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Artículos de investigación

Crime Analysis in the Carabineros of Chile: Experiences and Perceptions by Crime Analysts

Análisis Criminal en Carabineros de Chile: Experiencias y Percepciones de los Analistas Delictuales

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ABSTRACT

This study employed a Likert-type survey to gather insights from 40 crime analysts regarding their experiences and perceptions of crime analysis within the Carabineros of Chile. 90% of participants completed the entire questionnaire. The findings indicate that crime analysis has strengthened police accountability and enhanced decision-making processes aimed at crime reduction. The analysts primarily engaged in strategic and tactical forms of crime analysis; however, many reported that their analytical products were not being effectively utilized by frontline officers. This underscores the need for more comprehensive and integrated institutional approaches. The study concludes that better utilization of analysts' skills could significantly improve short- and medium-term decision-making among police station commanders, thereby supporting crime-reduction efforts across precincts.

Keywords Carabineros of Chile, crime analysis, crime analyst, Quadrant Plan, tactical analysis.

RESUMEN

Este estudio utilizó una encuesta tipo Likert para recopilar información de 40 analistas criminales sobre sus experiencias y percepciones sobre el análisis del crimen dentro de Carabineros de Chile. El noventa por ciento de los encuestados completaron toda la encuesta. Los resultados mostraron que el análisis de la delincuencia ha reforzado la rendición de cuentas de la policía y ha mejorado los procesos de toma de decisiones destinados a reducir la delincuencia. Los analistas criminales participantes se dedicaron principalmente al análisis estratégico y táctico del crimen. Sin embargo, muchos consideraron que sus productos analíticos no estaban siendo utilizados eficazmente por los funcionarios de primera línea, lo que puso de relieve

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la necesidad de soluciones más amplias e integradas. El estudio sugiere que un mejor aprovechamiento de las habilidades de los analistas podría mejorar la toma de decisiones a corto y mediano plazo por parte de los comandantes de las comisarías, apoyando así los esfuerzos de reducción de la delincuencia dentro de sus jurisdicciones policiales.

Palabras clave Carabineros de Chile, análisis del delito, analista del delito, Plan Cuadrante, análisis táctico.

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Introduction

From the late 1970s into the early 1980s, scholars began exploring the nature of crime analysis and its potential effects on policing outcomes (Austin et al., 1973). Emig et al. (1980) argued that crime analysis ensures police receive timely information about criminal activity. Gottlieb et al. (1994) maintained that it 'assists operational and administrative personnel in planning the deployment of resources for the prevention and control of criminal activity, aids the investigative process, and increases the number of arrests and the clearance of cases' (p.13). More recently, Osborne and Wernicke (2013) defined crime analysis as 'the breaking up of acts committed in violation of laws into their parts to find out their nature and reporting statements of these findings' (p.1). Similarly, Cope (2004) states that crime analysis refers to 'the process of identifying patterns and relationships between crime data and other relevant data sources to prioritize and target police activity' (p.188). More recently, Santos (2016) states that crime analysis is 'the systematic study of crime and disorder problems, as well as other police-related issues, including sociodemographic, spatial, and temporal factors, to help police in criminal apprehension, crime and disorder reduction, crime prevention, and evaluation' (p. 3).

All of these definitions converge on the idea that crime analysis is a tool for supporting police efforts to reduce crime (Santos, 2014), apprehend offenders (Santos, 2016), guide patrol operations (Ratcliffe and Sorg, 2017), solve problems (Lum, 2013), and ensure accountability to the community (Santos and Santos, 2012). Santos (2014) describes crime analysis as a systematic, iterative process of studying crime that encompasses data collection, collation, analysis, feedback, and evaluation of the resulting products. The feedback and evaluation stages assess whether those analytical outputs have effectively contributed to crime control or need refinement. At the same time, analysts use this evaluation to improve their own practices (Browning and Ballucci, 2020), learning which approaches do and do not work in controlling crime (Santos, 2014).

Crime analysis is intended to not demonstrates replace frontline policing but to enhance law enforcement's capacity to reduce crime (White, 2008). Crucially, Bruce (2012) notes that crime analysis can uncover patterns and trends, identify offenders and their networks, profile victims, map hotspots, gauge concentrations of risk factors, and even forecast future criminal incidents.

In summary, crime analysis is designed to support law enforcement's crime-reduction efforts and strengthen police accountability to the public. It provides a method for detecting, measuring, and mapping when and where crimes occur—but it is not a standalone cure for criminal activity. Ultimately, decisions about which crime-reduction tactics to deploy remain in the hands of the police. This study analyses crime analysts' perceptions of how crime analysis is implemented within the Carabineros of Chile. It examines whether crime analysis has improved the perceived efficiency and effectiveness of resources assigned to police stations under the Quadrant Plan 2.0 and identifies the main obstacles and enablers affecting its use. In so doing, this study aims to answer two research questions: *What are the experiences and perceptions of crime analysts with the use of crime analysis in the context of Quadrant Plan 2.0? and What is the frequency and nature of crime analysis activities conducted by the 10 selected police stations to support frontline police operations.*

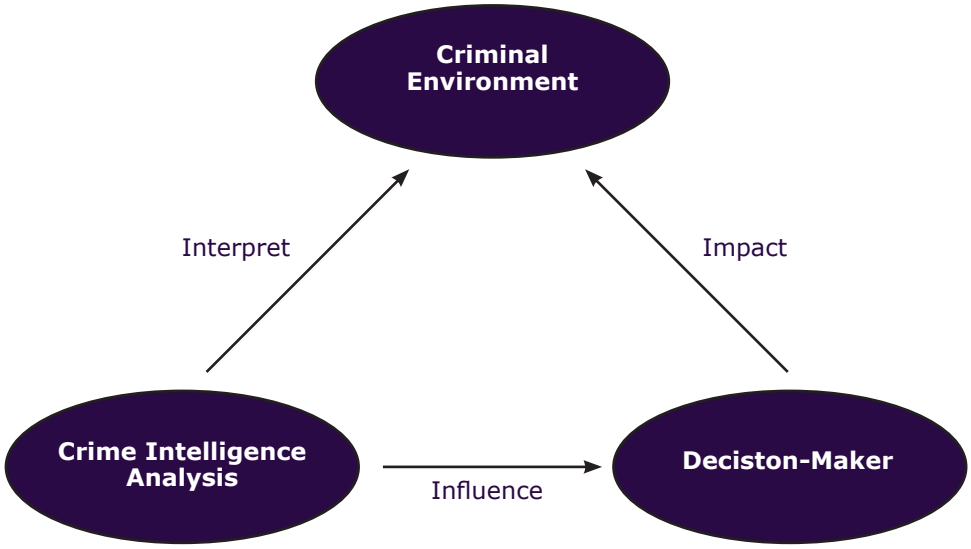
The Role of Crime Analysis in Policing Models

Since its debut in 1979, Problem-Oriented Policing (POP) has steadily attracted interest. Grounded in the view that incidents often reveal deeper problems (Goldstein, 2003), its introduction prompted many police forces to move away from traditional, reactive tactics toward a more proactive stance (Giblin, 2006). POP is a forward-looking approach that makes solving recurring community problems the centrepiece of police work, rather than an afterthought. It calls on officers to apply scientific methods to understand these problems and to rigorously test and evaluate potential solutions (Hinkle et al., 2020). At the heart of POP is the SARA framework—Scanning, Analysis, Response, Assessment—which guides the four stages of problem-solving analysis (Eck and Spelman, 1987). First, officers identify and prioritize community concerns (scanning). Next, they investigate the root causes of those concerns (analysis). Based on this diagnosis, they craft and implement tailored intervention plans that reflect the agency's capacities (response). Finally, they measure and review the impact of those interventions (assessment) (Sidebottom and Tilley, 2011). Because it focuses on problems rather than incidents, POP promotes a form of 'crime analysis' better described as 'problem analysis.' This approach differs from tactical, strategic, and administrative analysis in the questions asked, the types of data collected, and the analytical techniques employed (Scott, 2017; Scott and Kirby, 2012).

The intelligence-led policing model (ILP) is regarded as one of the most prominent examples of a data-driven policing approach that emerged in the twentieth century (Burcher, 2020). This model originated from a movement in the UK during the 1990s aimed at enhancing police effectiveness by employing crime analysis to proactively or, when required, reactively tackle crime to achieve crime reduction (Ratcliffe, 2010).

Figure 1

The 3-i Model



Source: Copied and adapted from Intelligence-Led Policing (Ratcliffe, 2010)

Note: The figure illustrates the three interconnected components—(a) crime intelligence analysis, (b) decision-making, and (c) the criminal environment—and the corresponding processes: (a) interpret, (b) influence, and (c) impact. The lower-left circle represents the analytical work performed by crime analysts, whose role is to interpret the criminal environment within their jurisdiction. The insights generated through this process are intended to influence commanders' decision-making, which, in turn, aims to produce measurable impacts on the criminal environment (Ratcliffe & Org, 2007).

CompStat is widely regarded as a groundbreaking innovation now in use by virtually every police agency (Weisburd et al., 2008). A 2013 PERF survey found that 79 percent of medium- to large-sized U.S. departments employ some version of CompStat. At its heart lies the computerized collection, mapping, and analysis of weekly crime data (Walsh, 2001). As Scott (2000, p. 103) explains, CompStat is 'a crime analysis method by which computerized crime statistics are analyzed and presented to operational commanders, who are then responsible for developing operational tactics to respond to emerging crime patterns.' Beyond simply comparing trends, it geo-referends incidents to spotlight high-crime areas (Godown, 2009). According to Godown 2009, CompStat rests on four interlocking components: a) timely, accurate intelligence, b) rapid deployment of resources, c) effective tactics, and d) relentless follow-up. More than a software package, CompStat is an ongoing, intelligence-driven process designed to 'work smarter, not harder' (Stewart, 1985).

Despite the growing reliance on various models and policing strategies that utilize crime analysis, additional research indicates that ILP, POP and CompStat might have unintended consequences for both law enforcement and the community (Tyler, 2011). According to Tyler (2011) CompStat-driven policing, for example, has prompted police departments to implement 'zero tolerance' programs where 'many ordinary citizens have been stopped, searched, and possibly cited or detained

for engaging in minor lifestyle offenses, and sometimes merely for walking on the streets or driving their cars' (p. 255).

Overall, crime analysis is deeply intertwined with multiple policing approaches (Tilley, 2003). For example, Problem-Oriented Policing depends on tactical analysis to plan and direct operations against complex crime problems. In the context of Intelligence-Led Policing, the absence of rigorous analytical support makes it difficult to identify prolific offenders or dismantle criminal networks (Tilley, 2003). Beyond simply charting incidents or profiling suspects, modern crime analysis aims to uncover the root causes and driving mechanisms behind public safety challenges. Such insights are vital for crafting innovative, effective, and equitable strategies to prevent and reduce crime (Scott, 2017).

Crime Analysts in Police Work

Crime analysts have become indispensable actors within contemporary police organizations (Kringen et al., 2017). Through the application of structured analytical techniques to raw incident data, they generate actionable intelligence that directly informs strategic and operational decision-making (Santos & Taylor, 2014). This intelligence supports not only the design and implementation of policing strategies (O'Shea & Nicholls, 2003) but also contributes to fairer, more efficient, and more effective police operations (Santos, 2014), leading to improved performance outcomes and enhanced resource management (Kringen et al., 2017).

Despite the recognized benefits of crime analysis, the full integration of analysts into policing remains limited (Piza & Feng, 2017). Studies reveal that although analysts are often welcomed by police leadership, their analytical outputs are not consistently utilized as intended. Cope (2004), Santos and Taylor (2014), and Keay and Kirby (2018) each found that analytical reports are frequently underused by officers in the field. According to Cope (2004), the usefulness of these products is diminished by two interrelated factors: the limited understanding of analysis among police personnel and analysts' insufficient familiarity with operational realities. This disconnect often results in a continued reliance on traditional policing methods that are not informed by analytical evidence.

Despite the generally acknowledged importance of crime analysis and crime analysts, their full integration into police work is still lacking (Piza and Feng, 2017). Research indicates that while analysts are typically welcomed by police commanders, their analytical products are not always utilized as intended. For instance, Cope (2004), Santos and Taylor (2014), and Keay and Kirby (2018) have all noted that these analytical outputs are frequently underused by police personnel. Cope (2004) points out that the limited understanding of analysis by police officers, coupled with analysts' lack of insight into policing, affects the usefulness of analytical products in operational policing. As a result, there is a tendency to rely on traditional policing methods that are not necessarily informed by crime analysis (Cope, 2004). Moreover, Cope's (2004) study, which evaluated the attitudes of crime analysts and officers towards crime analysis in two UK police agencies, revealed several key insights. The author determined that the effectiveness of analytical products was influenced by three main factors: a) inadequate data quality, b) unclear understanding of the impact of their work on policing, and c) a lack of familiarity with crime analysis among frontline officers. In this vein, Weisburd et al. (2014) examined the interplay between police staffing levels, tactical approaches, and crime reduction in New York City. They found that the decline in crime was largely driven by law enforcement initiatives. Notably, the NYPD, even with fewer officers

on the streets, chose to emphasize crime analysis rather than simply expanding patrols—thus achieving 'more with less' (Weisburd et al., 2014, p. 1).

While crime analysts have long been part of the police landscape, there is a limited amount of research examining their role and presence in policing. One of the pioneering studies in this area was conducted by O'Shea and Nicholls (2003). These authors aimed to explore the views of civilian analysts within U.S. law enforcement agencies. They surveyed over 500 agencies with at least 100 officers and concluded that civilians play a significant role in this facet of policing. It appears that police leaders are generally comfortable with civilians handling the crime analyst function (p.248). Additionally, O'Shea and Nicholls (2003) discovered that analysts mainly focused on tactical crime analysis. Additionally, O'Shea and Nicholls (2003) also observed that crime analysts routinely engaged in counting crime reports. They noted that police executives prioritized the tallying of reported crimes, often at the expense of analyzing crime patterns. The authors concluded their study by questioning *why police executives continue to focus on crime counts?* (p. 249).

The second conclusion by Cope's 2004 study pointed to a gap between analysts and police officers. He argued that effectively integrating crime analysis into policing depends on both groups recognizing and valuing one another's professional expertise. In a similar vein, Belur and Johnson (2018) examined the role of crime analysis within a British police force by gathering the views and experiences of analysts, frontline officers, and senior commanders. Their findings echoed those of earlier research, including Cope's work. Belur and Johnson discovered that the biggest obstacles to embedding crime analysis stem not from police culture itself but from a widespread lack of understanding about how analysts carry out their work and produce their reports. Their study suggests that:

> ... '[a]nalysts lack the resources, time, and sometimes, motivation to undertake sophisticated analysis, and often feel frustrated when officers' opinions override analytical wisdom…. [b]etter training and cultural change are necessary for creative utilization of analytical resources and for bridging the knowledge and process gaps in the organization.' (Belur and Johnson, 2018, p.1).

In sum, studies of embedding crime analysts within police forces have generally produced positive findings. Most officers—especially those in senior positions—are receptive to the analysts' contributions. At the same time, the research reveals ongoing tensions between analysts and operational personnel. Many police staff have yet to make routine use of analytical products, largely because they lack familiarity—and in some cases training—with the value these outputs offer. As a result, analysts often feel frustrated when their work goes underappreciated or is simply overlooked.

Crime Analysis in the Carabineros of Chile

Crime analysis was initially introduced to the Carabineros in the early 2000s through management meetings focused on analyzing and discussing crime patterns and trends in Greater Santiago. These discussions, however, lacked an information system capable of providing reliable data for informed decision-making. In 2010 and 2011, a series of meetings involving President Sebastián Piñera's government, the Inter-American Development Bank (IDB), the consulting firm ALTEGRITY Security, and the Carabineros led to the develop-

ment of a crime analysis system. By mid-2011, ALTEGRITY presented a prototype for the Tactical Crime Analysis System of the Carabineros (TCAS), primarily based on the CompStat model (Piñol et al., 2015). Initially implemented in the metropolitan region, TCAS utilized the existing Carabineros of Chile crime database, AUPOL. This experimental phase, supported by ALTEGRITY's technical advice, included the creation of a weekly crime report. This report highlighted the frequency and percentage changes in serious crime data compared to the preceding week, month, and year. By the end of 2013, TCAS had been rolled out nationwide across the Carabineros (Piñol et al., 2015).

The Tactical Crime Analysis System (TCAS) is a locally tailored version of the CompStat model (Piñol et al., 2015). It provides station commanders with analytical support for scheduled meetings—bringing together government agencies and civil society organizations—to diagnose and resolve community safety concerns (Carabineros, 2018; Piñol et al., 2015). The primary aim of TCAS was to furnish Carabineros precincts with timely, actionable intelligence to sharpen their crime-control strategies and thereby curb offense levels. A further objective was to promote the exchange of proven policing practices across different stations (Piñol et al., 2015). In TCAS forums, commanders are encouraged to engage every legally mandated stakeholder in the co-production of security, ensuring that all relevant social actors participate in addressing identified problems (Carabineros, 2018). TCAS draws its data from the AUPOL database, which is maintained by the Carabineros' Information Technology Department (ITD). Using the force's online infrastructure, the ITD distributes a weekly TCAS bulletin to all stations, reporting case volumes and their percentage changes relative to the previous week, the preceding 28 days, and the year-to-date totals.

In 2014, the Carabineros launched Quadrant Plan 2.0 in 57 Santiago stations with an upfront investment just over US$1 million. To ensure its effective rollout, they brought on board 300 civilian specialists—engineers, geographers, social workers and psychologists—to carry out crime analysis at those sites. By late 2017 the plan was fully deployed, requiring a further US$4 million-plus largely devoted to upgrading stations' technological infrastructure. As of 2018, 180 police stations nationwide were operating under Quadrant Plan 2.0. That same year, the existing Tactical Crime Analysis System (TCAS) was expanded into the Carabineros Integrated Crime Analysis Platform (CICAP). Built around an online GIS, CICAP delivers precise intelligence to more than 15,000 analysis posts. Often called the Territorial Information Analysis System (TIAS), it functions as a geospatial database that organizes information into thematic layers for rapid processing and streamlined topology. TIAS also groups crimes into clusters by their characteristics and generates hotspot maps to pinpoint areas of concentrated criminal activity within each precinct.

While international research has consistently demonstrated the positive impact of crime analysts on policing effectiveness (Piza & Feng, 2017; Piza et al., 2021), little empirical evidence exists regarding their role within the Carabineros. This study therefore addresses that gap by employing a Likert-type survey to document the experiences and perceptions of 40 analysts working under Quadrant Plan 2.0. Specifically, it explores how these analysts perceive the use and value of crime analysis within the Carabineros and examines the frequency and nature of analytical activities performed by ten selected stations in support of frontline operations.

Data

Rather than employing methods like focus groups or in-depth interviews, this study utilized an anonymous Likert-type survey

with 40 crime analysts selected from the 10 police stations involved in this research. This survey approach enabled the participating analysts to self-assess their level of agreement or disagreement with various statements concerning crime analysis and the Quadrant Plan. Additionally, the fixed response options made the data easier to evaluate compared to the information from open-ended qualitative questions. In essence, the Likert-type survey was deemed a flexible method for collecting data on the experiences and perceptions of crime analysts regarding the integration of crime analysis into the Carabineros.

Additionally, various researchers have employed survey methods to examine the perceptions and opinions of police personnel (see Adams et al., 2001; O'Shea and Nicholls, 2003; Paoline, 2004; Hinkle et al., 2020; Browning and Bellucci, 2021). Although less extensively explored, the role of crime analysts within police organizations has also been investigated by scholars such as O'Shea and Nicholls (2003), Cope (2004), and Belur and Johnson (2018). Generally, these studies indicate that crime analysts have been positively received by police managers. However, they also highlight that frontline police personnel often do not make use of the analytical products provided.

Methods

The crime analyst survey was designed to capture participants' perspectives on how crime analysis has been implemented within the Carabineros of Chile. Specifically, it examined whether analytical practices have improved the perceived efficiency and effectiveness of police resources allocated to stations under the Quadrant Plan 2.0, and it sought to identify the principal obstacles and enablers influencing the application of crime analysis in this context.

The questionnaire comprised four self-administered sections. The first section collected analysts' views on the tactical and strategic crime analysis meetings conducted at Carabineros stations. These meetings, introduced as accountability mechanisms under Quadrant Plan 2.0, were designed to assess performance and support data-driven decision-making. This section also explored how analysts managed various data sources—including crime and arrest reports, outstanding warrants, service calls, traffic accidents, and citizen complaints—and whether they primarily counted, analyzed, or disregarded these data types. Respondents were asked to indicate which of three categories best described their stations' use of each data type:

(a) Counting: merely tracking the number of incidents or arrests;

(b) Analyzing: identifying trends and relationships within the data; or

(c) None: not utilizing the data in support of operational decisions.

This question aimed to determine whether the data retrieved from the CICAP system were used to generate actionable insights to support frontline police operations, such as targeting prolific offenders. Participants were also asked to indicate which analytical tasks they had personally performed within the previous two weeks to corroborate the frequency and type of crime analysis activities undertaken. Responses were analyzed using a percentage distribution method to summarize analysts' engagement with these activities.

The second section of the survey investigated how frequently the analysts performed 12 predefined crime-analysis tasks. These were grouped into three temporal categories—

strategic, tactical, and administrative—based on their time horizons and objectives.

Strategic analysis supports long-term planning by identifying trends, assessing risk factors, conducting intelligence work, and mapping criminal networks.

Tactical analysis focuses on immediate operational priorities, such as hotspot identification, call-for-service analysis, repeat victimization assessment, and offender profiling.

Administrative analysis provides broader organizational insights, including evaluations of citizen satisfaction surveys or station-level performance indicators.

Responses were rated on a four-point Likert scale: never (1), rarely (2), frequently (3), and always (4). Total scores ranged from 12 (minimum) to 48 (maximum), allowing comparison of activity frequency across stations.

The third section contained 13 statements designed to measure analysts' perceptions of how crime analysis is incorporated into Carabineros operations. The first seven items examined perceptions of analytical integration under Quadrant Plan 2.0 and were adapted from O'Shea and Nicholls (2003), who surveyed U.S. analysts to identify attitudes toward crime analysis and organizational barriers. The remaining six items assessed analysts' perceptions of how police personnel value analytical work, based on Taylor et al. (2007) and Santos and Taylor (2014). Responses were recorded on a five-point Likert scale ranging from strongly disagree to strongly agree.

Finally, the fourth section gathered demographic and professional background information, including whether respondents were civilian specialists or sworn Carabineros, their educational level, years of experience, number of analysts per 100 officers at their station, and whether they had received formal crime-analysis training. These variables were later used in the descriptive demographic analysis of the sample.

Analytical Strategy

The data were analyzed in two main stages. First, descriptive statistics were computed to summarize respondents' demographic characteristics, including rank, gender, years of service, education level, and completion of specialized crime-analysis training. Second, Cronbach's alpha coefficients were calculated to assess the internal consistency of the survey items, following standard reliability procedures for multi-item Likert-type instruments (Spector, 1992; Gliem & Gliem, 2003).

The next phase examined the frequency with which the 12 listed crime-analysis tasks were carried out in each police precinct. This step aimed to identify the relative emphasis placed on strategic, tactical, and administrative analytical work. In addition, the survey included two open-ended prompts that invited analysts to identify the main barriers and enablers influencing the effectiveness of crime analysis at their respective stations.

Sampling Method and Size

The research took place in 10 of the 29 police stations in the Greater Santiago Police Western Area. A non-random sampling approach was used because: (1) the researcher had access only to these ten stations, and (2) each housed an on-site crime analysis unit. This set-up allowed for direct data collection from the analysts actually performing crime analysis at those locations. At the time of the study, 120 crime analysts were employed across all

29 stations in the Western Area. Forty analysts—those assigned to the crime analysis units in the ten selected stations—were invited to participate, and all completed the survey, yielding a 100 percent response rate for that subset. These 40 analysts represent one-third (33 percent) of the area's crime analysis staff. Because this group varies in age, gender, experience, and educational background, their responses are expected to reflect a broad spectrum of understanding, expertise, support for, and commitment to crime analysis.

Piloting Survey Exercise

A pilot survey was conducted to assess the questionnaire's content and identify the most effective procedures for its administration (Lindquist, 1991; van Teijlingen & Hundley, 2001). With the superior commander's approval, this pilot took place on 27 March 2024 at the Carabineros Police Western-area Headquarters. Five crime analysts—three women and two men, each with between seven and twelve years of service and experience using Quadrant Plan 2.0—volunteered to participate. The researcher began by introducing themselves, outlining the survey's objectives, and distributing printed copies of the questionnaire. Participants were informed of their right to withdraw at any point, and a statement affixed to the top of the first page reiterated the study's purpose and guaranteed the confidentiality of all responses. After completion, the surveys were collected and secured in a sealed envelope.

Feedback was uniformly positive regarding the survey's scope, clarity, specificity, and focus. Three analysts confirmed that the 20–25-minute time frame was appropriate. Participants also recommended adding more open-ended items to capture respondents' perspectives on their roles within the station. In response, two questions were introduced, inviting analysts to identify key drivers and barriers to effective crime analysis in the Carabineros. Additionally, one analyst advised relocating the demographic section to the end of the instrument to sustain engagement and ensure completion of the survey's most critical sections. Apart from these modifications, the remainder of the questionnaire was considered clear and user-friendly.

Survey Research Administering Process

The final version of the crime analyst survey was administered between April 10 and May 4, 2024. Data collection took place at the crime analysis units of the ten participating police stations, with each session held in the analysts' designated workrooms. The researcher began by introducing themselves and providing a brief overview of the study's purpose, emphasizing the voluntary nature of participation and the confidentiality of all responses.

Participants who consented to take part were asked to provide their email addresses to receive a link to the online version of the survey. The opening section of the questionnaire restated the study's objectives and included a confidentiality clause to ensure participants' understanding of data privacy.

The survey was hosted on the Microsoft Teams platform, which allowed for the secure distribution, completion, and recording of responses in real time. This digital administration method enhanced both data accuracy and logistical efficiency, minimizing human error during data entry and processing.

Throughout the administration process, the researcher remained available to clarify questions related to terminology, structure, or the purpose of specific survey items. Upon completion, all responses

were automatically stored in a protected digital repository accessible only to the researcher, ensuring full compliance with ethical research standards.

Results

This section outlines the findings from the crime analysts survey, divided into four subsections. The first subsection presents descriptive statistics regarding the respondents' demographic profiles. The second subsection addresses the internal consistency analysis of the survey statements provided to the analysts. The third subsection presents findings on the types and frequency of crime analysis activities reportedly performed by police stations, as indicated in the initial part of the survey. Additionally, it details the frequency of these activities' implementation. The fourth subsection reveals the results of assessing crime analysts' perceptions of the utilization and perceived value of crime analysis within police stations.

Demographic Characteristics of the Participating Crime Analyst

Thirty-six of the 40 analysts surveyed (90%) completed every question; the four who did not finish remaining unexplained and were excluded from further analysis. Among those who responded in full, 22% were sworn officers assigned to crime-analysis roles within station units, while 78% were civilian analysts. Half of the respondents held a bachelor's degree, and 13 of the 36 had also earned a postgraduate qualification. A large majority (86%) reported receiving formal crime-analysis training—71% through the Carabineros and 15% from other providers—whereas 14% (five analysts) had never undergone any formal training in this field. Participants were not asked to assess the quality of the training they received.

Internal Consistency Analysis

The final version of the survey was checked for internal consistency using Cronbach's alpha, which gauges how reliably a set of items measures a single construct. Alpha values range from 0 to 1, with higher values indicating stronger reliability; a threshold of .70 or above is generally accepted as adequate (Spector, 1992). By applying this metric, the researcher confirmed that each item cohered well with the rest and that the survey included enough statements to capture the underlying concept fully. In this study, an alpha of .70 was used as the benchmark for reliability.

The internal consistency analysis was conducted in three stages. Initially, the Cronbach's alpha reliability coefficient was calculated for four statements that gauged crime analysts' views on the crime analysis meetings organized by the Carabineros as part of the Quadrant Plan 2.0. The reliability coefficient for the crime analysis meetings scale was determined to be 0.78, indicating that the statements are closely linked and thus the scale is reliable. The statements assessing this independent variable had a median score of 3 ($M = 3.6$; $SD = 0.38$, $n = 36$), implying that the majority of analysts selected 'agree' (3) as the option that best represented their views regarding the statements in the survey. Regarding enhancing accountability to the community, 60% of the responses suggested that such meetings have increased the transparency of police stations' crime control outcomes.

In the second phase, the reliability of the seven statements concerning crime analysts' perceptions of crime analysis usage was measured using the Cronbach alpha reliability coefficient, which resulted in a score of 0.82. The third phase examined the internal consistency of six additional statements regarding the perceived value police personnel attribute to crime analy-

sis, yielding a Cronbach's alpha reliability coefficient of 0.90.

Scores for each scale were determined by summing the item scores and dividing by the total number of items. Table 1 summarizes the mean and median scores for each statement within the scales assessing crime analysts' perceptions of crime analysis. For instance, the seven statements evaluating the variable 'perception about the use of crime analysis' had a median score of 4 (M = 3.56; SD = 1.20, n = 36). Forty percent of analysts agreed or strongly agreed that crime analysis has sped up frontline patrols' responses to incidents, while 38 percent disagreed or strongly disagreed. Seventy percent felt that crime analysis has strengthened decision-making on issues affecting quadrant residents' safety. And 75 percent judged it essential to meeting the Quadrant Plan's objectives. Taken together, these results suggest analysts view crime analysis as a key enabler of more effective police deployment and, ultimately, lower crime and insecurity in the quadrants.

The six statements concerning the 'perceived value of crime analysis' had a median score of 3 (M = 2.57; SD = 1.26; n = 36), indicating that most analysts chose 'neutral' (3) or 'agree' (4) when expressing their views through the survey. These results revealed that crime analysts have divergent views on how their work is valued by station personnel. About one-third believe crime analysis is appreciated, while a slightly larger share feels it is not. A majority (58%) disagreed or strongly disagreed that frontline patrols effectively use analytical products to manage crime in the quadrants, indicating these tools often go underutilized. Similarly, 40% said they are not consistently included in strategic and tactical planning at their stations, compared with just 28% who agreed or strongly agreed, and 31% who took a neutral position.

Table 1

Summary of the Crime Analyst' Survey's Scales

	Statements	M	Median	SD	n
Perception about the crime analysis meetings	1,2,3,4	3.6	3	0.38	36
Perception about the use of crime analysis.	1,2,3,4,5,6,7	3.56	4	1.20	36
Perceived value place on crime analysis	8,9,10,11,12,13	2.57	3	1.26	36

Type and Frequency of Crime Analysis Activities

Table 2 presents the percentage breakdown of how often police stations reportedly engage in the crime analysis activities listed. Analysts indicated that tactical crime analysis activities were the most commonly performed within the crime analysis units. For instance, 88% mentioned they frequently (44%) or always (36%) conducted activities to identify crime hotspots. Additionally, 83.5% engaged in intelligence analysis. Analysts also reported always (38%) or frequently (43%) performing analyses to identify prolific offenders. Similarly, 8 out

of 10 crime analysts noted they frequently (41%) or always (36%) conducted activities assessing potential crime displacement within their precinct. The frequency of these activities is similar to that of strategic analysis activities, which include a) crime trend analysis, b) risk factors analysis, and c) criminal network analysis, albeit only four types of strategic crime analysis were developed.

Table 2

Frequency with which Police Stations perform Crime Analysis Activities

Activity	N	Never (1)	Rarely (2)	Frequently (3)	Always (4)
Crime trend analysis	36	0.9%	14.7%	44.0%	40.4%
Intelligence analysis	35	1.3%	15.2%	44.3%	39.2%
Calls for service analysis	36	1.4%	18.3%	43.7%	36.6%
Crime hotspots analysis	36	0.9%	19.3%	43.9%	36.0%
Citizen surveys analysis	35	1.4%	15.7%	38.6%	44.3%
Repeat victimization analysis	36	1.8%	15.8%	42.1%	40.4%
Crime displacement analysis	36	0.9%	21.6%	41.4%	36.0%
Police resources analysis	36	1.1%	16.9%	39.3%	42.7%
Risk factors analysis	36	1.0%	19.2%	43.3%	36.5%
Criminal network analysis	36	1.2%	18.1%	41.0%	39.8%
Victim profile analysis	36	1%	18.1%	43.8%	37.1%
Prolific offenders analysis	33	1%	18.8%	42.7%	37.5%

Besides analyzing the types of activities conducted, the survey aimed to assess how often these activities were executed by the police stations. Each frequency option was assigned a score from 1 for 'never' to 4 for 'always'. The total scores provided insight into the frequency with which the 12 activities listed in Table 2 were performed by each station. Table 3 displays the cumulative scores for each police station, reflecting the regularity of their crime analysis activities.

Table 3

Summary of the Crime Analysis Activities score by Police Stations

Police Station	Analysts	Never (1)	Rarely (2)	Frequently (3)	Always (4)	Score
Lo Prado	4	1	12	18	17	147
Santiago	4	11	24	17	7	138
Estación Central	4	10	12	10	14	120
Independencia	4	18	2	15	13	119
Cerro Navia	4	7	18	19	4	116
Pudahuel	4	9	20	16	2	105
Renca	4	5	8	12	11	101
Quilicura	3	6	6	14	10	100
Quinta Normal	3	10	10	12	3	78
Recoleta	2	2	8	10	4	64

The figures in Table 3 show that across the ten stations the mean crime-analysis score was 109 points. Analysts rated Lo Prado, Santiago, Estación Central, Independencia and Cerro Navia as carrying out analysis 'frequently' or 'always.' By contrast, Pudahuel, Renca, Quilicura and Quinta Normal were described as doing so only 'rarely' or at best 'frequently.' Recoleta—with a score of 64—fell into the same lower-activity category, a result that likely reflects the fact that only two analysts from that station took part in the survey. In sum, the bulk of analysts' work remains at the tactical level. Yet Table 3 also demonstrates that many analysts regularly engage in strategic tasks—75 percent examine crime trends and 69 percent identify risk factors.

The crime analysts were also asked 'Which of these three terms best describes the department's use of each of the following types of data?'. This question sought to ascertain if the police stations merely performed a basic tally of cases, utilized this data in their analytical activities, or did not use such data (crime reports) at all for their crime analysis. The findings from the choices selected by the crime analysts are shown in Table 4.

Table 4

Percentage distribution of the three terms describing the use of data by the Police Stations

Data type	N	Count	Analyze	None
Crime reports (without arrests)	36	19%	78%	3%
Crime arrest reports	36	14%	86%	0%
Court Orders (warrant)	36	60%	26%	14%
Calls for service	36	42%	28%	30%
Traffic accidents	36	61%	6%	33%
Citizens' claims	36	28%	44%	28%

Table 4 indicates that 78 percent of crime analysts reviewed crime-report data, and 86 percent examined arrest reports—demonstrating the core tasks of station-based analysis units. Sixty percent of respondents simply tallied incoming warrants, while only 26 percent explored their specific purposes. Calls for service were likewise only counted by 42 percent of analysts and analyzed in depth by 28 percent. Overall, the strong emphasis on processing crime reports (with and without arrests) and handling calls for service indicates that analysts are chiefly engaged in tactical crime analysis to support immediate policing needs.

As part of the operationalisation of the crime analysis activities, crime analysts were asked: '*What task (s) from the list mentioned in the preceding question was the last you carried out in the last two weeks?*' Table 5 presents how often analysts selected each activity and its corresponding percentage. Crime trend analysis was the most recent task, mentioned 16 times (23 %). This was followed by crime hotspot analysis (17 %), victim-profile analysis (14 %), and prolific-offender analysis (11 %). These proportions mirror earlier survey findings. Moreover, in the two weeks before the survey, over 60 % of analysts' work balanced immediate crime issues (tactical analysis) with longer-term crime challenges (strategic analysis).

Table 5

Frequency and Percentual distribution of Crime Analysis Activities

Activity	N	f	%
Crime trend analysis	34	16	23%
Intelligence analysis	34	3	4%
Calls for service analysis	34	4	6%
Crime hotspots analysis	34	12	17%
Citizen surveys analysis	34	0	0%
Repeat victimization analysis	34	0	0%
Crime displacement analysis	34	6	8%
Police effectiveness analysis	34	4	6%
Risk factors analysis	34	8	11%
Criminal network analysis	34	0	0%
Victim profile analysis	34	10	14%
Repeat offender analysis	34	8	11%
Total		**71**	**100%**

Qualitative Results of the Crime Analysts' Perceptions about Crime Analysis

In addition to quantitative findings, the survey incorporated two open-ended questions aimed at identifying the principal barriers and enablers affecting the effectiveness of crime analysis within the Carabineros of Chile. Responses were subjected to thematic analysis, which yielded six major themes: (1) limited institutional integration, (2) underutilization of analytical products, (3) insufficient feedback from command staff, (4) technological and data-management challenges, (5) lack of formal training and professional development, and (6) organizational support as a key enabling factor.

Shortage of police resources

Sixty-four percent of the free-text responses highlighted that the most common barrier to effective analysis was the reported shortage of human and logistical resources necessary for police operations aimed at crime reduction. One participant encapsulated this issue, stating, '[l]ack of police resources within the police station to carry out the proper implementation of the analyses conducted by us' (civilian crime analyst 6). Additionally, police crime

analyst 21 noted, '[m]y police stations do not have adequate personnel to apply the police strategies developed based on crime analysis.' These observations echo the findings of the evaluations of the Quadrant Plan conducted by the Ministry of Economy (2007, 2014) and the Paz Ciudadana Foundation (2012), which similarly concluded that insufficient police resources in most stations hindered the achievement of the Quadrant Plan's objectives.

Knowledge gap and resistance to change

Twenty percent of the analysts highlighted that frontline personnel's lack of understanding of crime analysis, resistance to transitioning from a reactive to a data-driven approach (8%), and the poor quality of data gathered by frontline officers (8%) are hindrances to effective crime analysis. Civilian crime analyst 16 pointed out that there is still a belief that arresting criminals is more effective than using data analysis for situational crime prevention. Eleven responses (8%) from participating analysts indicated that there remains some resistance among operational personnel to the shift intended by using crime analysis to support police operations within the quadrants. Similarly, civilian analyst 15 remarked that the data collected in crime reports is limited and not very helpful in identifying offenders' modus operandi.

Technological Infrastructure

Eighty seven percent of the respondents consider the quality of the information systems that support crime analysis to be the factor that facilitates crime analysis work. For example, the police crime analyst 9 wrote '[e]xcellent systems and databases that enable crime analysis.' The civilian analyst 11 pointed out that [t]he IT systems that Carabineros have in place greatly benefit the work of crime analysis…... [t]he growth of the CICAP system, as it allows the collection of information almost in real time (civilian crime analyst 10) …. [A]RGIS-type territorial analysis systems have made it possible to know precisely where the crime problem concentrated (police crime analyst 3).

Discussion

The aim of this study was to explore and assess the experiences and perceptions of crime analysts regarding the implementation of crime analysis within the framework of the Quadrant Plan 2.0. It also sought to determine the frequency and types of crime analysis activities conducted by the 10 selected police stations to aid frontline police operations. Data was gathered from a survey completed by 36 crime analysts working at these stations. Although the findings are somewhat limited, they align with other research on integrating crime analysts into police work.

As discussed, the implementation of the second version of the Quadrant Plan 2.0 involved, among other aspects, the implementation of the Carabineros Integrated Crime Analysis Platform (CICAP), and the incorporation of many civilian professionals from different areas of knowledge to work as crime analysts in Chile's police stations. Kiedrowski et al. (2019) studied the civilianization of police in 18 police departments in Canada. Some results of this research indicated that police efficiency improved since the introduction of civilians to police work. In line with the above, the results from this study showed that most respondents consider crime analysis indispensable to meeting the objectives of Quadrant Plan 2.0. Likewise, most analysts believe it has strengthened commanding officers' decision-making on community crime issues. While the bulk of their work remains at the tactical level, a substantial share also regularly undertakes

strategic analysis—75 percent examine crime trends and 69 percent assess risk factors. These patterns echo Santos and Taylor (2014), who maintain that crime analysis bolsters police managers' security-related decisions. Analysts furthermore report that their analyses have optimized the deployment of resources in specific areas, a conclusion that aligns with Browning and Ballucci (2021) and Hinkle et al. (2020), both of which underscore crime analysis as critical to refining crime-reduction strategies.

Additional results showed that analysts believe their work is chiefly valued by station commanders. This echoes Piza et al. (2021), who found that, despite formal recognition from police managers, analysts often feel excluded from decision-making at their stations. Analysts also reported that most frontline officers rarely draw on their analytical products. This pattern suggests that Carabineros' patrol personnel have yet to appreciate the full value of crime analysis, likely because they receive too little training on its purpose and methods. Prior research attributes this shortfall to inadequate instruction for officers on how to interpret and apply analytical outputs (Cope, 2004; Belur and Johnson, 2018). For example, Cope (2004) argues that the frontline's limited understanding of analytical tools significantly hampers their impact.

The findings showed that most respondents consider their information systems to be high quality and supportive of their work, yet they feel their analytical skills are underused. This underutilization appears to confine analysts to relatively simple tasks.

As Belur and Johnson (2018) observe, commanding officers often assign straightforward analyses because they are unsure of the full range of an analyst's capabilities—preferring simplicity over sophistication. The result is that analysts frequently feel marginalized and undervalued within their stations. Based on these results, the researcher hypothesized that crime-analysis outputs may not be properly tailored to the full spectrum of internal users. Instead, these products might be designed primarily to meet the needs of commanding officers, overlooking operational staff. To test this hypothesis, it is essential to assess frontline personnel's understanding of crime analysis to determine whether a lack of comprehension leads to underuse of analytical products. The study should also evaluate whether the outputs align with the distinct needs of all end-users—commanding officers, junior officers, and frontline staff. Commanding officers require both tactical and strategic information for setting objectives and directing operations; junior officers need tactical insights to manage and coordinate tactics; and frontline staff depend on clear, tactical-level data to execute those tactics effectively. By properly organizing and applying analytical outputs, a precinct can reap the full benefits of crime analysis. Achieving this optimization requires law enforcement to master the use of these products to evaluate the effectiveness of their crime-reduction strategies. In turn, analysts will see their expertise put to good use, fostering greater job satisfaction and smoother integration within the station.

In sum, this study examined the experiences and views of 40 crime analysts regarding the rollout of crime-analysis work within the Carabineros. As the first empirical investigation of its kind, it found a noticeable reluctance at the evaluated precincts to adopt analytical products—a hesitancy linked to knowledge gaps among frontline officers. In practice, those gaps can translate into anything from underusing valuable analytical insights to jeopardizing both officer and public safety. The findings therefore underscore the importance of equipping operational personnel with stronger crime-analysis skills and capabilities if crime-reduction goals

in the quadrants are to be met. Furthermore, embedding crime analysts within the Carabineros aligns neatly with innovation-theory principles, which suggest that programmatic changes gain traction when they support an organization's core functions (Weisburd et al. 2008; Weisburd et al. 2014). By reorganizing to include civilian analysts and implementing real-time analytic platforms, the Carabineros have reshaped their production processes and, in turn, their operational strategies—an evolution exemplified by Quadrant Plan 2.0. This study therefore demonstrates the value of drawing on multiple theoretical lenses to understand how the Quadrant Plan 2.0 was developed and implemented through a crime-analysis framework.

Limitations

As with all survey-based studies, the data presented here are derived from self-reported responses provided by crime analysts regarding their experiences and perceptions. This method carries inherent limitations. Respondents may have felt constrained in expressing critical opinions, potentially offering more favorable answers to avoid negative professional repercussions. However, the diversity and candor evident in many of the responses suggest that this bias was minimal. In fact, several participants openly discussed institutional weaknesses—such as the limited value that police personnel often assign to analytical work—indicating a degree of authenticity in their feedback.

A second limitation concerns the non-probability sampling design, which restricts the representativeness of the results. Although the 40 analysts surveyed correspond to approximately one-third of all analysts in the Carabineros' Western Area, the findings cannot be generalized to all analysts across Chile. Nevertheless, it is reasonable to assume that the views captured in this study reflect broader trends among analysts with similar operational roles and contexts.

Third, the research design did not include an evaluation of the relationship between analytical quality and training, a variable that may significantly influence performance. Future studies could address this by assessing the impact of training programs on analysts' competencies and on the effectiveness of analytical products. Such research would contribute to improving the design and content of crime-analysis training initiatives.

Fourth, the study focused exclusively on analysts with direct experience implementing Quadrant Plan 2.0. Consequently, it was not possible to compare their perceptions with those of analysts working in stations without crime-analysis units or in regions that had not yet adopted the plan. Comparative analyses across different organizational contexts would enrich future research and provide a more comprehensive understanding of analytical integration.

Finally, the sample size and scope of this study necessarily limit the generalizability of its conclusions. Nonetheless, the exploratory design succeeded in identifying critical patterns and providing valuable insights into the operational and cultural dynamics shaping crime analysis in the Carabineros. These findings can serve as a foundation for more extensive, mixed-method investigations in the future.

Conclusion

The Carabineros of Chile, through the introduction of crime analyst into police work, seeks to ensure that the limited police resources available to police stations in Chile can be deployed productively to better address community problems and ultimately reduce crime. Despite its lim-

ited scope, the evidence obtained in this study added to other analyses discussed in this research can be used to understand, from the point of view of crime analysts, that the implementation of Quadrant Plan 2.0 has meant a real innovation-based organisational change in the Carabineros. However, if the role of crime analysis in police operations is to become widely understood, accepted, and used within the scope of the Carabineros police stations, even more comprehensive data will be needed to better determine whether its use has been successful in generating the results that Quadrant Plan 2.0 is expected to generate. That is, whether the use of crime analysis has helped to implement more problem-oriented policing and solving problem approaches intended to reduce crime in Chile.

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