

MULTICRITERIA DECISION-MAKING FOR SMART, SUSTAINABLE AND SAFE CITIES: A CASE STUDY WITH THE MILITARY POLICE

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ABSTRACT

The promotion of safer, more resilient urban environments with improved quality of life is a fundamental premise for cities and governments, especially in light of high crime rates, the growing perception of insecurity, and the various social challenges currently faced. In this context, the concepts of Public Security and Smart and Sustainable Cities are intrinsically connected, sharing the common goal of transforming urban centers into Safe Cities. Accordingly, this research aims to identify and prioritize actions that contribute to the development of cities that are simultaneously smart, sustainable, and safe. To this end, a case study was conducted in the mid-western region of the state of Santa Catarina - Brazil, with the support of the Military Police (MP). The decision problem was structured using the Value-Focused Thinking (VFT) approach, and subsequently, the FITradeoff method for ranking problematic was applied. Regarding the preference modeling process within the multicriteria method, a combination of classical decomposition and holistic evaluation was employed to support decision-making involving multiple criteria. In this context, the multimethodological approach is particularly noteworthy, integrating a Problem Structuring Method (PSM) with a multicriteria method, which provided significant benefits and positive impacts for the decision-maker. It also highlighted the importance of identifying criteria and alternatives through a cohesive and structured process, followed by their use in a Decision Support System (DSS). Thus, the Hasse Diagram was developed to represent the ordering of the alternatives within the decision model, indicating the prioritization of actions aimed at making cities smarter, more sustainable, and safer. As suggestions for future research, it is recommended to replicate the study in other municipalities, regions, and states in order to understand and compare different local realities in the country. Furthermore, expanding the number of decision-makers and incorporating group decision-making, as well as involving other police institutions and key stakeholders, is also advised.

KEYWORDS. Multicriteria Decision-Making, Safe Cities, Military Police.

Paper topics (ADM – Multicriteria Methods to Aid Decision-Making; D&SP – OP in Defense and Security)