UNIVERSITI TEKNOLOGI MARA

THE PHYSICAL ENVIRONMENT FOR CYCLING PARTICIPATION CAUSALITY MODEL DEVELOPMENT IN MALAYSIAN RESIDENTIAL NEIGHBOURHOOD

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ABSTRACT

Malaysia is accelerating progressively to achieve a neutral carbon country by 2050, including cycling promotion. The provision of cycling infrastructure and bikeway design in Malaysians residential neighbourhood being progressively implemented to realise the aspiration. However, citizen acceptance on cycling is stilled discouraging due to unsuited of their needs and preference consideration on cycling spaces provided. Therefore, the study aims to develop Malaysian cycling participation causality model interfaced by the perceived physical environment. The study evaluates the understanding of the causal effect of physical environmental perception (H1), route choice preference (H2) and travel satisfaction (H3) on bike-built environment towards cycling participation (H4). Also, it is underpinned by an Ecological Model of Active Living (EMAL) and the Theory of Routine Mode Choice Decision (TRMCD). The study has applied an online survey by using a Google Form. A total of 242 respondents (Elmina Gardens and Denai Alam Residents' Association) were participated in the online survey from August to October 2018. Eventually, a gathered data has analysed by using IBM SPSS version 23 and Smart PLS 3.2.6 to determine the statistically significant evidence by bootstrapping procedure with a resample of 5000. The study has found a significant positive relationship among all variables. The result reveals that Perception ($\beta = 0.193$, $t = 2.296$, $p < 0.01$), Preference ($\beta = 0.405$, $t = 6.843$, $p < 0.01$) and Satisfaction ($\beta = 0.215$, $t = 3.376$, $p < 0.01$) has an influential impact on bike-built environment. Thus, the hypothesis H1, H2 and H3 were supported in this study. Besides, Bike-built environment ($\beta = 0.270$, $t = 3.023$, $p < 0.01$) has a positive significant predictor on cycling participation; thus, the hypothesis H4 was also accepted. Consequently, the bikeway design need to be initiated with the physical environmental perception, travel satisfaction and route choice preference were recognised for designing Malaysians residential bikeway. The process scrutinises with a total of 19 sub-criteria in overall. Eventually, it is hoped that the criteria are useful for Malaysia Landscape Architect, Planner, Urban designer, Developer and Local Authority in designing Malaysian residential bikeway comprehensively. The aspiration of a neutral carbon country can be realised by promoting greener network space (conducive bikeway design) towards shifting the attitude of citizen from regressive motorised vehicular used into active mobility specifically in the residential area.

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CHAPTER ONE
INTRODUCTION

1.1 Overview

The background of the study is presented in the earliest chapter which covers the definition, history, current cycling phenomenon, and Malaysia's initiatives related to cycling. This study also identifies the issues raised in the body of the knowledge or the gaps existing, as well as current conflicts concerning the phenomenon which henceforth proves the relevance and novelty of the study. Moreover, the aim, objectives and research questions have been established to set a clear direction for the study. Then, the study describes the terminologies of key constructs as a working title to specify the context and scope of the study. Besides, the study elaborates and outlines the scope and limitation of study to ensure the study is executed within the time frame given. Following this, the significance of the study has been acknowledged to confirm the contribution of the study to the body of knowledge and practical fields. In terms of research methodology, the framework encompasses five stages namely preliminary stage, literature review stage, research methodology stage, finding and analysis stage, and discussion stage. This chapter in particular, accentuates the structure of the study comprehensively leading to an understanding of the overall content of the study. Hence, the study is initiated by the understanding of the research background, specifically concerning cycling.

1.2 Background of the Study

Cycling is a combination of human body energy and thermodynamic engine in generating a movement. It is important as a flexible, sustainable, healthy means of transport in remedying environmental disorders, depleting energy resources and social exclusion (Oosterhuis, 2016). Besides, by pedalling two-wheeled thermodynamic engine, it enables the exploration of spaces in flexible mobility and free movement. In history, since the 1950s until 1970s, the cycling activity reached the age of renascence. In many parts of western countries, a bicycle has been recognised as an instrument that