RISK FACTORS OF MOTORCYCLE ACCIDENTS IN SRI LANKA

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DECLARATION

I declare that this is my own work and this Dissertation does not incorporate without acknowledgment any material previously submitted for a Degree or Diploma in any other University of Institute of Higher Learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgment is mad in the text. I retain the right to use this content in whole or part in future works (such as articles or books).

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Name of the Supervisor:

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ABSTRACT

Road Traffic Accidents (RTAs) constitute a substantial public health concern and are among the foremost contributors to injury-related fatalities and overall mortality worldwide. Considering the past ten years, Motorcycle Accidents (MAs) have shown a remarkable proportion among RTAs in European and Asian Countries. MAs have emerged as a prominent subset of RTAs in the Sri Lankan context. MAs contribute to approximately 40% of the reported annual RTAs. Hence, the primary objective of this study is to pinpoint the risk factors linked to fatal Motorcycle Accidents in Sri Lanka spanning the years 2013 to 2019, offering valuable insights for policymakers and those in decision-making roles. The research objectives were accomplished through the examination of existing data pertaining to various aspects related to motorcyclists, including personal factors, the characteristics of MAs, and specific attributes of motorcycles as ownership and age. The association between the severity of MAs and the aforementioned factors was investigated. According to the fitted binary logistic regression model, the calculated odds were those fatal motorcycle accidents are approximately 60 times more likely to happen on dry road surfaces compared to other types of road surfaces, nearly 3 times more likely in rural areas compared to urban and estate areas, nearly 3 times more likely on weekdays, nearly 2 times more likely on roads with no junctions, nearly 2 times more likely when the motorcyclist is in the age group of 40 to 59, and equally likely among male and female motorcyclists. These factors have proven to wield a significant and positive association with accident rates and the severity of resulting injuries. The adoption of measures like improved signaling, the construction of pedestrian bridges, and the implementation of pavement tunnels to reduce interaction with moving vehicles is strongly recommended based on their effectiveness.

Keywords: Binary Logistic Regression, Fatal Accidents, Non-fatal Accidents

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LIST OF ABBREVIATIONS

Abbreviation		Description
ABS	-	Anti-lock Braking System
DMT	-	Department of Motor Traffic
EAMM	-	European Association of Motorcycle Manufacturers
EU	-	European Union
GDP	-	Gross Domestic Product
H-L	-	Hosmer and Lemeshow
LL	-	Log Likelihood
ML	-	Maximum Likelihood
MAs	-	Motorcycle Accidents
NCIPC	-	National Center for Injury Prevention and Control
NSC	-	National Safety Council
OECD	-	Organization for Economic Co-operation and Development
PTWs	-	Powered Two-Wheelers
RTAs	-	Road Traffic Accidents
RTI	-	Road Traffic Incidents
SEAR	-	South-East Asia Region
USA	-	United States of America
VIF	-	Variance Inflation Factor
WBG	-	World Bank Group
WHO	-	World Health Organization

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