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Priyanka Biswas · Nilanjana Das Chatterjee

Crime Prediction Using GIS and Statistical Modelling

A Study on Crime Against
Women in West Bengal

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Foreword

In the rapidly evolving landscape of crime prevention and justice, the urgency of applying advanced analytical methods and technologies can hardly be overstated. The book *Crime Prediction Using GIS and Statistical Modelling: A Study on Crimes Against Women in West Bengal* stands at the intersection of these transformative approaches, offering a comprehensive exploration of how Geographic Information Systems (GIS) and statistical modelling can be harnessed to address one of the most pernicious and pressing issues of our time: crimes against women.

Despite numerous measures and laws in place, crimes against women are pervasive, cutting across cultures and geographies. Occurrences of gender-based crimes continue to skyrocket, creating an urgent need for effective prediction and prevention strategies. Here, the fusion of GIS and statistical modelling is indispensable in tackling the problem at hand. These tools not only help identify the spatial and temporal patterns of crimes but also aid in formulating data-driven policies and interventions.

The study of crimes against women is critical in countering this societal menace. Gender-based violence is a global epidemic with profound consequences for individuals, families, and societies. In India, and specifically in West Bengal, the challenges related to such crimes are exacerbated by socio-economic and cultural factors that often prove to be stumbling blocks to effective responses and interventions. This book is a timely and vital contribution to help understand and address these challenges through a rigorous and innovative approach.

The state of West Bengal offers a unique vantage point for such a study. Known for its rich cultural heritage and historical significance, West Bengal has seen an upsurge in crimes against women over the past decades. While West Bengal, one of India's most populous states, mirrors overarching challenges at the national level, its distinctive geography in terms of urban-rural divide, cultural ethos, and political dynamics mire the issue in added layers of complexity. Historically, the state has been at the forefront of progressive movements, yet rising crime rates against women paint a contrasting picture.

The primary objective of this book is to harness the power of GIS and statistical modelling to predict crimes against women in West Bengal. By doing so, it aims to

provide a scientific framework for developing preventive strategies and policies. The book focuses on four major types of crimes perpetrated against women and girl children: trafficking, rape and sexual harassment, domestic violence, and dowry deaths. A detailed and in-depth study, supported by an extensive literature review and available data on such crimes, both at national and state levels, offers an opportunity to compare and contrast incident patterns at national and state levels.

Each chapter addresses these objectives as each crime has its own distinct spatial pattern, posing differing threats to targets and increasing the risk of victimisation. The study showers light on how women throughout Bengal are exposed to a variety of gender-linked harassment due to situational environmental determinants as well as culturally fostered misogyny, including the persistence of patriarchal values and beliefs, victim-blaming, socio-economic marginalisation, and many other factors responsible for a surge in crimes against women as well as the under-reporting and non-reporting of such incidences.

The integration of GIS and statistical modelling into crime prediction represents a cutting-edge advancement in criminology and public safety. GIS technology, with its ability to map and analyse spatial data, offers invaluable insights into the geographical distribution of crime. When combined with sophisticated statistical models, it provides a powerful tool for identifying patterns, predicting trends, and formulating evidence-based strategies for crime prevention and intervention.

Through a series of well-researched chapters, the authors present a nuanced analysis of the spatial and temporal aspects of crimes against women, offering a rich understanding of the factors contributing to these offences. The use of GIS allows for a visual representation of crime data, which is instrumental in revealing patterns and trends that may not be immediately apparent through traditional statistical methods alone.

The scope of this book extends beyond mere academic inquiry; it is a call to action for policymakers, law enforcement agencies, and social workers. The insights derived from this study are intended to inform and shape policies that ensure the safety and well-being of women. In an era where data-driven decision-making is paramount, this book is a testament to the critical role of research and technology in societal advancement.

The book is more than just an academic endeavour; it is a crucial step towards ensuring the safety and dignity of women. The insights and recommendations outlined in this book have the potential to inform decision making and bring about tangible changes on the ground. This book stands as a beacon of what can be achieved when rigorous research meets state-of-the-art technology.

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Consent Forms

Informed Consent

Informed consent was obtained from all individual participants included in the study.

Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Conflict of Interest

The authors declare that they have no conflict of interest.

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