

**UNIVERSITI TEKNOLOGI MARA**

**SMART COMMUTING FOR URBAN  
LOW-COST RESIDENTS TO  
WORKPLACE**

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## ABSTRACT

Urban mobility is a challenge for urban developing country. Efficient and well-organised mobility planning for urban areas brings significant benefit to the growth of the economy, society and the environment. Public transport services that offer proficient mobility option will help attract more passengers in making public transportation as obvious transport choice. A depressing consequence on daily life and productivity of the employee occurs due to these lateness problems because of the traffic congestion. Excellent time management enhances the quality life for employees that help decrease tardiness, absenteeism and improve productivity in the workplace. The research methodology comprises of the interview sessions with authorising personals and the distribution of questionnaire survey forms to the resident of low-cost housing areas in Melaka Tengah District in Malaysia. Social Package Statistical Software (SPSS) and Geographic Information System (GIS) techniques were used to show accessibility pattern preference of transportation mode and distance parameter to the workplace. Utilisation of GIS network analysis on pathfinding helps in reviewing the current path taken and also used to establish the optimal suggestion of routes that can be taken by the commuter. It is shown that higher numbers of the respondent choose private vehicle as the transportation mode to the workplace. This result to the traffic congestion during peak hours, especially when they're going to the workplace and back from the workplace. It is crucial that another alternative travelling mode reduces the problems of traffic congestion. The bus route network analysis showed that the existing bus route is taking too many hassles for respondent. The new bus route is proposed to cut down this hassle, which includes of reducing the travel time and distance from the increasing number of trips so that the public transport can be optimally utilised by commuting smartly when travelling to their workplace.

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# TABLE OF CONTENTS

	<b>Page</b>
<b>CONFIRMATION BY PANEL OF EXAMINERS</b>	ii
<b>AUTHOR'S DECLARATION</b>	iii
<b>ABSTRACT</b>	iv
<b>ACKNOWLEDGEMENT</b>	v
<b>TABLE OF CONTENTS</b>	vi
<b>LIST OF FIGURES</b>	x
<b>LIST OF TABLES</b>	xiii
<b>LIST OF ABBREVIATIONS</b>	xiv
<b>CHAPTER ONE: INTRODUCTION</b>	
1.1 Research Background	1
1.2 Problem Statement	3
1.3 Research Aim	4
1.4 Research Objective	4
1.4.1 Research Question for Objective 1	4
1.4.2 Research Question for Objective 2	4
1.4.3 Research Question for Objective 3	4
1.5 Scope And Limitations	5
1.6 Study Area Location	6
1.7 Research Framework	6
1.8 Chapters Organisation	9
1.9 Chapter Summary	9
<b>CHAPTER TWO: LITERATURE REVIEW</b>	
2.1 Introduction	10
2.2 Definition of Terms	11
2.2.1 Rush Hours/Peak Hours	11
2.2.2 Accessibility	11
2.2.3 Mobility	12

# CHAPTER ONE

## INTRODUCTION

### 1.1 RESEARCH BACKGROUND

The urbanisation has urged nearly half of world population to live in the urban area where people are moving from the countryside to live and work in the larger towns and cities such as Kuala Lumpur, Johor Bharu, Penang and Melaka in order to get better educational and job opportunities (Phua, 2000). As a rapidly growing country, the number of private vehicles ownership automobile increasing each year. Due to this phenomenon, there several challenges that need to be faced such as overcrowding, constant traffic jams, and inflation in the price of essential goods such as housing, greater strain on services. One of the problems is related to transportation cost affordability among the citizen, especially the lower-income groups.

Considering this trend, urban transportation issues are of foremost importance to support the passengers and load's mobility requirements of large urban accumulation due to urbanisation. Traditionally, the focus of urban transportation has been on passengers as cities were viewed as locations of utmost human interactions with intricate traffic patterns linked to commuting, commercial transactions and leisure/cultural activities (Rodrique et al., 2009).

The traffic congestion on the road highly occurs during the peak hour or the rush hour that generally happens twice a day which is once in the morning and once in the evening. This is because of the standardised working hours as the employee goes to work in the morning and coming home in the evening (Hyman et al., 2005). There are also third peak hours, which occurs during the afternoon. This phenomenon happens because of the lunch break and the end of the morning school sessions. The heavy traffic during these hours usually occurs within the school area and food centres (Downs, 2004).

Since the standard of Malaysia's public transportation is poorer than other developed countries, people tend to choose to travel by private car to their destination. As an initiative to improve the standard of Malaysia's public transport, Government Transformation Programme (GTP) has been introduced by Malaysian Government in