

PEDESTRIAN UTILIZATION; ENHANCING FROM EXISTING : A
STUDY CASE OF PANTAI CHENANG, LANGKAWI AND
MELAKA HISTORICAL CITY, MELAKA

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ABSTRACT

This is a study on the pedestrian walkway, provided by local authorities. Pedestrian walkway is a crucial element in the settings of a city. Many local authorities do not see that the provision of pedestrian's walkways without taking into account the actual requirements of users will have a negative impact on them in the future. This includes the maintenance, beautification and the provision of supporting facilities. It is therefore very important to know the profile of sites and the actual pattern of pedestrian before building a pedestrian walkway. This study will look at the extent to which existing pedestrians' facilities were constructed without fully considering the real needs of the pedestrians flow pattern that is influenced by a variety of spatial activities in the environment. The objective of this study was to investigate the actual pattern of pedestrian flow compared with the pedestrian walkway provided by local authorities at the Pantai Chenang area and at the Melaka Historical City. Methods used in conducting this study were observational field and pedestrians count method (gate count method) to examine the utilization of the existing walkway. Findings of this study revealed that there are significant differences in pedestrian flow (for Pantai Chenang case studies) when compared with pedestrian walkways provided. The pedestrians' concentration is influenced by the spatial activities present on site. In the case of Melaka, the difference discovered was not significant, but the concentration of pedestrians has equal criteria to the case study at Pantai Chenang. It is concentrated in areas with a variety of spatial activities. Thus, the existing spatial configuration is the important factor of the environment that affects the actual pattern of pedestrians' flow. Time constraints and limited data are some of the challenges faced by the researchers in this study. This study will provide valuable information to local authorities in planning and designing pedestrians systems that can be fully implemented.

ABSTRAK

Kajian ini adalah kajian mengenai laluan pejalan kaki yang telah disediakan oleh pihak berkuasa tempatan. Laluan pejalan kaki merupakan elemen yang sangat penting dalam menghidupkan suasana bandar. Kebanyakan pihak berkuasa tempatan tidak melihat penyediaan laluan pejalan kaki tanpa mengira keperluan sebenar pengguna akan memberikan impak negatif kepada mereka pada masa akan datang. Ini merangkumi aspek penyelenggaraan, pengindahan dan penyediaan fasiliti sokongan. Oleh itu adalah sangat penting untuk mengetahui profil tapak dan pengguna sebelum membina laluan pejalan kaki. Kajian ini akan melihat sejauh mana laluan pejalan kaki sedia ada tidak mengambil kira keperluan sebenar corak aliran pejalan kaki yang dipengaruhi dengan pelbagai aktiviti ruwang di persekitarannya. Objektif kajian ini adalah untuk melihat corak aliran sebenar pejalan kaki berbanding dengan laluan pejalan kaki yang disediakan oleh pihak berkuasa tempatan di Pantai Chenang dan di Pusat Bandar Melaka Bandaraya Bersejarah. Kaedah yang digunakan dalam melaksanakan kajian ini adalah kaedah pengamatan tapak serta pengiraan pejalan kaki untuk melihat tahap penggunaan laluan pejalan kaki sedia ada. Penemuan kajian ini mendapati terdapat perbezaan aliran pejalan kaki yang sangat ketara (bagi kajian kes Pantai Chenang) jika dibandingkan dengan laluan pejalan kaki yang disediakan serta hanya sebahagian laluan pejalan kaki sahaja yang menjadi tumpuan pengguna. Tumpuan pejalan kaki ini dipengaruhi oleh aktiviti ruwang yang ada di tapak. Bagi kes Melaka Bandaraya Bersejarah, perbezaan yang diperoleh adalah tidak ketara, namun tumpuan pejalan kaki juga mempunyai kriteria yang sama dengan kajian kes di Pantai Chenang. Ianya tertumpu di kawasan yang mempunyai aktiviti ruwang yang pelbagai. Oleh itu, faktor susunan ruwang yang ada di persekitaran mempengaruhi corak aliran sebenar pejalan kaki. Kekangan masa dan dapatan data yang terhad merupakan cabaran yang dilalui pengkaji semasa kajian ini dijalankan. Kajian ini akan dapat menyediakan maklumat yang berharga kepada pihak berkuasa tempatan dalam merancang dan mereka bentuk sistem laluan pejalan kaki yang mampu dimanfaatkan sepenuhnya.

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GLOSSARY OF TERMS

LRT	-	Light Rapid Transit
DBKL	-	Dewan Bandaraya Kuala Lumpur
GIS	-	Geography Information System
HCM	-	Highway Capacity Manual
LOS	-	Level of Service
TRB	-	Transportation Research Board
PB	-	Planning Block
LADA	-	Langkawi Development Authority
LMC	-	Langkawi Municipal Council
MHCC	-	Melaka Historic City Council

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CHAPTER 1

INTRODUCTION

Pedestrians' way is an important aspect in land usage development such as sites of new townships. The routes will help to create a very lively townships, connecting people to public and private buildings, LRT stations and commuter rail facilities, although still not widely implemented in Malaysia. Nowadays, the attitude of most Malaysians has changed; they are more concerned, especially in developing pedestrians' way in the residential, commercial and recreational areas. For example, Putrajaya is well planned in terms of pedestrians' routes which are connected to the other parts of the city. They are connected to the major activity centres and nodes such as government precincts, commercial centres, public parks, plazas, community centres and schools. They also provide vivid and direct access to transit stops as well as connections between residential and retail areas. People can walk to all the components of the city without using a car.

The researcher believed that the development of the pedestrians' walkway also need to be considered in public-attraction areas as well, that includes all types of development areas (e.g., tourist area, township, residential and recreational). It is known that pedestrians' walkway implementations involve spatial configuration. The configuration should help people's accessibility in a comfortable way and to fulfil connectivity and mobility. However, most construction of pedestrians' ways has been developed without knowing how far it can be fully utilized. Of course, the development projects cost a lot of money. It is incurred by local authorities, and sometimes it is not worth it when the maintenance costs are taken into account.

1.1 Background of Problem

In Malaysia, most walkway facilities for pedestrians are built along the left and right side of the road (see **Figure 1-1**) which is not stated in any guidelines or any legal documents. But, practically, it is implemented in every new development projects in this country and it seems to be a necessity, whereas it is only the minimum requirements with detailed and specific methods to get it done. Perhaps there are differences when we make a comparison between the actual pattern of pedestrian walkways with the ideal design as suggested earlier (see **Figure 1-2**).

The question is whether existing pedestrians' walkways are fully utilized? Does the provision of pedestrians' network, different from the actual movement or actual flow of pedestrians activities? The investments involved in building or conducting the maintenance activities made by the local authorities should produce certain returns for them.



Figure 1-1 Existing pedestrians' walkway on the left and right of the road at Pantai Chenang

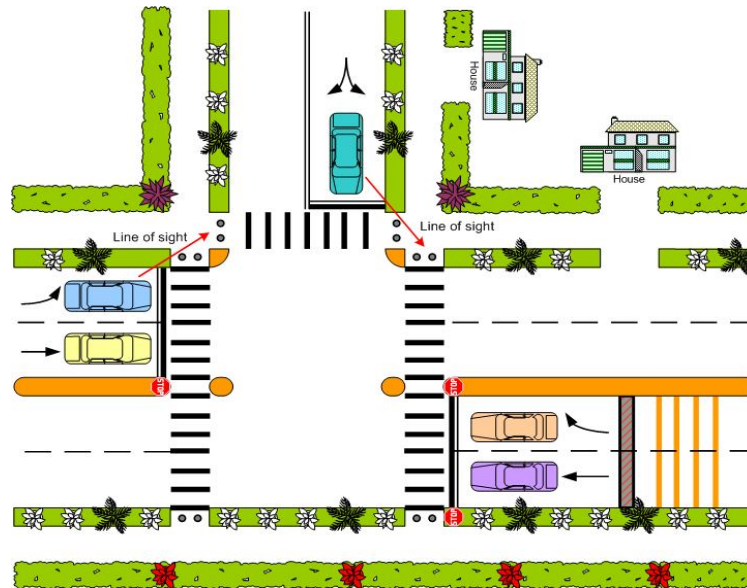


Figure 1-2 Ideal Pedestrian/Cyclist Facility

This study will only focus on one major question. Of course there is the basic question about the importance to study. This is because, the provision of facilities for pedestrians will involve the use of space (land use configuration) and human behaviour is related to it in any urban environment. These two elements should be studied together in order to achieve better results. However, this study will only focus on patterns of pedestrian users (spatial factor) compared with pedestrians' walkways built by the local authorities.

Pedestrians' walkways are important to make the building; the town and the city become more habitable (Nor Izura Tukiman, 2006). Walking is an easy physical activity that can be done anywhere, anytime, anyplace, even to those who use private vehicles also need to walk after parking their vehicles in parking areas. This activity also contributes to human healthy living lifestyles and can reduce environmental pollution resulting from the usage of motorized vehicles. Very importantly, it should be accessible to the disabled.

There are actually real flows of pedestrians in nature. This configuration came from the relationship between space and human behaviour. The question is, how far different it is from the provisions of existing pedestrians' walkway? Can we identify the differences? What are the implications when they are of any difference? This approach is used by researchers to examine and analyze the flow in pedestrians'

walkway in nature compared to the pedestrians' walkway provided by local authorities. They focused on the pedestrians' walkways built on the left and right of the road. This is the minimum requirement in Malaysia. The study examined whether the pedestrians' walkways in the area are fully utilized, along which the actual movement pattern or flow of pedestrians' activities occur.

The main challenge in this study is to see patterns of any kind in the actual model of pedestrians' walkways when considering the land use configuration in creating physical development. There are relationships between space and human behaviour, which can be described in physical form. It is difficult because there are different labels of social structure, different group, people or activities, and different rules of behaviour (Sonit Batna, 2003). Nevertheless, converting the patterns or actual flow of pedestrians, to create a form of configuration, is useful. Referring to the case of Shibuya Station, Tokyo, Japan (see **Figure 1-3**). It is a redevelopment project that has produced a complicated multilayered railway station. A railway station is a node for passengers flow as well as a key junction for logistics; therefore redevelopment projects in these areas will also affect human flow. One of the purposes of the study is to examine and clarify the characteristics or preferences of pedestrians flow in a multi-layered complicated space. This preference of pedestrians flow is actually the real flow of pedestrians which is the characteristics of passengers using the railway station in Shibuya Station.



Figure 1-3 The number of pedestrians flow in block per ten minutes in the case of Shibuya Station, Tokyo, Japan

1.2 Problem Statement

Many local authorities have overseen the importance of the preparation of a plan to look at and analyze the nature of human interaction in the built environment. As a result, the initial objectives of providing a facility are not achieved and it is considered as a waste.

For example, “based on a public opinion survey conducted by the Public Callout, Greater KL / KV, Kuala Lumpur is not a pedestrian-friendly city. Currently it has inefficient designs, poor maintenance and poor accessibility. Locals and tourists hardly find the physical connection between buildings. Furthermore, the physical connections are normally bad and they lack in pedestrians’ access for the disabled and the elderly. For the purpose of enhancing the network of existing pedestrians’ walkways, DBKL has planned to build more pedestrians’ walkways network throughout the City of Kuala Lumpur, totalling 45 kilometres in distance. Overall financial requirements are estimated at RM105 million from 2011 to 2020”. (Chapter 5; The Economic Transformation Program, A Roadmap For Malaysia, 2010). Therefore, in order to avoid unproductive efforts to continue, a study to select the best pedestrians’ network should be implemented to identify specific sites.

In this study, the researchers believe that the existing pedestrians’ walkways do not meet the needs of people and there are actual flows of human interaction compared to the existing pedestrians’ walkways provided on the left and right side of the road. As B. Hillier (1996) described, different human behaviours do not just happen in space, they have their own spatial form no matter what the purpose is for using that space, whether for gathering, interacting, teaching, eating or dwelling. The arrangement of spaces always constitutes a spatial pattern which B. Hillier called spatial configuration. To see this in a more detailed perspective, the researcher decided to set up observation fields on two locations in Malaysia; which are Case Study 1: Pantai Chenang, Langkawi and Case Study 2: Melaka Historical City.

1.3 Research Questions

The research questions focused on whether the provision of pedestrians' walkways by the local authorities are fully utilized. The reason is simple; the provision of the facilities for pedestrians should emphasize spatial relationships that exist in the surrounding environment. Therefore, a detailed planning needs to be done considering the spatial relationships that exist in the environment before building the pedestrians' network. From my general observation and a pilot survey on some pedestrians as well as from my experiences as a planner, the majority of pedestrians' walkways recently constructed in Malaysia are not being used according to their intended purposes (see **Figure 1.4**). This is a waste because the requirements of the pedestrians' walkways are not fulfilled. In addition, the planning and provision of the pedestrians' walkways by local authorities are based on 'add hoc' solutions and prepared by a division other than the planning division.



Figure 1-4 Condition of pedestrians' walkways at Prescient 9, Putrajaya.

As a researcher, it was observed that there are patterns in the actual flows of pedestrians when we do the pedestrians' walkways utilization analysis. This interaction can actually avoid waste that might occur due to building pedestrians' walkway. The local authorities do not employ any specific methods or detailed studies at the planning stage before building a network of pedestrians' walkway. The studies should take into account the relationships in daily human activities in the existing spatial form.

1. Are the existing pedestrians' walkways fully utilized?
2. Does the provision of pedestrians' network, different from the actual movement or actual flow of pedestrians' activities?

1.4 Research Objectives

The objective of this study is firstly, to look into the actual pattern of pedestrians flow and compare it with existing provision of pedestrians' walkway by the local authorities. Researchers seek to discover the differences between pedestrians flow, in comparison with the existing pedestrians' walkways provided by the local authorities. Secondly, to suggest the improvement in the planning policy or methods in constructing pedestrians' walkways in order to achieve a high level of utilization.

1.5 Scope of Research

1. The study will focus on the existing pedestrians' walkways provided along Jalan Pantai Chenang, Langkawi and in Historical Melaka City, Melaka.
2. The study will use observational field study (visual survey and pedestrians volume count) focusing on the actual flow of pedestrians in Jalan Pantai Chenang, Langkawi and Historical Melaka City, Melaka.

The scopes of the study are summarized in the **Table 1-1**.

Table 1-1 The scope of the study

Num.	Scope	Case Study: Pantai Chenang and Melaka Town Centre
1.	Issue	Actual flow (pattern) of pedestrians' movement.
2.	Purpose of Study	Explanatory - to review the development of the existing pedestrians' walkways.
3.	Type of investigation	Pedestrians flow investigation- Observational field study method and gate count survey method.
4.	Extent of researcher interference	Minimal - involves only a general questionnaire through phone line and observational method.
5.	Study Setting	Field study - to make a comparison between the existing pedestrians' walkway systems with the output (spatial configuration) from the observational of existing pedestrians' walkway.

1.6 Research Assumptions

Throughout this research, researchers assume that there is no method or tools used by the local authorities to plan the pedestrians' walkways network and it will affect the pedestrians' walkway as they are not fully utilized.

1.7 Limitations of Research

In this study, there are some limitations that have been identified. This study only determines whether the existing pedestrians' walkways are fully utilized and to prove it, a specific method in identification of the actual pedestrians flow was being implied. By doing this, the local authorities can avoid waste. First, it is expected that the result may not accurately depicts the actual condition due to inadequate data that leads to a certain degree of bias. Assumptions will have to be made. For instance, specific site attributes such as the volume of pedestrians, use class order, site profiles and other facilities are likely to influence the demand for pedestrians' needs. Second, due to time constraints and difficulty in data collection such as used class order (building use) and etc. from the local authorities, the researcher had to compromise

our selection of sites at which data is already available from the previous research, such as a Draft Special Area Plan, Chenang, Langkawi and Draft Special Area Plan, Historical Melaka City.

1.8 Expected Contributions

The fields of architecture, urban design, landscape architecture, and city planning consist of both professional and theoretical interests in the matter of physical environments, particularly built environments. Without any accurate instruments to measure environments, it is not surprising when the authorities have only focused primarily on internal processes at the expense of external environmental factors. By using this research, the authorities can employ a technique to identify the actual movement of pedestrians in the area before they plan to build it. This situation will see the relationship between the actual pedestrians flow and the surrounding land-use components. It makes the pedestrians' walkway more integrated and more efficient. The project will also have its cost effectiveness. Although many methods involving the use of GIS technology, such as in determining the alignment of the pedestrians' walkways, these methods are rarely being used by local authorities. In urban planning, field observational method is very easy and inexpensive for implementation by the local authorities.

1.9 Significance of Research

Based on questionnaires conducted through telephone calls, , only 29% of the 99 local authorities in Peninsular Malaysia have built pedestrians' walkways network in their administrative area. The 29% local authorities, all have agreed that during the planning stage, they do not used any method or study in determining the pedestrians' walkways. Therefore, this study will assist local authorities in terms of;

1. The study will confirm that there is a difference between actual flow of pedestrians with the existing pedestrians' walkways in the Pantai Chenang, Langkawi and in Melaka Historical City, Melaka.

2. The study will provide a simple technique to identify and represent the spatial relationships in setting up the plans. The formulation of these relationships is the main purpose of our built environment to provide the facilities for pedestrians.

1.10 Structure of the Report

The report will be organized into six chapters:

- **Chapter 1** provides an introduction to the study and background of the pedestrians' walkways provision by the local authorities. This chapter also highlights the issues of the study, problem statements, research objectives, as well as scope, significance and limitations of research.
- **Chapter 2** is the literature review which is elaborating the principle of planning pedestrians' walkways,
- **Chapter 3** will discuss on the research methodology, which explains how this study will be conducted,
- **Chapter 4** will present data collected from the observational fields including pedestrians counts and analyses section.
- **Chapter 5** explained the result and finding of the study; and
- **Chapter 6** will discuss the conclusion and suggestions from the study.

1.11 Chapter Summary

In this chapter, the researcher tries to explain the main issues that must be resolved. Firstly, the provision of the existing pedestrians' walkways was supposed to meet the requirements of the pedestrians that use the facilities. As already being explained, the provision of the pedestrians' walkways at Pantai Chenang was just to meet the typical or basic standards required by the local authorities, that is the pedestrians' walkways are provided on the left and right side of the road. The same thing happens in Melaka Historical City. However, researchers believe that there are actual flows of pedestrians on walkways that are related to space configuration and spatial activities. In addition, researchers will be able to identify the focal point of pedestrians' activities within the space where the authorities can focus on providing support facilities for pedestrians which can be interpreted in the planning stage. Next chapter will attempt to understand the principle of planning the pedestrians' walkways and try to determine and discuss the best practice on planning and designing the pedestrians' walkways network.

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