DEVELOP EFFECTIVE AND PREVENTIVE MEASURES FOR ROAD TRAFFIC ACCIDENTS: A COMPREHENSIVE STUDY ON THE "A9" ROAD SECTION, NORTHERN PROVINCE

By

ASANKA HIDALLAARACHCHI
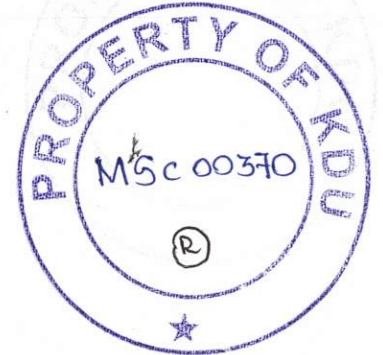
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ABSTRACT

This research study aims to develop effective preventive measures for road traffic accidents on the "A9" road section in the Northern Province of Sri Lanka. The primary objective is to identify the most fatal-rated hotspot and develop effective strategies to mitigate accidents and enhance road safety. Through a comprehensive analysis of accident data and the application of Hotspot Spatial Analysis techniques, two critical high-risk areas, namely Kilinochchi and Meesalai, are identified along the A9 road. These hotspots exhibit a high frequency of fatal accidents and pose significant risks to road users.

To address the identified hotspots, the research employs thematic analysis of local expert interviews to derive insights and recommendations for preventive measures. The findings underscore the key factors contributing to accidents, including driver behavior and attitude, enforcement and compliance, and road infrastructure and design. Based on these findings, a set of recommendations is proposed to guide practice, policy, and future research.

Recommendations for practice include strengthening enforcement efforts through strategic deployment of police officers and introducing an offense-based point adding system to incentivize adherence to traffic laws. Improving road infrastructure and design is emphasized through measures such as implementing traffic calming techniques, ensuring visibility of warning signs, and developing separate lanes for two-wheelers and pedestrians.

Fostering stakeholder collaboration and engagement is recommended to promote coordinated road safety initiatives. This involves conducting regular road safety audits, organizing awareness programs, and engaging government agencies, community organizations, and the public. The utilization of technology and innovation is also emphasized, with suggestions to embrace intelligent transportation systems, automated traffic control, and innovative engineering solutions.

Enhancing data collection and analysis is vital for evidence-based decision-making. Recommendations include establishing a comprehensive database, conducting regular monitoring and evaluation, and utilizing data analysis insights to develop targeted interventions and allocate resources effectively.

Promoting traffic safety education and awareness is crucial in shaping responsible road behavior. Recommendations include integrating road safety education into the school curriculum, organizing national-level campaigns, and emphasizing adherence to road safety regulations.

For policy development, recommendations focus on introducing penalty systems based on offense categorization, fostering political commitment to road safety, and mainstreaming road safety into the development process.

In terms of future research, it is recommended to conduct long-term evaluations of preventive measures, comparative analysis of road safety education programs, assessment of the socio-