

UNIVERSITI TEKNOLOGI MARA

**PREVALENCE OF SECONDARY
TASKS ENGAGEMENT WHILE
DRIVING IN SELECTED DISTRICTS
IN SELANGOR**

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ABSTRACT

Road traffic injuries remain a major public health concern in Malaysia. Among the leading human-related factors contributing to road crashes is driver distraction, particularly in the form of secondary task engagement. This refers to any activity that diverts a driver's attention from the primary task of driving. Despite widespread global research on the issue, empirical evidence from real-world observational studies in Malaysia is limited. This study addresses this gap by conducting an observational investigation into secondary task engagement among drivers in two high-fatality districts in Selangor, namely Kajang and Kuala Selangor. The study was guided by three main objectives: (1) to measure the prevalence of observable secondary task engagement while driving in the selected districts; (2) to identify and categorize the different types of secondary task engagement; and (3) to examine whether the frequency of these behaviours is associated with various driver and road-related characteristics, including gender, age group, vehicle type, observation time (peak or off-peak), road location (urban or rural), and road geometry (straight or intersection). These objectives were operationalized into five research questions and tested through corresponding null and alternative hypotheses to explore the potential associations between the independent variables and the occurrence of secondary task engagement. A quantitative, cross-sectional, and unobtrusive roadside observational method was employed. Data were collected through direct observation of 43,006 drivers across 32 randomly selected locations in Kajang and Kuala Selangor during peak and off-peak daylight hours under clear weather conditions. Observers used a structured data collection form to record secondary task behaviours, vehicle types, and estimated demographic characteristics of drivers. The analysis involved descriptive statistics, Chi-square, and regression analysis to determine the prevalence, types, and predictors of secondary task engagement. The study found that 18.1% (n=7,779) of drivers were engaged in secondary tasks, directly fulfilling Objective 1 and answering Research Question 1, which investigated the overall prevalence of such behaviours. The most frequently observed behaviours were mobile phone usage (7.8%), talking with passengers (6.0%), and other secondary tasks (4.2%), thereby addressing Objective 2 and Research Question 2, which explored the different types of secondary task engagement. To achieve Objective 3, the study tested Hypotheses 2 through 5 related to whether the frequency of these behaviours varied significantly by driver demographics (gender, age group), vehicle type, observation time (peak/off-peak), road location (urban/rural), and road geometry (straight/intersection) as guided by Research Questions 2 through 5. Statistical analysis using Chi-square and regression demonstrated significant associations between secondary task engagement and all the examined independent variables, leading to the rejection of most null hypotheses. This confirmed that driver distraction patterns were meaningfully influenced by these contextual and demographic factors. However, five sub-hypotheses were not rejected, revealing no significant associations between: (i) driver gender and mobile phone usage, (ii) driver age group and other secondary task engagement, (iii) observation time and talking with passengers, (iv) observation time and other secondary task engagement, and (v) road geometry and other secondary task engagement. The findings offer critical insights for road safety stakeholders in developing targeted strategies to mitigate distraction-related risks and enhance driver safety.

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CHAPTER 1

INTRODUCTION

1.1 Research Background

The road safety issue is a global problem faced by the majority of countries. According to the World Health Organization (WHO, 2018), the eighth leading cause of death for all age groups globally, surpassing HIV/AIDS, tuberculosis, and diarrhoeal diseases, is a road traffic accident. In addition, road traffic accidents are the major worldwide cause of death for children and young adults ranging from 5 to 29 years old, and approximately 1.35 million deaths in 2016 were attributed to road accidents (WHO, 2018). Looking at this critical issue, the United Nations General Assembly, which was held on 31st August 2020, proclaimed the period from 2021 until 2030 as the Second Decade of Action for Road Safety, aiming to reduce road traffic fatalities and injuries by a minimum of 50% from 2021 to 2030, as a continuation and enhancement of the First Decade of Action for Road Safety 2011-2020 (United Nations General Assembly, 2020). It is also noteworthy to mention that the road safety outline has been included in the Agenda for the United Nations Sustainable Development Goal 2030. It is mentioned explicitly in Target 3.6, which aims to reduce global road traffic deaths and injuries by as much as 50% by 2020, and in Target 11.2, which provides secure, efficient, effective, and sustainable transport networks by 2030 (UNCTAD, 2017).

Malaysia is also not left behind in facing the same problem pertaining to road safety issues. Over the past several years, the number of deaths related to road accidents in Malaysia has steadily been above 6,000 fatalities. Regrettably, 6,167 deaths were recorded from a total of 567,516 road traffic accidents in 2019 (Royal Malaysian Police, 2024). This shocking statistic leads to approximately a total of 16 people being killed per day. Realizing the existence of the road safety problem, the Malaysian government, under the jurisdiction of the Ministry of Transport Malaysia, has developed and launched the Road Safety Plan of Malaysia 2022 – 2030, which is in line with the second United Nations Global Decade of Action for Road Safety 2021 – 2030. The plan identifies ten priority areas, namely Responsive Governance, Effective Monitoring and Evaluation, Safer Motorcycle Riding, Speed Management, Safer Work-Related Journeys, Safer Journeys for High-Risk Groups, Safer Infrastructure, Safer