

Congestion Woes: A Performance at Jalan Tun Abdul Razak to Jalan Bertingkat Skudai, Johor Bahru, Johor

Nur Idayu binti Abu Hasan, Donnavan Tan Kong Weng

Abstract: Traffic congestion has been one of the major issues faced by most urbanization around the world. Traffic congestion can be define as the vehicles that travels at a certain place with slower speed. This is because there are many vehicles using that road at the same time. This problem has resulting to the delay, pollution and increased fuel consumption. The aims of this study are to determine the factors that contribute to this problem, identify the impacts have been occurred and give the recommendation on reducing the issue. Each data and information in this research is strengthen with the support from several sources of reading and knowledge gained through past studies and journals. The researcher using the quantitative method in order for describe and generalize collecting data from the respondents. Then, the collected data has been analyze by using the SPSS software. After that, the researcher has used the descriptive statistics in order to identify the most significant factors and impacts based on the mean values respectively. The highest mean value shows that those factors and impacts were strongly significant. From that, it can show that the objectives of this research successfully achieved. Furthermore, in this research study the researcher has gave the recommendation to reducing traffic congestion at Jalan Bertingkat Skudai, Johor Bahru. Those are implement Vehicle Quota System (VQS), reduced parking spaces strategy, implement Electronic Road Pricing (ERP) system, Tidal-Flow operation and provide bike-sharing system at this area.

Keywords: Traffic Congestion; Factors of Traffic Congestion; Impacts of Traffic Congestion; Recommendation on Reducing Traffic Congestion; Jalan Bertingkat Skudai.

I. INTRODUCTION

Johor Bahru are one of the area that located in Johor state, which is at the south of Peninsular Malaysia. the Johor's government has offered many employment opportunities to the society. This kind of phenomena could attract more people to migrate, work and even live in the Johor Bahru. Even thought, some of peoples who are live far from Johor are willing to travel to this area every day. This research are focused on the traffic congestion issue occur at Jalan Bertingkat Skudai.

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The aim of this research are to fulfill of the research gap because there are lack of the research resources are focusing in this area

Background of Study

This traffic congestion phenomenon can reacted that rapidly occur at the Jalan Bertingkat Skudai, Johor Bahru. There are almost 184,136 vehicle crosses from Johor Bahru to Skudai every day.¹

Problem Statement

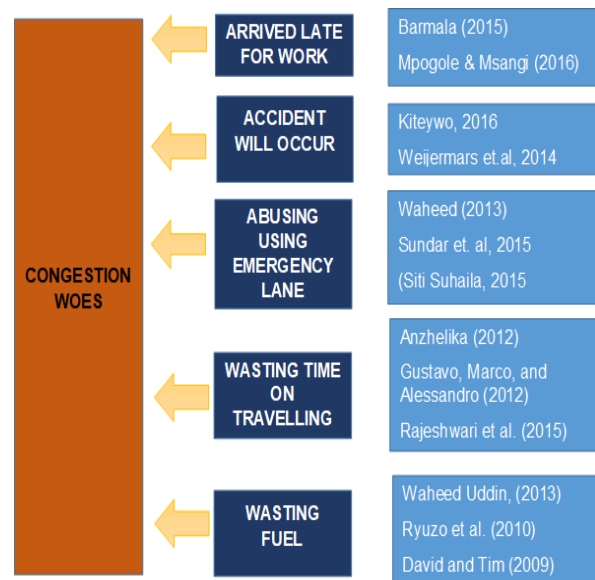


Fig. 1 Problem Statement of Congestion Woes

Purpose of Study

This purpose of this research is to determine factors and impacts of traffic congestion at Jalan Bertingkat Skudai, Johor Bahru. Next, it is also to give recommendation in reducing traffic congestion at this area.

Research Objectives

- To determine factors that contribute to traffic congestion at Jalan Bertingkat Skudai, Johor Bahru
- To identify the impacts of traffic congestion at Jalan Bertingkat Skudai, Johor Bahru
- To give recommendation in reducing traffic congestion at Jalan Bertingkat Skudai, Johor Bahru

Significant of Study

This research in order to study the movement of the transportation and transportation planning at Jalan Bertingkat Skudai, Johor Bahru.

The researcher are think that the traffic congestion are one of the serious issues should be preferred.

Scope of Study

The researcher had specified the scope of study, which is the area have focused from Bandar Baru Uda to Taman Ungku Tun Aminah. The covered length of the road are just within on the 7 kilometers.

Limitation of Study

The researcher are only focusing on the public perspective regarding on their knowledge, awareness, factors and impacts that influence to the traffic congestion

II. LITERATURE REVIEW

Introduction

Literature review are the summarization of research study based on the various type of resources such as journals, articles, newspapers and online resources. The literature review could help the researcher on getting ideas on how the previous researcher in analyze their case study.

Definition of Traffic Congestion

Majority of the previous studies stated that where the traffic volume are exceeds than the road capacity. They also stated traffic congestion are a physical phenomenon when there are increasing of the vehicles demand than with the limited of the road space in supporting whereas there are a lot of capacity at the same time.

Traffic Congestion in Malaysia

In this section majority of the researcher are Malaysian. The researcher explained that traffic congestion issue are not the new things face by the Malaysia. It is usually occur at the main route which the motorist always using for going to urban area. The current trend of the traffic in Malaysia can be result as the unsustainable whereas it is in the direction of society are more towards on using the private transportation rather than the public transportation.

Type of Traffic Congestion

Based on the previous study stated that two categories of the traffic congestion which is recurrent congestion and non-recurrent congestion. Although, other researcher argued that there are two type of traffic congestion, thus are structural and incidental.

Problem Related on Traffic Congestion

Problem related with the traffic congestion are explain about what are the problem, issue, obstacle and trouble been face for every countries if these phenomenon happen consistency. Most of the previous studies explained that there are limited of the land space, delay on time, lost worker productivity, loss in trade opportunities, late in delivery and rising on the costing expenses.

Traffic Congestion at Urban Area

In this section, the previous studies pointed that the outcomes with the successful of economic development, employment, residential place, cultural and shopping area and excellent in term infrastructure. This can encourage society to live and work at this area and pull the firms to increasing their productivity performance because there are a lot of demand it was the way lead to traffic congestion occur. However, at the same time for those deciding to live at urban area need suffer in preparing with the crowded and busy traffic.

Factors influence to Traffic Congestion

Majority of the previous research study highlighted that increasing number of population; improper planning of city development, higher purchasing power of public, narrow roads, driver behavior, government ideology factors, growth of automobile industries and rising number of vehicles are the main factors that contribute to traffic congestion.

Impacts of Traffic Congestion

According from the previous research study, most of the researcher were categories the impacts of traffic congestion into three that are impacts of economy, impacts of social and impacts of environment.

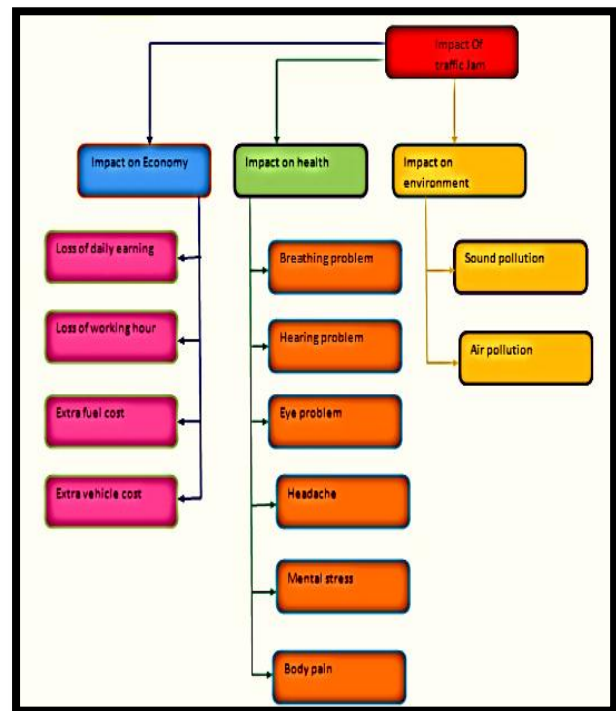


Fig. 2 Impacts of Traffic Congestion

Source: Traffic Jam Is Freezing Strong Economy and Healthy Environment: A Case Study of Dhaka City ²

Recommendation on Reducing Traffic Congestion

Those are several research studies been analyze by certain researcher around the world such as the authorities of the transportation need to create the separate route for the heavy



vehicles, road pricing, road space management, ridesharing, decrease the demand of road space, increasing the supply of roads and improving transportation.

III. METHODOLOGY

Introduction

In Chapter 3, the researcher had clearly define the method that the researcher had been use to get the data for the finding and discussion chapter.

Research Operation Framework

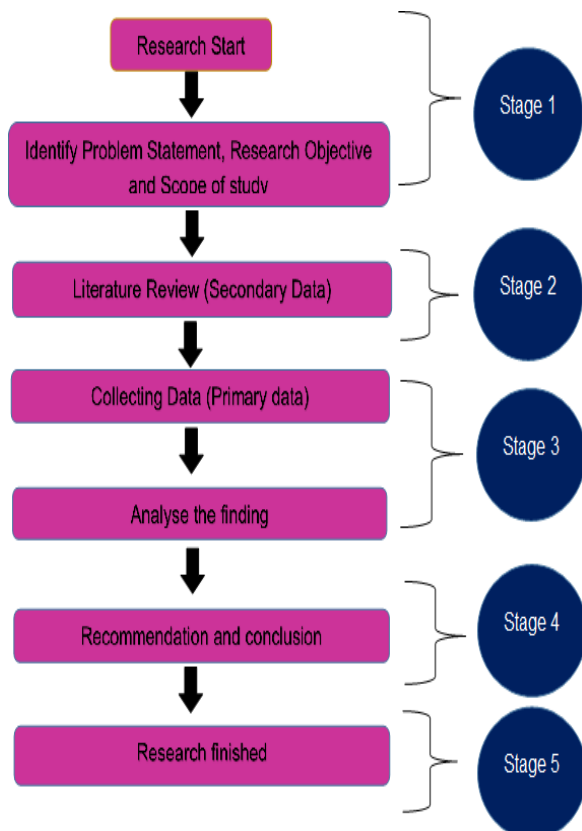


Fig. 2 Framework of Research Methodology

Research Instruments

For research instrument, researcher have used the primary data and secondary data to achieve the research objectives. This research would be use the quantitative method, which is data, had been collect from the questionnaire form.

Data Analysis

In this study, the researcher had used the quantitative method as the data analysis. . It was more towards to the statistical analysis and mathematical models and make analysis on it either the objectives of study achieve or not. ³

Conceptual Framework

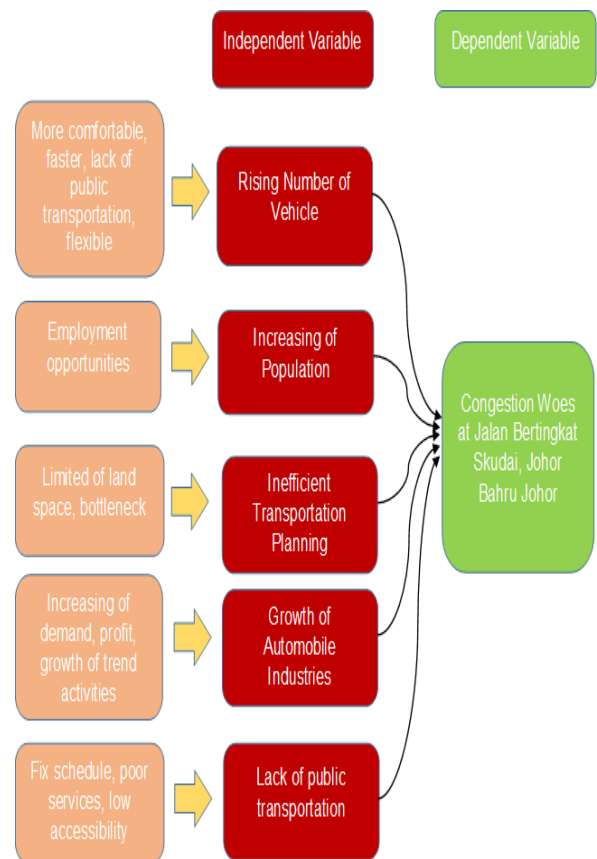


Fig. 3 Conceptual Framework of Congestion Woes at Jalan Bertingkat Skudai, Johor Bahru Johor

Sampling Technique and Procedure

The researcher had used the Slovin's Formula. Hence, the researcher had took the latest statistics of the population vehicles had crosses from Johor Bahru to Skudai which are 184, 136. The equation of this research study sample size show as below:

$$n = \frac{N}{1+N(e)^2}$$

Where:

n = sample size

N = Number of sample size

e = error limit

Calculation:

$$n = \frac{184\ 136}{1 + 184\ 136 (0.1)^2}$$

$$n = \frac{184\ 136}{1 + 184\ 136 (0.01)}$$

$$n = \frac{184\ 136}{1\ 842.36}$$

$$n = 99.95 (100\ respondents)$$

Survey Design

In order to achieve the objectives of the study in the survey design the researcher had divided into the five section, which is section A, B, C, D and E.

In order to get the strong research data so, the researcher use 4 Likert Scale, which is strongly agree, agree, strongly disagree and disagree.

• **Section A**

Demographic Information

• **Section B**

Traffic Congestion Experiences

• **Section C**

Factors that Contribute to the Traffic Congestion at Jalan Bertingkat Skudai, Johor Bahru

• **Section D**

Impacts of the Traffic Congestion at Jalan Bertingkat Skudai, Johor Bahru

• **Section E**

Recommendation in Reducing Traffic Congestion at Jalan Bertingkat Skudai, Johor Bahru

- The rising number of private vehicle and lack of public transport are the most significant factor.
- This is because those factors have the highest mean value than the other factors.
- The consequence of those factors can related with some reasons.

Rising number of private vehicles

- ❖ High purchasing power Malaysians to buy a new vehicles
- ❖ None system to managing the quota of vehicles in Malaysia

Lack of public transportation

- ❖ Inconvenient
- ❖ Overcrowding
- ❖ Uncomfortable
- ❖ Low accessibility

IV. FINDING AND DISCUSSION

Introduction

The purpose in this chapter are to discuss and make the discussion for finding in the research study.

Result of Demographic Information

Majority of respondents are:

- Male (Due to the majority of male gender are working in Singapore)
- Within 26 to 35 years (majority of people that lived in that area is in working class community)
- Malay (majority of the residents at study area along the Jalan Bertingkat Skudai are Malay)
- Employed (known as the middle road between the metropolitan area and the residential areas is in close proximity with the industrial areas)

Result of Traffic Congestion Experience

Most of them are:

- Have used everyday (respondents was work in Singapore they usually will work every days even though on the weekend)
- Taking for commute to work (this route are also known as main route for those are live along near with Jalan Bertingkat Skudai will using this route for going to the south and north of Johor Bahru)
- Has experience traffic congestion (Evidence that this road frequently occurring congestion)
- Stuck about 15 minutes to 35 minutes (still can consider as traffic congestion)

Result of Factors that Contribute to Traffic Congestion at Jalan Bertingkat Skudai, Johor Bahru

Ranking	Factors	Mean Value
1	Rising Number of Private Vehicle	10.8700
2	Lack of Public Transportation	10.6100
3	Inefficient Transport Planning Factor	10.4100
4	Increasing of Population	9.3700
5	Growth of Automotive Industries	6.3500

Impacts of Traffic Congestion at Jalan Bertingkat Skudai, Johor Bahru

Ranking	Impacts	Mean Value
1	Economic	10.7500
2	Environmental	10.400
3	Social/Health	9.8500

- As regard from result show at descriptive statistics the economic impact was represent as the most significant impact of traffic congestion at Jalan Bertingkat Skudai, Johor Bahru.
- The consequence of this impact can refer to research study by Matthias, 2011

“ traffic congestion can slow the economic in terms increase vehicular emission, increase fuel expense, increase operating costs for both private and freight vehicles, delay on travelling and decrease the productivity performance. “⁴

Recommendation in Reducing Traffic Congestion at Jalan Bertingkat Skudai, Johor Bahru

Mostly of the respondents gave their opinion in this section were

- To increasing and improving the existing public transportation
- Build LRT and MRT instead of make the shopping malls and houses
- Changing government ideology/government support

V. RECOMMENDATION AND CONCLUSION

Introduction

In this chapter, the researcher had provided the summarization of the finding that has be done at the previous chapter.

Then, the researcher had presented the recommendation for further improvement in order to reducing the traffic congestion at Jalan Bertingkat Skudai, Johor Bahru.



Review of the Findings

Researcher finds that the most significant factor has contribute to the traffic congestion at Jalan Bertingkat Skudai are the rising number of private vehicles and lack of public transportation. The researcher obtained this result by providing the respondents with the five general factor of traffic congestion. As the results shows at descriptive statistics it shows that most of the respondents agreed that these factors are the factors that contributed Jalan Bertingkat Skudai to be congested.

Researcher also finds that the respondents have agreed that the traffic congestion mostly affect economic which are most of the respondents feel delay on their travelling. They were also has experiences that traffic congestion can contribute to wasting fuel and time plus it can decreased their productivity performance. While, for the last research objective on the open-ended question the respondents have to give their recommendation on reducing traffic congestion at Jalan Bertingkat Skudai, Johor Bahru. In this section, the researcher finds that majority of the respondents stated that improving the existing public transportation and changing the government ideology can be as the suggestion on reducing traffic congestion at Jalan Bertingkat Skudai, Johor Bahru.

Recommendation

In this research of study, there are some recommendation that can be recommend by the researcher.

- **Implement Vehicle Quota System (VQS)**

It is can controlling the number of new vehicles allowed to registration. If this strict requirement for registered the vehicles it will force people to using public transportation effectively.

- **Reduced Parking Spaces Strategy**

Without available parking spaces and expensive fee can force the car owners will eventually lower their vehicle usage. It is will effectively induced people to using the public transportation

- **Implement Electronic Road Pricing (ERP) system**

The system run with automatically charges that can adjust based on the certain period that is reflecting with the level of the traffic congestion itself. The charges will be expensive during the traffic congestion.

- **Tidal – Flow Operation**

Tidal Flow are one of the system that installed in tunnel or bridges to give information to motorist in order to allow the traffic to be diverted around an incident It is usually use on roads where the flow of traffic is heavy in certain direction and light in the other at some times.

- **Bike Sharing System**

Shared on a short-term bicycle rental available at unattended urban location It is can categorise as the public transportation that require less cost rather than operating the LRT, MRT and monorail which are need more space infrastructure and quite expensive in order to build the railways at the same time.

VI. CONCLUSION

A conclusion, the research successfully achieved as the findings obtain by the researcher are able to answer all the research question. Through the findings, it can show that there are several strong factors has contribute to the traffic

congestion at Jalan Bertingkat Skudai, Johor Bahru. However, there are various recommendation has been provided by the researcher in reducing the traffic congestion at that area. These findings also will be shared with other researcher for research purpose in the future.

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