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Applicability of the *Intelligence-Led Policing* model in Brazil: the case of the Military State Police of Santa Catarina

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ABSTRACT[1]

This article discusses scientific issues and evidence regarding the policing intelligence-led model (ILP) in police institutions and its applicability in the organizational reality of the Military Police of Santa Catarina (PMSC). This is a theoretical-analytical study with a qualitative approach through a systematic and narrative review of national and international academic production. The research on the subject was found to be incipient in the Brazilian scenario, although space has been gained in several other countries, with a reasonable number of studies. The adoption of intelligence-led policing has the power to "unify" police work, enhance preventive action in public safety, and improve the strategic management of police organizations.

Keywords: Intelligence-led policing. Police models. Data-driven. Organizational strategy. Brazilian Military Police.

1. INTRODUCTION

This paper is grounded in intelligence-led policing (ILP) principles and purports those police leaders, as in the case of Santa Catarina, a state in the South of Brazil, are augmenting the application and reliance on 'big-data' capabilities to influence their decision-making (Ratcliffe, 2016)[1]. The paper will define and compare a selection of the relevant police leadership models and examine the Military Police of Santa Catarina (PMSC) in context and the precipitators that drive police leaders to use technologies to improve policing. In making the case, recognize the inherent risks and policy limitations on using technologies as a 'panacea' to analyze whether the Brazilian police organizations can adopt the ILP to bridge the gap between institutional strategy and operational application.

2. POLICING FRAMEWORKS

The perception that police activity is multifaceted and depends on multiple perceptions for data-based decision-making is not new. In London, UK, in the 19th century, the figure of the "detective" was created, responsible for identifying patterns, crime statistics, and, later, classifying criminals based on crimes committed (IACA, 2017)[2]. In the 20th century, specifically in 1928, Ernest Burgess of the Chicago School designed an actuarial model that predicted the likelihood of the recurrence of prisoners (Brayne, 2017)[3].

According to Brayne (2017)[3], since the 1970s, it has been observed that the reactive character of policing has begun to decrease in the USA with evidence-based policing initiatives and patrolling hotspots. Evidence-based policing consists of using research to guide practice and evaluate policies, adopting "the best evidence to shape the best practice" (Sherman, 1998, p. 4)[4], thus removing decisions about policing from the empirical field and applying science to it.

Clarke (1976)[5] argued that Western policing had advocated situational crime prevention, and regardless of the changing criminogenic environments, its leaders use data capabilities for specific initiatives with varying degrees of success. In the UK, for instance, the National Crime Agency's National Data Exploitation Capability (NDEC) is an algorithmic machine-learning tool capable of processing vast quantities of data, which over 'lockdown' supported partners to identify criminals that had exploited furlough schemes for pecuniary advantage.

This capability confirms that conduct is directly influenced by the situation interacting with opportunity and a motivated criminal (Wortley & Townsley, 2017)[6]. The NDEC conducted thousands of checks and allowed investigators to make decisions that, in turn, disrupted tens of millions of UK pounds in fraudulent claims[2]. It has also assisted policymakers in mitigating the exploitation of future schemes. On the face of it, applying tools like NDEC is endless, but before horizon or even 'near-horizon scanning' to assess the efficacy of being data-driven or extending into algorithmic police decision-making plots relevant leadership models against continuums.

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[2] https://www.nationalcrimeagency.gov.uk/who-we-are/publications/533-national-strategic-assessment-of-serious-and-organised-crime-2021

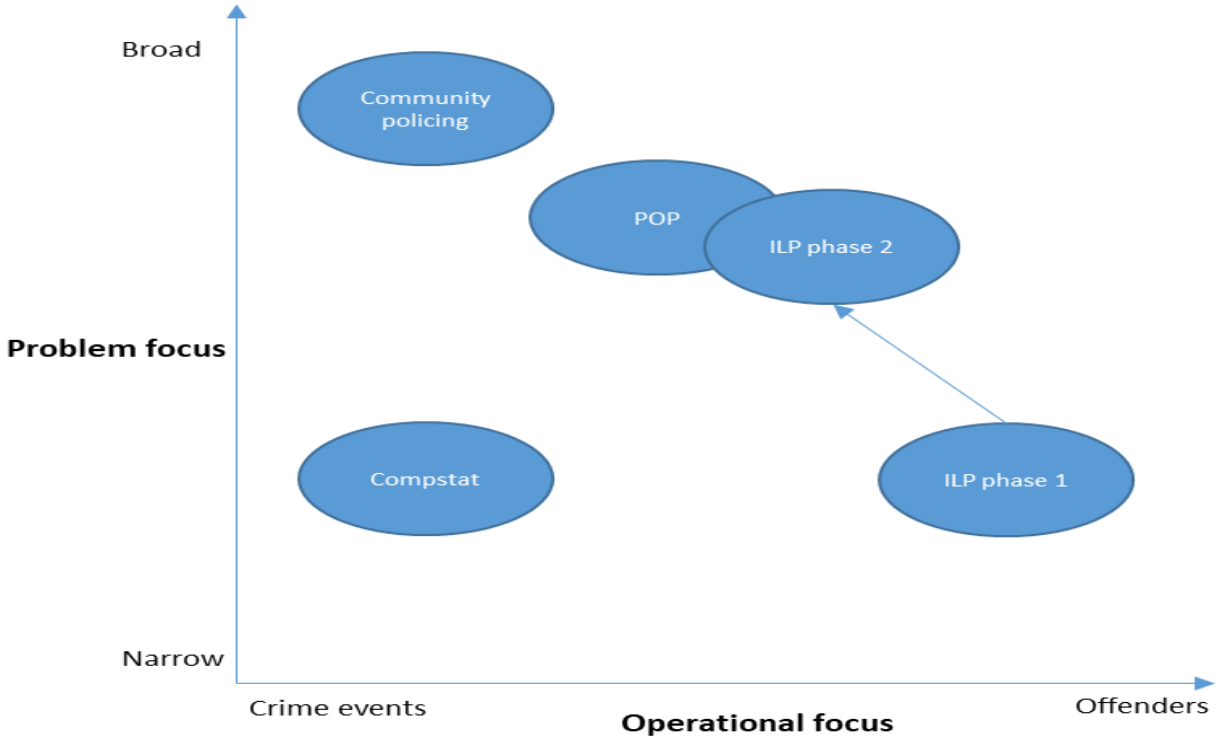

Figure 1: Policing Models (Ratcliffe, 2016)

The figure above presents policing models, considering the problem and operational focus. Community policing relies on partnership-devolved local decision-making and tackling the most critical problems of your constituents (Oliver, 1998)[7]. Problem-orientated policing (POP) starts introducing this notion of data to help identify temporal-spatial anomalies known as hotspots, which help bring the community together on common goals. It focuses on detecting, analyzing, and solving criminal problems using the SARA methodology (Scanning, Analysis, Response, and Assessment) (IACA, 2017)[2]. CompStat, a data-driven solution implemented by the then commissioner of the New York Police Department (NYPD), used data to apply a 'zero tolerance' response to drive senior decision-making. This top-down leadership model targeted resources on anti-social behavior, including "outstanding warrants" to deter more severe urban crimes – a root and branch theory, 'broken windows' (Eck & Maguire, 2006)[8].

These models characterize the leadership movements that have shaped modern policing but are not co-dependent, nor in the case of CompStat, widely accepted as the causal link to the significant crime reduction in New York in the nineties (Moore, 2003)[9]. Willis *et al.* (2003)[10] argue that the hierarchical inflexibility of policing limits how leadership utilizes data to create suppression strategies that merely conduct targeted enforcement. Ratcliffe (2003)[11], citing Weisbud and Eck, states that the standard policing model of police institutions is based on randomly ordered rounds, with a rapid standardized response to case response, as well as sending police officers to the investigation after the crime and dependence of law enforcement and the legal system as the primary means of reducing crime.

Gill (1998)[12] starts to unpick the prosaic definition of ILP, a management framework that assists leaders in making tactical and strategic decisions. Initially, the model was used in limited circumstances. Kent Police, in the UK, was the pilot for ILP (phase 1), which (a) identified and targeted serious local criminals; (b) prioritized activity through an agreed triage process; (c) employed covert capabilities for strategic dividends; and (d) made intelligence a core function (Levi & Maguire, 2012). According to Ratcliffe (2003)[11], initially, the ILP was designed on four main themes: (i) focused on active (prolific) and serial criminals; (ii) exclusion of crimes from a more profound investigation when this does not bring harm; (iii) make greater strategic use of surveillance and informants; (iv) finally, central positioning of intelligence in decision-making.

This evolved, and while some still saw ILP as merely a tactical crime control tool, ILP shifted to phase 2, which aligned with structural changes and leadership commitment to deliver this intelligence model within a national management framework (Groff et al., 2015)[13]. For the first time, police commanders were now seen as proactive, using their personnel to address priorities that supported increased collaboration with partners (Flood and Gaspar, 2009).

Ratcliffe (2016)[1] inferred that ILP was a management framework that used traditional intelligence practices to influence senior policing leaders to create Situational Crime Prevention (SCP) strategies that addressed broader community priorities. Whilst POP and CompStat are measured against reductive objective(s), ILP can be more nuanced to form part of the decision-making framework where intelligence is more than information and in turn data.

This is evidence that NIM in the UK elevated itself above the humble beginnings of ILP (John & Maguire, 2003)[14] and shifted ambitions towards coordinating multiagency partnerships. This evolutionary line was fostered due to a new paradigm that challenges public security: terrorist attacks and global drug trafficking. After the events of 9-11, in 2001, in the USA, the idea of ILP spread through the American police departments (Brayne, 2017)[3]. An example of the applying

mode of action is the creation of fusion centers (command and control centers, situation rooms, among other denominations), mainly in endemic drug trafficking areas or even intelligence support centers (IACA, 2017)[2].

Nowadays, the concept has improved, coming to be treated as (1) designed to be a model for the policing business; (2)aims to achieve the reduction, prevention and interruption of crime and harm; (3) focuses on hot spots of crime, prolific criminals, recurrent victims and active criminal groups; (4) employs a top-down management approach; (5) mixes criminal analysis and criminal intelligence; (6) assists police resource prioritization decisions (Ratcliffe, 2003).

3. THE BRAZILIAN CASE

The PMSC, in 2011, published its strategic planning, called "The Command Plan", with principles, values, and structuring axes of military police action, as well as the priorities, objectives, and goals of the organization throughout the State (SANTA CATARINA, 2011)[15].

The Command Plan established goals and performance indicators for 107 objectives. For instance, in the area focused on "society and citizens," the collection of big data aimed to measure the reduction of the crimes of homicide, robbery, theft, trafficking and possession of drugs, possession of a firearm, disturbance of peace, traffic deaths on state highways, fear of crime and disorder, among others (SANTA CATARINA, 2011)[15].

Subsequently, after its second revision in 2015, the Command Plan began to be called the Strategic Plan, redefining the objectives and goals. In this review, the plan started to have 48 (forty-eight) objectives, among them, the reduction of violent lethality (homicide, robbery, infanticide, deaths in police interventions), attempted murder and robbery, bodily injury, theft, theft, disturbance of quiet, drug trafficking, possession of firearms, traffic accidents and deaths on state highways and (SANTA CATARINA, 2015)[16].

Within the scopes outlined by the plans, several Standard Operating Procedures were edited to standardize and guide the police officers in providing service and attendance to the public, as well as implementing several information systems that enabled the measurement of police activity and monitoring of recently implemented indexes.

For the purposes of monitoring the indexes, strategic panels were developed in the *Qlik View* application of business intelligence, which was fed with the data of the police reports. Given the need for data systematization and process improvement, the PMSC Mobile System, a mobile application based on an Android operating system, was implemented and connected to the Emergency Response and Dispatch System.

This application reduced case attendance time as well as spending on paper forms. The success of PMSC Mobile was verified through the awards granted by the Brazilian Association of State Entities of Information and Communication Technology (ABEP) by the Brazilian Ministry of Planning, Budget and Management in 2017, by the National School of Public Administration and by FONAJE, in the category "Operators of Law" in 2018, and, finally, at the International Association of Chiefs of Police (IACP) Technology Conference, in the USA, also in 2018.

However, despite creating a database and presenting descriptive statistical data, there was no guideline on the "what" type of policing archetype that should be adopted to achieve the objectives. Both the 2011 Command Plan and the 2015 Strategic Plan only stated that some indicators would need additional performance control and tactical projects detailing "how" the objective would be achieved.

Socioeconomic, geopolitical, and cultural factors, among others, directly influence the activity-end of today's policing. The high connectivity, at speed with unrestricted coverage, puts in contact with complex and adaptive systems, which cannot be interpreted in the light of rigid concepts of what will become public security (VISACRO, 2019)[17].

Due to the demand for data and the need to share information in the ILP model, the integrated center structures (fusion centers) became one of its characteristics. This type of arrangement, with various police forces and state organizations, among others, working together, is also due to the current labyrinthine scenario of public security.

Currently, time, distance, and power no longer exist in the way classically and once occurred, leading to a phenomenon of convergence and hybridization of criminal networks, and "(...) insurgent groups, terrorist organizations, criminal factions share interests, methods, and objectives, establishing cooperation dynamics supported by legal, illegal and formal activities" (Visacro, 2019)[17].

Thus, some points of contact between the PMSC, with its data and institutional strategy managed by the Central Intelligence Agency, and the ILP model, which seeks to use intelligence activity as a central point to understand complex environments and guide decision-making, can be exploited.

The Brazilian Military State Police is a permanent body, auxiliary force, and army reserve, organized based on hierarchy and discipline, subordinated to the Governor of the State. The organization is responsible, in addition to other attributions established by law, to (I) exercise the ostentatious police related to (a) the preservation of public order and security; (b) land, air, lake and river patrols; (c) road patrolling; (d) the guarding and supervision of forests and water sources; (e) the custody and supervision of urban traffic; (f) the military judicial police, in accordance with federal law; (g) the protection of the environment; (h) the guarantee of the exercise of the police power of public agencies and entities, especially in the area of clothing, sanitary, environmental protection, land use and occupation and cultural heritage; (II) cooperate with civil defense agencies; and (III) to act preventively as a deterrent and repressive force as a restoration of public order (SANTA CATARINA, 1989)[18].

This contextualization allows us to conceive the broad mission of the PMSC, as well as the need to achieve the established goals and objectives in favor of society. Considering the existence of an internal agency with access to such an amount of data, it is to be asked whether the ILP model can promote and convince the organization's leaders to bridge the gap between institutional strategy and operational application.

To this end, a systematic review of publications on intelligence-led policing in Brazil and international journals was conducted. The Systematic Search Flow methodology was used to define the search protocol with Boolean logic operators to identify articles with the term "intelligence-led policing".

4. METHODOLOGY

For the research, the Portal of the Ministry of Education of Brazil (CAPES) was used, with the taxonomy "intelligence-led policing" limited the search between 2018 and 2022 and peer-reviewed journals. We found 142 (one hundred and forty-two)

results, 133 (one hundred and thirty-three) scientific articles, and 9 (nine) reviews.

It was carried out in the court of analysis, excluding from the articles that dealt with terrorism, internal defense, counterterrorism, and forensic analysis because such matters are not the constitutional competence of the Brazilian Military State Police. Other issues, such as community police and singular police models from other countries, were also disregarded, resulting in 37 articles analyzed and organized in the Mendeley and Bibliometrix system.

Among the articles studied, the authors A. Johannes Bottema and Cody W. Telep stand out, and the USA is the country with the highest number of citations, and the most cited scientific articles were those produced by Clemmow (2020) and Capellan (2019). There is a strong network of cocitations in the analyzed studies; however, there is low network collaboration between research institutions.

The following section presents the results.

5. RESULTS

Analyzing the articles surveyed, it was found that, despite the increase in academic research on ILP in some US police departments, there is still conceptual confusion with community policing. One survey collected information from 227 (two hundred and twenty-seven) police agencies in the USA demonstrated that even when both models were implemented in the same agency, the models led to various policing actions, proving their distinction in the operational sphere (Carter & Fox, 2019).

Sarre and Prenzler (2018, griffins ours)[19], analyzing the development keys in modern policing in Australia, listed the main innovations, among them: community policing and partnership; pluralization; diversification practices; **problem-solving policing and intelligence-led policing**; education outside the academy; procedural justice; the shift of focus to legitimacy; an evaluative (experimental) basis and mapping of this information; the addressing of diversity; **revolutionary technologies**; 'new public management' and **performance indicators**.

Sarre and Prenzler (2018)[19] argue that 'Problem-solving' policing and its spin-off, intelligence-led policing, are consistent with the view that not all crime and disorder problems are the same, nor the neighborhoods and communities in which the same occur. The problem-solving strategy tries to gather incidents to paint a larger picture and provides a good fit for the growing emphasis on government accountability through quantitative efficiency and effectiveness measures.

Burcher and Whelan (2019)[20] found that intelligence-led policing is an organizational form that aims to put criminal intelligence at the heart of decision-making and is widely adopted in the United States, United Kingdom, Canada, and Australia.

Burcher and Whelan (2019)[20] identify 3 (three) key themes that start the successful implementation of intelligence-led policing: (1) analysts and data, (2) analysts and tools, and (3) analysts and decision-makers. Also, according to these authors, some challenges limit the application of intelligence-led policing, mainly the low scientific production compared to other modalities, such as problem-oriented policing, as well as problems of non-interoperability of systems, failures in police records and database duplication, among others.

In this sense, Mugari & Obioha (2021)[21], in bibliographic research on the evolution of predictive policing between 2010 and 2020, pointed out that low data quality, low predictive accuracy, the limited scope of crimes that can be predicted, and high cost of software have been some limiting factors and that influence the non-adoption of such policing model.

Criticism of predictive policing is also listed by Hälterlein (2021)[22], who highlighted discriminatory consequences, the confusion between regulatory boundaries and legal provisions, as well as a general paradigm shift in social control allowing near real-time decision-making and "stochastic governance" of populations.

Despite the flaws pointed out above, Egbert (2019)[23] asserts that the capacity of predictive policing has been oversized; all the positive results to be pointed out are the evolution of the underlying methods of criminal data analysis. In other words, the importance of predictive policing is centered on predicting crimes and the potential for analyzing police-related data, leading to what the author called the "datafication" of police work.

Currently, computer criminal prediction programs become incubators for datified police work and can create a fruitful environment for the analysis of criminal data, becoming of greater value when aggregated to external sets of data and processed on a large scale (Egbert, 2019)[23]

Similarly, Brayne (2017)[3], in his field research in the Los Angeles Police Department, noted that the use of a large volume of data (big data) by the police entails the transformation of daily and operational activities, going through five specific stages:

First, supplements of law **enforcement discretionary risk assessments** of officers with quantified risk scores. Second, there is an increase in the **use of predictive data analysis** – rather than reactive or explanatory. Third, there is a proliferation of **alert-based systems**, which facilitates systematic and rapid surveillance of a larger number of individuals than is possible with traditional consultation-based systems. Fourth, the limit for inclusion in law enforcement databases is lower, now **including individuals who have had no direct contact with the police**. Finally, previously separate data systems are merged into relational systems, making it possible for the police to **use data collected initially in other non-criminal justice contexts** (Brayne, 2017, p. 985, our griffin)[3].

As Egbert (2019)[23] points out, big data is not only a massive amount of data but also consists of analysis tools needed to explore and understand it. For the author, if the belief of "the more data, the better" is taken as a priority, the data will gain unique importance, meaning that data-driven policing, one of the ramifications of ILP, will consist of interconnecting as much data as possible in order to obtain information and knowledge in the fight against crime.

In this sense, Uzlov, Vlasov, and Strukov (2018)[24], when dealing with the possibility of using data mining for ILP and criminal analysis, state that the existence of a mass of data enables the application of clustering, classification, and association algorithms to identify implicit and hidden links between crime objects records in databases.

One interesting case to be followed, as it represents a country usually far from the mainstream of research in policing, is that of the Republic of Serbia, which is currently adopting the ILP model. The Serbian model is extracted: police directorates make operational public safety assessments and adopt plans for their respective police directorates. The operational objective of the evaluation is to analyze and evaluate security problems in the territory for which each police officer has created a board of directors. In the operational evaluation, the object of analysis and evaluation is to find out how strategic priorities are reflected in the territory of the police board. According to the Police Strategic Plan and its operational assessments, all police directorates adopt operational plans. In the same way as the police strategic plan,

operational plans define activities to combat selected priorities, the timetable for their implementation, the results indicators, and the sources of verification of the results achieved for each priority (Đurđević & Vuković, 2018).

6. CONCLUSIONS

This article aimed to present research related to the adoption of the ILP model and to verify the points of contact with the current governance in the Brazilian Military Police, especially the case of the PMSC. In the development of the present study, it was demonstrated that the PMSC needs to make decisions based on a range of data of different hues since the problems it deals with do not have a single and closed solution.

The first step towards the adoption of 'data-driven' management has already been taken. From the Command Plan in 2011 to its subsequent revision and amendment of nomenclature in 2015 as the Strategic Plan, the added culture of technological development provides the PMSC with foundations for incremental improvement and adoption of the policing intelligence-led model. However, as verified in the articles researched and presented, specific internal alignments must be considered and performed.

If policing is to be truly data-driven, then external confidence in these technologies will also be needed, and lawful challenge will help the public embrace algorithmic decision-makers (Hobson, Yesberg, Bradford *et al.*, 2021)[25]. Kearns and Muir (2019)[26] present a series of points that detail how police leaders can manage risk, which we could stress the (a) proactive citizen participation in sharing a common understanding of being data-driven within the complex environment of modern policing and to set ethical boundaries; (b) introduce a regulatory framework to govern the use of technology; (c) support the creation of professional standards detailing how technology is to be integrated into existing operating procedures; (d) up-to-date data protection act policies and procedures; (d) priority funding to address immediate skills deficit; (e) a coordinated approach to improving data quality and system maintenance; (f) a Standard Operating Procedure to meet procedural thresholds or where heightened protections are required; (g) increased governance on spending to ensure public value; and (h) seeks to replicate best practice from across policing.

Currently, various technological tools used institutionally in the PMSC, such as PMSC Mobile and business intelligence systems, can be considered the precursors of the first analyses and orientation to the desired results, and the model can evolve to the aspects of predictive policing and data-driven policing. Nonetheless, noticeable in its absence is the necessity for a people plan to deal with upskilling and the retention of skilled officers.

Some studies cited throughout the work show that the suggested technologies present a high degree of improvement in the environment in which they were applied and seek to prove that intelligence-led policing can be an adequate work model at the stage in which the institution is located.

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