CYCLING INFRASTRUCTURE IN KL:
A STUDY OF THE SOUTH-WEST DEDICATED BICYCLE HIGHWAY

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DEDICATION

This thesis is dedicated to my *Ayah* and *Ibu*, who always give the moral of support during my study journey.

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ABSTRACT

Cycling is one method of transportation that can help reduce pollution and protect the environment. Through transition the endemic phase, cycling activity nowadays as a trend for Malaysians. But when cycling in Kuala Lumpur (KL) the situation is even poor. The aim of this study is to understand the priority elements of safe cycling infrastructure from the point of view of authentic cyclists. To achieve the aims, three (3) objectives were outlined; (1) to evaluate the facilities for cyclist needs, (2) to identify the issues and problem of cycling infrastructure in Kuala Lumpur, (3) to study the elements of the facilities for the safe cycling infrastructure in KL. In way to answer the objectives of the study, this research had used qualitative method. To gain the data collection, a case study technique is selected, while the participant observation is a main data and supported by in-depth semi structured interview with informant. Additional data were derived from by transcribed audio-visual material and supported by document analysis. The study outcome from the observations South-West Dedicated Bicycle Highway from Point A to Point B was selected. The observations also were done on the blue bike lane in Kuala Lumpur City. From the observation, the cycling infrastructure in Kuala Lumpur has lacking and the certain elements of infrastructure were not provided by the City Hall. The findings of this study will be able to contribute significantly to the body of knowledge as well as a practical contribution about cycling infrastructure in urban area.

Keywords: cycling infrastructure, bicycle highway, bike lane, bike facilities

ABSTRAK

Berbasikal merupakan salah satu pengangkutan yang dapat membantu mengurangkan masalah pencemaran dan melindungi alam sekitar. Melalui peralihan fasa endemik, aktiviti berbasikal kini semakin menjadi trend rakyat Malaysia. Tetapi apabila berbasikal di Kuala Lumpur (KL), keadaanya lebih teruk. Matlamat kajian ini adalah untuk memahami elemen keutamaan infrastruktur basikal yang selamat dari sudut pandangan penunggang basikal yang tegar. Untuk mencapai matlamat tersebut, tiga (3) objektif telah digariskan ; (1) menilai kemudahan untuk keperluan penunggang basikal, (2) mengenal pasti isu dan masalah infrastruktur berbasikal (3) mengkaji elemen kemudahan infrastruktur berbasikal selamat di KL. Bagi menjawab objektif kajian, kajian ini telah menggunakan kaedah kualitatif. Untuk mendapatkan pengumpulan data, teknik kajian kes telah dipilih, manakala pemerhatian peserta merupakan data utama dan disokong oleh temu bual separa struktur mendalam dengan pemberi maklumat. Data tambahan diperolehi daripada bahan audio-visual yang ditranskripsi dan disokong oleh analisis dokumen. Hasil kajian adalah daripada pemerhatian Lebuhraya Basikal Dedikasi Barat Daya dari pusat titik A ke pusat titik B telah dipilih. Pemerhatian juga turut dilakukan di lorong basikal biru di Bandaraya Kuala Lumpur. Daripada pemerhatian, infrastruktur berbasikal masih lagi kurang dan beberapa elemen infrastruktur tidak disediakan oleh pihak DBKL. Penemuan kajian ini akan dapat meyumbang secara signifikan kepada badan ilmu serta sumbangan praktikal tentang infrastruktur berbasikal di kawasan bandar.

Kata kunci: infrastruktur berbasikal, jalan raya basikal, laluan berbasikal, kemudahan basikal

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LIST OF ABBREVIATIONS

DBKL	-	Kuala Lumpur City Hall
KL	-	Kuala Lumpur
CCTV	-	Closed Circuit Television
KLPS	-	Kuala Lumpur Plan Structure
JKR	-	Jabatan Kerja Raya
KTM	-	Keretapi Tanah Melayu
MRT	-	Mass Rapid Transit

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CHAPTER 1

INTRODUCTION

1.1 The Background of study

Cycling is a popular family-friendly leisure activity whether on the trail, hiking or in urban area. As the cycling community grows, cycling now is being promoted as commuting tool to support healthier lifestyle (R.Shokoohi, A.Nikitas, 2017). Descriptively, cycling is not only encouraged to get good health but also to reduce cardiovascular disease and other health problems (Theja Putta, 2019). This arguments is also supported by (Cronkleton, 2020), stated that cycling activity can help in weight loss, and can also help addressing mental illness and physical health problem. In addition, cycling activities not only seen as activity that contribute to a healthy lifestyle, cycling can also contribute to zero pollution as it is an environmentally friendly mode of transportation compared to motor vehicles (S.C. Kwan et al, 2017). Based on study by (M.Z.M. Salleh et al, 2018), have stated that this active mode of transportation seen as able to improve the quality of sustainable environment. In Malaysia, carbon emissions occur mainly in urban settings, with the energy and transportation sectors identified as the biggest contributors, accounting for about 80%. As in the study (T.Lokman , 2017) stated that, Malaysia aims to reduce carbon emissions by 45 percent when approaching 2030 and relatively by 2050 Malaysia will be a free carbon country. So that, to support this planning, in January 2014, KL City Hall started KL Car Free Morning to promote a healthier lifestyle. The programme shares a common awareness among the public about the importance of practicing cycling, of course to improve all levels (M.Z.M. Salleh et al, 2018). People can also to adapt the changing lifestyle with the green technology or Green style (T.Jones, 2012). This start-up will be able to revive the cycling culture in the urban area.

Cycling in Kuala Lumpur is a great way to get around exploring the more urban areas, and it became popular routine for biker enthusiast in leisure time. But as (Yusfida.A.A, 2020) stated, riding a bicycle in town from point A to point B can be traumatic and even fatal on the open streets and road highways supported by (Desjardians et al. , 2021) , the cyclist felt unsafe when more interaction with motor vehicles. (Jasmine A.M., 2014) has stated that the cycling will be safer if with the provision of the bike path infrastructure itself. This explained by (Haris et al, 2009 that cycling infrastructure can consistently improve the safety of cyclist on the road compared to the direct absence of infrastructure built on the road. The study found that, it can prevent severe injuries. However, the planning and quality of cycling infrastructure in Malaysia is still unconvincing, unsecured environmental, improper implementation and bike paths are shared with motorcycles (R.Shokoohi, A.Nikitas, 2017). In addition, (Lau.S.H et al., 2017) has denoted that the most of cycling infrastructure in Malaysia are not yet widely implemented. To change this perception, local authorities need to play a role in providing bicycle access facilities supported by a safe and good bicycle infrastructure environment (R.Shokoohi, A.Nikitas, 2017). As suggested by (M.Z.M. Salleh et al, 2018), several facility infrastructure design factors should be consisting of four elements such as safety/security, accessibility/connectivity, attractiveness / aesthetics as well as convenience/comfort. In other context, (Vedel et al (2017) has suggest, that cycling routes should be well connected infrastructure, a smooth surface, less traffic lights, the low surface gradient and (Desjardians et al. , 2021) also suggest the latter routes should be more attractive, pleasant and green surrounding. The improvement and convenience safe cycling infrastructure can be able stimulates user's intention to cycle in safe and efficient way (Lau.S.H et al., 2017). Furthermore, the provision of others bicycle facilities (besides bike path) should gain more attention to respect the daily needs of cyclist. One of them is secured bicycle parking with CCTV and sport lights should be provided. The presence of bike parking must prioritize safety and accessibility and as traffic connectors such as LRT transport hubs.

In Malaysia, cycling is still less attention as commuting tools option. Although, (Yusfida.A.A, 2020) has argued, to encourage more cyclist, bicycle facilities and the provision of dedicated lanes for cyclist should be provided. But unfortunately, the facilities provided for cycling users have been abused by other

vehicle users and that is the reason why this friendly transportation not being widely used. (Syakir et al, 2021) has denoted, mostly Malaysians are thinking that constructing a bicycle lane and bicycle facilities will bring harm than a good benefit. Furthermore, the planning and quality of cycling infrastructure in Malaysia is still unconvincing, unsecured environmental, improper implementation and bike paths are shared with motorcycles (R.Shokoohi, A.Nikitas, 2017). In addition, (Lau.S.H et al., 2017) has denoted that the most of cycling infrastructure in Malaysia are not yet widely implemented. To identify this issues and problem, an observation was conducted on the bicycle blue lane in Kuala Lumpur. From the observation, it is found that, Kuala Lumpur is far behind in having a good bicycle lane and provision cycling infrastructure. However, to understand what cyclist needs, perceptions about the view of cycling infrastructure was analyse from the in-depth interview by experts, referring to enthusiast cyclist. This method will be discussed further in Chapter 3 Methodology.

In conclusion, the cycling infrastructure have lacking and the certain elements of infrastructure, were not provided by the City Hall. Because of the poor of quality in cycling infrastructure, that's the main reason why people less choose the bicycle as commuting tools. Due to lack of budget and skills on the design cycling network, the City Hall unable to addressing the any infrastructure improvements that need to be implemented.

1.2 Problem Statement

To develop a culture cycling where is seen a normal means of transport for Malaysia is one of big challenge for DBKL (R.Shokoohi, A.Nikitas, 2017). But, if we still not improve our skills in design bicycle infrastructure, the people not really convinced to adapt the bicycle as a part of commuting tools. The mind-set of the people will not be changed. Its seem like the cohesive of master plan bike lane by DBKL just for sake of having them. Based on (R.Shokoohi, A.Nikitas, 2017) study, up till now, KL still lack of infrastructure. This issues were addressing because of lack of design skills and issues of the money.

This research to study the elements of cycling infrastructure by observations existing bike routes to address the issues about the poor bicycle infrastructure in Kuala Lumpur City. It will help to understanding about the preferences the infrastructure cyclist most. The study will be useful concept as a reference to drawn a better cycling infrastructure in future. To achieve this aim, the research addresses three (3) primary research questions:

1. What are the facilities for cyclist needs?

2. How to improve the cycling infrastructure in KL?

3. What the kind of elements in cycling infrastructure?

1.3 Aim & Objectives

Cycling infrastructure play a very important element into implementation cycling campaign programmed. The study will focus on the elements of design in cycling infrastructure. What the cyclist need the most? The aim of this study is to develop an understanding of cyclist need in cycling infrastructure to implement into the Master Plan Bike Lane in the city of Kuala Lumpur. The following goals have been set for the study:

A. To evaluate the facilities for cycling needs

B. To identify the issues and problems of cycling infrastructure

C. To study the elements of the facilities for the safe cycling infrastructure in KL

1.4 Significance of Study

The study is very important to improve the cycling infrastructure in KL. The outcome will become as references to help to planning cycling infrastructure for better.

1.5 Methodology of Study

This study used qualitative methods, through a literature review, interviews, content analysis, and observation. Evaluation survey based on the group of cycling and who lives in Kuala Lumpur. Therefore, the method by qualitative approach used to analyse data and information and discussions will be undertake by each of the views of the various parties involved.

Using a case study design approach based on qualitative methods, the methodology used in this research is divided into four (3) ways:

1. **Desktop Study;** through literature review for understanding the theory and definition of the bicycle infrastructure. The document analysis through the literature on various writings on concepts related.

2. **Primary Data;** through semi structure in-depth an interview with the Jeffry Lim, who founded created the Bicycle Map Kuala Lumpur. The informant detail will be discussed in Chapter 3 Methodology.

3. **Observation;** site information about research studies including the physical aspect, design and condition. the South-West Dedicated Cycling Highway was selected. The aims of the observation were to evaluate the design cycling infrastructure and the factors.

1.6 Limitation of Study

Limitation of study only focus on the cycle routes and the facilities.

1.7 Structure of the dissertation

1.7.1 Introduction

In Chapter 1, the intro chapter explained the idea of the background and explained problem statement of study to determine the formulation of the research question in this study. In this chapter, the description of the aim and objectives of the study included the importance of the study is solid. The study also describes method of analysis used in this study, the type of method and observation. In this first chapter also describes the limitation of study and the structural of studies.

1.7.2 Literature Review

In chapter 2, the literature review gives an overview of the definition of concepts related to the research topic, and also the theory that will be used in problem analysis. The definition of the concept should be clearly explained. In addition, should pay attention to the relevance of the theory to be used in analyzing the problem. This part will be also introducing the Development Pattern in Kuala Lumpur, review on cycling infrastructure in Kuala Lumpur and the policies to promote cycling. This topic also discusses about the case study from Conpehengen, and which lessons can have interpreted into bike infrastructure in Kuala Lumpur. The case study based on analysis content from other paper.

1.7.3 Methodology

In Chapter 3, the study also describes definition concept, method of analysis used in this study, the type of method, location studies, subjects, sources and types of data, the stages of research, data collection techniques, and data analysis.

1.7.4 Analysis & Findings

In Chapter 4, analysis and finding could provide information on the data obtained through primary data and secondary data. Analysis of the data was made through writing and also includes pictures, tables or certain parts to support the data. In this chapter, the study will be made through an overview of the data that supported and evaluated in the form of description. After that, analyzing data generated through relevant theories. This part will derive the elements of the bicycle infrastructure should be improving in planning Master Plan Bike Lane Programmed.

1.7.5 Conclusion

In Chapter 5, the author write in conclusion of research problem and the results of this study will contribute information to the other parties of the limited knowledge about the bicycle infrastructure.

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