Grouping by municipalities thus gives relevant information. People who live in the same municipality share a tendency to assess the police's effectiveness and treatment and communication received by the police similarly.

In the second model of individual sociodemographic characteristics (age, socioeconomic status, educational level, the experience of victimisation, ethnicity, and gender), the data reveals that just 11.3% (effectiveness) and 10.4% (treatment) of the municipal-level variation are explained. The third model of quality of life (fear of crime, social disorder, social cohesion, and informal social control) indicates that 22.4 % (effectiveness) and 21.3%% (treatment) of the municipal-level variation is explained. The third local government model increased the explained variance up to 34.1 % (effectiveness) and 33.3% (treatment) of the municipal. The fourth model of structural factors at the municipal level almost does not contribute to the explained variance. In the discussion the implication of this point will be covered.

For a proper interpretation of the multilevel regression, I highlight that the following variables have a particular feature: confidence in the police, social cohesion, informal social control, and satisfaction of security municipal services. Their values are latent score that refer to an unobservable or hidden variable that represents an underlying construct or concept. These latent scores provide a way to summarize the information contained in multiple observed variables into a single score, which represents the underlying construct.

Turning to Table 13, in model 1 of individual sociodemographic characteristics, age has a significant effect. Specifically, elderly persons (over 60 years) have higher confidence in the effectiveness of the police than the young group (15-29 years). That difference is maintained for the 4 models, indicating that despite the introduction of variables of perception and structural factors, age is a factor where the oldest group trusts the survey more than the youngest age group. However, no difference was found between people aged 30-59 years and the youngest group. This suggests that individuals between the ages of 30 and 59 have a similar level of confidence in the police as the youngest age group.

Socioeconomic status also shows a significant association with the outcome variables. Both status levels, middle and high, have greater confidence in the effectiveness than low status, a difference present in all the models. Although it is highlighted that people with a high socioeconomic status have more confidence than the middle class (value of coefficient). At the education level, no significant differences between the group that reached high school and university studies compared to those who only reached the primary level were found.

In the case of ethnicity, people who describe themselves as belonging to one of the seven indigenous groups in Chile show lower confidence in the police than those who do not belong to an indigenous group. That difference is persistent in all models.

For persons with prior victimisation, confidence in the police decreases by 0.035 units compared to those who have not been victims, a difference held in all the models.

Turning to model 2 on quality of life, based on the perceptions regarding local area measured at the individual level, it was found that social cohesion, informal social control, fear of crime, and perception of the social disorder are crucial predictors of confidence. People perceiving a greater level of social cohesion are the highest expected value of confidence in this model. If social cohesion is increased in 1 unit in their values as latent score, confidence in the police (police effectiveness) will boost to 0.182 in the same type of measurement.

A similar situation was uncovered for fear of crime (coefficient 0.170) and informal social control, although it with less value (coefficient 0.140). On the contrary, a greater level of perceived disorder is more likely to have a low level of police effectiveness. If the perception of social disorder is increased in 1 unit, confidence in the police (police effectiveness) will decrease to 0.104.

Thus, individuals who declared high levels of social disorder in their local area, hold a high level of fear of crime, but a low level of social cohesion and informal social control will be especially likely to lack confidence in the police.

Turning to model 3 of Local Government, the variable with a greater capacity to explain the variance of police effectiveness is municipal security. People who indicate a high level of satisfaction with municipal security services where they live will have more trust in the police. The effect of this variable is three times more than the variables that made up the above model of quality of life. In other words, if satisfaction with municipality services is increased in 1 unit, confidence in the police (police effectiveness) will increase to 0.328.

Furthermore, the contextual variable that belongs to the local government model, which is the municipal budget, is also significant, so an increase in the budget of 1,000 Chilean Pesos (1 GBP) per capita implies an increase in the confidence in the police in 0.068.

Finally, in model 4 of structural factors at the municipal level, only multidimensional poverty demonstrates a significant effect, where the municipality with a high level of poverty has a low level of police effectiveness. To put it another way, if poverty is increased by 1 unit, confidence in the police (police effectiveness) will decrease by 0.103.

Turning to Table 14 of predictors of perception of treatment and communication of the police, this is shown to be similar to the police effectiveness. Nevertheless, there are some differences. Firstly, being female has a significant and positive effect only on the perception of treatment and communication of the police but not on effectiveness. Thus, being male in Santiago implies inadequate treatment and communication received from the police, which does not occur with effectiveness where gender lacks effect. Secondly, multidimensional poverty at the municipal level is only significant for police effectiveness but not for treatment and communication, shedding light on different interpretations.

On the other hand, I highlight some relevant similarities among the predictors for police effectiveness and type of treatment and communication. In both dimensions, the municipal budget is a significant and positive predictor of higher confidence. Therefore, our decision to analyse the confidence using the multilevel model was correct because it demonstrated significant variables at level individual and municipal levels. There are significant variables at the individual level, such as socioeconomic level and age, although they keep their effect, the strength of their coefficient decreased when the variables of perception and variables at level 2 are introduced. To finish this point, in both dimensions, the model of local government displays a greater capacity for explaining the variance. Higher satisfaction with municipal services can predict a higher likelihood of an elevated value of perception of effectiveness and treatment from the police services.

Table 14 Hierarchical linear model for effectiveness of the police

| | Null Model | | Model 1 | | Model 2 | | Model 3 | | Model 4 | |
|---|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|
| | <i>Coeff.</i> | <i>SE</i> | <i>Coeff.</i> | <i>SE</i> | <i>Coeff.</i> | <i>SE</i> | <i>Coeff.</i> | <i>SE</i> | <i>Coeff.</i> | <i>SE</i> |
| Individual Level= (N: 23265) | | | | | | | | | | |
| Predictors | | | | | | | | | | |
| (Intercept) | 0.432*** | 0.01 | 0.412*** | 0.012 | 0.024*** | 0.01 | 0.109*** | 0.033 | 0.119*** | 0.033 |
| Socioeconomic Level (<i>Low Socioeconomic Level is the reference</i>) | | | | | | | | | | |
| Middle Level | | | 0.021*** | 0.003 | 0.011* | 0.005 | 0.011* | 0.003 | 0.011* | 0.003 |
| High Level | | | 0.060*** | 0.006 | 0.039*** | 0.003 | 0.029*** | 0.005 | 0.029*** | 0.005 |
| Level educational reached (<i>primary is the reference</i>) | | | | | | | | | | |
| Secondary Education | | | 0.000 | 0.006 | 0.002 | 0.003 | 0.001 | 0.003 | 0.001 | 0.003 |
| University | | | 0.004 | 0.005 | -0.001 | 0.004 | -0.001 | 0.004 | -0.001 | 0.004 |
| Age (<i>15-29 is the reference</i>) | | | | | | | | | | |
| 30-44 | | | 0.001 | 0.003 | -0.001 | 0.003 | -0.001 | 0.003 | 0.001 | 0.003 |
| 45-59 | | | 0.001 | 0.003 | -0.004 | 0.003 | -0.004 | 0.003 | 0.001 | 0.003 |
| 60 or over | | | 0.041*** | 0.003 | 0.021*** | 0.003 | 0.026*** | 0.003 | 0.026*** | 0.003 |
| Ethnicity (declare belonging) | | | -0.022* | 0.007 | -0.015* | 0.006 | -0.017* | 0.006 | -0.017* | 0.006 |
| Female | | | 0.000 | 0.002 | 0.006* | 0.002 | 0.003 | 0.002 | 0.003 | 0.002 |
| Victimisation (yes) | | | -0.035*** | 0.002 | -0.018*** | 0.002 | -0.019** | 0.002 | -0.019** | 0.002 |
| Fear of Crime | | | | | -0.170*** | 0.006 | -0.105*** | 0.006 | -0.105*** | 0.006 |
| Social Cohesion | | | | | 0.182*** | 0.006 | 0.134*** | 0.006 | 0.134*** | 0.006 |
| Informal Social Control | | | | | 0.140*** | 0.006 | 0.101*** | 0.006 | 0.101*** | 0.006 |
| Perception Social Disorder | | | | | -0.104*** | 0.005 | -0.065*** | 0.005 | -0.065*** | 0.005 |
| Satisfaction with municipal security | | | | | | | 0.328*** | 0.006 | 0.328*** | 0.006 |
| Municipality level (N= 26) | | | | | | | | | | |
| Municipal Budget | | | | | | | 0.068*** | 0.015 | 0.041* | 0.027 |
| Multidimensional poverty | | | | | | | | | -0.103* | 0.047 |
| Police Rate | | | | | | | | | 0.050 | 0.108 |
| Victimisation municipal area | | | | | | | | | -0.703 | 1.114 |
| Variance Explained (Conditional R2) | 11.5% | | 11.3% | | 22.4% | | 34.1% | | 34.4% | |
| ICC (Intraclass correlations) | 11.0% | | 9.0% | | 3.0% | | 1.0% | | 1.0% | |
| Observations | 23265 | | 23265 | | 23265 | | 23265 | | 23265 | |

***p<0.001 *p<0.05

Table 14b Hierarchical linear model for treatment of the police

| | Null Model | | Model 1 | | Model 2 | | Model 3 | | Model 4 | |
|---|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|
| Individual Level= (N: 23265) | | | | | | | | | | |
| Predictors | <i>Coeff.</i> | <i>SE</i> | <i>Coeff.</i> | <i>SE</i> | <i>Coeff.</i> | <i>SE</i> | <i>Coeff.</i> | <i>SE</i> | <i>Coeff.</i> | <i>SE</i> |
| (Intercept) | 0.447*** | 0.01 | 0.427*** | 0.012 | 0.248*** | 0.008 | 0.112*** | 0.033 | 0.091*** | 0.033 |
| Socioeconomic Level (<i>Low Socioeconomic Level is the reference</i>) | | | | | | | | | | |
| Middle Level | | | 0.021*** | 0.003 | 0.011* | 0.003 | 0.011* | 0.003 | 0.011* | 0.003 |
| High Level | | | 0.061*** | 0.006 | 0.041*** | 0.005 | 0.030*** | 0.005 | 0.030*** | 0.005 |
| Level educational reached (<i>primary is the reference</i>) | | | | | | | | | | |
| Secondary Education | | | -0.000 | 0.004 | 0.001 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 |
| University | | | 0.003 | 0.005 | -0.002 | 0.004 | -0.002 | 0.004 | -0.002 | 0.004 |
| Age (<i>15-29 is the reference</i>) | | | | | | | | | | |
| 30-44 | | | -0.001 | 0.003 | -0.004 | 0.004 | -0.001 | 0.004 | -0.001 | 0.003 |
| 45-59 | | | -0.001 | 0.003 | -0.007 | 0.003 | -0.002 | 0.003 | -0.002 | 0.003 |
| 60 or more | | | 0.037** | 0.003 | 0.018* | 0.003 | 0.023*** | 0.003 | 0.023*** | 0.003 |
| Ethnicity (declare belonging) | | | | | | | | | | |
| Female | | | -0.017* | 0.007 | -0.011 | 0.006 | -0.013* | 0.006 | -0.013* | 0.006 |
| Victimisation (yes) | | | 0.003 | 0.002 | 0.008* | 0.002 | 0.006* | 0.002 | 0.006* | 0.002 |
| | | | -0.031*** | 0.002 | -0.014* | 0.002 | -0.014*** | 0.002 | -0.014*** | 0.002 |
| Fear of Crime | | | | | -0.166*** | 0.006 | -0.100*** | 0.006 | -0.099*** | 0.006 |
| Social Cohesion | | | | | 0.198*** | 0.005 | 0.148*** | 0.005 | 0.148*** | 0.006 |
| Informal Social Control | | | | | 0.127*** | 0.006 | 0.086*** | 0.005 | 0.086*** | 0.006 |
| Perception Social Disorder | | | | | -0.088*** | 0.006 | -0.048*** | 0.005 | -0.048*** | 0.005 |
| Satisfaction with municipal security | | | | | | | 0.338*** | 0.006 | 0.338*** | 0.006 |
| Municipality level (N= 26) | | | | | | | | | | |
| Municipal Budget | | | | | | | 0.067*** | 0.015 | 0.055* | 0.027 |
| Rate Num. community organisations | | | | | | | | | -0.005 | 0.080 |
| Multidimensional poverty | | | | | | | | | -0.006 | 0.047 |
| Police Rate | | | | | | | | | 0.035 | 0.108 |
| Victimisation municipal area | | | | | | | | | -0.140 | 1.237 |
| Variance Explained (Conditional R2) | 10.7% | | 10.4% | | 21.3% | | 33.3% | | 33.4% | |
| ICC (Intraclass correlations) | 11.0% | | 9.0% | | 5.0% | | 1.0% | | 1.0% | |
| Observations | 23265 | | 23265 | | 23265 | | 23265 | | 23265 | |

***p<0.001 *p<0.05

6.7. Discussion

The first aim of this chapter was to test whether there was more than one dimension to be found within the variable and construct of confidence in the police based on a set of police activities assessed by people in Santiago. As claimed by Engel et al. (2015) effective police success through crime reduction does not necessarily imply progress in their type of relationship with the public. Indeed, the Confirmatory Factorial Analysis applied by this research confirms two dimensions of confidence in the police. There is both a dimension of treatment or contact and communication between police and citizens and local government and a dimension of effectiveness based on police capacity to respond time to call, control drug trafficking, stop offenders, and patrol frequency. These results on Santiago are consistent with empirical evidence found by Jackson (et al., 2012) in England and Wales.

Thus, the theoretical relevance of this finding is that perception of police effectiveness is influenced not only by their capacity to control crime but also by a belief that the police should know and understand the needs of the public, that the community receives dignified and fair treatment, and can raise and communicate the local issues they face daily. Furthermore, the importance of distinguishing between both dimensions is demonstrated empirically because some variables were significant for one dimension but not for another. Specifically, being female has a significant and positive effect on the perception of treatment and communication of the police but not on perception effectiveness where men and women assess similarly. At the same time, multidimensional poverty at the municipal level is only significant for police effectiveness but not for treatment and communication. In other words, the perception of police capacity to control crime is unequal and socio-economically discriminatory in Santiago, where local areas with high poverty receive weak police efficiency, but that imbalance does not occur for the treatment. Both findings open research avenues to investigate the association between the poverty of the families (like a municipal average) and police effectiveness.

The finding that being female has a significant and positive effect on the perception of police treatment and communication, but not on perceived effectiveness, aligns with existing literature on gendered experiences with law enforcement. Studies have shown that women often have distinct interactions and perceptions of the police compared to men. For example, Hinds (2009) found that women generally report higher satisfaction with police treatment, likely due to differences in expectations and experiences during encounters. Additionally, Schafer, Huebner, and Bynum (2003) suggest that women value procedural justice aspects—

such as fairness, respect, and communication—over outcomes like crime control. This may explain why women in Santiago rate police treatment and communication more positively, whereas assessments of police effectiveness are similar between genders.

The significant effect of multidimensional poverty on the perception of police effectiveness, but not on treatment and communication, highlights a crucial socio-economic dynamic. Multidimensional poverty includes deprivations in education, healthcare, living conditions, and social services, which can influence perceptions of institutional effectiveness. Areas with higher deprivation may experience lower police presence and responsiveness (Fitzgerald, 2008). Sampson and Bartusch (1998) argue that socioeconomic disadvantages often correlate with decreased trust and perceived legitimacy of law enforcement. In Santiago, this results in poorer evaluations of police effectiveness in high-poverty areas. The lack of significance of poverty on treatment and communication perceptions suggests that while police services in poorer areas may be less effective, interpersonal interactions and communication efforts of the police are more uniformly experienced across different socioeconomic strata.

These findings resonate with broader criminological theories such as social disorganisation theory and collective efficacy. The differential impact of multidimensional poverty on police effectiveness underscores the importance of considering the broader socioeconomic context in policing strategies. Policies aimed to improve living conditions, access to education, and healthcare can indirectly enhance perceptions of police effectiveness by addressing some of the root causes of social disorganisation and crime.

Despite the argument developed, it is important to acknowledge that both dimensions of police confidence are correlated, which presents a limitation as they might be explaining the same underlying concept. However, recognising these dimensions allows for a more nuanced analysis of police perception and its subdimensions, providing a finer understanding of the varied aspects of police work and public interactions.

From a methodological perspective, applying a multilevel model to understand the variance in confidence in police in Santiago was an appropriate and necessary decision. Firstly, the ICC (intra-class correlations) of the empty model, which includes no covariates, reveals that 11% of both police effectiveness and treatment variation occurs between municipalities. Within the context of social sciences, ICC values between 5 and 20 percent are considered relevant (Raudenbush & Bryk, 2002), so the models obtained in this study respond to nested phenomena. To put it another way, people who live in the same municipality share perceptions of police effectiveness and treatment and communication received by the police.

This result confirmed the finding in Chapter 5 in which the ANOVA test shows that the variance in confidence between municipalities is higher than in municipalities. As mentioned, some significant variables were observed at the individual level (such as sociodemographic characteristics and their perceptions of the municipal area) and the municipal level (municipal budget and poverty).

As expected, the model of individual characteristics revealed that individuals aged over 60 exhibited higher levels of confidence in the effectiveness and treatment of the police compared to the youngest group (15-29 years). Moreover, individuals from high and middle socioeconomic statuses reported significantly greater confidence in the effectiveness of the police compared to those with low socioeconomic status. Also, persons with prior victimisation experience tend to have less confidence than people not victimised. These findings are in line with the evidence provided by Anglo-Saxon research (Skogan 1978; Carter, 1985; Thurman, 1996; Homant et al., 1984; Corraei et al., 1996) and Latin American studies (Alda et al., 2017; Bergman and Flom, 2012; Ahmad et al., 2011; Cao and Zhao, 2005).

Furthermore, what the results show regarding ethnicity contributes to the development of Chilean Criminology in the following terms. Scholars in the Anglo-Saxon context, characterised by multicultural components, have offered extensive evidence on how people belonging to a racial minority show less confidence in the police compared with those not belonging to these groups (Wu et al., 2009; Sampson and Bartusch, 1998; Reisig and Park, 2000; Jackson et al., 2012). In the case of Chile, so far, there is no quantitative evidence to demonstrate less confidence in different ethnic groups, possibly due to the lack of a sample large enough to represent these groups that include minority groups. Nevertheless, the survey used in this research considers the most extensive sample implemented at the municipal level with 1000 cases of sample and with 7% of Mapuche in this sample. Findings show that people who declare belonging to an indigenous group, mainly Mapuche, show lower confidence in the police treatment and effectiveness than those who did not declare belonging to an indigenous group. Therefore, the findings open questions about the causes of this phenomenon, considering that there could be other variables mediating this association, such as poverty at the local level, or the municipal budget where these indigenous groups live in Santiago.

The next model of quality of life, explores whether confidence in the police is affected by the perception of the local area and social web in the territory. All the variables here are significant and give a considerable amount of explained variance. As expected, lower

confidence in the police is associated with a high fear of crime, low social cohesion, informal control, and a high perception of social disorder in the neighbourhood (Reisig and Park, 2000; Cao et al., 1996; Merry et al., 2012; Kwak and McNeeley, 2019). These results from Santiago reinforce the research line of Jackson for the case of the United Kingdom (Jackson et al., 2009; Jackson and Sunshine, 2007; Jackson and Bradford, 2008; Jackson et al., 2012), that police confidence is ingrained in assessments of social order, cohesion, and trust. In other terms, an area with low police confidence could represent a lack of community commitment to defending the values of social order embedded in the laws. These findings shed light on the interconnectedness of social factors and their impact on public perceptions of the police. They suggest that building and maintaining confidence in law enforcement is not solely reliant on police actions or strategies but is also influenced by broader social dynamics within communities. A strong sense of social cohesion and shared commitment to upholding social order can contribute to higher confidence in the police.

On the other hand, since the model of local government, developed in Section 2.2., is the most relevant in explaining the variance of perception of police effectiveness and police treatment and communication, it contributes to criminological theory and public policies. Even though in Latin America and Chile in particular, during the last decades, the role of the local government in prevention crime strategies has increased, studies focused on their relationship with the police are still limited. Therefore, conceptually, because satisfaction with municipal security is the variable that could predict better confidence in the police, future models should incorporate this variable, moreover, considering the territorial inequality at the municipal level present in Chile as well as in Latin America (United Nations Development Programme, 2018 b).

Following the contribution of the model of local government, the findings highlight the pivotal role of structural factors in understanding confidence in the treatment and effectiveness of the police, reinforcing the need for a social ecology of trust in the Chilean case. As noted, the weight of the socioeconomic condition of the municipality where people live (specifically, the municipal budget) has a more considerable impact on the police (coefficient 0.068) than the socioeconomic status of families (0.029). Therefore, a family can improve their socioeconomic status, and they might increase their confidence in the police, but where the family lives, increases in budget and enhanced security services in terms of confidence have more impact. This result of Santiago, which emphasises the crucial role of structural factors in the perception of the police, is in line with Wu (et al. 2009), who found that neighbourhood class status, rather than individual class status, has a higher impact on

police satisfaction in the United States. Thus, municipal budget and neighbourhood class status as structural factors hold a relevant weight in a variable at level 1 like perception of the police, emphasising the importance of a social ecology approach in this type of analysis.

For instance, in Santiago, two families may have a similar family income, however their perception of treatment and effectiveness received by the police may differ greatly according to municipal area. Indeed, unexpectedly, other structural factors, such as victimisation at the local level and the number of police officers in the municipal area (model 4), are not significant to explain police confidence. So, more municipal security services visible on the street and cooperating with the police may increase public confidence in the police, enabling more preventive police in its alliance with the municipality.

Therefore, it is crucial to underscore the pivotal role of local government in shaping public perceptions of police effectiveness and communication. As emphasised by Silva et al. (2022), the relationship between local government actions, policing strategies, and public confidence is intricate. Their findings highlight perceptions of local government fairness and the effectiveness of policing efforts significantly influence community confidence and cooperation. This underscores the importance of integrating satisfaction with municipal security into conceptual frameworks, as it emerges as a key predictor of confidence in the police. Furthermore, disparities in confidence levels among different demographic groups, such as racial minorities, underscore the need for nuanced policy approaches that address structural inequalities and foster inclusive policing practices. Therefore, incorporating these insights into the discussion on local government models not only enriches our perspective of police-public relations but also informs more effective and equitable public safety strategies tailored to diverse community needs.

This thesis seeks to deepen our comprehension of the mechanisms shaping the distribution of public safety in Santiago through a rigorous spatial analysis. Notably, recent studies such as those by Salazar-Tobar and Rengifo (2023) have advanced the field by applying multilevel models to investigate variations in police trust across Latin American countries. However, their methodologies, which do not incorporate cross-level interactions or random slope models, may overlook critical nuances in spatial heterogeneity. While their insights into trust variations, particularly in Chile with its notable high confidence levels, inform the methodological foundations of Chapter 7, they underscore the ongoing need for nuanced spatial analysis techniques.

Chapters 5 and 6 have yet to fully explore spatial heterogeneity in the variables influencing perceptions of public safety. Although Chapter 6's multilevel analysis has elucidated the role of structural variables in understanding factors of police confidence, inherent limitations persist. Specifically, these analyses do not definitively establish whether structural factors moderate the relationship between social cohesion and confidence across varying contexts within Santiago. Furthermore, the applied multilevel approach does not sufficiently examine whether the impacts of independent variables on outcomes remain consistent across diverse geographical areas.

Chapter 7 is dedicated to overcoming these limitations and addressing critical questions that are pivotal for advancing our understanding of spatial heterogeneity. By laying the groundwork for an ecological theory of police confidence in Chile, this chapter aims to integrate the complexities of spatial variation into our analytical framework, thereby enriching scholarly discourse in the field.

CHAPTER 7: Exploring Spatial Heterogeneity and Interactions between Individual and Contextual Factors in Santiago's Confidence in the Police

7.1. Introduction

The central focus of this thesis has revolved around comprehensively analysing and understanding the distribution of public safety within Santiago, which ranks among the highest in security and well-being indicators in Latin America. However, despite these positive aspects, the Chilean cannot evade the pervasive issue faced by many countries in the region which is inequality. Chapter 5 aimed to bridge a crucial knowledge gap by developing tools to assess the degrees of variability in the distribution of safety, encompassing both objective (victimisation) and subjective (fear of crime and confidence in the police) aspects. Within this context, confidence in the police stood out as the most salient variable, exhibiting the most substantial variations across diverse municipal areas, and manifesting distinct clustering mechanisms that delineated a specific sector of Santiago characterized by a marked prevalence of high confidence in the police, distinctly segregated from the remainder of the city.

The results from Chapter 5, pertaining to the distribution of police confidence and its unequal allocation, in conjunction with the influence of social cohesion variables and municipal-related factors, lay the foundation for the unexplored realms that Chapter 6 seeks to delve into. Acknowledging the need for a multilevel approach that accentuates both municipal and individual-level variables, the model of local governance of crime emerges as the principal elucidator for the variance in police confidence. Specifically, determinants such as municipal budget and satisfaction with municipal services wield significant influence in shaping this confidence. Moreover, factors encompassing ethnic affiliation, family socioeconomic status, and municipal-level poverty also wield considerable influence over police confidence.

While Chapters 5 and 6 have provided valuable insights into the dynamics of confidence in the police, the exploration of spatial heterogeneity within the complexities of the variables shaping public safety and its perceptions remains unexplored. Despite the significance of the applied multilevel analysis in Chapter 6, certain limitations persist. Specifically, analysis followed a Fixed Slope Model, a common approach in most multilevel studies on confidence

in the police. However, this model assumes a uniform relationship between the outcome and predictors across all municipal areas of Santiago, implying some degree of spatial homogeneity. In other words, it assumes that the influence of factors like satisfaction with municipal services on confidence in the police remains consistent throughout the city.

Additionally, this type of approach in a multilevel model evaluated the effects of variables at the individual and contextual levels separately, overlooking the potential interaction between factors originating from different levels. For instance, while the results in Chapters 5 and 6 demonstrated that social cohesion positively influenced confidence in the police, after controlling for other variables, the examination of whether structural conditions such as poverty could moderate this relationship was not undertaken.

To address these shortcomings and advance the understanding of spatial heterogeneity, Chapter 7 is dedicated to providing answers in this domain. By doing so, the present chapter expects to lay the empirical groundwork to foster a possible ecological theory of confidence in the police in Chile. This theory should be based on a central theoretical assumption: *the spatial component of confidence in the police*. This approach esteems the vital role of space and places in Santiago to explain differences in the levels of confidence according to different places and areas of Santiago, and the variables that explain this confidence could vary their effect in that space. The spatial component of confidence in the police emphasises the importance of adopting a multilevel and geographically nuanced approach to comprehend the complex interplay of factors shaping public perception in law enforcement, ultimately contributing to more effective and inclusive strategies for enhancing public safety and community well-being.

In order to unpack and comprehend this spatial component, Chapter 7 will test for spatial variation in the relationship between structural and individual factors and confidence in the police. In this context, the Chow test, Geographically Weighted Regression (GWR), ANOVA test, and analysis of covariances were used to test the assumption of spatial heterogeneity, specifically, whether the relationship between confidence and their associated factors varies across Santiago. Through a multilevel analysis, cross-level interaction was employed to assess if structural factors mediate the above relationship between outcome and their predictors at the individual level.

The rest of this chapter is organised as follows. First, I present an overview of the main concept developed in detail in Section 2.5 focused on understanding the structural mechanisms that impact and moderate the confidence in the police and their associated

variables. The focus is on developing a social ecology theory of confidence and its spatial component. The methodological section explains the statistical tools used to respond to the research question. In the results section, the analysis begins by showing the Chow test and ANOVA test results to check the spatial variability of the relationship between confidence and its associated variables.

Furthermore, using Geographically Weighted Regression (GWS) visualises how the variables in the model explain different intensities according to the municipal area on the map of Santiago. Subsequently, a covariance analysis (between the slope of predictor and intercept of confidence) was performed to understand the above points better. Ultimately, multilevel regression results that incorporate models with cross-level interactions are shown. These results will be interpreted and visualised through suitable graphs designed to demonstrate how the relationship between confidence in the police and their predictors at the individual level, like social cohesion, is moderated by structural factors.

The results confirm the main assumptions of this Chapter. Spatial heterogeneity is demonstrated by a set of tools and approaches, confirming that the influence of the main predictors is differentiated across municipal areas in Santiago. Consequently, social cohesion, informal social control, satisfaction with municipal services, perception of social disorder, ethnicity, and socioeconomic status on the variation of the distribution of confidence in the police are not the same across Santiago. Secondly, structural variables at the municipal level, such as the number of police, municipal budget, and poverty, moderate the relationship between predictors and confidence at the individual levels. This role can be interpreted as facilitator and constraining to vary confidence and its relationship with its predictors.

Finally, a debate is opened about the need to incorporate spatial heterogeneity in the analysis of confidence in the police, mainly for the design of public policies.

7.2. Theoretical framework

As I explained in detail in Section 2.5, one of the persistent inquiries in social science disciplines like Criminology revolves around how the social environment both shapes human attitudes and perceptions and is, in turn, influenced by human actions (Heisig & Schaeffer, 2019).

The main focus of the following discussion will be on exploring the interplay between individuals and the social structures they create, and how these structures, in turn, shape them through the lens of territory and space. This chapter's fundamental premise is that confidence in the police possesses a spatial component. Understanding this component will be crucial in comprehending the unequal realities of Santiago and establishing the empirical bases for a theory of the social ecology of policing in the Chilean context.

The geographical context and spatial distribution of an individual's residence have a profound impact on their perceptions of daily life, interactions with neighbours and others, access to public services offered by the state, and, notably, their attitudes towards the police. Put simply, the experiences and perspectives regarding police practices among citizens demonstrate certain variations when examined across different locations (Jackson et al., 2012). These variations are, in part, shaped by ecological factors, such as the socioeconomic status prevalent in a given area (Gau, 2012).

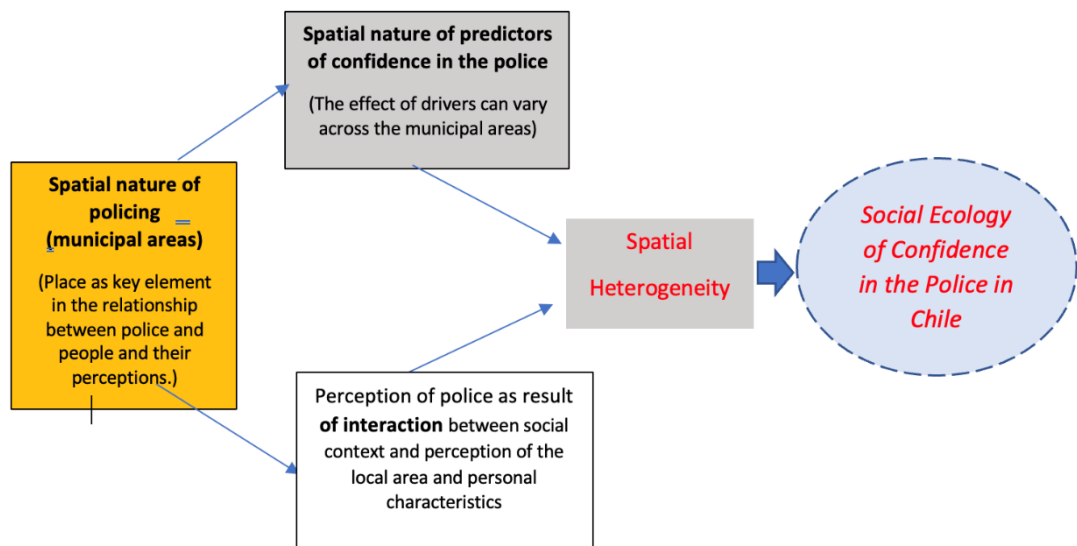
It appears that residents of diverse neighbourhoods and local areas carry distinct universes of meaning and perceptions regarding the police, shaped by their personal experiences and observations of police practices. One influence on these experiences and observations could be the presence of social disadvantages in the local area, which acts as "ecological contamination" (Sampson & Bartusch, 1998). As a result, confidence in the police should exhibit spatial heterogeneity, manifested in the relationships between confidence and associated variables, as well as the mediating role of structural variables.

For example, the positive effect of social cohesion and informal social control in fostering confidence in the police may not be sufficient when individuals in a local area are affected by a concentration of social disadvantages, such as socioeconomic vulnerability. Similarly, perceptions of social disorder and safety are influenced by poverty (Sampson & Bartusch,

1998), and the impact of race on confidence in the police is moderated through similar neighbourhood factors (Cao et al., 1996). On the other hand, when financial and institutional resources are abundant within local areas, their effect could mitigate unfavourable factors, such as poverty, which jeopardizes trust in public institutions and people, or, conversely, amplify the positive effects of variables that foster trust (Altschuler et al., 2004; Muyama et al., 2014).

A summary of the theoretical scheme is shown in Figure 15.

Figure 15 *Spatial nature of policing*



Source: Own elaboration based in literature exposed in Section 2.4. and 2.5.

This diagram depicts a conceptual proposal to untangle the spatial nature of policing and the necessity of a Social Ecology Theory of Confidence in the Chilean police. It underscores the significance of geographical space, place-specific characteristics, and contextual factors in shaping individuals' attitudes and perceptions towards police.

The first aspect, "Spatial nature of policing," elucidates how the physical location and territorial settings in which individuals reside play a fundamental role in shaping their interactions with the police and their overall perceptions of law enforcement. Various neighbourhoods and municipal areas within a city may experience distinct levels of police

presence, resources, and practices, leading to heterogeneity in how individuals perceive and engage with the police within their spatial context.

The second element, "Spatial nature of predictors of confidence in the police," highlights the notion that factors influencing individual confidence in law enforcement may exhibit spatial variation across different municipal areas. While certain predictors, such as social cohesion, informal social control, or poverty, may positively influence confidence in the police in one municipal area, their effects could differ or be insignificant in another area. This spatial heterogeneity underscores the significance of contextual factors in shaping individual confidence in law enforcement.

The third dimension, "Perception of police as a result of interaction between social context and perception of the local area and personal characteristics," emphasises the intricate interplay between various elements contributing to individual perceptions of the police. It posits that people's perception of the police is not solely determined by their personal characteristics but is also profoundly influenced by the broader social context in which they reside and the specific characteristics of their local area. The interplay of social context, personal experiences, and local perceptions collectively shape how individuals perceive and develop confidence in the police.

The comprehensive framework, "Spatial Heterogeneity Social Ecology of Confidence in the Police in Chile," integrates these dimensions to underscore that comprehending confidence in the police requires acknowledging spatial variability and the intricate interplay of social, contextual, and individual factors. Policymakers and researchers should recognise the nuanced and context-specific nature of confidence in the police, as it can significantly differ across various spatial locations and be influenced by an array of spatially relevant determinants. This theoretical approach offers valuable insights for guiding empirical research of this chapter and policy development aimed at enhancing public confidence in law enforcement within the Chilean context.

To better understand the variation of confidence in the police, the present chapter will test a set of theoretical assumptions considering the arguments outlined before. Firstly, it brings attention to the relevance of socioeconomic conditions and the number of police officers at the municipal level as contextual factors that may influence the individual-level relationship between features of persons, their perceptions of the local area, and their degree of confidence (Garcia & April 2003). In fact, as demonstrated in Chapter 6 the number of police officers in local areas might increase police confidence and satisfaction because more officers

provide a sign of police visibility, and they would act to reduce the number of crimes (Lai and Zhao, 2018; Skogan, 2009). However, the question arises as to whether the police keep the same effect in diverse structural conditions.

Secondly, it is expected that a high score measurement of the perception of social cohesion and informal social control in the municipal area might be related to higher confidence levels. Nevertheless, that positive relationship between cohesion, informal control, and confidence might be attenuated when people are living in municipal areas affected by a high poverty level or a limited municipal budget. Inversely, this relationship might be enhanced in areas with many police officers.

Furthermore, the municipal budget might moderate the relationship between individual-level satisfaction with municipal services and individual confidence in the police. Specifically, individual-level confidence in the police might be related higher to satisfaction with municipal services when municipalities hold a robust municipal budget. Finally, because the municipal budget played a key role in the variation of public safety, in Chapter 5 and in the multilevel regression in Chapter 6, it is expected that the variables at individual levels, such as ethnicity, socioeconomic condition, gender, and age, might be influenced by the level of municipal budget of the area where citizens live.

Thus, that interaction could modify the level of confidence in the police. For instance, a high municipal budget could moderate the expected and negative relationship between young people and confidence in the police.

Chapter 7 contributes to the literature on confidence in the police in at least two key aspects. Firstly, to provide empirical elements to develop a theory of social ecology of confidence in the police for the Chilean case centred on the heterogeneity spatial of their distribution, associated variables, and the influence of the structural condition as a moderator of variables at the personal level. A theory with these characteristics can provide a more refined understanding of how social mechanisms shape confidence and the nuances of specific context effects. In this perspective, a second contribution is related to the implication of public policies in confidence in the police and their design. When the studies on the drivers of confidence in the police are analysed using Ordinary Least Square (OLS) or through a multilevel regression with a fixed slope model, the policy recommendations are based on an assumption of spatial homogeneity – assuming that variables have similar influence across the entire study region. In that sense, one-size-fits-all policies facing confidence in the police may fail if the nuances of specific contexts are not included. In this respect, the current

chapter has the challenge of unfolding, measuring, and visualising the complexity of an unequal distribution of access to public safety, in this case, police services and citizen perception associated with them.

7.3. Research questions

Chapter 5 illuminated the landscape of spatial inequality in experiences and perceptions of public safety within Santiago, uncovering a pronounced variation in the dimension of confidence in the police. Chapter 6, employing a Multilevel Model, endeavoured to interrogate the determinants behind this disparate distribution by probing the influence of individual and municipal-level variables. The results demonstrated that structural factors, including the municipal budget and multidimensional poverty, yielded noteworthy associations with confidence in the police. This underscored the pivotal role of structural considerations in elucidating the underpinnings of confidence in the police.

However, despite these valuable contributions, both Chapters 5 and 6 also have some limitations in fully exploring the complexities of how police perception is distributed across different spaces. In response, Chapter 7 takes on the task of refining our understanding in this area. Its goal is to provide solid evidence that can support the development of a comprehensive theory about confidence in the Chilean police, considering the spatial aspects.

The analysis adhered to a Fixed Slope Model, mirroring the prevailing approach in most multilevel studies pertaining to confidence in the police. In this model, the relationship between the outcome and predictors is uniform in magnitude and direction across all municipal areas of Santiago. The current chapter expects to address the limitations mentioned to develop a more refined understanding about *spatial component of confidence in the police*.

Criminology in Latin America and Chile reports two ambits to build new knowledge in this matter, the first concerns studies of confidence in the police from a multilevel analysis which was covered by Chapter 6. A second area is regarding models that test the variability of the influence of the predictors and their interaction with structural variables. Therefore, considering the key concepts that this thesis has developed about inequality and segregation in the provision of safety, it is vital to examine the component of spatial heterogeneity in the distribution of perceptions about police services.

In order to unravel this spatial component, the current chapter will respond a set of research questions. The formulation of them here is grounded in the concepts develop in Sections 2.4. and 2.5. This comprehensive review serves to underscore the multifaceted and spatially heterogeneous nature of the factors that impact public confidence in police and their services.

The rationale behind these research questions is rooted in the recognition of the inherent complexity characterising the relationship between public confidence in the police and the diverse determinants that underlie it. Empirical evidence derived from previous studies strongly indicates that this relationship is contingent upon an array of contextual factors, encompassing not only personal attributes but also broader socio-economic and geographical dimensions.

In this context, the initial research question is dedicated to unveiling potential spatial variations in the influence of local area perceptions on police confidence. It seeks to ascertain whether the negative association of perceptions related to social disorder on police confidence manifests differing patterns across distinct municipal areas within Santiago. Subsequently, the inquiry delves deeper into the intricacies of spatial heterogeneity by exploring potential differential influences of perceptions concerning informal social control, social cohesion, and satisfaction with local government security services on police confidence across the diverse districts of Santiago. Moreover, these research inquiries extend to encompass the interplay between individual characteristics and the spatial context. Their objective is to discern whether the influence of individual attributes, including ethnicity, gender, age, and socioeconomic status, on police confidence manifest dissimilarly within municipal areas.

The research questions are:

- How does perception regarding local areas about the confidence in the police vary across municipal areas of Santiago?

The hypothesis associated with this question are:

- The negative influence of the perception of social disorder about the confidence in the police varies across municipal areas of Santiago.

- The positive influence of perception of informal social control, social cohesion, and satisfaction with the security of local government on confidence in the police varies across municipal areas of Santiago
- The influence of personal characteristics, such as ethnicity, gender, age and socioeconomic level, on the confidence in the police vary across municipal areas of Santiago.

Having answered the above, the next question is addressed to probe into the potential mediating role of specific municipal-level factors in linking individual-level variables and the manifestation of confidence in the police. In other words, these questions jointly endeavour to explore the intricate interplay between structural determinants at the municipal level and individual-level variables in the context of shaping public perceptions of law enforcement agencies. By investigating the mediating mechanisms and moderating influences of these structural factors, the study seeks to contribute an inclusive conception of the complex dynamics underpinning the relationships between individual attributes and confidence in the police.

The questions are:

- *How do structural factors at the municipal level moderate the relationship between confidence in the police and variables at the individual level?*

The hypothesis associated with this question are:

- The municipal budget moderates the positive influence of the satisfaction with municipal security services on the confidence in the police
- The municipal budget moderates the negative influence of the perception of social disorder and belonging to an ethnic group on the confidence in the police
- The number of police officers in the municipal area and the poverty level moderates the positive influence of social cohesion on the confidence in the police
- The municipal budget moderates the influence of socioeconomic level at home on the confidence in the police

7.4. Method

7.4.1. Analytical approach

A third dimension that this thesis expects is to contribute to the existing valuable knowledge in the literature regarding deepening the concept of spatial heterogeneity. In Chapter 7, I explore the possibility that the effect of predictor variables on the outcome of safety might be diverse across municipal areas of Santiago. Moreover, I will examine whether structural variables might be mediating the relationship between individual-level predictor variables such as perceptions and individual-level dependent variable.

I posit that both explorations might contribute to relevant changes in Criminology research in the context of studies of inequality and public safety. Firstly, the notion of spatial heterogeneity invites to challenge the simplified notion of fixed relationships between variables and recognises the multifaceted nature of perceptions like confidence in the police within diverse social contexts. Recognising that variables can exert different intensities of influence in the context of inequality is essential in gaining a comprehensive understanding of the complex dynamics that underlie crime and their perceptions and its disparate impacts on diverse municipal areas in Santiago and its communities. A second realm to contribute to is to uncover potential spatial heterogeneity, providing insights into how the relationship between predictors and the outcome at the individual level can be mediated by structural variables fluctuating the mentioned association. Consequently, this approach enables a more granular analysis of the unequal distribution of safety and the underlying mechanisms driving such disparities.

Both contributions recognise the limitations of Fixed Slope Models to account for spatial heterogeneity in Santiago. Hence in Chapter 7, I will use the Chow test, an instrument frequently used in econometrics to determine whether the independent variables affect population subgroups differently and also the Geographically Weighted Regression (GWR), a tool that explores how the relationship between a dependent and one or more independent variables might vary geographically (Anselin, 2007). Furthermore, I will test a Random Slope Model, which allows intercepts and slopes to vary across municipalities and whose relationship is demonstrated by the analysis of covariance. It is a practical tool that locates the groups in a quadrant (in our case, municipalities) according to the values in the intercept (level of safety or confidence) but, in turn, to know the specific influence of each predictor (their slope) on the dependent variable for each municipality (Steele, 2008). Finally, as the emphasis is also to test the mediator role of structural factors, I will use cross-level

interaction, tools that allow to examine whether a specific level 2 variable can explain at least part of the variance in slopes across groups. This approach helps answer questions like why individual-level effects vary across level 2 units; they explicitly model variation in level 1 random coefficients as a product of level 2 group characteristics (Johnson, 2010). More details and limitations of these models are developed in Chapter 7.

7.5. Results

7.5.1. Exploring spatial heterogeneity:

7.5.1.a. Testing and mapping the diverse influence of predictors related to the perception of the local area and personal characteristics on confidence in the police.

Firstly, I will verify a potentially non-constant relationship between each predictor and the outcome. The Chow Test determines whether the independent variables affect different population subgroups (Anselin, 2007), in our case, in municipal areas.

Table 15 Chow test

| Chow Test | | |
|--------------------------------------|----------|----------------|
| | F | p-value |
| Socioeconomic Status | 3.003 | 0.028 |
| Level educational reached | 1.674 | 0.071 |
| Age | 0.944 | 0.624 |
| Ethnicity | 5.299 | 0.005 |
| Gender | 1.647 | 0.192 |
| Social Cohesion | 2.791 | 0.004 |
| Informal Social Control | 0.073 | 0.041 |
| Perception Social Disorder | 35.574 | 0.000 |
| Satisfaction with municipal security | 5.132 | 0.005 |

Table 15 shows evidence that the coefficients are not constant across municipal areas, indicating spatial heterogeneity for the following variables: social cohesion, informal social control, perception of social disorder, ethnicity, and socioeconomic status. These variables displayed a significant p-value ($\alpha = 0.05$), showing that their influence on confidence in the police is different across Santiago.

On the contrary, level of education, age, and gender are not significant, implying that their effect on confidence in the police is constant across Santiago, resulting in spatial homogeneity in influence.

After checking which variables represent differences, the analysis is addressed by observing this phenomenon on the map using Geographically Weighted Regression¹⁹.

Figure 16 depicts the residuals of the model as determined through Geographically Weighted Regression (GWR) across various municipal areas within Santiago. Analysing the spatial pattern of model residuals can offer valuable information about the presence of spatial heterogeneity and local variations in the model's performance across different areas of Santiago. In other words, the figure helps us understand whether the model's predictions hold consistently across the entire study area or if there are specific regions where the model performs better or worse.

Specifically, Figure 16 reveals that the model is not stable over the space of Santiago. In some areas, there was an overestimation of the confidence value (positive residual), while in other areas of Santiago, there was an underestimation of the value (negative residual). This fact, again, demonstrates the component of spatial variability of confidence in the police where the model holds a differentiated power to explain the variable of interest.

¹⁹ Because the number of geographical areas in this study in the dataset is small, an adaptive spatial kernel was used. This option involves using varying bandwidth to define a region around regression. The extent of the kernel is determined by the number of nearest municipal areas from a given regression point. The kernels have larger bandwidths where the data are sparse. Fotheringham, Stewart, Chris Brunsdon, and Martin Charlton (2002). *Geographically Weighted Regression*. John Wiley & Sons.

Figure 16 Model residuals according to Geographically Weighted Regression in municipal areas of Santiago

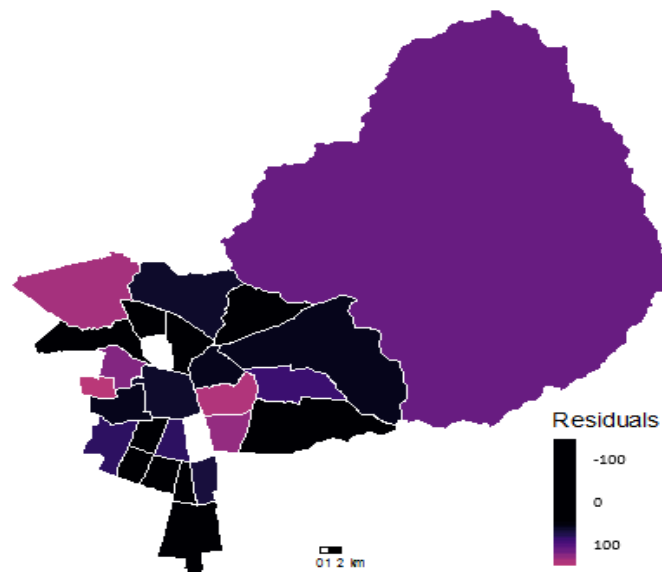
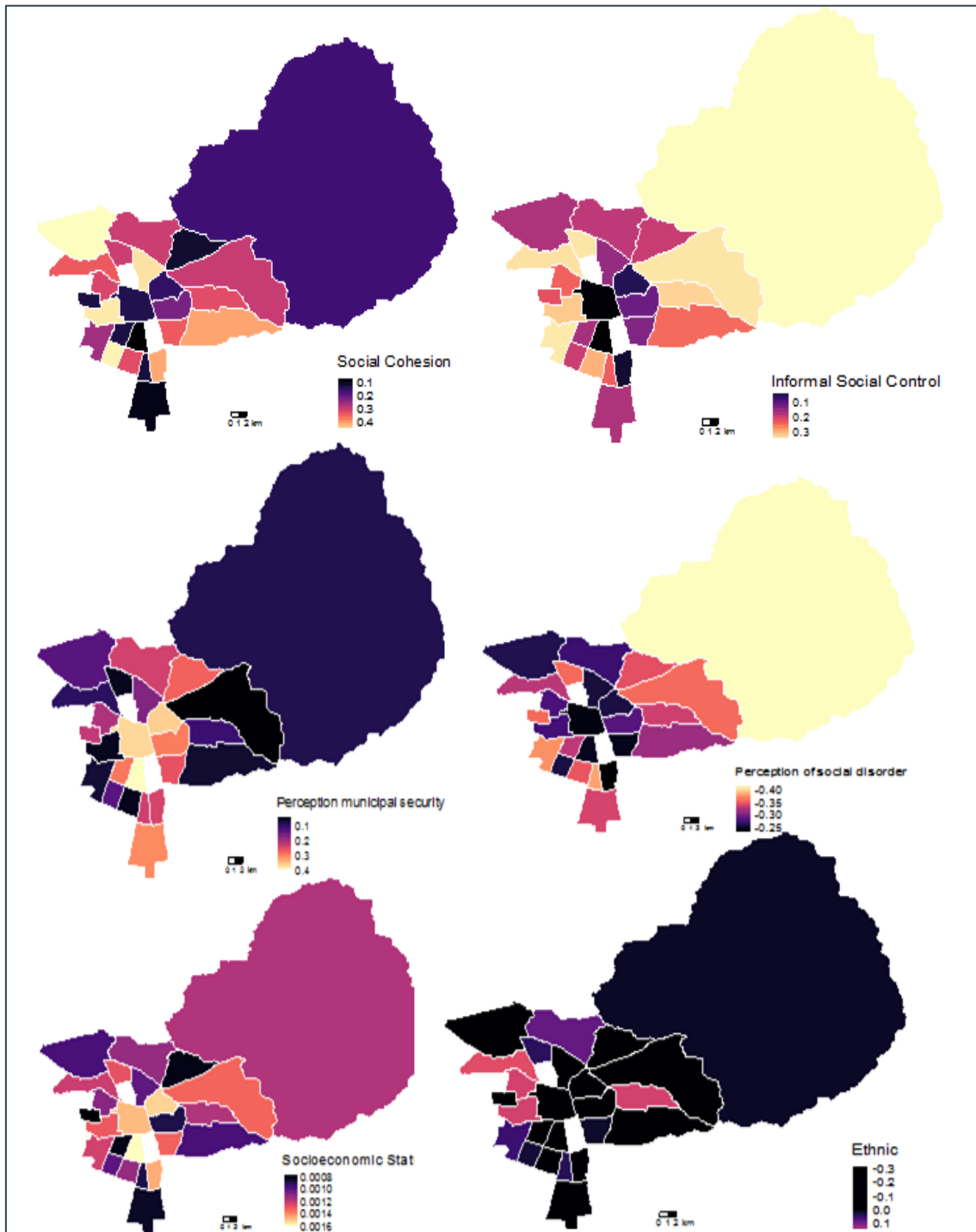


Figure 16 presents the coefficients derived from the Geographically Weighted Regression (GWR) model across various municipal areas of Santiago. Also, it offers a visual representation of how the relationships between variables and confidence in the police unfold across Santiago's municipal areas, shedding light on the spatially varying factors that contribute to public perceptions of the police. Thus, the map might highlight where specific predictors hold greater or less influence on shaping public confidence in the police within the city.

Indeed, Figure 17 shows that the predictors and their coefficients have different explanatory power across Santiago, predictors that are the same variables that were significant in the Chow Test.

Figure 17 Coefficients of Geographically Weighted Regression in municipal areas of Santiago



It is noteworthy that the coefficients exhibited in the preceding maps display relatively modest variations. The range spans from 0.1 to 0.4, with the most substantial disparities observed in variables such as social cohesion, informal social control, and satisfaction with municipal security. Conversely, the variables of socioeconomic status and perception of social disorder showcase narrower ranges. It is crucial to acknowledge that while the maps

indicate a somewhat limited spectrum of variation in the influence of predictors, the Chow test has indicated statistically significant differentiation. Consequently, the exploration into these distinctions will persist, aiming to comprehensively elucidate the nuances and complexities of the relationship between predictors and confidence in the police within the diverse municipal areas of Santiago.

7.5.1.b. Allowing to vary slopes of predictors: Modelling with Random Slope Model and placing the municipalities of Santiago

The following step is the evaluation of the Random Slope Model compared with the Fixed Slope Model through the ANOVA Test. This procedure will be for those variables which indicate spatial heterogeneity in the Chow Test ²⁰.

²⁰ This model and the following ones, the dependent variable will be confidence in the police and not with its two differentiated dimensions in treatment-communication and effectiveness of the police found in chapter 6. The reason is that there are no relevant differences in the findings between both dimensions.

Table 16 Testing random slope model of each variable using ANOVA test

| | Model 1 Fixed Slope | | Model 2 Random Slope municipal security | | Model 3 Random Slope social cohesion | | Model 4 Random Slope informal control | | Model 5 Random Slope social disorder | | Model 6 Random Slope ethnicity | | Model 7 Random Slope socioeconomic status | |
|--|---------------------|-------|---|-------|--------------------------------------|-------|---------------------------------------|-------|--------------------------------------|-------|--------------------------------|-------|---|-------|
| Predictors | Coeff. | SE | Coeff. | SE | Coeff. | SE | Coeff. | SE | Coeff. | SE | Coeff. | SE | Coeff. | SE |
| Individual Level= (N: 23265) | | | | | | | | | | | | | | |
| (Intercept) | 0.436** | 0.004 | 0.436** | 0.004 | 0.462** | 0.004 | 0.464** | 0.004 | 0.429** | 0.004 | 0.432** | 0.004 | 0.432** | 0.004 |
| Socioeconomic Level (Low Socioeconomic Level is the reference) | | | | | | | | | | | | | | |
| Middle Level | 0.004 | 0.002 | 0.003 | 0.002 | 0.004 | 0.002 | 0.003 | 0.002 | 0.003 | 0.002 | 0.004 | 0.002 | 0.003 | 0.006 |
| High Level | 0.021** | 0.006 | 0.017** | 0.004 | 0.019** | 0.004 | 0.018** | 0.004 | 0.017** | 0.004 | 0.020** | 0.004 | 0.015** | 0.004 |
| Ethnicity (yes) | 0.021** | 0.006 | -0.022** | 0.006 | 0.022** | 0.006 | 0.021** | 0.006 | 0.022** | 0.006 | 0.023** | 0.006 | -0.021** | 0.006 |
| Social Cohesion | 0.149** | 0.005 | 0.147** | 0.005 | 0.153** | 0.005 | 0.150** | 0.005 | 0.149** | 0.005 | 0.149** | 0.005 | 0.149** | 0.005 |
| Informal Social Control | 0.111** | 0.005 | 0.110** | 0.005 | 0.111** | 0.005 | 0.105** | 0.005 | 0.109** | 0.005 | 0.111** | 0.005 | 0.112** | 0.005 |
| Perception Social Disorder | 0.097** | 0.005 | -0.097** | 0.005 | 0.095** | 0.005 | 0.101** | 0.005 | 0.107** | 0.005 | 0.097** | 0.005 | -0.096** | 0.005 |
| Satisfaction with municipal security | 0.345** | 0.006 | 0.344** | 0.013 | 0.342** | 0.013 | 0.341** | 0.006 | 0.344** | 0.006 | 0.345** | 0.006 | 0.344** | 0.006 |
| Municipality level (N= 26) | | | | | | | | | | | | | | |
| Municipal Budget | 0.049* | 0.018 | 0.046 | 0.019 | 0.048* | 0.019 | 0.049* | 0.019 | 0.015 | 0.019 | 0.037* | 0.017 | 0.066* | 0.017 |
| Multidimensional poverty | -0.115* | 0.048 | -0.123* | 0.052 | 0.132* | 0.054 | 0.107* | 0.052 | -0.129* | 0.052 | -0.134* | 0.045 | -0.139** | 0.045 |
| Police Rate | 0.014 | 0.088 | 0.041 | 0.095 | 0.065 | 0.098 | 0.087 | 0.051 | 0.073 | 0.092 | -0.008 | 0.082 | -0.078** | 0.082 |
| Variance Explained (Conditional R2) | 33.1% | | 33.5% | | 33.7% | | 33.0% | | 32.5% | | 32.8% | | 32.4% | |
| ICC (Intraclass correlations) | 1.0% | | 2.0% | | 2.0% | | 1.0% | | 2.0% | | 1.0% | | 1.0% | |
| Test ANOVA between Fixed and Random Slope Model Covariance (Slope and Intercept) | Significant | | Significant | | Significant | | Significant | | Significant | | Significant | | Significant | |
| | | | -0.0001 | | -0.0003 | | -0.0002 | | -0.0002 | | -0.0003 | | -0.0004 | |
| Observations | 23265 | | 23265 | | 23265 | | 23265 | | 23265 | | 23265 | | 23265 | |

***p<0.001 *p<0.05

The previous table of the ANOVA Test allows us to employ the variation as a model in the relationship between these variables (socioeconomic status, ethnicity, social cohesion, informal control, satisfaction with municipal services and perception of disorder) and confidence in the police across municipal areas. The fixed slope model is compared with

each of the variables separately. For example, model 2 compares the fixed slope model with the inclusion of random slope model of the variable satisfaction with municipal services. The following variables reiterate the same procedure. In simple words, the Random Slope Model is compared with a Fixed Slope Model. In the latter, the relationship between associated variables and confidence in the police is constant across every municipality.

The results show significant differences between models for all variables tested: socioeconomic status, ethnicity, social cohesion, informal control, satisfaction with municipal services, and perception of disorder²¹. Therefore, it is possible to affirm that the influence of these variables on the confidence in the police is not uniform across municipalities of Santiago²².

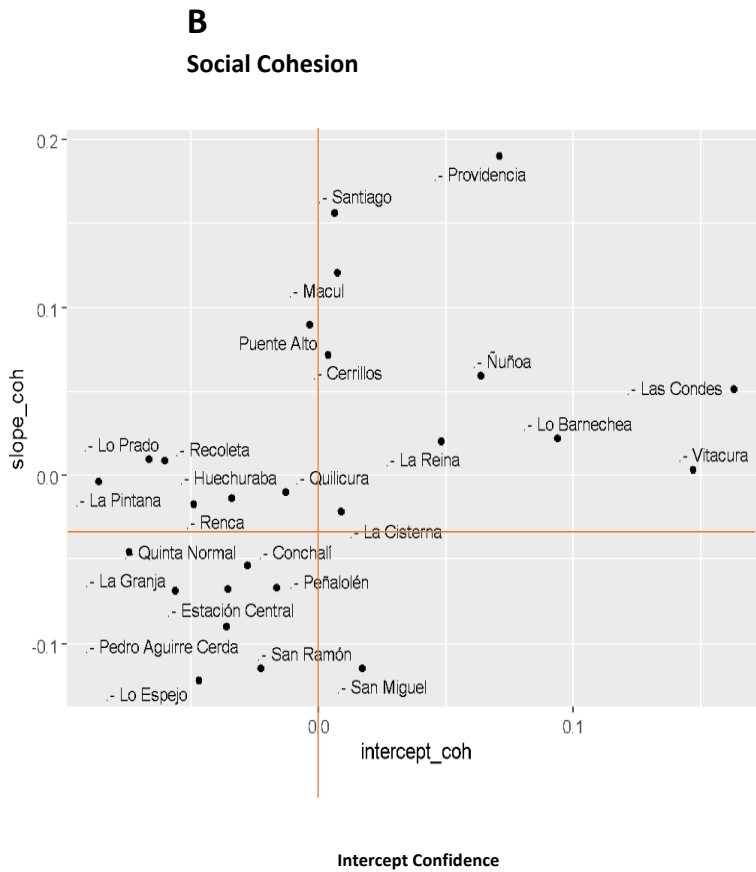
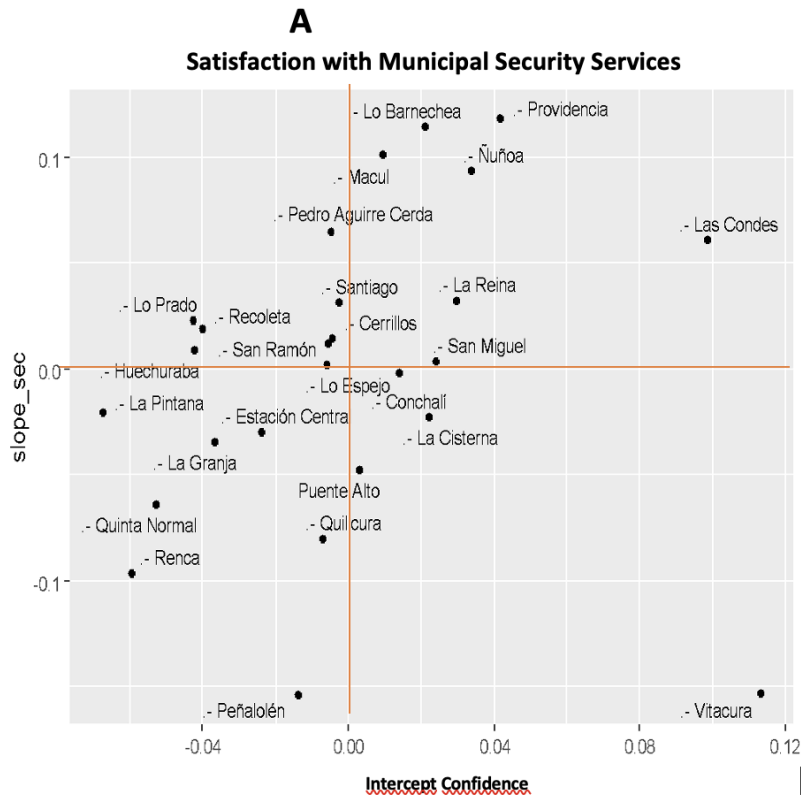
Another approach to responding to the research question about differences in the influence of the predictors across municipal areas is the analysis of covariances between the slope (of the predictors) and intercept (of the outcome “confidence”). It is a tool that could help demonstrate the nature of spatial heterogeneity in the form of confidence distribution in Santiago. In addition, covariance analysis is a practical instrument because it would allow to consider differentiated policies according to the profile of each municipal area.

By identifying each municipality in a quadrant, we can determine which predictor influences more confidence variation, differentiating between municipalities with low confidence (below average) or high confidence.

²¹ Despite that variable age, gender and level education were non-significant for Chow Test, it was decided to check these variables in ANOVA Test. The results confirm the above, so age, gender and level education do not show variation across the municipal areas of Santiago.

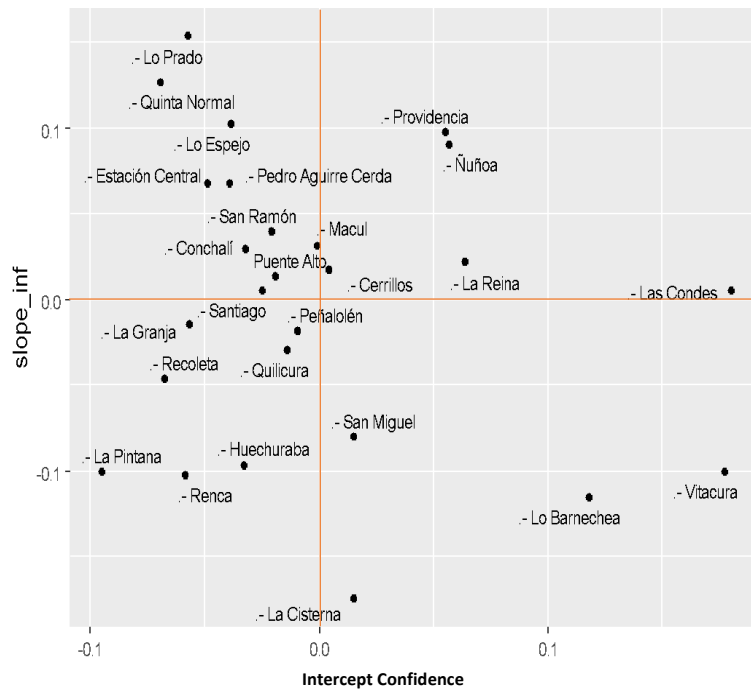
²² According to Heising and Schaeffer (2019), multilevel models involving cross-level interactions should always include random slopes on the lower-level components of those interactions. Thus, once tested random slope model, they are incorporated into the equation of cross-level interactions.

Figure 18 Covariance of slopes (predictors) and intercept (confidence) according to municipalities (labelled).
Four types of covariance ABCD



C

Informal Social Control



D

Perception of Social Disorder (ASB)

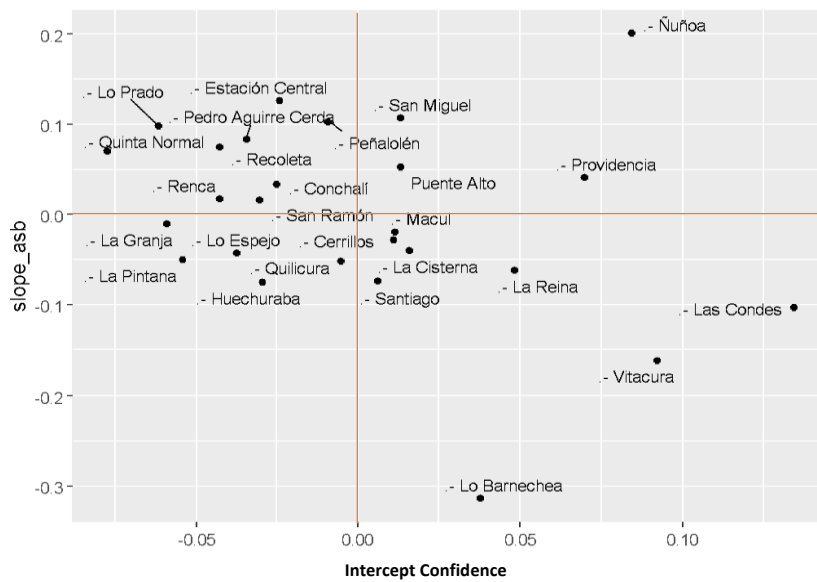


Figure 18 displays the variables of satisfaction with municipal security services, social cohesion, informal social control, and perception of the social disorder. The focus on these variables responds to the following points. Firstly, these variables are significant in the Chow Test showing that its influence differs across municipal areas and merits being tested in a model where the slope can vary. Secondly, these variables are an essential part of the literature focused on confidence in the police, whose implications were widely explained in the theoretical framework of Chapter 6. Thus, the expected results of a diverse influence of the predictors seek to reinforce the concept of Social Ecology of Confidence in the police in Chile, whose empirical basis is spatial heterogeneity.

I start with Figure 18 A. The form in which the covariance table is interpreted is based on Steele (2008). In the top-right quadrant, we find municipalities with higher-than-average confidence in the police and a better-than-average score-on-score confidence improvement due to satisfaction with municipal services. In this group of municipalities, such as Providencia, Las Condes, and La Reina, the influence of municipal services on the confidence in the police is the highest. According to Chapter 5, these municipalities are characterised by maintaining a high municipal budget and a low level of poverty among their inhabitants.

In opposition, in the bottom-left quadrant, we can find municipalities with the lowest confidence level in the police (intercept) and the weakest score-on-score improvement of confidence due to satisfaction with municipal services. In this group of municipalities, such as La Granja and La Pintana, the effect of municipal services on the confidence in the police is the lowest. Chapter 5 characterised these municipalities as areas with a modest budget and a high poverty level among their inhabitants. Consequently, municipal security seems to be an unsuitable strategy for improving confidence in these areas.

With Figure 18 B I analyse social cohesion. The position of municipalities in the quadrant is similar to the distribution of perception regarding municipal services. Thus, social cohesion is more important for increasing confidence in municipalities with a wealthy profile and that hold high confidence. By contrast, social cohesion seems unimportant for vulnerable municipalities with low confidence, showing only a modest effect.

I find a distinct situation in informal social control (Figure 18 C). A higher effect of this variable is found in many impoverished municipalities, such as Lo Espejo and San Ramon. However, in other deprived municipalities such as La Granja and La Pintana, this strategy of social control does not reach its positive effect compared with the rest of Santiago.

Finally, the analysis of covariance in Figure 18 D, does not provide a clear pattern as to who is most influenced by the presence of social disorder in their confidence. There are similar municipal areas between those affected above the slope average by social disorder in confidence and those affected below the average.

7.5.2. Exploring the moderator role of the structural factor at the municipal level

To answer the research question regarding whether structural factors moderate variables influencing the confidence in the police, I will apply the analysis of cross-level interaction. This technique seeks to determine whether structural factors could play the role of expander or restrictor of the predictor variables on confidence. The expected results might allow me to strengthen a theory of social ecology of trust in the police for the Chilean case.

Table 17 Cross-level interaction results

| | Model 1 Fixed Slope (without cross-level interaction) | | Model 2 Cross-level interaction municipal security * budget | | Model 3 Cross-level interaction social cohesion * poverty | | Model 4 Cross-level interaction social cohesion * rate police | | Model 5 Cross-level interaction informal control * rate police | | Model 6 Cross-level interaction social disorder * budget | | Model 7 Cross-level interaction ethnicity * budget | | Model 8 Cross-level interaction socioeconomic status * budget | |
|--|--|-------|---|-------|---|-------|---|-------|--|-------|--|-------|--|-------|---|-------|
| Individual Level= (N: 23265) | | | | | | | | | | | | | | | | |
| Predictors | Coeff. | SE | Coeff. | SE | Coeff. | SE | Coeff. | SE | Coeff. | SE | Coeff. | SE | Coeff. | SE | Coeff. | SE |
| (Intercept) | 0.436** | 0.004 | 0.436* * | 0.004 | 0.484* * | 0.004 | 0.464** | 0.004 | 0.463** | 0.004 | 0.463** | 0.004 | 0.463* * | 0.004 | 0.471** | 0.004 |
| Socioeconomic Level (Low Socioeconomic Level is the reference) | | | | | | | | | | | | | | | | |
| Middle Level | 0.004 | 0.002 | 0.003 | 0.002 | 0.003 | 0.002 | 0.003 | 0.002 | 0.003 | 0.002 | 0.003 | 0.002 | 0.004 | 0.002 | 0.004 | 0.002 |
| High Level | 0.021** | 0.006 | 0.017* * | 0.004 | 0.016* * | 0.004 | 0.017** | 0.004 | 0.017** | 0.004 | 0.017** | 0.004 | 0.019* * | 0.004 | 0.015* * | 0.004 |
| Ethnicity (yes) | -0.021** | 0.006 | -0.022* * | 0.006 | -0.022* * | 0.006 | -0.022** | 0.006 | -0.022** | 0.006 | -0.022** | 0.006 | -0.029* * | 0.006 | -0.017* * | 0.006 |
| Social Cohesion | 0.149** | 0.005 | 0.147* * | 0.005 | 0.151* * | 0.005 | 0.148** | 0.005 | 0.147** | 0.005 | 0.149** | 0.005 | 0.149* * | 0.005 | 0.163* * | 0.005 |
| Informal Social Control | 0.111** | 0.005 | 0.110* * | 0.005 | 0.110* * | 0.005 | 0.110** | 0.005 | 0.110** | 0.005 | 0.109** | 0.005 | 0.111* * | 0.005 | 0.095* * | 0.005 |
| Perception Social Disorder | -0.097** | 0.005 | -0.097* * | 0.005 | -0.097* * | 0.005 | -0.097** | 0.005 | -0.097** | 0.005 | -0.110** | 0.005 | -0.097* * | 0.005 | -0.076* * | 0.005 |
| Satisfaction with municipal security | 0.345** | 0.006 | 0.344* * | 0.013 | 0.342* * | 0.013 | 0.343** | 0.013 | 0.344** | 0.013 | 0.345** | 0.006 | 0.345* * | 0.006 | 0.354* * | 0.006 |
| Municipality level (N= 26) | | | | | | | | | | | | | | | | |
| Municipal Budget | 0.049* | 0.018 | 0.046 | 0.019 | 0.050* * | 0.019 | 0.048* * | 0.019 | 0.049* * | 0.019 | 0.132 | 0.019 | 0.046* * | 0.017 | 0.046* * | 0.017 |
| Multidimensional poverty | -0.115* | 0.048 | -0.123* * | 0.052 | -0.122* * | 0.054 | -0.124* * | 0.052 | -0.123* * | 0.052 | -0.129* * | 0.052 | -0.135* * | 0.045 | -0.094* * | 0.045 |
| Rate Police | 0.014 | 0.088 | 0.041 | 0.095 | 0.054 | 0.098 | 0.045 | 0.051 | 0.037 | 0.051 | 0.082 | 0.092 | 0.001 | 0.082 | -0.049* * | 0.082 |
| Cross-Level Interactions | | | | | | | | | | | | | | | | |
| Satisfaction with municipal security * Municipal budget | | | 0.043 | 0.048 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|--|-------|-------|-------|-------|---------|-------|---------|-------|-------|-------|---------|-------|--------|-------|--------|-------|
| Social Cohesion * Multidimensional Poverty | | | | | -0.232* | 0.051 | | | | | | | | | | |
| Social Cohesion *Rate Police | | | | | | | 0.471** | 0.114 | | | | | | | | |
| Informal Social Control * Police Rate | | | | | | | | | 0.065 | 0.111 | | | | | | |
| Perception Social Disorder *Municipal Budget | | | | | | | | | | | -0.169* | 0.491 | | | | |
| Ethnicity (yes)*Municipal Budget | | | | | | | | | | | | | 0.086* | 0.397 | | |
| High Socioeconomic Level*Municipal Budget | | | | | | | | | | | | | | | 0.033* | 0.022 |
| Variance Explained (Conditional R2) | 33.1% | 33.6% | 33.5% | 33.5% | 32.2% | 32.2% | 32.2% | 32.1% | | | | | | | | |
| ICC (Intraclass correlation) | 1.0% | 2.0% | 2.0% | 2.0% | 1.0% | 1.0% | 1.0% | 1.0% | | | | | | | | |
| Observations | 23265 | 23265 | 23265 | 23265 | 23265 | 23265 | 23265 | 23265 | | | | | | | | |

In general terms, the results serve as a comprehensive illustration of the intricate interplay among individual attributes, perceptions of local areas, and contextual dynamics within distinct municipal domains, collectively moulding the contours of confidence in the police. The influence of pivotal variables, including satisfaction with municipal services, social cohesion, socioeconomic disparity, perceived societal disorder, ethnic identity, and socioeconomic stratum, exhibits nuanced fluctuations within the intricate mixture of Santiago's municipal landscape.

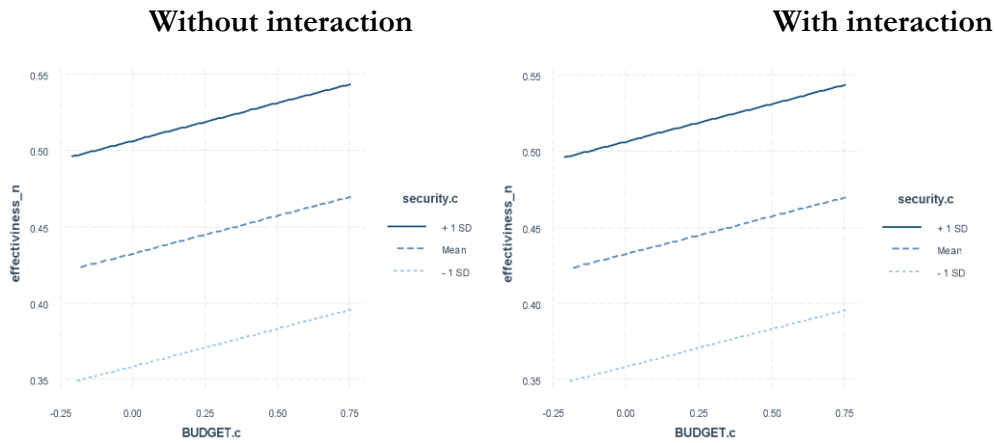
Specifically, after adjusting for all individual-level and district-level factors, I found a set of significant cross-level interactions between characteristics of persons and their perception of the local area and contextual factors in the municipal area on confidence in the police. It is possible to observe these significant interactions in Models 3,4,6,7 and 8.

Firstly, Model 2, which considers the result of the municipal budget on the relationship between satisfaction with municipal security and confidence in the police, was not significant.

This result means that increasing or decreasing the municipal budget will keep the relationship between satisfaction with municipal security and confidence in the police constant, not increasing the gap between people with different levels of satisfaction with municipal security. In other words, it is possible to assert that satisfaction with municipal services is associated with police confidence, regardless of the municipal budget.

Therefore, since satisfaction with municipal services is the variable that influences confidence in the police the most, this relationship is not moderated by the municipal budget. The relevance of this variable is regardless of factors at the municipal level. Graphically, the null moderator effect of the municipal budget is visualised when both graphs, with and without interaction, are similar and the lines in the second graph still parallel (Figure 19).

Figure 7 Confidence in the police (effectiveness) based on the interaction and not interaction between satisfaction with municipal security services (1=low, 2=medium, 3=high) and municipal budget



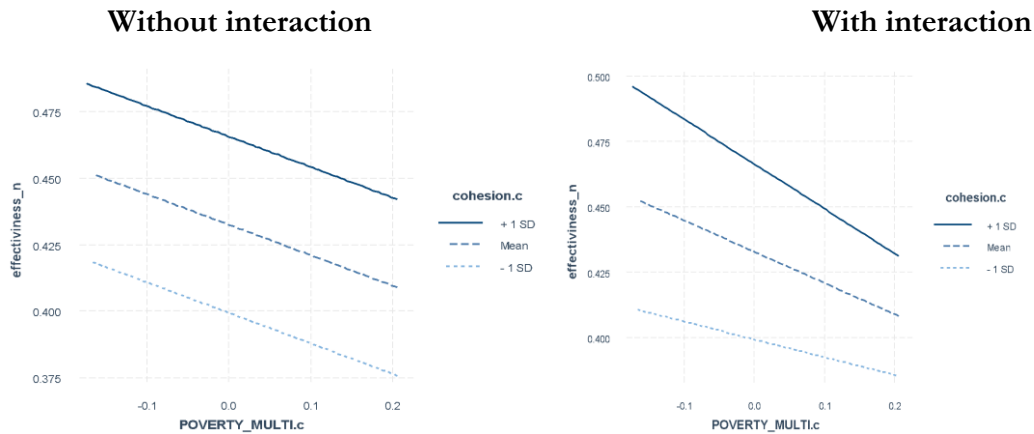
The interaction in Models 3 and 4 are both significant, indicating that the relationship between social cohesion and confidence in the police is moderated by multidimensional poverty and the number of police officers per capita.

In Model 3, Table 17 shows in statistical terms that the slope of individual confidence in the police on individual social cohesion is expected to equal 0.151 for municipalities with average poverty in the local area. However, the relationship between individual cohesion and individual confidence becomes weaker, by -0.232 units (score in confidence), for every additional 1% of households living under poverty. Graphically, this relation is shown in Figure 19.

If poverty at the municipal level is low, there will be a marked gap in the levels of confidence in the police between those with greater social cohesion and those with less social cohesion. Therefore, a municipal condition of low poverty would be mediating to enhance the effect of social cohesion on confidence in the police. In other words, social cohesion is more important in wealthy municipal areas.

By contrast, when poverty increases, social cohesion's effect tends to decrease because the gap between people from a low and high level of social cohesion will be lower. Hence, it is possible to state that social cohesion is less intense in disadvantaged municipal areas.

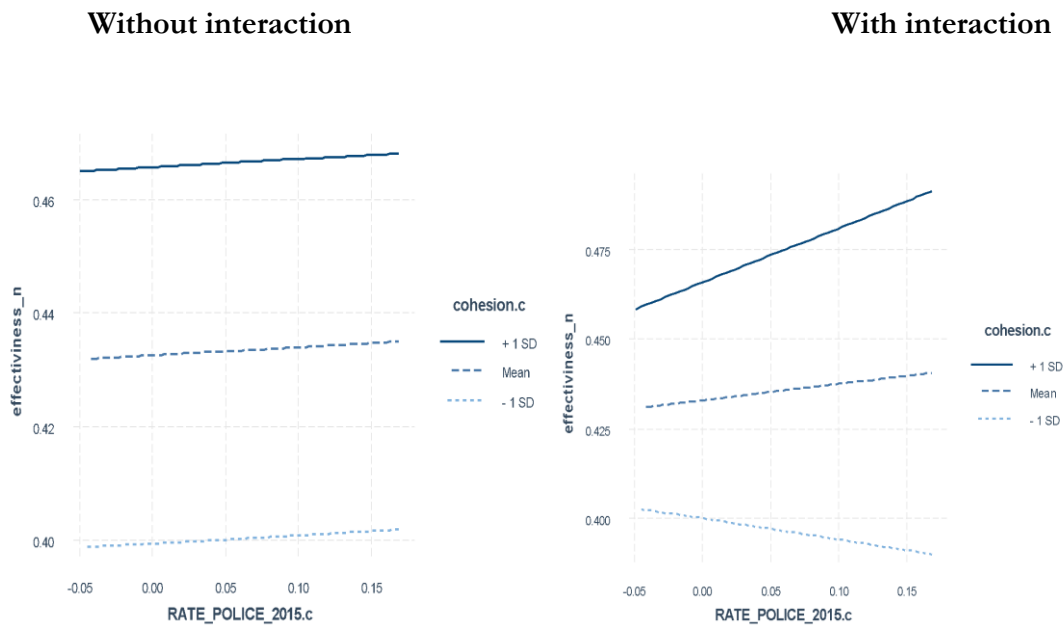
Figure 20 Confidence in the police (effectiveness) based on the interaction not interaction between social cohesion and poverty



In the case of Model 4, Table 17 shows that the slope of individual confidence in the police on individual social cohesion is expected to be equal to 0.148 for municipalities with an average rate of police officers in the local area. Nevertheless, this relationship between individual cohesion and individual confidence becomes stronger, by= 0.4711 scores of confidences, as the rate of police officers increases by one officer.

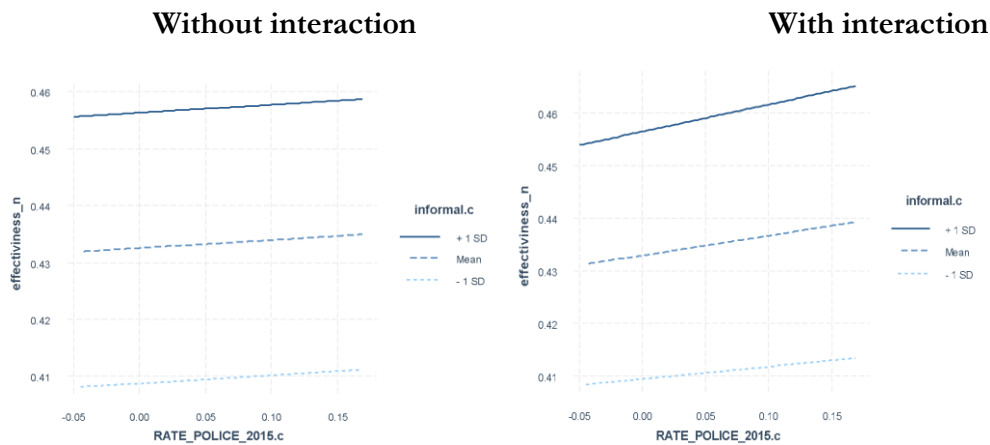
In contrast with poverty, when I analyse the variables without interactions (see Figure 21), the number of police officers exerts a smooth and positive relationship with the confidence of all persons regardless of their levels of social cohesion. However, when I include cross-level interaction, the number of police officers, considered moderator, amplifies the degree of confidence, but this effect is only for those with high social cohesion. The mediating effect of the police officers favours this last group. By contrast, surprisingly, if the number of police officer increases, confidence will decrease in groups with less social cohesion.

Figure 21 Confidence in the police (effectiveness) based on the interaction and not an interaction between informal social control and rate police officers.



Model 5 analysed the same interaction of rate police officers but now with informal social control. Because the informal control variable is composed of coordinating actions with police and neighbours to achieve more public safety, an increased police presence could impact confidence. Nonetheless, this cross-level interaction was not significant, so people with greater informal social control in their local areas have more confidence than those who declare low informal control, but the number of police officers does not modify this relationship. Since Figure 22, with and without interaction, has the same shape, it is possible to show the null influence of rate police on informal social control and their effect in confidence in the police.

Figure 22 Confidence in the police (effectiveness) based on the interaction and not the interaction between informal social control and rate of police officers

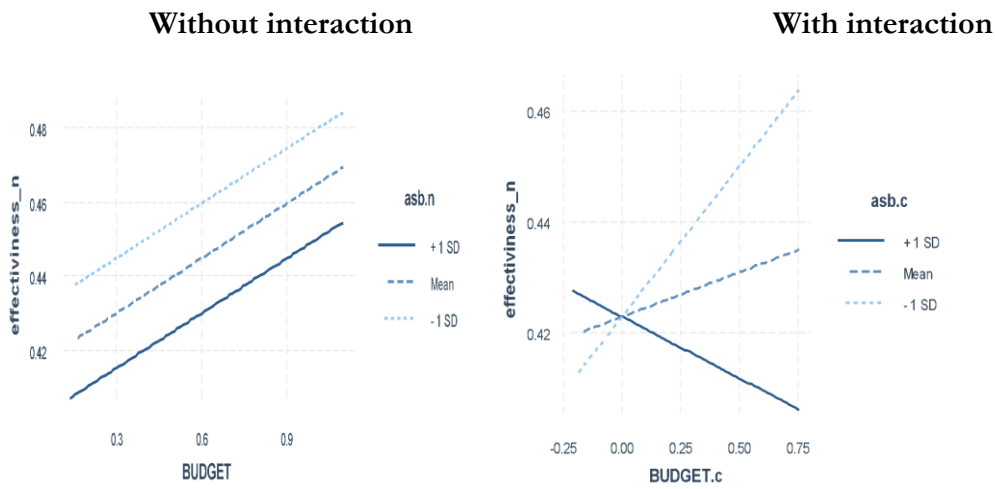


Considering the key role of the municipal budget in explaining confidence in the police revealed by this thesis, a relevant interaction to test was whether the municipal budget moderates the negative relationship between the perception of social disorder in the neighbourhood and confidence in the police (Model 6). The interaction was significant.

Table 17 elucidates that the gradient of individual police confidence in relation to the individual perception of social disorder is initially estimated at -0.110 for municipalities with an average municipal budget within the municipal area. However, this association diminishes in potency, registering a decline of approximately -0.169 units, with every increase of 1,000 Chilean pesos per capita in the municipal budget. This phenomenon is visually validated in Figure 22 wherein a growth in the municipal budget of a particular municipality corresponds to an increase in the confidence of individuals with a lower perception of social disorder. In succinct terms, an elevated budget allocation at the municipal level appears to foster heightened confidence among those who hold a less pessimistic view of social disorder.

On the contrary, in municipalities with a reduced budget, the difference in perception of the police between people from different levels of perception of social disorder will be more minor. Therefore, in disadvantaged municipalities, social disorder slightly affects their grade levels of confidence. In these places, police reach a low level of confidence regardless of the perception of disorder.

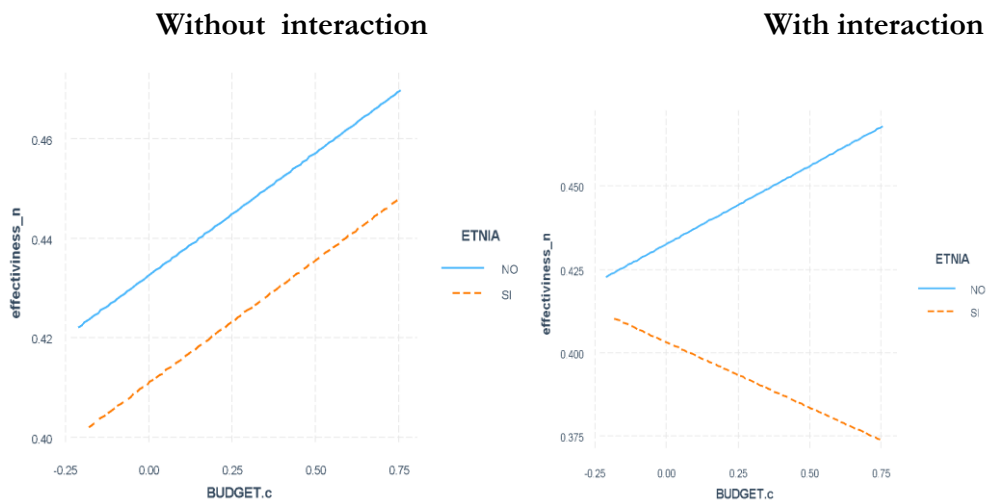
Figure 23 Confidence in the police (effectiveness) based on the interaction and not the interaction between perception of social disorder and municipal budget



Research focusing on public confidence in law enforcement agencies has emphasized the significant role of ethnicity, within the larger social context. This aspect has been highlighted in various studies, including those by Wu et al. (2009), Sampson and Bartusch (1998), Reisig and Park (2000), and Jackson et al. (2012). These studies underscore how a person's ethnicity interacts with their surroundings and societal structures, impacting their perception of the police. This chapter is influenced by this body of work, aiming to deeply investigate the connection between ethnicity, individual factors, and the municipal environment in shaping police confidence.

Thus, in this chapter, the interest is in testing ethnicity and whether some structural factors moderate their confidence levels. In municipal areas with lower municipal budgets, there is still a noticeable gap in police confidence between individuals belonging to ethnic minorities and those who do not. However, this gap is relatively smaller compared to wealthier areas. Interestingly, as we shift towards wealthier areas with higher municipal budgets, the disparity in police confidence between these two groups widens, indicating that the influence of ethnicity becomes more pronounced in wealthier contexts. This aligns well with the findings presented in Figure 24 which visually illustrates this dynamic relationship.

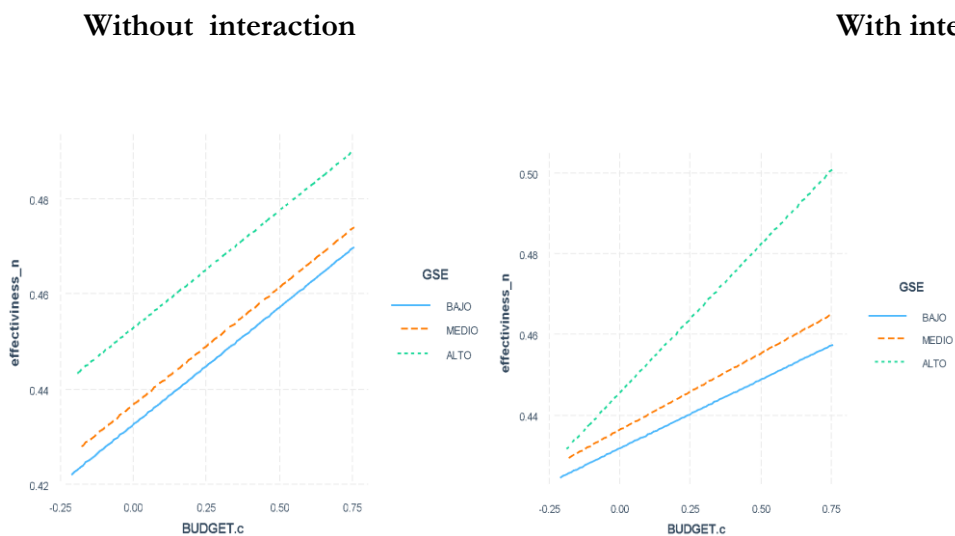
Figure 24 Confidence in the police (effectiveness) based on the interaction and not the interaction between ethnicity and municipal budget



- Etnia: Ethnicity : yes/no

Finally, another topic that the literature focused on was confidence in the police examining whether the relationship between the socioeconomic status (SES) of families and confidence in the police is influenced by the municipal budget. Table 11 reveals that the slope of individual confidence in the police on individuals belonging to high socioeconomic status (SES) is expected to equal 0.015 over low socioeconomic status for municipalities with an average of the municipal budget at the local area. As the municipal budget increases by 1,000 Chilean pesos, this relationship between high SES and individual confidence is strengthened by ≈ 0.033 scores in confidence in the police. Figure 25 shows that in municipalities with low budgets, people from different socioeconomic statuses hold a similar level of confidence, so the positive effect of an upgrade of the socioeconomic condition to foster confidence is attenuated when the financial resources of the local government are limited. On the other hand, it is possible to recognise the municipal budget as a structural amplification of confidence because all the socioeconomic groups improve their perception of the police when the municipal resources are increased. However, this amplifier effect benefits more people from high socioeconomic status, increasing the gap with persons from low socioeconomic status.

Figure 25 Confidence in the police (effectiveness) based on the interaction and not on the interaction between personal socioeconomic condition and municipal budget



*GSE: high/middle/low socio-economic status

7.6. Discussion

To advance a deeper and more nuanced understanding of spatial heterogeneity, Chapter 7 aims to respond to two central inquiries. First, it addressed the question of whether the predictor variables of confidence in the police, developed in Sections 2.5 and 2.6 of our theoretical framework, kept a differentiated influence across municipal areas. Secondly, it addressed whether structural factors at the municipal level moderate the relationship between confidence in the police and variables at the individual level.

Answering these two questions is crucial to outline a social ecology theory of confidence in the police for the Chilean case, whose core is spatial heterogeneity. However, prior to elaborating on the contribution of this thesis to the establishment of a theory of social ecology, it is imperative to present the empirical findings that will serve as the basis for the formulation of this theory.

Firstly, the results showed the positive influence of social cohesion²³ to foster confidence (Cao et al., 1996; Merry et al., 2012; Kwak and McNeeley, 2019) *is weakened when poverty increases at the municipal level*. In that case, while it is true that those who perceive greater social cohesion in their local areas are more affected by a decrease in confidence in the police (evidenced by plots of cross-level interaction), they continue to rely on the police more than those who perceive less social cohesion. In other words, despite the adverse effect of poverty as a structural factor, like ecological contamination (Sampson & Bartusch, 1998), people with greater social cohesion are better prepared to maintain their confidence in the police.

From another point of view, I can also affirm that it is not enough to consider social cohesion as a strategy if public policies seek to increase confidence. Families living in a determined context that shapes and modifies their actions and perceptions do not often choose these social environments²⁴. In this manner, studies in this field should consider and measure *how poverty acts as a constraint* that restricts the positive effect of cohesion to foster confidence in the police. These results of cross-level interactions are consistent with the findings of this chapter covariances analysis. People living in municipal areas with higher confidence (areas characterised by being affluent zones, as was demonstrated in Chapter 5) benefit from the effect of cohesion (measured by their slope) on confidence the most. By contrast, in municipal areas with a low confidence level, the influence of cohesion is reduced (see quadrant of analysis of covariances).

Consequently, the findings demonstrate why one-size-fits-all policies addressing confidence in the police in Santiago may fail if not designed for the nuances of specific contexts and their spatial heterogeneity.

A second contextual factor with a potential role of moderator in the relationship between confidence and social cohesion, and informal social control is the *police officers per population* in each municipal area (the number of police officers divided by the total population). The rate of police officers in local areas might increase police confidence and satisfaction because more officers provide a sign of police visibility, and they would act to reduce the number of crimes (Lai and Zhao, 2018; Skogan, 2009). However, as noticed (unexpectedly) in Chapter 6, the rate of police officers was not a significant variable. In other words, the presence or

²³ As a reminder, social cohesion in a variable that was constructed from 4 items: “*People in this neighbourhood are reliable*”, “*People in this neighbourhood are willing to help each other*”, “*This is the close-knit neighbourhood*”, “*People in this neighbourhood share the same values*”.

²⁴ According to descriptive data from the survey on which this study is based, in some municipal areas of Santiago, 51% of people state that they would move because of the crime levels in their neighborhood.

absence of police officers in a municipal area did not show any significant influence on the degree of confidence that individuals had in the police force. This outcome underscores the intricate nature of factors influencing public confidence in law enforcement agencies. Because of the above results, Chapter 7 sought to test if the rate of police could be significant as a moderator structural factor. Studies indicate that social cohesion, informal social control, and willingness to coordinate citizens' actions with the police can increase their confidence in them, but likewise the number of police could play a considerable role in this process (Garcia & April 2003). This existing knowledge served as a catalyst to employ a cross-level interaction analysis, allowing for a deeper exploration of the potential mediating role of the police officers' rate in influencing individuals' confidence in the police force.

In contrast with poverty, when the variables were analysed without interactions, the number of police officers exerts a positive but minor influence concerning the increase in confidence of all persons, regardless of their levels of social cohesion. However, when cross-level interaction was included, the number of police officers considered a moderator amplifies the degree of confidence, but this effect is only for those with high social cohesion. Simply put, the group maintaining higher social cohesion is more favoured by the mediating effect of the police officers. Therefore, policymakers seeking to increase police confidence through greater visibility of the police on the streets, in terms of quantity, should consider that this effect will be more successful in local areas with greater social cohesion.

The problem lies in groups with less social cohesion. Surprisingly, if the number of police officers' increases, their confidence will drop, a tendency that could be interpreted as revealing underlying factors, such as preceding or historical conflict with police. Hence, if areas with low social cohesion increase the number of police officers, it would not guarantee greater confidence. In other words, confidence benefits, such as the willingness to call the police for assistance, report crimes, and collaborate by providing information, and thus more crimes investigated by the judicial system (Cao and Zhao, 2005), could shrink in that type of social environment. Possibly these groups require community work in the social network in the neighbourhoods before or parallel to any police intervention. This outcome underscores the necessity for tailored and context-specific approaches in policies aimed at addressing confidence in the police. The notion of implementing uniform strategies may prove ineffective, as it neglects the intricate diversity inherent within specific contexts. Consequently, the implementation of policies should be guided by a profound understanding of the particular factors and dynamics that contribute to confidence in the police within different municipal areas.

After examining social cohesion, this chapter analysed whether the rate of police officers could influence the positive relationship between informal social control and confidence. The assumption was that as informal control is composed of actions such as coordinating activities with police and neighbours to achieve more public safety, a potential increased police presence could impact their confidence level. Despite this, the cross-level interaction was not significant. Thus, people with greater informal social control in their local areas have more confidence than those who declare low informal control, but the *number of police officers does not modify this relationship*. Future studies should qualitatively explore why the number of police affects social cohesion but not informal social control and the differences between social capital and interaction expressions.

Before moving to another variable, the last idea about informal social control was revealed by analysing covariance. The impact of informal control (slope) on confidence is most, unlike social cohesion, in many municipal areas with a low level of confidence. Therefore, a more successful strategy to increase confidence would be to encourage informal social control instead of increasing social cohesion in those municipal areas of low confidence. Once again, future qualitative studies should clarify why both variables related to social networks influence confidence differently in municipal areas that suffer low confidence and social vulnerability.

Another matter that this chapter included was the relationship between the families' socioeconomic status (SES) and the SES of the municipal area on confidence in the police. Numerous studies (Skogan 1978; Carter, 1985; Thurman, 1996; Jackson et al., 2012; Sampson and Bartusch, 1998) show that belonging to low SES is associated with lower confidence in the police. These findings were confirmed in Chapter 6. Nevertheless, the results of cross-level interactions uncovered that even though the benefit of living in a municipality with more resources (as municipal level 2 variable) improves confidence in all SES groups (as individual level 1 variable), people belonging to high SES groups experience (as individual level) a greater increase in confidence than those in lower SES groups. Therefore, if a municipality increases its budget does not imply that the distance between wealthy and vulnerable people will be shortened. By contrast, the amplifying effect of living in a municipal area with high resources benefits those who already individually live in better socioeconomic conditions. These findings are consistent with the analysis of covariance. Belonging to a high and medium SES, compared to a low SES, brings more advantages to increase confidence in municipalities with more resources (at the same time, municipalities with greater confidence).

Conversely, deprived municipalities, which are in turn, those with less confidence, belonging to the medium and high SES have less impact on confidence. Put another way. Everyone has a similarly low level of confidence in the police in these municipal areas, regardless of SES.

These results of cross-level and covariance were different from what was expected. Altschuler et al. (2004) posit a significant relationship exists between higher neighbourhood SES and wealthier local services and facilities. Municipal areas with a wide budget are likely to have more appropriate access to many conveniences, services, and information. In the case of trust in the state institutions, Muyama (2014) demonstrates that even though people may have low SES if they live in an affluent district, they may have greater trust in the national government or their assessment of it may be more optimistic. The perception of trust among people of low SES is more likely to be influenced by the municipal budget of the local area than that among people of high SES. In simple terms, people from low SES gain more trust in the government if they live in a local area with high resources.

In Chapter 7, I assumed that in Santiago, those who could most benefit from living in a wealthy municipal area were the low SES groups since the help from the municipality could reduce the gap that separates them from the high-level groups. I supposed that the confidence levels could be similar between high and low-SES groups in an affluent municipal area. However, the results demonstrate that a structural change, such as an increase in the municipal budget, could improve confidence in the police, especially in groups previously favoured by their personal SES situation. This result seems to show a detrimental circuit that raises inequality since those with more privileges continue to boost confidence through social structures like the municipal budget.

In addition to the previous interaction, this chapter also tested whether the municipal budget might moderate the relationship between individual-level satisfaction with municipal security services and individuals' confidence in the police. The relevance of including this type of satisfaction is because Chapter 6 evidenced that this variable was the most relevant variable to explain the variance of confidence (taking the value of the coefficient in the regression). Remarkably, Chapter 7 expected that individual-level confidence might be higher when related to satisfaction with municipal services when municipalities hold a higher municipal budget. Also, I projected that in municipal areas with a low budget, individual-level satisfaction with municipal services would be the same regarding their influence on confidence because municipal services provided in those areas would be precarious and

might not cause differences. By contrast, in municipal areas with high budgets, satisfaction would score variations in confidence.

Nevertheless, the result of cross-level interaction was not significant, indicating that the level of confidence will always be higher among people with high satisfaction with municipal services compared with low satisfaction regardless of the variation of the municipal budget. Thus, satisfaction in municipal services is not only the variable most associated with confidence but it also does not show to be affected by an amplifying or constricting effect from the municipal budget condition. Simply put, the strength of the relationship between satisfaction and confidence would be based mainly on the individual dimension, in multilevel terms, in level 1.

This outcome aligns with existing literature which suggests that individual-level perceptions of service quality often have a more direct impact on confidence in public institutions than broader structural factors (Tyler, 2006; Gau, 2011). In the context of public safety, citizens' direct experiences with municipal services, such as the perceived quality and responsiveness of these services, are likely to shape their confidence in the police more strongly than the overall financial capacity of the municipality.

Moreover, studies have shown that while structural factors like municipal budgets are crucial for the provision of public services, their impact on individual perceptions and confidence may be mediated by other variables, such as the quality of service delivery and the visibility of these services in the community (Jackson et al., 2012; Wu et al., 2009). In this sense, satisfaction with municipal services could be viewed as a more immediate and tangible factor influencing confidence in the police, overshadowing the potential moderating effect of municipal budgets.

Interestingly, the municipal budget was found to be significant in other interactions, highlighting its importance in certain contexts. This discrepancy suggests that while municipal budgets play a crucial role in some areas, their influence on the satisfaction-confidence relationship might be less pronounced due to the direct nature of personal interactions with municipal services.

Regarding how the perception of social disorder affects confidence in the police in local areas, as most research shows, a higher perception of social disorder at the individual level decreases confidence in the police (Reisig & Park 2000; Cao et al., 1996; Merry et al., 2012; Kwak and McNeeley, 2019). Chapter 6 confirmed these findings. Nevertheless, the current

chapter shows that the municipal budget moderates the rate by which social disorder affects confidence in the police. As Sampson explains (2002), cognitive perceptions of the social disorder are shaped by poverty and the vulnerability of local services. Therefore, not only do individual perceptions of social disorder matter but so do shared perceptions of environments (Gaitán-Rossi & Shen, 2018). In a municipal area with an extensive budget, there are considerable differences in confidence between those who perceive a high level of social disorder and those who perceive it as low. In fact, as the municipal budget expands, the gap between both groups increases. Interestingly, individuals who perceive a higher degree of social disorder demonstrate a more pronounced impact on their levels of confidence in localities with larger municipal budgets. Notwithstanding their residence in areas of improved structural conditions, these individuals display a propensity for shifts in their confidence levels when confronted with instances of social disorder. Thus, a high perception of disorder could always be an attenuator of police confidence, still modifying the financial conditions of the municipalities where they live.

Otherwise, in municipal areas with a low budget, the distance between different levels of disorder is smaller. In these municipalities, the social disorder slightly affects their confidence levels: low confidence in the police experience could be regardless of people's perception of the disorder. This result seems to uncover that confidence in the police will not necessarily depend on the performance of officers in the social disorder. If, for instance, in areas with a low municipal budget, the police could reduce social disorder more, this would not necessarily increase confidence in the police. Instead, it would be more beneficial for civil authorities to increase the municipal budget, but this decision is out of the scope of police action for the Chilean case. On the other hand, the analysis of covariance does not provide a clear pattern of who is impacted the most by the presence of social disorder in their confidence. There are similar municipal areas between those affected above the slope average by social disorder in confidence and those affected below the average.

The last significant variable in the cross-level interaction analysis was ethnicity. For the first time in Chile, I can illustrate and quantify with empirical evidence that people in Santiago who declare belonging to an indigenous group report lower confidence in the police than those who do not declare belonging to an indigenous group. This finding is consistent with broad evidence for the Anglo-Saxon context in which persons belonging to a racial minority show less confidence in the police (Wu et al., 2009; Sampson and Bartusch, 1998; Reisig and Park, 2000; Jackson et al., 2012). However, unlike the studies in the Anglo-Saxon context,

where ethnicity loses significance when structural variables control it, ethnicity remained significant in Santiago.

The current chapter examined whether ethnicity might interact with the municipal budget. In light of the extensive research that underscores the intricate interplay between race and class, this investigation delves into a particularly intriguing facet of this relationship. I specifically examine how this interplay interacts with our proxy measure for socio-economic status, represented by the municipal budget. By exploring this intersection, I aim to shed new light on the complex dynamics that underlie the influence of socio-economic factors on perceptions of the police. The analysis offered in this regard promises to enrich our understanding of the nuanced interactions between race, class, and structural factors in shaping confidence in police.

The results revealed that in municipalities with reduced budgets, people belonging to an ethnic group and those who do not hold a similar confidence level. In these municipal areas, people have low confidence in the police regardless of whether they belong to an ethnic group or not. Chileans and those who declare to belong to an ethnic group suffer similarly from low confidence in the police and its multiple negative externalities, neutralising their ethnic difference under a shared scenario of social disadvantages. This situation changes dramatically as the municipal budget grows. In affluent municipal areas, Chileans and those who declare to belong to an ethnic group maintain a substantial difference in confidence, widening the gap. With these results, it is possible to suppose that significance of ethnicity could change from municipal area to municipal area, once again evidencing the relevance of including spatial heterogeneity in the analysis of nested phenomena such as confidence in the police in the case of Santiago.

To sum up, this research provides a unique opportunity to shed light on the complex interplay between individual perceptions, socio-economic factors, and the municipal context, thereby contributing to the overarching framework of social ecology. The implications of the findings resonate strongly with the idea that the context within which individuals reside significantly influences their perception of the police.

The exploration of the varying influences of variables such as social cohesion control across different municipal areas underscores the importance of localised dynamics. This spatial heterogeneity reinforces the notion that building confidence in the police is not a universal phenomenon but is intricately tied to the socio-economic and contextual attributes of a

specific municipal area of Santiago. This understanding substantiates the foundation of a social ecology theory, which seeks to comprehend how diverse elements coalesce to influence individuals' confidence in police forces.

Thus, the present research highlights the foundational significance of spatial heterogeneity along with its intricate interplays with individual-level attributes and structural determinants. Through the meticulous unravelling of these intricate complexities and the provision of empirical substantiation, it is anticipated that this study will make a substantial contribution towards the development of a comprehensive and robust theory pertaining to the social ecology of police confidence within the Chilean context. Built upon concrete empirical evidence and bolstered by the methodical analytical rigor accurately expounded in this thesis, this theoretical construct stands ready to significantly amplify the insights gleaned from this inquiry. Ultimately, its potency lies in furnishing an all-encompassing and enhanced framework that enriches our comprehensive comprehension of the intricate dynamics influencing public perceptions of police forces.

8. CHAPTER 8: Conclusions

8.1. Summary of the key findings

This thesis is primarily concerned with unpacking the concept and measurements of the distribution of public safety considered from a multidimensional approach focused on Santiago. A core assumption made throughout is that public safety might show substantial variation and inequality in its distribution across Santiago replying to a pattern presented in other public services.

Chile and Santiago represent a distinctive case in Latin America due to their liberal welfare regime, which contrasts with the conservative–corporatist or mixed models prevalent in the region (Ferre, 2023). Unlike its neighbours, Chile heavily relies on market mechanisms for social service delivery, creating a dual system where high-quality private services are accessible to those who can afford them, while public assistance remains minimal and targeted at the poor (Ferre, 2023). This approach has led to significant inequality, despite Chile's high rankings in international social and economic indicators such as GDP per capita, the Human Development Index, and public safety (World Bank, 2018; United Nations Development Programme, 2018). Institutional stability, government efficiency, and public confidence in the police further distinguish Chile from Latin America (Kaufmann and Kraay, 2023; Latinobarometro, 2019). However, the country's pronounced inequality, a legacy of neoliberal reforms, makes it a critical subject for examining the impact of market-driven policies on social equity.

To truly grasp the intricacies of Santiago's distribution of safety, relying solely on local data proves insufficient. This research considers various social, economic, and political elements to understand the distribution of access to public safety. Despite Chile's high rankings in social and economic indicators, the country simultaneously confronts high levels of societal inequality, surpassing numerous Latin American nations in terms of the Gini Index (World Bank, 2023). Segregated urban areas further exacerbate inequality, impacting access to essential services like education and healthcare (United Nations Development Programme, 2017; Senado de Chile, 2012). While there is a noticeable diagnosis of inequality, limited knowledge exists regarding the extent and variation in the distribution of public safety at a more detailed level. This study aims to address this gap by suggesting the utilisation of crime

surveys that capture representative data at the municipal level instead of relying solely on national-level data

The novelty of this thesis is that to date no victimisation survey representative at the municipal level covering the totality of a large capital city such as Santiago has been conducted in Chile. Despite Chile holding the longest-running continuous national crime survey in Latin America (ENUSC) with an extension of almost 20 years (Aebi and Linde, 2012), from a statistical and public policy approach, there is one significant restriction: its representativeness does not reach the municipal level (Under Secretary of Crime Prevention of Chile, 2014 b). To overcome this limitation, this research employed the first municipal crime survey whose focus was to highlight the differences between municipal areas and local governments in Santiago. The results displayed through their pages endeavours to furnish a substantial wealth of data and analysis, thereby serving as an incentive for the sustained implementation of municipal-level surveys, even in the face of their considerable financial costs.

The findings revealed, firstly, the crucial role of local governments and their services in understanding this uneven distribution of public safety in Santiago. Specifically, in Chapter 5, satisfaction with municipal security services was the variable most associated with the three dimensions that compound the concept of public safety: victimisation, fear of crime, and confidence in the police. Then in Chapter 6, both satisfaction with municipal security services and the municipal budget, which conform to the conceptual model of local government, were central to explain the variance and unequal confidence in the police across Santiago. Even more, in Chapter 7, the municipal budget acts as a factor moderator between confidence in the police and variables associated such as socioeconomic status and ethnicity.

Considering these notable findings that emphasise the role of local government, this thesis has presented a theoretical framework and historical context that offers a more complete analysis, allowing for a better understanding of distribution of public safety in Santiago. In this regard, elements such as the neoliberal transformations in public policy during the 80s, which were key in the configuration of the role of local governments, taking the forms of the segregation and inequality highlighted throughout this research. Indeed, neoliberal reforms often sought to reduce the role and size of centralized state, giving greater autonomy to the municipalities in areas such as education, health and currently public safety. However, in terms of resources, these municipalities exhibit massive disparities among them. Hence this autonomy came with the cost of new forms of inequality and segregation that have not

been considered in current literature and that call for more fine-grained analysis. Thus, this dissertation undertakes the task of filling this research gap within the field of Criminology by contributing to the existing void in knowledge.

Faced with the consequences of neoliberal reforms where a greater role of the municipalities is attributed, revealing the conditions of inequality at the local level, I suggest that, in terms of quality of life, levels of crime and its perceptions, and access to public safety represented by the police and municipal services, Chile could be seen as “many Chiles” and Santiago is a solid representation of this phenomena.

In response to the research objective of comprehending the distribution of public safety, Chapter 5 aimed to address the inquiry regarding the extent of inequality among municipalities in Santiago. I assume a multidimensional conception of safety consisting of victimisation but also of a subjective dimension based on perceptions such as fear of crime and confidence in the police which are crucial spheres to comprehend the reasons why crime plays a key role in the agenda setting of media, governments, and the people. The general perception of crime is intricately connected to how unsafe people feel in their homes and on the streets as well as how they evaluate the performance of the police, their effectiveness and the type of treatment received (Jackson and Bradford, 2009).

Employing the ANOVA test and spatial autocorrelation analysis to examine the clustering patterns in the distribution of public safety across Santiago, the results revealed that confidence in the police exhibited the highest levels of inequality. Specifically, the spatial autocorrelation analysis indicated an unequal distribution of the three dimensions of public safety investigated in this thesis. Notably, in the eastern region of Santiago, where neoliberal reforms have led to an unequal allocation of wealth and resources (Parraguez-Camus, 2017; Harvey, 2007; French-Davis, 2003; Han, 2012; Portes and Martinez, 2019), a spatial clustering characterised by a low fear of crime and high confidence in the police was observed. These findings align with existing literature discussing the establishment of urbanisation models aimed at shielding advantaged groups from various social issues, including crime. Such measures include the creation of "security enclaves" (Sabatini and Salcedo, 2007), "fortified zones" (Perez, 2011), or "gated communities" (Portes and Martinez, 2019).

Furthermore, these findings align with the empirical evidence put forth by the Social Disorganisation Theory, which posits that the forced migration of vulnerable populations to peripheral areas coupled with the liberalisation of housing markets can contribute to the

segregation and concentration of crime risk factors (Sampson and Wilson, 2007; Bruinsma and Johnson, 2018; Tompson, 2016; Sampson et al., 1997). Similar patterns of forced migration have been observed in Santiago as well (Rojas, 1984), resulting in the formation of enclaves within the city where homogeneous groups are geographically separated from one another by considerable distances.

Therefore, spatial analysis studies in both the Global North and South show that social disorganisation and vulnerability influence crime concentration, segregation, and urban planning, as seen in Santiago. Findings from Santiago mirror those from London, where confidence in the police is higher in affluent areas despite higher crime rates, due to socio-economic factors like unemployment (Buil-Gil et al., 2020; Williams et al., 2019). Santiago also shares similarities with Malmö, Sweden, where perceptions of unsafety are linked to specific micro-geographical features (Kronkvist, 2022). Conversely, in Viçosa, Brazil, fear of crime is evenly distributed among residents, regardless of socio-economic status or urban planning quality (Alkimim et al., 2013).

Another relevant finding for Criminology, is the analysis of spatial autocorrelation concerning victimisation. This variable behaves differently from fear of crime and confidence in the police. The results showed that wealthy municipalities hold a similar victimisation level to other areas of Santiago, challenging Portes and Martinez (2019), who affirm, because of neoliberalism reforms, there is a displacement of crime to Santiago's affluent areas that is the most victimised. Considering both elements, a similar level of victimisation across Santiago, and the fact that victimisation has been a priority indicator in defining Chilean public policies, the risk arises of assuming that access to public safety could be equivalent among the population. In a similar form that the studies on poverty evolved from measuring poverty based on incomes to a multidimensional approach (Madden, 2006), it is fundamental to develop a multidimensional conception of public safety for Chile that is not reduced to the experience of being a victim of a crime. The results of Chapter 5 evidenced the need to include a broader concept of the victim because policies should focus not only on victims of crimes but also on victims of a high fear of crime and low confidence in the police.

Moving on to Chapters 6 and 7, the focus was on confidence in the police. The reason for that decision is because confidence represents an indicator of progress in democratic societies and the success of criminal justice depends on people trusting their police. Moreover, the police are the most tangible symbol of the state and regime power on the

streets and among people. From the empirical evidence, Chapter 5 demonstrated that, within dimension of public safety, confidence in the police was the most unequally distributed.

A first topic covered by Chapter 6 was the exploration of potential dimension within concept confidence in the police. It should be noted that achieving effective police success in terms of crime reduction does not necessarily indicate an improvement in their relationship with the community (Engel et al., 2015). It is plausible that a high rate of arrests by the police could signify a deterioration in their interactions with the community or certain specific groups. Despite this important aspect, the investigation of confidence in Latin America and Chile has not adequately addressed the examination of potential dimensions that underlie this concept of confidence, leading to a significant research gap. In this regard, I aimed to investigate whether more than one dimension could better account for the phenomenon of confidence, specifically considering one latent dimension related to police effectiveness and another dimension associated with communication with the community.

The Confirmatory Factorial Analysis confirmed both dimensions of confidence in the police. A dimension of treatment, contact, and communication between police and citizens and local government, and a second dimension of effectiveness based on police capacity to respond time to call, control drug trafficking, stop offenders, and patrol frequency. These results on Santiago were consistent with empirical evidence found by Jackson (et al., 2012) in England and Wales. In terms of results, certain variables exhibited statistical significance in one dimension while not in another. Specifically, being female exerted a significant and positive impact solely on the perception of police treatment and communication, where males received comparatively inferior treatment, whereas it did not have any significant effect on the perception of police effectiveness, wherein both males and females were evaluated similarly. In parallel, the relevance of multidimensional poverty at the municipal level was observed solely in police effectiveness, while it did not exert an influence on treatment and communication. These findings imply that the police's capacity to combat criminal activities in Santiago is marked by inequality and socio-economic discrimination, whereby impoverished areas encounter limited police efficiency. However, this imbalance would not necessarily manifest in terms of treatment.

As well as distinguishing dimensions, the study of confidence in the police has transitioned from focusing solely on individual factors such as demographics and socioeconomic status to examining the influence of structural factors, as exemplified in the research on the social ecology of trust (Jackson et al., 2012; Sampson and Bartusch, 1998). This shift in perspective

holds relevance for Latin American and Chilean contexts, as the region faces significant challenges related to safety and violence, which are intricately linked to structural conditions such as inequality and poverty. Furthermore, it is worth noting that there is notable disparity in the lack of quantitative research conducted in the fields of policing and criminology when comparing Latin American and Chilean studies to the extensive research undertaken in countries such as the United States and the United Kingdom (Ahmad et al., 2011; Dammert, 2014; Cao and Zhao, 2005).

To tackle that gap, I examined whether structural variables at the municipal level are significant in explaining the variance of confidence in the police controlling for individual variables. A multilevel modeling approach was employed to examine the variance in confidence levels within Santiago. This methodological choice was deemed appropriate from both theoretical and statistical perspectives. Chapter 6 presented an Intra-Class Correlation (ICC) value of 11%, indicating the proportion of total variance in confidence that can be attributed to variation between municipalities. This ICC value holds significance in the realm of social science, particularly in the context of nested phenomena (Raudenbush & Bryk, 2002). Consequently, the ICC value is interpreted considering the evidence that confidence in the police is embedded within distinct municipal areas of Santiago, as observed in the analysis of spatial autocorrelation in Chapter 5. These findings highlight the necessity to obtain a deeper and more nuanced understanding of spatial heterogeneity, a dimension that is extensively examined in Chapter 7.

Another, relevant finding from Chapter 6 is that people who declare belonging to indigenous groups, mainly Mapuche, show lower confidence in the police. Even though evidence confirmed multiple international studies about this phenomenon (Wu et al., 2009; Sampson and Bartusch, 1998; Reisig and Park, 2000; Jackson et al., 2012), in Chile, studies addressing confidence in the police by indigenous groups have been insufficiently described by quantitative methods. Some studies have centred on trust by Mapuche regarding a broad set of institutions but not with special consideration to the relationship between this group and the police (Aninat, 2017). Other studies have worked from a historical and ethnographic approach (Foerster and Menard, 2009; Reyes et al., 2022; Rojas and Miranda, 2016) and media agenda (Urrea et al., 2020).

In this regard, the contribution of this research is based on the most extensive sample implemented at the municipal level being able to statistically represent this group. The advantage of this dissertation is that for the first time, it is feasible to statistically compare

Chilean people with people who identify as being Mapuche (not Chilean), corroborating what qualitative studies have already indicated about a greater sense of distrust in this ethnic group. In addition, as developed in the results of Chapter 7, this research tested the influence of structural variables such as the municipal budget on the relationship between ethnicity and confidence in the police. Therefore, a key aspect is to design focalised public policy under a shared scenario of social disadvantage like reduced municipal budgets, as Chileans and those who declare to belong to an ethnic group suffer similarly from low confidence in the police and its multiple negative externalities, neutralising their ethnic difference. Therefore, this thesis fills a pending research gap in this realm.

In terms of conceptual frameworks aimed at explaining the variability in perceptions of the police, the model of local government emerged as the most salient. Structural factors, such as the municipal budget, played a significant role in comprehending the distribution of confidence in the treatment and effectiveness of the police, thereby reinforcing the importance of adopting a social ecology approach to understand confidence within the Santiago context. Notably, the model of local government exhibited the highest increase in variance, surpassing both the models incorporating socio-demographic variables and perceptions on municipal areas. To illustrate this notion, based on the applied Multilevel Models, the influence of the socioeconomic condition of the municipality where individuals reside (specifically, the municipal budget) was found to have a substantially higher coefficient of 0.068 compared to the socioeconomic status of families, which had a coefficient of 0.029. This indicates that doubling the municipal budget has a greater influence on enhancing confidence in the police compared to transitioning between two different socioeconomic levels. Thus, it is evident that confidence in the police is influenced not only by improvements in the socioeconomic circumstances of individual households but also by the level of financial resources available within the municipality where they reside. Consequently, individuals remain conditioned by social structures, even when their household situation changes.

While Chapters 5 and 6 have yielded valuable insights into the aspects of confidence in the police, the examination of spatial heterogeneity within the intricate web of variables influencing public safety and its corresponding perceptions remains unexplored. Notwithstanding the significance of the applied multilevel analysis in Chapter 6, certain constraints persisted. Precisely, the analysis adhered to a Fixed Slope Model, a conventional approach in numerous multilevel inquiries concerning confidence in police forces. This kind of model presupposes a uniform association between the outcome and predictors across all

municipal areas of Santiago, implying a certain degree of spatial uniformity. In essence, it postulates that the influence of factors such as satisfaction with municipal services on confidence in the police might maintain a consistent pattern throughout the city.

It is precisely this gap that Chapter 7 aimed to fill. Through the application of the Random Slope Model, the focus was on the interaction of variables and their differentiated influences on confidence in the police and deepening how spatial heterogeneity is shaped in the municipal areas of Santiago.

The importance of understanding a non-uniform distribution of confidence in the police under the logic of a model (Random Slope) that recognises the differentiating influence of variables, lies in two aspects. Firstly, from public policies, gaining an understanding of spatial heterogeneity provides valuable insights into the fundamental mechanisms, patterns, and connections that influence a specific spatial phenomenon such as public safety and its perception. This knowledge might aid in the identification of enabling informed decision-making, resource allocation, and targeted interventions in contexts with spatial diversity.

From the theoretical realm, the approach of spatial diversity is valuable to lay the bedrock for a Theory of the Social Ecology of confidence in the Chilean police. Comprehending the social ecology of policing in the Santiago context demands a profound discernment of how spatial heterogeneity is rooted. This knowledge is crucial because it encompasses the convergence of individual experiences and the societal structures they shape, all influenced by territorial and spatial factors. Thus, identifying the significance of the spatial component is essential to grasp the unequal realities present in Santiago and develop a comprehensive theory of the social ecology of policing in Chile.

Taking into account the practical and theoretical motivation to deepen the spatial component, Chapter 7 aimed to respond to the research question of whether the predictor's variables of confidence in the police, as considered and remarked on in the literature, kept a differentiated influence across municipal areas; and secondly, whether structural factors at the municipal level moderate the relationship between confidence in the police and variables associated at the individual level.

The results responded to both research questions, demonstrating robust spatial heterogeneity evidence, nourishing a substantive empirical background for a social ecology theory of confidence in the police for the Chilean case. Broadly speaking, extensive tools, such as the Chow test, Geographically Weighted Regression (GWR), analysis of covariance, and cross-

level interaction were employed to gain a more detailed understanding of a nuanced distribution of confidence in the police. The variables associated with confidence in the police exhibited diverse influences across Santiago, with structural factors such as poverty, rate of police officers, and municipal budget acting as moderators that amplify or constrain the impact of variables like social cohesion and ethnicity on confidence.

Even though people with greater social cohesion are better prepared to maintain their confidence in the police (Cao et al., 1996; Merry et al., 2012; Kwak and McNeeley, 2019), the evidence of this case for Santiago showed the positive influence of social cohesion to foster confidence is weakened when poverty increases at the municipal level. In that sense, it is not enough to consider social cohesion as a strategy if public policies seek to increase confidence.

Families living in a determined context that shapes and modifies their actions and perceptions do often not choose these social environments²⁵. In this manner, studies in this field should consider and measure how poverty acts as a constraint that restricts the positive influence of cohesion to foster confidence in the police.

A second contextual factor with the role of moderator in the relationship between confidence and social cohesion was the number of police officers per population in each municipal area. The number of police officers in local areas might increase police confidence because more officers provide a sign of police visibility, and they would act to reduce the number of crimes (Lai and Zhao, 2018; Skogan, 2009). However, in Chapter 6 the rate of police officers was not a significant variable. This result means that in the multilevel analysis, the number of police officers, when its influence is measured against the effect of the other variables, does not affect the variation in confidence in the police.

A particular contribution of Chapter 7 is that when the influence of the number of police officers, considered a moderator amplifies the degree of confidence and is included as cross-level interaction, an influence occurs but it is only for those with high social cohesion. Simply put, the group with a higher social cohesion was more favoured by the mediating effect of the number of police officers. Therefore, policymakers seeking to increase police confidence through greater visibility of the police on the streets, in terms of quantity, should consider that this outcome will be more successful in local areas with greater social cohesion.

²⁵ According to descriptive data from the survey on which this study is based, in some municipal areas of Santiago, 51% of people state that they would move because of the crime levels in their neighbourhood.

The issue resides within groups characterised by lower social cohesion. Unexpectedly, an increase in the number of police officers in such groups leads to a decrease in confidence. This trend suggests the presence of underlying factors, such as past conflicts or historical tensions with law enforcement. Consequently, merely increasing the number of police officers in areas with low social cohesion does not ensure an improvement in confidence levels.

To elucidate further, it is conceivable that the advantageous outcomes associated with confidence, such as the inclination to solicit police and leading to enhanced criminal investigations by the judicial system (Cao and Zhao, 2005), may suffer diminishment in areas with low social cohesion. It is plausible that these groups necessitate community-based initiatives facilitated by the social networks within their neighbourhoods, either preceding or concurrent with police interventions. This empirical finding underlines the importance of tailored policies rather than uniform approaches when addressing public confidence in the police, underscoring the imperative to account for the contextual diversity inherent to specific settings.

Concerning social class, individuals from lower Socioeconomic Status (SES) backgrounds exhibit higher levels of trust in the government when residing in a local area that holds ample resources (Muyama, 2014). In Chapter 7, I postulated that in Santiago, those who could most benefit from living in a wealthy municipal area were the low SES groups since the help from the municipality could reduce the gap that separates them from the high-level SES groups. In essence, the disparity in confidence in the police between high and low SES groups would be diminished within an affluent municipal area. Nevertheless, the findings indicate that a structural variation, such as an expansion in the municipal budget, could enhance confidence in the police, but mainly in groups previously favoured by their personal SES situation, which means in high-level SES groups. This outcome seemingly illustrates a reinforcing cycle that exacerbates inequality, as individuals with greater privileges continue to bolster confidence through social mechanisms like the municipal budget, while the improvement in confidence among low SES groups remains marginal. In statistical terms, the slope of individual confidence in the police on individuals belonging to high SES is expected to equal 0.015 over low SES for municipalities with an average of the municipal budget in the local area. As the municipal budget increases by 1,000 Chilean pesos, this relationship between high SES and individual confidence is strengthened by = 0.033 scores in confidence in the police.

Thus, it is plausible to identify the municipal budget as a structural mechanism that amplifies confidence, as evidenced by an improvement in the perception of the police across all socioeconomic groups when municipal resources are increased. Nevertheless, this amplification effect predominantly favours individuals from higher socioeconomic statuses, thereby widening the gap between them and those from lower socioeconomic backgrounds.

Chapter 7 also tested whether the municipal budget, a significant variable in different analysis, might moderate the relationship between individual-level satisfaction with municipal security services and individuals' confidence in the police. While Chapter 5 demonstrated that satisfaction with municipal security services was the variable most associated with public safety (fear of crime, confidence in the police, and victimisation), Chapter 6 evidenced that this variable was the most relevant variable explaining the variance of confidence from multilevel approach.

Thus, I expected that individual-level confidence might be more highly related to satisfaction with municipal services when municipalities increase their municipal budget. Nonetheless, the result of cross-level interaction was not significant, indicating that the level of confidence will always be higher among people with high satisfaction with municipal services compared with low satisfaction regardless of the variation of the municipal budget. Thus, satisfaction with municipal services is not only the variable most associated with confidence in the police but also does not show to be affected by an amplifying or constricting influence from the municipal budget condition.

On the contrary, the municipal budget does significantly moderate the negative relationship between the perception of social disorder in the neighbourhood and confidence in the police. In municipalities with a reduced budget, the difference in the level of confidence in the police between people from different grades of perception of social disorder is narrow compared with affluent municipalities. Therefore, in vulnerable municipalities, social disorder slightly affects their grade levels of confidence. In these places, the police reach a low level of confidence regardless of the individual perception of disorder presumably because structural conditions play a crucial role in shaping opinions, feelings, and perceptions. Thus, as Sampson explains (2002), cognitive perceptions of social disorder are shaped by poverty and the vulnerability of local services. Put another way, not only do individual perceptions of social disorder matter but so do shared perceptions and experiences of environments (Gaitán-Rossi & Shen, 2018).

In summary, this thesis examined public safety distribution in Santiago's municipal areas. Chapter 5 highlighted significant inequality in police confidence, particularly in the eastern part of the city. Chapter 6 identified the Model of Local Government as a key factor in this inequality. Chapter 7 explored nuanced factors, revealing varied influences of police confidence-related variables across different areas, with structural factors like poverty, police presence, and budgets acting as moderators.

I thus read the provision of public safety from different perspectives and methodologies, but they all converge to a similar conclusion: the unequal distribution of public safety in Santiago.

8.2. Implications of the findings and public policy suggestions

This section considers the contributions of this research to Criminology from a perspective of theoretical, methodological, and public policy.

Theoretical Implications:

- **Laying the bedrock for the basis of a Theory of the Social Ecology of Confidence for the Chilean Police:**

The results obtained through analytical tools such as spatial autocorrelation and the random slope model significantly enhance our understanding of how structural factors influence perceptions of the police and how these perceptions respond to social patterns associated with these structural conditions. An illustration of this phenomenon is the presence of high-confidence "fiefdoms" within certain municipal areas of Santiago, overlapping with areas with the largest municipal budgets. However, the Theory of Social Ecology gains enrichment through the findings presented in this thesis, demonstrating that the influence of a variable such as social cohesion cannot be uniformly generalised. Social cohesion influences police confidence but is intricately moderated by broader social structures, notably poverty. This nuanced understanding allows us to qualify and contextualise the influence of social cohesion within the framework of spatial heterogeneity, recognising that its influence can vary significantly across different spatial and structural contexts.

Furthermore, by merging theory with empirical corroboration, this research champions the crucial role of evidence-based support for theoretical constructs. This specificity ensures that adapting the Theory of the Social Ecology of Confidence is not a mere abstraction, but a dynamic construct deeply rooted in the realities of Chilean society and law enforcement dynamics. Thus, this approach contributes to the applicability and relevance of the theory, making it a potent tool for policymakers, law enforcement agencies, and researchers seeking to pilot the dynamics of public safety in Chile.

In essence, through its integration of empirical evidence, sophisticated methodologies, and its focus on the context of a Chilean city, this research can lay a robust bedrock upon which future studies, policies, and interventions can be built, ultimately contributing to the advancement of Criminology in Chile and beyond.

In fact, while the primary focus of this dissertation is on Santiago, the theoretical implications would extend far beyond this specific context, offering valuable insights for other Latin American cities, regions in Africa with similar problems, and even cities in the global North. This research underscores the importance of considering spatial heterogeneity and socio-economic contexts when applying the Theory of Social Ecology, particularly in countries with high Gini coefficients and urban designs shaped by market logic, which generate significant income-based urban segregation.

A significant distinction between cities in the global North and the global South is the degree of institutional instability and low public trust in the latter. However, Santiago, with its unique characteristics of relatively high income but embedded in an institutional structure of unequal provision of public services like safety, exhibits elements of both types of cities, making it an interesting case for comparative analysis. The spatial heterogeneity observed in Santiago invites a rethinking of traditional views where a single variable uniformly influences a dependent variable across an entire space. The empirical evidence provided for Santiago strengthens the validity of the Social Disorganisation Theory and underscores the significance of socio-economic structures. The findings suggest that an approach to Social Ecology can be effectively applied to understand and address these issues in diverse urban contexts.

The identification of "security enclaves" and "fortified zones" in Santiago aligns with urbanisation patterns observed in other cities globally. These patterns, characterised by the concentration of wealth and resources in specific areas, often lead to spatial segregation and disparities in public safety perceptions. In Latin America, Brazilian cities and Mexico City exhibit similar socio-economic inequalities and segregation as Santiago. The concept of spatial heterogeneity, as explored in this research, would be crucial for these cities, where the distribution of municipal resources and economic opportunities significantly might impact public safety and confidence in law enforcement.

Similarly, the theoretical implications extend to African cities, since rapid urbanisation and socio-economic disparities present significant challenges to public safety and governance. The role of municipalities in these contexts is crucial, as local governance and resource allocation would play a significant role in shaping public perceptions of safety and law enforcement in this region.

Finally, the findings have the potential to challenge prevailing theories in the global North, where traditional Social Disorganisation Theory has been widely applied. Cities in the global North, such as those in the UK and USA, also face issues of income inequality and spatial segregation, albeit in different socio-economic, institutional and political contexts. The emphasis on spatial heterogeneity and the role of municipal governance in this research would provide an additional perspective on public safety and law enforcement in these cities. By highlighting the limitations of a uniform application of Social Disorganisation Theory, this dissertation advocates for a more nuanced approach that takes into account the specific socio-economic and spatial contexts of each city.

- **Elucidate the key role of local government to comprehend the distribution of public safety:** The revelation of local government's pivotal role in shaping the unequal distribution of public safety within Santiago constitutes a theoretical milestone of considerable significance. This research's particular dissection of the Model of Local Government within the context of Santiago underscores its centrality as a determinant in the complex landscape of public safety. By tracing the historical trajectories of decentralisation policies and their ramifications within Santiago, this study portrays how the distribution of resources and power among municipal areas has engendered a

diversified panorama of safety provision specifically tailored to the nuances of Santiago's urban setting.

This conceptual advancement reverberates across the broader criminological discourse by accentuating the profound interplay between local governance structures and safety outcomes. The examination of local government's agency in shaping safety provision and perceptions within Santiago catalyses a re-evaluation of the understanding of policing dynamics, necessitating the incorporation of localised factors and governance configurations in the formulation of criminological theories. The theoretical significance extends beyond Santiago, resonating with cities possessing analogous socio-political and economic profiles, thereby fostering a conceptual trajectory that might cross geographical boundaries.

Furthermore, this theoretical underpinning extends its stems into the realm of policy formulation, illuminating trails for targeted interventions to address safety disparities. The disclosure of local government's pivotal role in safety distribution posits it as a potential axis for policy interventions aimed at alleviating inequalities. By recognising the municipal sphere as a municipal of influence, policy prescriptions can be calibrated to align with the socio-economic and demographic peculiarities of distinct municipal areas, thereby nurturing a tailored approach to safety enhancement. This insight advances policy discourse from generic treatments to contextually nuanced strategies, piloting in a pattern change in the ethos of public safety governance.

- **Demonstrate the dimensions behind the intricate concept of confidence in the police:** This research marks a substantial scholarly contribution by delving into the multifaceted dimensions that underlie the concept of confidence in police forces. By immersing itself in the urban context of Santiago, this study transcends traditional boundaries focused on control of crime and offers a comprehensive exploration that unveils the meshing of factors influencing public perceptions of the police.

The contribution rests upon a thorough investigation into the effectiveness of law enforcement agencies in ensuring public safety. By analysing data and empirical evidence, this research unveils the interplay between diverse levels of confidence and the perceived competence of police actions. This exploration enriches our comprehension of the

dynamics that shape public attitudes toward the police. Equally important is the contribution of the connection between police conduct and public confidence. This study delves into the complex interaction between citizen interactions with law enforcement and their overall confidence levels. By revealing how positive encounters, respectful behaviour, and equitable treatment by police officers intertwine with public perceptions of confidence, this research sheds light on the subtle mechanisms through which police behaviour and citizen experiences collaboratively shape the broader scenery of public safety perceptions in Santiago.

Methodological Implications:

- **Employing varied methodological approaches to illuminate the complex setting of public safety distribution in Santiago:** While Latin America, including Chile, has grappled with longstanding issues of violence and urban inequality, it is only in the past decade that research specifically addressing the spatial distribution of crime and perceptions has gained prominence. This is primarily due to the prevailing focus on crime within a legal deviance framework, which has limited the extent of quantitative studies in this domain. The methodological proposal of this thesis offers a set of advanced statistical tools to establish a benchmark for the comprehensive exploration of the intricate variety of public safety distribution. The interplay of geospatial analysis, multilevel models, and cross-level interactions, all acutely attuned to Santiago's urban nuances, culminates in an analytical framework that adeptly captures the multifaceted panorama of spatial heterogeneity of Santiago.

This methodological initiative engenders a multi-dimensional apprehension of the disparities characterising public safety distribution, surpassing the limitations of conventional single-faceted analyses. As an embodiment of methodology tailored precisely to Santiago's intricacies, this research enriches the exploration of the many-sided dynamics governing public safety. This methodological prowess, harmonising empirical insights, and quantitative tools within Santiago's distinct context, reverberates as a demand to elevate research standards in the realm of Latin American criminology, fostering empirical precision and nuanced theorisation.

The multilevel approach also addresses a critical void in the existing literature on public safety distribution developed in Chile. This methodological preference acknowledges the interconnected nature of factors operating at diverse levels of analysis, bridging the gap between micro-level perceptions and macro-level structural determinants. By unveiling these intricate interconnections, the multilevel approach provides a robust foundation to comprehend the nuanced dynamics of public safety provisioning and enable space for Theory on the Social Ecology of Confidence in the Chilean police to emerge.

Furthermore, the methodological tool employed in this research extends beyond its immediate scope. By employing the first local crime survey as a vehicle for exploration, this study presents a methodological archetype for future inquiries into public safety dynamics across diverse urban settings in Chile and beyond. The analytical rigour exhibited through the exploration of spatial heterogeneity in Santiago sets an empirical precedent that echoes the potential use of local crime surveys as illuminating tools to dissect the complex relationships between municipal attributes and the distribution of public safety.

Public Policy Implications:

Informed and contextually nuanced policy formulation: The empirical revelations emanating from this research in Santiago wield transformative potential in steering the formulation of public policies related to safety and policing. By championing a departure from one-size-fits-all policy approaches, this study advocates a model shift towards interventions accurately tailored to the intricate dynamics of Santiago's urban landscape. The recognition of spatial heterogeneity as a pivotal determinant underscores the pressing need for policy customisation, aligning strategies with the distinct characteristics of Santiago. This resonates profoundly with the ethos of evidence-based policymaking, propelling policy formulation beyond generic mandates and towards impactful, localised solutions within Santiago's specific context. In the pursuit of comprehensive public safety policies, it is crucial to adopt a multifaceted approach to address the challenges faced by low socioeconomic status (SES) neighbourhoods and municipal areas. To foster safer and more cohesive communities, the following policy recommendations form a holistic strategy:

Enhanced Police Training: Prioritising specialised training for law enforcement is paramount. Officers should receive instruction in de-escalation methods, conflict resolution, and cultural competency. Equipping them with these skills enhances their ability to engage effectively with diverse communities, reducing potential conflicts and bolstering community trust in law enforcement.

Annual Budgetary Increases: Governments should commit to yearly budget increments specifically designated for low SES neighbourhoods and municipal areas. These funds should be strategically allocated to address key areas such as education, healthcare, housing, economic development and, clearly, prevent crime strategies. Consistent financial support enables these communities to experience sustained growth and improved quality of life.

Investment in Community Facilities: Building community infrastructure stands as another critical element of these policies. The establishment of community centres, affordable housing projects, and recreational facilities grants residents access to essential resources and services. These facilities serve as hubs for community involvement and empowerment, fostering a sense of belonging and collective responsibility for safety.

Precise targeting of interventions: The policy implications derived from this research reverberate with precision-driven interventions strategically aimed at addressing the foundational determinants that underlie public safety and confidence in the police within Santiago. By incorporating the diverse influences of variables such as social cohesion, ethnicity, and municipal budget, this study offers Santiago's policymakers a strategic roadmap. This roadmap guides them through the labyrinth of public safety distribution, facilitating the careful allocation of resources that are acutely attuned to Santiago's unique socio-cultural and urban setting. This nuanced policy approach thereby optimises the efficacy of safety-related policies specifically calibrated for Santiago's intricate dynamics.

Implications of Policies Beyond Santiago

Such as Santiago, in the context of Latin American cities, in the last decades, there has been a trend towards implementing policies with a universal focus, such as concepts like citizen security -focused on social participation- promoted by institutions like the Inter-American Development Bank (Abizanda et al., 2012) and the International Center for the Prevention

of Crime (CIPC, 2016). These initiatives, while well-intentioned, sometimes overlook the diverse socio-economic and spatial realities of specific urban areas. This one-size-fits-all policy approaches can result in policies that are less effective or applied without considering local specificities.

Given this backdrop, our findings evidence the need for public policies that take a more localised approach in Latin American cities. This shift would ensure that policies are tailored to the unique socio-economic and spatial dynamics of each area, rather than being uniformly applied across diverse contexts. Such an approach not only promises more effective outcomes but also addresses the critical need for better local information and the active involvement of local governments in policy design and implementation.

For instance, a social cohesion initiative may yield positive results in affluent neighbourhoods with robust municipal support but could face challenges in low-income areas with limited resources. This underscores the necessity of adopting a multi-level perspective that integrates local data and context-specific factors into policy-making processes. By doing so, policymakers can develop interventions that are more responsive to local needs and equitable in resource allocation, ultimately enhancing public safety and community well-being across Latin American cities.

8.3. Limitation of the study and recommendations for future studies

This thesis, while endeavouring to comprehensively examine the distribution of public safety within Santiago's urban landscape, is not exempt from certain constraints that warrant consideration and could potentially illuminate future research avenues. These limitations serve as steppingstones toward refining our understanding of public safety dynamics, both in Santiago and beyond, and signal advanced methodologies and a profound inquiry.

One paramount constraint inherent in this study lies in its geographic focus solely on Santiago. While Santiago presents an appropriate object for investigating the interplay of socio-economic disparities, historical backgrounds, and urban dynamics, it remains imperative to extend the scope of investigation to other regions in Chile characterised by similar inequities. In this vein, a comparative exploration involving areas like the northern regions of Chile, where immigration dynamics play a distinctive role, could offer a panoramic

view of public safety distribution dynamics, enhancing the generalisability of findings and underscoring the broader applicability of the theoretical constructs employed.

Moreover, it is important to recognise that this study was confined to a municipal area perspective, largely precluding a comprehensive analysis of neighbourhood-level variations. The absence of neighbourhood-level data for a whole city like Santiago warrants attention, as neighbourhoods often constitute significant socio-cultural units that influence public safety perceptions. Thus, future research endeavours could delve into the feasibility of incorporating neighbourhood-level analyses, acknowledging the challenges posed by the absence of legal and administrative neighbourhood boundaries in Chile.

An avenue of exploration that could substantially enrich the insights drawn from this study involves the integration of qualitative methodologies. While this research bounds quantitative tools to unravel patterns and correlations, qualitative investigations can expose the intricate narratives underpinning public safety perceptions. Inclusion of qualitative dimensions, such as in-depth interviews, focus groups, or ethnographic studies, could divulge the lived experiences and contextual nuances that quantitative analyses might inadvertently overlook. This methodological expansion could foster a more holistic comprehension of the interplay between public safety perceptions and the socio-cultural dynamics that shape them.

Furthermore, the limitations of quantitative tools, particularly in the context of crime surveys, warrant careful consideration. While crime surveys provide valuable quantitative data, they might not capture the complete spectrum of public safety experiences. Certain qualitative aspects, such as emotional responses to safety concerns or the subjective interpretations of safety, may not be fully encapsulated through quantitative measures alone. This implies a potential gap between the numerical representation of safety and the lived reality experienced by individuals. Thus, future research could explore innovative ways to bridge this gap, perhaps by integrating qualitative components within quantitative crime surveys, to provide a more complete understanding of public safety dynamics.

Moreover, this thesis is constrained by its use of a general measure of victimisation encompassing a range of crimes, from theft to violent robbery. This broad approach may restrict the findings, as much of the literature on social disorganisation theory and crime distribution specifically focuses on violent crimes. Future studies should consider differentiating between crime types to provide more nuanced insights. Additionally,

victimisation surveys, including the one used in this study, often fail to capture recent phenomena in Santiago, such as organised crime. Addressing these gaps in future research could enhance the relevance and applicability of the findings to contemporary urban safety issues.

Furthermore, a detailed exploration of the survey's limitations and the measures employed is crucial. Key limitations include the absence of items related to police legitimacy, the lack of questions on private security, and the need for more precise instruments to assess municipal security. Including questions on the perceived legitimacy of the police can provide deeper insights into public confidence in the police and their relationship with legitimacy, exploring variations across different socio-economic and cultural contexts. Moreover, the omission of inquiries about private security is significant, given its growing role in urban areas, particularly in liberal economies like Santiago.

Additionally, developing more refined instruments to evaluate municipal security efforts could improve the accuracy of local safety assessments. Municipalities face unique challenges and possess varied resources, and a more nuanced measurement tool could better capture these local nuances. For instance, detailed metrics that consider specific security initiatives undertaken by municipalities, including administrative capabilities, would offer clearer insights into how local governance influences public safety outcomes.

Addressing potential unmeasured confounders is also critical for future research. The absence of key questions in surveys, such as those pertaining to police legitimacy and the role of private security, may act as unmeasured confounders, potentially skewing results. To mitigate such impacts and strengthen the analysis, future studies should integrate these missing elements.

Considering these limitations, this study serves as a foundational pillar, inviting future researchers to venture into uncharted territories and address the identified gaps. By expanding the geographical scope, embracing neighbourhood-level analyses, delving into qualitative dimensions, innovatively addressing the limitations of quantitative tools, and anticipating the future trajectory of public safety surveys, subsequent investigations may further enrich the discourse on public safety dynamics and contribute to the robust edifice of criminological scholarship in Chile and Latin America.

8.4. Concluding summary

While research on the spatial distribution of crime and its associated factors has been integral in the development of Criminology in countries like the United States and the United Kingdom, it has only gained significant traction in Latin America and Chile in the past decades. This distinctive regional approach predominantly framed crime-related issues within the context of legal deviance, resulting in a deficit of a more pronounced orientation towards quantitative research. Addressing this knowledge gap is essential since Latin American cities struggle with elevated violence levels associated with historical disparities in the distribution of social problems. This doctoral dissertation was focused on unpacking and measuring the distribution of public safety across Santiago considered from a multidimensional approach: victimisation, fear of crime and confidence in the police.

Despite international indicators often portraying Chile and Santiago as safe compared to their Latin American neighbours, this thesis performed a more granular examination revealing significant variations in fear of crime and confidence in the police at the municipal level. These variations highlighted the presence of "mini countries" within Santiago. To comprehend the inequality rooted in Santiago's urban configuration, this thesis consistently underscored the role of structural factors, such as municipal budgets and poverty, and their influence on individual safety perceptions.

Over the past three decades, the Central Government of Chile has increasingly delegated greater responsibilities to municipalities, including municipal security services. This led to a stark disparity among municipalities in terms of financial and human resources. Spatial autocorrelation results indicated that the eastern side of Santiago displayed a spatial clustering characterised by the lowest levels of fear of crime and highest confidence in the police. These same areas concentrated the greatest financial resources at the household and municipal levels. Through multilevel analysis, confidence in the police was mainly associated with variables such as satisfaction with municipal security services and municipal budget. Consequently, economically disadvantaged municipal areas exhibited both the lowest satisfaction with municipal services and confidence in the police. These findings underscored the pivotal role of local governments in explaining the disparities in public safety distribution and their perceptions.

In this context, a significant contribution of this thesis lies in its exploration and measurement of the intricate relationship between social structures and individual safety

perceptions in a city marked by spatial heterogeneity. The results obtained from statistical tools such as the random slope multilevel model and cross-level interaction may serve as a groundwork for a Social Ecology Theory of Confidence in the Police, approach that consider the role of the social environment in the formation of perception of people's, mainly in urban context. The thesis can enrich this approach since that offer a more nuanced findings into the interplay between individuals and social structures within the logic of spatial heterogeneity, revitalising perspectives for the advancement of such a theoretical framework.

Specifically, this research revealed that variables related to the perception of police services have varying influences across municipal areas, and scholars should consider the mediating influence of structural factors in the relationship between outcomes and predictors at the individual level. Consequently, we should avoid assuming a uniform influence of variables associated with confidence in the police, such as the widely recognised influence of social cohesion. This influence may be moderated by structural conditions like poverty, as demonstrated in this dissertation. In other words, it would be a risky assumption to affirm that a policy promoting social cohesion among neighbours will uniformly enhance confidence in the police across Santiago. Affluent and disadvantaged municipal areas should receive specialised treatment in this regard.

Therefore, this thesis contributes to laying the foundation for a vision of public safety policies that must account for spatial diversity. It emphasises the importance of departing from generic policy approaches and adopting tailored interventions that consider the complexities of Santiago's urban landscape. This approach aligns with evidence-based policymaking, shifting from one-size-fits-all mandates to effective, localised solutions that address Santiago's distinct context.

In conclusion, this thesis, which delves into the distribution of public safety, has implications beyond immediate safety concerns; it resonates deeply within the realm of societal equity. As a cornerstone in constructing a fairer and more just society, this understanding may bolster the well-being of citizens and advance the overarching goal of nurturing an inclusive and equitable social landscape. This vision not only amplifies the protective shield for those most in need but also optimises the utilisation of limited resources, steering towards a more efficient and impactful resource distribution.

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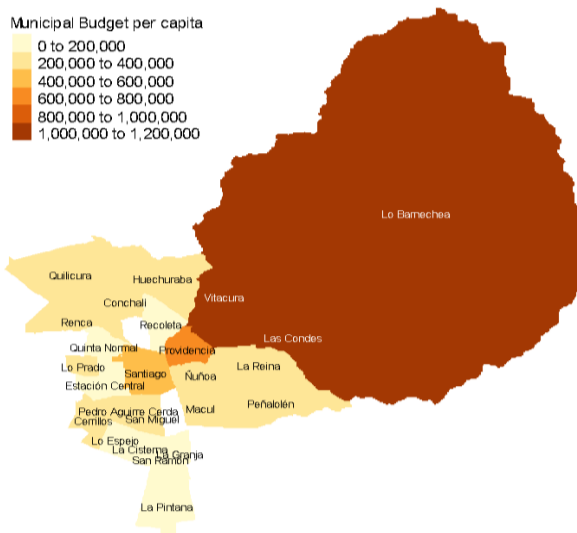
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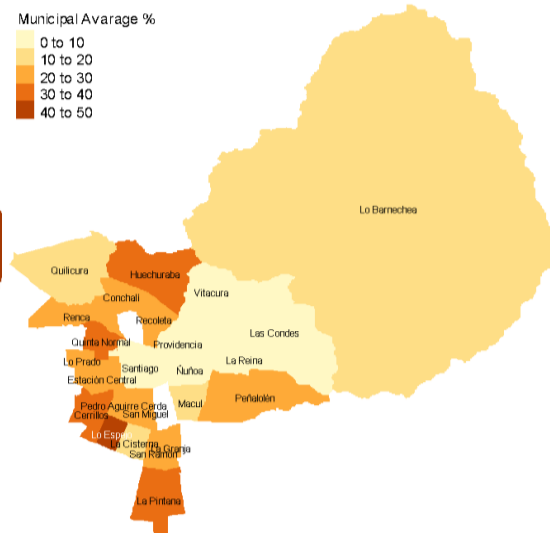
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Appendix 1

Municipal Budget



Multidimensional Poverty



Appendix 2

Satisfaction with municipal security services.

