

TRAFFIC SYSTEM IN MALAYSIA: THE FACTORS THAT INFLUENCE TRAFFIC CONGESTION IN URBAN AREA

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ABSTRACT

The focus of this paper is on traffic congestion in urban area such as Kuala Lumpur and Penang. Traffic system in Malaysia still in the low level. It is because Malaysia has a many barrier to be a good in traffic system likes other country. The factors that influence this condition occur is the attitude of the road users, service of public transport, high population and facilities. Besides that, if traffic congestion interminable occur it will give negative impact to environment and economic. Because of that, all party must involved and plays their own roles to reduce the congestion problems.

Keywords

Traffic system, traffic congestion, traffic jams, traffic problems

1 INTRODUCTION

In transport, mobility is defined as the ability to move from one place to another place and is measured by the number of trips made by a person per day (Vasconcellas, 2001) whilst “personal mobility” refers to the use of personal transport; a car or a motorcycle or other non-motorised (Tseu, 2006). Moving from one destination to another is a necessity due to working needs, leisure need or other possibilities. Thus, travelers need to choose the characteristics of a transit that suits their needs.

In a developed country, the public transport is much better because of the technologies and a well planned transportation system. But, poor road traffic management is the primary reason for extended periods of traffic congestion on throughout the world. Road traffic jams continue to remain a major problem in most cities around the world, especially in developing regions resulting in massive delays, increased fuel wastage and monetary losses (Jain, Sharma and Subramanian, 2012). Due to the poorly planned road networks, a

common outcome in many developing regions is the presence of small critical areas which are common hot-spots for congestion, poor traffic management around these hotspots potentially results in elongated traffic jams.

Traffic congestion is a road condition characterized by slower speeds, longer trip times and increased queuing. It occurs when roadway demand is greater than its capacity. According to Cambridge Systematics (2005), congestion is relatively easy to recognize – roads filled with cars, trucks, and buses, sidewalks filled with pedestrians. The definitions of the term *congestion* mention such words as “clog”, “impede”, and “excessive fullness”. For anyone who has ever sat in congested traffic, those words should sound familiar. In the transportation realm, congestion usually relates to an excess of vehicles on a portion of roadways at a particular time resulting in speeds that are slower – sometimes much slower – than normal or “free flow” speeds. Congestion often means stopped or stop-and-go traffic (Cambridge Systematics, 2005).

According to research of ECMT and OECD (2004), congestion is a situation in which demand for road space exceeds supply. Congestion is the impedance vehicles impose on each other, due to the speed-flow relationship, in conditions where the use of a transport system approaches capacity. Congestion is essentially a relative phenomenon that is linked to the difference between the roadway system performance that users expect and how the system actually performs. In Malaysia, many traffic congestion problems faced by motorist, residents and commercial operations in urban area. This is because the economic growth being reflected an equally high level of car ownership per capital.

2 LITERATURE REVIEW

Traffic congestion has been the universal problem for most big cities. In recent years, with the rapid growth of privacy car, urban road transportation

load enlarges suddenly and many road sections approach to saturated limit in peak time interval (Ye, 2012). Increased travel time caused by traffic congestion imposes costs to road users, both in terms of economic loss and also the reduced quality of life and mobility. There is a factors that influence traffic congestion in urban area and figure 1 presents a breakdown of the typical causes of congestion, as estimated from national sources; and shows that nonrecurring sources of congestion account for more than one-half of the total delay in a typical urban network.

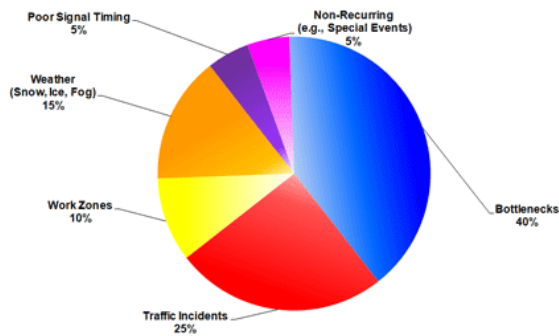


Figure 1

Source: Cambridge Systematics, Inc., and Texas Transportation Institute, *Traffic Congestion and Reliability: Linking Solutions to Problems*, July 19, 2004.

2.1 Weather

Environmental conditions can lead to changes in driver behavior that affect traffic flow. Due to reduced visibility, drivers will usually lower their speeds and increase their headways when precipitation, bright sunlight on the horizon, fog, or smoke are present. Wet, snowy, or icy roadway surface conditions will also lead to the same effect even after precipitation has ended.

2.2 Traffic Incidents

Are events that disrupt the normal flow of traffic, usually by physical impedance in the travel lanes. Events such as vehicular crashes, breakdowns, and debris in travel lanes are the most common form of incidents. In addition to blocking travel lanes physically, events that occur on the shoulder or roadside can also influence traffic flow by distracting drivers, leading to changes in driver behavior and ultimately degrading the quality of traffic flow. Even incidents off of the roadway (a fire in a building next to a highway) can be considered traffic incidents if they affect travel in the travel lanes.

2.3 Traffic Demand

Day-to-day variability in demand leads to some days with higher traffic volumes than others. Varying demand volumes superimposed on a system with fixed capacity also results in variable (i.e., unreliable) travel times, even without any events occurring. A special case of demand fluctuations where traffic flow in the vicinity of the event will be radically different from “typical” patterns. Special events occasionally cause “surges” in traffic demand that overwhelm the system.

2.4 Physical Bottlenecks

Transportation engineers have long studied and addressed the physical capacity of roadways – the maximum amount of traffic capable of being handled by a given highway section. Capacity is determined by a number of factors: the number and width of lanes and shoulders; merge areas at interchanges; and roadway alignment (grades and curves). Toll booths may also be thought of as a special case of bottlenecks because they restrict the physical flow of traffic. There is also a wild card in the mix of what determines capacity – driver behavior. Research has shown that drivers familiar with routinely congested roadways space themselves closer together than drivers on less congested roadways. This leads to an increase in the amount of traffic that can be handled.

3 METHODOLOGY

The sources of these studies are mainly focusing on the secondary data. The data preferred in these studies were a secondary data that collected from the book, journal and article. These secondary data providing more information from previous studies are already proven. The complete this study, more journal of traffic system in urban area were use as a reference. From the previous study, there are several methods that can be used to obtain information on traffic. Normally, the method that are used is a manually using human energy to record the traffic information. The second method is using a detector device installed in the road to detect traffic flow while the third method is moving observe surveys to obtain the traffic.

4 FINDINGS

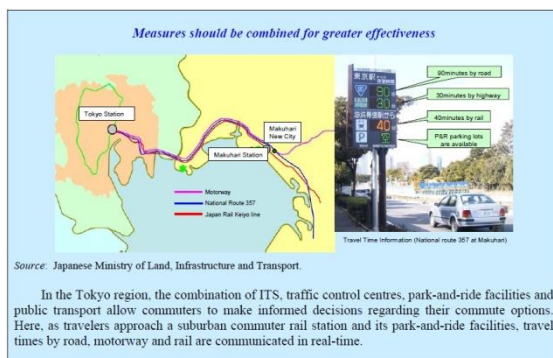
Based on the research, it found that the traffic congestion is the problem for many countries and need to be reduced from time to time. There are many step to solve the traffic problems such as improvement of service, time management and others.

4.1 Improving traffic operations

Proactive traffic operations management has much potential. Road traffic information systems, pre-trip guidance, coordinated traffic signal systems and the implementation of dynamic speed and incident management policies have often proven to be cost-effective ways to deliver better travel conditions, allowing users to reschedule their trips away from traffic peaks and/or select other travel modes. These strategies all allow road managers to get more out of roads – e.g. to allow for greater flows than could otherwise be realised. They should not be deployed with an eye to bringing traffic up to the limit of the physical capacity of the roadway as this inherently leads to major instabilities in traffic flow and increased probabilities of sudden breakdowns. In fact, many of these strategies can be helpful in managing traffic such that flows are held below these unstable threshold zones.

4.2 Implementing mobility management

There are numerous mobility management strategies that can, when successful, reduce car use in urban areas. These include ride-sharing, promoting bicycling and pedestrian travel or supporting mobility management efforts targeting large trip generators such as companies.



4.3 New urbanism

Narrow path and buildings contribute to the traffic congestion. Besides that, city sprawl is the reason for the unavailability of public transport service and thus increase the private-transport users. New urbanism, Transit-Oriented Development (TOD) will prompt American to drive less, and walk, bike and ride transit more (Cervero, 2006). New urbanism within home-to-work can be implemented where this will decrease the delay-travel. The urban parking pressures, and the enforcement process and system, that have been developed to manage the growth of rapid car traffic is a successful move (Kerley, 2007). Good system in parking such as electronic parking pricing, systematic parking lot and others will give benefit to parking management and can reduce the traffic congestion. Parking

policy needs to be tailored to respond the different local conditions within the same city or urban area (Kirby, 2007).

5 RECOMMENDATION & CONCLUSION

Traffic congestion is one of the worldwide urban problems, which can lengthen journey time, increase energy consumption, aggravate environmental pollution and result in traffic accident. If we take no measure to govern it, not only individual journey cost will be enhanced, but also the entire municipal transportation system will paralysis and urban sustainable development will be restricted. Therefore, how to solve traffic congestion becomes the hot issues for each big city.

Public transport is the main solution to solve the traffic congestion problems. Transit-Oriented development (TOD) focuses on better connecting public transport systems physically and functionally with the surrounding development (Bezler and Autler, 2002). The systematic public transport will attract users where the service gives more benefits to them. Japan's and U.S's transit can be referred which produces less delay in travel compared to private transport in long distance. Besides that, transit user's information need to be upgraded on the concept of public transport which should be prepared by the Government.

Staggering the working hours is seen as one of the agents that can reduce the congestion problems. Shift time during work and rearrange the time-work is more practicable. Resistance of work commuters to altering works their schedule to avoid congestion (Small 1982, Wilson 1989).

In conclusion, the traffic system in Malaysia still in poor level. It caused by the attitude of the road users, service of public transport, high population and facilities. Congestion has a range of indirect impacts including the marginal environmental and resource impacts of congestion, impacts on quality of life, stress, safety as well as impacts on non-vehicular roadspace users such as the users of sidewalks and road frontage properties. So, the all party must involved and play their own roles to solve the traffic problem in Malaysia.

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