

INTERNATIONAL JOURNAL
OF LAW, GOVERNMENT
AND COMMUNICATION
(IJLGC)

www.gaexcellence.com/ijlgc



A MULTIDIMENSIONAL CRIME INDEX (MCI-PDRM) FOR SAFETY AND SECURITY IN MALAYSIA: A SYSTEMATIC LITERATURE REVIEW

Sharifah Mohd Nawani¹, Zaherawati Zakaria^{2*}


¹ Ibu Pejabat Polis Daerah Klang Selatan, Jalan Gedung Raja Abdullah, 41560 Klang, Selangor.

 sharifahzayani@yahoo.com

 <https://orcid.org/0009-0001-3489-7624>

² Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA, Malaysia

 zaherawati@uitm.edu.my

 <https://orcid.org/0009-0001-8298-0078>

*Corresponding Author

Article Info:

Article history:

Received date: 30.04.2026

Revised date: 20.05.2026

Accepted date: 07.06.2026

Published date: 23.06.2026

To cite this document:

Nawani, S. M., & Zakaria, Z. (2026). A Multidimensional Crime Index (MCI-PDRM) For Safety and Security in Malaysia: A Systematic Literature Review. *International Journal of Law, Government and Communication*, 11(44), 281-292.

Abstract:

This study explores the development of a multidimensional crime index to measure safety and security in Malaysia using a systematic literature review method. Conventional crime data, which may not fully reflect aspects of public safety, social well-being, fear of crime, environmental vulnerability, cyber risk, and broader community resilience, are often overemphasized by current crime measurement systems. As a result, there is an increasing demand for a more comprehensive and integrated crime index structure that can represent current security issues in Malaysia. Relevant scholarly articles, policy reports and institutional publications were systematically retrieved and analysed from a large academic database using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) technique. The main dimensions and theoretical underpinnings used in previous crime index and security assessment research in the Malaysian and international contexts are summarised in this study. The results show that several interrelated domains, such as violent crime, property crime, cybercrime, public disorder, perceptions of safety, socio-economic determinants, urban environmental conditions, and government effectiveness, are often included in multidimensional crime measurements. Significant research gaps in the Malaysian context are also identified through the assessment, particularly the inadequate integration of subjective and objective safety indicators in current frameworks for measuring crime. In response, this study offers a conceptual framework for creating a multifaceted crime index that can assist in sustainable community development, evidence-based policymaking, urban governance, and crime prevention tactics. By encouraging more rigorous methods of assessing safety and security beyond conventional crime data, the proposed framework adds to the literature on criminology and public

policy. Finally, this study offers useful suggestions for improving the management of national safety and security in Malaysia for scholars, policymakers, local authorities, and law enforcement.

DOI: 10.35631/IJLGC.1144017 **Keyword:**

Crime Index; Safety and Security; Multidimensional Measurement; Systematic Literature Review; Malaysia.



© The authors (2026). This is an Open Access article distributed under the terms of the Creative Commons Attribution (CC BY NC) (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact ijlgc@gaexcellence.com.

Introduction

Due to the increasingly complex patterns of crime in contemporary culture, safety and security have emerged as a major issue in public administration, urban governance, and national development. Conventional crime measures, particularly violent and property crimes, often rely on police-recorded figures, which may not accurately reflect larger aspects of public safety and the population's perception of insecurity. Cybercrime, commercial fraud, drug abuse, public nuisance, juvenile delinquency, and fear of crime are among the crime-related issues that continue to undermine community well-being and public trust in government institutions in Malaysia. Assessments of the diverse state of safety and security are limited as the Malaysian Crime Index, published by the Department of Statistics Malaysia (DOSM) and the Royal Malaysian Police (RMP), mainly focuses on violent and property crimes. A multi-dimensional approach to crime and security assessment is gaining popularity among academics worldwide. Spatial analysis, socioeconomic indicators, environmental conditions, government effectiveness, technological surveillance and public perceptions of security are now incorporated into crime analysis, according to recent systematic literature reviews (Du & Ding, 2023; Kounadi et al., 2020).

To provide a more comprehensive understanding of public safety, recent studies on urban safety and smart cities further suggest that safety measurements should include both objective indicators, such as crime statistics, victimization rates and cyber threats, and subjective indicators, such as fear of crime, perceived safety, and trust in institutions (Gallardo-Amores et al., 2025). Concerns about the accuracy and precision of current crime indicators have also arisen in Malaysia. This lack of technical measurement has already been shown to be a problem due to lack of reporting, discrepancy between the extent of perceived and actual crime, and a lack of traditional crime statistics. Additionally, due to increased security, digitalization, and advancements in technology that have changed crime trends, traditional crime indicators have become less useful in measuring the reality of safety and security today. Consequently, there is

a growing need for a crime index that encapsulates the complex and changing aspects of safety and security in Malaysia. The investigation and prevention measures, encourage evidence-based investigations, and improve sustainable city and community engagement. The over reliance of traditional crime statistics, caused mainly by violence and property crimes, is one of the major problems in measuring crime. The index still often overlooks emerging safety issues such as cybercrime, internet fraud, crime in the natural environment, troubled communities, and the public's fear of crime. The index is also a form to assess aspects of safety and security within the wider community. Du and Ding (2023) argue that modern crime patterns are more diverse and influenced by social, technological, and geographical factors, which requires a more integrated measurement approach. Age-related public perception of safety and criminal stage is another important issue. Caused by social media exposure, lack of trust in the city, and a decline in public trust in law enforcement agencies, previous studies have shown that public fear of crime can continue (Gallardo-Amores et al., 2025). In addition, Kounadi et al. (2020) findings show that assessing of crimes must consider elements of the surrounding context that affect the public's perception. Consequently, relying entirely on police-recorded crime data would not reflect the true experience of safety communities appropriately.

Multidimensional techniques for analyzing crime and security are becoming increasingly popular in international research. In a study of systematic crime prediction, Kounadi et al. (2020) found that crime analysis considered environmental, temporal, and geographical factors as an addition to traditional statistical methods. Similarly, Du and Ding (2023) emphasize that modern crime prediction models combine socio-economic, temporal, and specific factors to enhance intervention and crime prevention. Additionally, research regarding assessing and predicting crime has been greatly influenced by developments in artificial intelligence and machine learning technology. Mandalapu et al. (2023) argue that machine learning technology facilitates proactive policing tactics and increases forecasting crime trends. Additionally, Gallardo-Amores et al. (2025) argue that government effectiveness, security concerns, public trust and technological surveillance should be combined in assessing city security as important components in measuring comprehensive security. Overall, this study shows how crime assessment frameworks based on multiple dimensions of intelligent technology are becoming popular around the world. Although the government of Malaysia and its law enforcement agencies have always strived to improve public safety and reduce crime, the country's current crime measurement system still relies heavily on traditional statistics recorded by the police, which cannot fully capture various aspects of security today. Current work only partially covers public perception about security, cyber risk, government effectiveness, environmental concerns, and sustainable communities. As a result, policy makers, local authorities, and enforcement agencies face difficulty in implementing safety and security-based evidence-based initiatives due to the lack of a comprehensive crime index of multiple dimensions. This study comprehensively reviews existing literature to provide a conceptual basis for developing a multi-dimension crime index to measure safety and security in Malaysia.

Literature Review

Due to the increasing complexity of security in contemporary society, the idea of crime assessment has changed dramatically over the past few decades. Historically, data recorded by police regarding crime, violence and property has been the focus of the main crime index. However, an increasing number of academic experts believe that traditional crime statistics are not sufficient to fully capture the safety and security of the broader public (Kounadi et al., 2020). According to recent studies, safety and security are diverse concepts influenced by

socioeconomic conditions, quality of government, advancement in technology, elements of the surrounding nature, and public perception of uncertainty (Du & Ding, 2023). The literature on public and urban security, which emphasizes the need to use both objective and subjective indicators in assessing community safety, is a source for a multidimensional approach to assessing crime. Crime rates, victimization statistics, cybercrime incidents, emergency response effectiveness and public disturbance statistics are examples of objective indicators. According to Gallardo-Amores et al. (2025), subjective indicators include public attitudes about safety, fear of crime, trust in law enforcement and trust in institutional governance. Because it allows policy makers to study aspects of social and physical security concerns in the community, model assessment and security integration are becoming increasingly important, according to Chockalingam et al. (2017).

Research regarding measurement of security and crime is still somewhat limited and scattered in Malaysia. Previous research has mostly focused on public safety measures, environmental crime prevention tactics, and crime prevention programs. Tan and Abass (2022), for example, studied the Prevention of Violence Through Environmental Design (CPTED) in managing physical security and emphasized the importance of environmental design to enhance security organizations. Among the same, Abd Malek et al. (2024) study public safety initiatives in Malaysia designed to prevent property crime and emphasize the value of integrated tactical enforcement and community involvement. Although there are contributions, most studies in Malaysia have focused on specific crime categories or prevention strategies rather than creating a comprehensive crime index with multiple dimensions. Perception of subjective security, exposure to cybercrime, quality of events, environmental trends, and indicators of sustainable community are only partially included in the country's current crime statistics, which still underestimate crime, terrorism, and property. This shows that in the Malaysian context, measuring safety and security across multiple dimensions is still in its early stages. Malaysia's framework for measuring crime is still spread across multiple agencies and continues to place strong emphasis on reporting crime administration. National statistics currently provide some influencing factors such as social, environmental, political, technology and perception-based factors, and particularly the decline in crime, violence, and property. According to studies by Tan and Abas (2022) and Abd Malek et al. (2024), research related to security in Malaysia mostly turned to specific crime prevention techniques by creating a comprehensive crime index of various dimensions. To promote effective security planning, crime prevention programs and measures, law enforcement agencies and law enforcement agencies may face difficulty in gathering comprehensive evidence. The purpose of this work is to conduct a comprehensive study of the literature regarding measurement of security various dimensions and creation of crime index. This study specifically aims to determine the key dimensions and indicators used in assessing security and studying crime index, analyze perspective theory and methodology related to measuring crime multiple dimensions, identify research gaps in the current crime index framework and suggest conceptual framework for creating crime index multiple dimensions for Malaysia. I also look at the approach in Malaysia and globally to measure safety and security.

Studying the literature reveals some notable gaps. First, most crime indexes ignore subjective factors such as public confidence in law enforcement, fear of crime, and perceived safety relative to objective crime figures. Second, rising crimes such as cybercrimes and digital fraud do not translate well into conventional frameworks for measuring crime. Third, there is no comprehensive multi-dimension crime index adapted to the social, political, and urban context of Malaysia; In contrast, this country's research is still dispersed and sector specific. In addition,

existing crime assessment models do not adequately integrate environmental, socioeconomic, political, and technical elements. In addition, there is a lack of information comparing the literature to systematic previous studies that specifically address the establishment of crime indices of various dimensions for Malaysia. As a result, policy experts and law enforcement agencies are less able to develop evidence-based safety and security measures if there is no complete working framework. Recent developments in data analysis and technology have further changed the methods for assessing criminal activity. Geographic information systems (GIS), machine learning and artificial intelligence can increase understanding and prediction of criminal behavior patterns, according to a study on crime prediction and crime analysis (Mandalapu et al., 2023).

To identify crime hot spots and encourage proactive law enforcement, Kounadi et al. (2020) found that the model predicts crime space using environmental, demographic, and temporal characteristics. In the same vein, Du and Ding (2023) emphasize that, compared to conventional statistical techniques, crime prediction models that combine characteristics of multiple dimensions, socioeconomics, and space produce more accurate and successful crime prevention results. Modern color work measurement safety has also been affected by pollution and the rise of city painting. According to a study on the topic of urban security, city security should include security, residential security, monitoring technology and sustainable city management in addition to crime reduction (Gallardo-Amores et al., 2025). This approach is in line with the concept of sustainable development, specifically the Matlab Development Framework 11, which focuses on cities and communities that are sustainable, inclusive, and safe. As a result, the Multi-Dimension Crime Index is becoming increasingly recognized as an important instrument to assist in the development of policy and city-based evidence.

Studies regarding measurement of crime and security are still less in Malaysia. Most studies currently focus on policing communities, crime prevention tactics around nature, and crime prevention initiatives. Tan and Abas (2022) study the Criminal Prevention Through Environmental Design (CPTED) and emphasize the importance of planning the physical environment to increase the safety of cities and organizations. Among the same, Abd Malek et al. (2024) examine public safety initiatives in Malaysia and emphasize the importance of integrated enforcement strategies and community engagement in reducing crime. Although there are efforts, research to create a crime index comprehensive of multiple dimensions that is most suitable for Malaysia is still lacking. With little measurement of exposure to cybercrime, quality of governance, trends in socioeconomics, fear of crime, and indicators of public trust, the country's crime metrics currently focus mostly on criminal terrorism and property crimes directed by law enforcement agencies. Use these menus to assess aspects of safety and security in the broader Malaysian community. To identify the dimensions and important guidelines related to the creation of multidimensional crime index for Malaysia, synthesis of the entire literature is important.

Methodology

This study adopts a Systematic Literature Review (SLR) approach to examine the development of a multidimensional crime index for safety and security assessment in Malaysia. The SLR method was chosen because it provides a transparent, replicable, and structured process for identifying, selecting, and synthesizing existing scholarly evidence on a specific research topic. By clearly specifying the research topic, search strategies, inclusion and exclusion criteria, and thematic synthesis of findings, the review follows accepted recommendations for systematic

reviews (Kounadi et al., 2020). Relevant literature on crime measurement, safety and security indicators, urban governance, and crime index development was collected from large academic databases, including Scopus, Web of Science, Google Scholar, and other peer-reviewed sources. "Crime index," "safety and security," "multidimensional crime measurement," "crime indicators," and "systematic literature review" were some of the search terms used. To ensure that only the best and most recent papers are included in the analysis, the selected articles are then verified based on relevance, publication year, and academic quality. The specific dimensions, indicators, and frameworks used to construct the crime index are identified through a thematic synthesis of data from the selected literature. This approach allows the study to incorporate diverse perspectives from Malaysia and around the world and provide a conceptual framework for a multidimensional crime index suitable for Malaysia (Du and Ding, 2023; Gallardo-Amores et al., 2025).

Findings and Discussion

According to SLR analysis, the traditionally mono-dimensional crime statistics have gradually given way to frameworks for assessing safety and security that are more integrated and multi-dimensional. According to studies conducted around the world, the crime index includes factors such as socioeconomics, environmental factors, technology, and perception in addition to reported crime, violence, and property (Kounadi et al., 2020; Du & Ding, 2023). The great thing is that crime is a complex social phenomenon influenced by the factors structure, effectiveness of government and the feeling of security of the community in the third stage of its evolution. The results showed that the crime index framework often used five dimensions as the most prominent. First, traditional crime indicators such as criminal terrorism, criminal property crimes and drug-related crimes remain important. Second, the increase in fraud online and the digital revolution has led to an increase in cyber and technology crimes. Third, the level of crime risk is often related to factors affecting socioeconomic status, including unemployment, uneven income, and rural areas. For example, areas where crime is concentrated are largely determined by indicators of the surrounding environment and space (such as lighting, land use and crime hotspots) generated from GIS and city design.

Finally, it is becoming increasingly widely recognized that indicators based on perceptions such as perceived safety, trust in police and fear of crime are important parts of the overall security measurement system. The current method of measuring crime in Malaysia by the Royal Malaysian Police (RMP) is still based on data from criminal administration, especially the Crime Index (category of crimes of violence and property). These guidelines are useful for police operations, but they still poorly describe the complexity of safety and security in Malaysia. As a result, there is a clear gap in integrating objective crime data with subjective and structural indicators into a unified index system. Therefore, this study proposes a Multidimensional Crime Index (MCI-PDRM) designed to support strategic policing, crime prevention planning, and national safety governance.

Development of Multidimensional Crime Index for PDRM (MCI-PDRM)

The proposed index integrates five core dimensions:

Crime Incidence Dimension (CID)

- i. Violent crime rate
- ii. Property crime rate

- iii. Drug-related offences
- iv. Sexual offences

Cybercrime & Digital Security Dimension (CSD)

- i. Online fraud cases
- ii. Cyber harassment
- iii. Data breach incidents
- iv. Digital scam reports

Socioeconomic Risk Dimension (SERD)

- i. Unemployment rate
- ii. Urban poverty index
- iii. Youth population density
- iv. Income inequality (Gini coefficient)

Environmental & Spatial Risk Dimension (ESRD)

- i. Crime hotspot density
- ii. Urban lighting quality
- iii. Housing density
- iv. Land-use disorder index

Perception & Governance Dimension (PGD)

- i. Fear of crime index
- ii. Public trust in police (PDRM)
- iii. Perceived safety level
- iv. Community-police engagement rate

MULTIDIMENSIONAL CRIME INDEX FOR PDRM (MCI-PDRM)

An Integrated Framework for Safety and Security Assessment in Malaysia

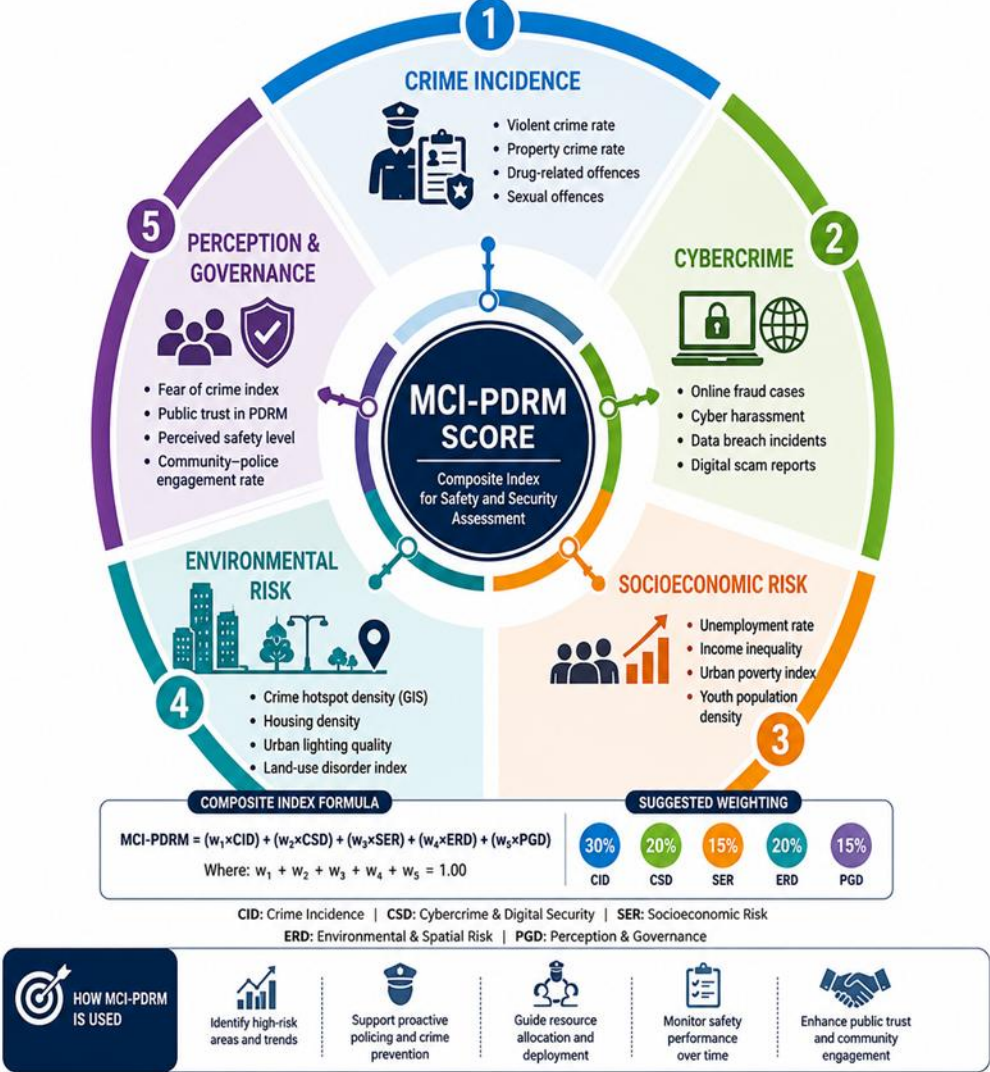


Figure 4.1 Multidimensional Crime Index for PDRM (MCI-PDRM) Framework

To represent the nature of interrelated elements of safety and security, the proposed of Multidimensional Index for RMP (MCI-PDRM) is theoretically structured as a model graph. The MCI-PDRM score, a value index composite derived from weighing all dimensions, is in the middle of the system. The crimes and safety profile is determined by five interconnected circles surrounding the centre. Statistics on traditional crimes, including criminal violence, property crimes, drug crimes and sexual crimes, are captured in the first circle, Inside Crime. Internet fraud, cyber threats, data breaches and activity-related fraud are among the new digital concerns represented by the second circle, cybercrime. Structural elements that influence criminality, such as unemployment, unequal incomes, urban poverty, and demographic pressure, include, in the third circle, socio-economic risks. The fourth circle is Risk Environment, which means physical and spatial factors that influence the likelihood of crime, such as high-rise housing, urban structure, land use disturbance, heat crime and lighting. Perception and good governance, the circle of influence, includes institutional and subjective elements including perceived safety, public confidence in PDRM, fear of crime, and engagement of the community with enforcement laws.

It is suitable as an infographic quality publication for dissemination purposes and academics because the projective arrangement shows that each dimension is not abstract but interacts dynamically with other dimensions to form the overall MCI-PDRM score. By shifting from a one-dimensional crime reporting model to an integrated, comprehensive, data-oriented index, the proposed MCI-PDRM framework addresses shortcomings in the crime measurement system currently in Malaysia. By combining both crime statistics and community perception data, this integrated framework allows RMP to make better crime predictions, allocate resources more effectively, and increase public confidence. In addition, by combining cybercrime and indicator-based perception, the framework of the Crime Malaysia initiative is in line with global best practice in developing and managing Malaysian security, reflecting the dynamic nature of security threats in the digital era.

Conclusion

In conclusion, the development of a multi-dimensional index (MCI-PDRM) is a big step towards improving Malaysia's safety and security measurement system. The results of the systematic literature review clearly show that the complex and dynamic nature of crime in modern society cannot be properly explained by traditional crime indexes, which mostly rely on statistics recorded by the police. The proposed paradigm gives a more rigorous and holistic approach to the assessment of crime by including the five variables required for crime, cybercrime, socio-economic risk, environmental risk, and perception and action. Both the objective facts of crime and the subjective perception of security can be better understood thanks to this multifaceted framework, which is necessary for an effective base for policy and development. It is hoped that the MCI-PDRM framework will help PDRM to improve crime prevention strategies, enhance data-based decision making, optimize resource allocation, and increase public confidence in law enforcement. Finally, this study expands on much of the literature by providing a conceptual framework for the crime index, which is larger, evidence-based, and future-ready, and is appropriate for Malaysia's changing security environment.

-
- Acknowledgements:** The authors would like to express their sincere gratitude to Universiti Teknologi MARA (UiTM) and the Royal Malaysia Police (RMP) for their invaluable support, cooperation, and assistance throughout the conduct of this research. Their contributions and commitment greatly facilitated the successful completion of this study.
- Funding Statement:** No funding was received for this research.
- Conflict of Interest Statement:** The authors declare that there is no conflict of interest regarding the publication of this paper. All authors have contributed to this work and approved the final version of the manuscript for submission to the International Journal of Law, Government and Communication (IJLGC).
- Ethics Statement:** This study did not involve any human participants, animals, or sensitive data requiring ethical approval. The authors confirm that the research was conducted in accordance with accepted academic integrity and ethical publishing standards.
- Author Contribution Statement:** All authors contributed significantly to the development of this manuscript. Zaherawati Zakaria (Author A) was responsible for the conceptualization, methodology, and overall supervision of the study. Sharifah Mohd Nawani (Author B) handled data collection, analysis, and interpretation of results. Zaherawati Zakaria also contributed to the literature review, drafting, and critical revision of the manuscript. All authors read and approved the final version of the manuscript prior to submission.
-

References

- Abd Malek, N., Pauzi, H. M., & Awang Noh, N. (2024). A systemic review of Malaysian public safety programs for preventing property crime. *Multidisciplinary Reviews*, 7(6), 2024116. <https://doi.org/10.31893/multirev.2024116>
- Brantingham, P. J., & Brantingham, P. L. (2016). Crime pattern theory. In *Environmental Criminology and Crime Analysis*. Routledge.
- Chockalingam, S., Hadziosmanovic, D., Pieters, W., Teixeira, A., & van Gelder, P. (2017). Integrated safety and security risk assessment methods: A survey of key characteristics and applications. arXiv.
- Cohen, L. E., & Felson, M. (1979). Social change and crime rate trends: A routine activity approach. *American Sociological Review*, 44(4), 588–608. <https://doi.org/10.2307/2094589>
- Du, Y., & Ding, N. (2023). A systematic review of multi-scale spatio-temporal crime prediction methods. *ISPRS International Journal of Geo-Information*, 12(6), 209. <https://doi.org/10.3390/ijgi12060209>
- Eck, J. E., Clarke, R. V., & Guerette, R. T. (2007). Risky facilities: Crime concentration in similar places. *Crime Prevention Studies*, 21, 225–264.
- European Commission. (2017). *European safety and security index: Methodological framework*. Brussels.
- Falade, A., Azeta, A., Oni, A., & Odun-Ayo, I. (2019). Systematic literature review of crime prediction and data mining. *Revue d'Intelligence Artificielle*, 33(6), 56–63. <https://doi.org/10.18280/rces.060302>
- Felson, M. (2018). *Crime and everyday life* (6th ed.). SAGE Publications.
- Gallardo-Amores, F. J., del Real, C., & Díaz-Fernández, A. M. (2025). Assessing urban security and safety smartness: A systematic review of key performance indicators. *IET Smart Cities*, 7(1).
- Hirschfield, A., & Bowers, K. J. (2001). Mapping and analyzing crime data: Lessons from research and practice. *Crime Mapping Case Studies*.
- Kounadi, O., Ristea, A., Araujo, A., & Leitner, M. (2020). A systematic review on spatial crime forecasting. *Crime Science*, 9(7). <https://doi.org/10.1186/s40163-020-00116-7>
- Mandalapu, V., Elluri, L., Vyas, P., & Roy, N. (2023). Crime prediction using machine learning and deep learning: A systematic review and future directions. arXiv. <https://arxiv.org/abs/2303.16310>
- OECD. (2019). *How's Life in the Digital Age? Measuring well-being in the digital transformation*. OECD Publishing.
- Ratcliffe, J. H. (2016). *Intelligence-led policing*. Routledge.
- Tan, W. H., & Abas, H. (2022). Systematic literature review crime prevention through environmental design (CPTED) in physical security for IT organization. *Open International Journal of Informatics*, 10(1), 68–83. <https://doi.org/10.11113/oiji2022.10n1.189>
- UN-Habitat. (2020). *Enhancing urban safety and security: Global report on safer cities*. United Nations Human Settlements Programme.
- UNODC. (2021). *Global study on homicide 2021*. United Nations Office on Drugs and Crime. <https://www.unodc.org>
- Wortley, R., & Townsley, M. (Eds.). (2017). *Environmental criminology and crime analysis*. Routledge.

Zhou, C., & Tong, X. (2021). Spatiotemporal modeling of crime: A review of methods and applications. *ISPRS International Journal of Geo-Information*, 10(9), 605. <https://doi.org/10.3390/ijgi10090605>