

**MODELLING MALAYSIAN ROAD ACCIDENTS: AN
INTERVENTION ANALYSIS APPROACH**



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ABSTRACT

The introduction of the integrated road safety operations commonly referred to as OPS Sikap on December 2001 was continuously implemented nationwide in Malaysia during every major festive season. The intervention carried out is aimed to reduce the number of road accidents and casualties. Though preliminary analysis based on before and after intervention implementation had concluded that the number of accident has decreased, our objective is to examine the effect in more detail. In this study, intervention analysis was conducted to investigate the effects of OPS Sikap on road accidents in Malaysia. The aim is to assess the intervention effect in comparison with the standard ARIMA model and hence to obtain the best model for forecasting purposes. Our results suggest there is a drop in the number of road accidents during OPS Sikap II, VI, VIII, XII and XIV. However, the significant reduction can only be seen after the implementation of OPS Sikap VIII and XIV with an expected number of reductions by about 1,227 and 1,484 accidents associated with respective intervention. This had suggest the intervention model with $ARIMA(1,1,1)(0,1,1)_{12}$ is the best model to predict the number of road accidents.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

Road accident is one of the major causes of death. It is a shocking fact that road accidents kill more people in other developing countries too, every year, than war and diseases. This phenomenon is quite alarming especially to developing countries like Malaysia. The number of accidents in Malaysia has recorded an increasing trend year by year. In 2007 alone, the total number of 363,319 cases was reported compared to only 215,632 cases in 1997 (RMP, 2007). This increment has become a critical issue that needs to be tackled by all parties involved as it has created an adverse impact to the economy, society and the country as a whole. To address this alarming problem, various intervention programs and enforcement actions has been carried out to offset the road accident figure. Among which is the nationwide implementation of an integrated road safety operation commonly referred to as 'OPS Bersepadu' or 'OPS Sikap'.

In December 2001, the integrated road safety operation commonly known as OPS Sikap was introduced and it has been continuously implemented nationwide during every festive season in Malaysia. The implementation of this intervention program is significantly important in examining the influence of the unique multi-cultural and religious activities of traffic exposure in Malaysia. It is common for Malaysians to take advantage of having a long holiday during festive seasons to go back to their respective hometowns. This tradition has generated high volume of traffic on all highways and major roads nationwide and resulted in the increased number of accidents. However, after eight years, the extent of OPS Sikap's effectiveness is still under discussion (Sunday Star, 2009).