

# Trigger Levels on Transport Mode Choice by Using Graphical Analysis

<sup>1</sup>NurFahriza, M.A and <sup>2</sup>Adnan, Z.

<sup>1,2</sup>Faculty of Engineering Technology, University Malaysia Pahang,  
Lebuhraya Tun Razak, 26300, Kuantan, Pahang, Malaysia  
<sup>1</sup>fahriza90@gmail.com, <sup>2</sup>adnanz@ump.edu.my

**Abstract** - This paper presents the evaluation of trigger levels at the equilibrium condition which the users' preferred mode choice is equal for both private vehicles and public transport. The research is conducted at Klang where the local authority is planning to construct a new Park and Ride at the Klang Commuter's Station. This study selected travel time as an important factor in triggering the users' mode choice in either selecting public transport or private vehicles for their daily journey. Therefore, the trigger levels' condition said the users' in deciding their mode of transport, as users often seek for a faster and more convenient method of transportation in getting themselves to reach their destination, especially during morning peak hour. The data is collected by means of The Bus Route in this study. The trigger levels are evaluated upon analyzing the data by using Graphical Analysis. The results show that almost equal of travel time was established between private and public transport. The outcome of this study may in turn be utilized to persuade users' to change their mode choice from private to public transport.

**Index terms** - Public transport, private vehicles, trigger factors, trigger components, trigger levels, equilibrium condition, mode choice, decision-making

## I. INTRODUCTION

Transportation plays a significant role in the economic growth and development of Malaysia. An efficient and accessible transport network is essential for a developing nation such as Malaysia as primarily the economic activities revolves around it. In this study, users' mode choice will be briefly discussed in order to come out with the trigger levels that will attract users to select public transport as their preferred mode of transport (viz. bus) as compared to private transportation (viz. car). Therefore, the trigger levels evaluation must be assessed based on equilibrium condition that the travel time between bus and car is perfectly are almost equal to each other. The evaluation will allow users' to make a more informed decision in selecting the preferred mode of transport. According to Stradling et al. (2000), the changes on users' decisions should be investigated to assist policy makers in providing a framework that attract users to opt for public over private transport. The research reveals that travel decisions are driven by the interaction of opportunity, obligation, and inclination. In order to attract users to switch their mode of transport, it is advantageous to know the purpose of them using private vehicles, whether they would like to switch their daily mode of transport, whether they think additional facilities may help them reaching the public transport easier, which level will trigger their interest in switching mode of transport, and what behavioural change measures already proves their effectiveness [5].

## II. LITERATURE REVIEW

Users' mode choice should be changed from private vehicles to public transport in order to facilitate in mitigating the increase of harmful emissions to the environment. According to Newman and Kenworthy (1989) and Hayashi and Roy (1996), the dependency on private vehicles is recognized as a significant factor that contributes towards atmospheric pollutant emissions from the transport sector; whilst the use of public transport will aid the reduction of these emissions [5], [3]. The evaluation of trigger levels will assist users to consider less polluting means of transport to reach their