FACTORS THAT CONTRIBUTE TO THE INEFFICIENCY OF SPACE USE AT
THE PUBLIC TRAINING INSTITUTES: A CASE STUDY

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DEDICATION

This thesis is aimed specifically at my father and mother, who taught me that the best knowledge is the knowledge learned in its own right and then passed on to the nation, religion and nation. It is also aimed at my family, to give them a boost in acquiring useful knowledge and to achieve their goals step by step towards success.

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ABSTRACT

The purpose of this paper is to identify the factors influencing use of spaces in public training institutes (PTIs). Most of the PTI buildings are motivated by social welfare or to provide services to the public as it is one of a government's responsibilities rather than a profit-making entity. Due to several incidents involving PTI building management weaknesses over the past few years, the government has taken a serious view on the space management for PTI buildings which are not only related to property management but also on space management efficiency. Therefore, the main objective that must be achieved in this study to find out the factors influence the use of space in PTIs. The author conduct literature reviews from a variety of text sources in relation to the factors influencing inefficient use of space. Afterwards, a qualitative content analysis has been conducted to determine the factors that contribute to the inefficient use of space. The results show that there are eight factors that influence the use of space in which five of them are factors that greatly influence the use of that space. These five factors are user requirement factor, organization factor, work environmental factor, spaces factor and technology development factor. Due to the application of Movement Control Order (MCO), the author was unable to conduct the field survey and only depends on the secondary data sources. The findings have confirmed that the user requirement factor, which is still a key factor in INSPEN. This result will help INSPEN overcome more efficient use of space in the future.

ABSTRAK

Tujuan kajian ini dibuat adalah untuk mengenal pasti faktor-faktor yang mempengaruhi penggunaan ruang di institut latihan awam (ILA). Sebahagian besar bangunan ILA didorong oleh kesejahteraan sosial atau untuk memberikan perkhidmatan kepada orang ramai kerana ini adalah salah satu tanggungjawab kerajaan dan bukannya entiti yang menghasilkan keuntungan. Oleh kerana berlakunya beberapa insiden yang melibatkan kelemahan pengurusan bangunan ILA sejak beberapa tahun kebelakangan ini, kerajaan memandang serius pengurusan ruang untuk bangunan ILA yang tidak hanya berkaitan dengan pengurusan harta tanah tetapi juga kecekapan pengurusan ruang. Oleh itu, objektif utama yang mesti dicapai dalam kajian ini untuk mengetahui faktor-faktor yang mempengaruhi kecekapan penggunaan ruang di ILA. Penulis melakukan tinjauan literatur dari pelbagai sumber teks berkaitan dengan faktor-faktor yang mempengaruhi penggunaan ruang yang tidak cekap. Selepas itu, analisis kandungan kualitatif telah dilakukan untuk menentukan faktor-faktor yang menyumbang kepada penggunaan ruang yang tidak cekap. Hasil kajian menunjukkan bahawa terdapat lapan faktor yang mempengaruhi penggunaan ruang di mana lima daripadanya adalah faktor yang sangat mempengaruhi penggunaan ruang tersebut. Lima faktor ini adalah faktor keperluan pengguna, faktor organisasi, faktor persekitaran kerja, faktor ruang dan faktor pengembangan teknologi. Oleh kerana penerapan Perintah Kawalan Pergerakan (MCO), penulis tidak dapat melakukan tinjauan lapangan dan hanya bergantung pada sumber data sekunder. Hasil kajian telah mengesahkan bahawa faktor keperluan pengguna, masih menjadi faktor utama di INSPEN. Penemuan ini di harap dapat membantu INSPEN mengatasi penggunaan ruang yang lebih efisien pada masa akan datang.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

CEA FT	-	Certificate of real estate agency (Full Time)
CEA PT	-	Certificate of real estate agency (Part Time)
HEI	-	Higher Education Institutes
INSPEN		Institut Penilaian Negara
ILA		Institut Latihan Awam
IPTA		Public Institutions of Higher Learning
PTI	-	Public Training Institutes
sm	-	Square Meter
SPHT	-	Sijil Penilaian Harta Tanah
SPGT	-	Sijil Pengurusan Harta Tanah
UPHF	-	Unit Penguruan Harta dan Fasiliti

CHAPTER 1

INTRODUCTION

1.1   Introduction

Space utilisation management is one of the branches in the property management structure of a building, whether it is for a public training institute building (PTI) or private training centre building. Typically, PTI property management is managed in-house, where a unit is being set up from the larger department that will be responsible for managing the affairs related to the property of the organization. Most of the PTI buildings are motivated by social welfare or to provide services to the public as it is one of a government's responsibilities rather than a profit-making entity.

Due to several incidents involving PTI building management weaknesses over the past few years, the government has taken a serious view on the space management for PTI buildings which are not only related to property management but also on space management efficiency.

In the Prime Minister's Department, a section / unit has been set up to monitor the management of office space known as Property Management Division (BPH), JPM. Its function is to ensure that all ministries / federal departments are placed in comfortable office space. In addition to these functions, this section ensures that all existing spaces (whether existing building spaces or non-buildings – parking spaces, field, park and others) are fully utilized. It is intended to enable staffs to work well and efficiently.

Its main objective is to ensure the management of space utilisation in PTI buildings, developing world class government office complexes through the implementation of government policies to create a safe and conducive working environment (Prime Minister's Department, 2009).

1.2   Research Background

Space utilisation management with efficiency is an issue in a training center building whether it is a PTIs or private training center building. Examples include the failure of a space to function optimally and the lack of facilities that support the function of space. Through a systematic approach, users expect space provided will offer optimum functionality and can meet user satisfaction. In addition, value for money can be achieved especially in terms of its key criterion of cost reductions, profit increments, improving quality and efficiency of resources being use (Zarita, 2007).

Space utilisation planning works to disseminate spaces efficiently, systematically and effectively. Space is one of the facilities in a building that houses other facilities and components that support the function of a space itself. Space requests are an unpredictable, therefore space utilisation should be efficiently maximized. There are many PTIs provided by the government for the benefit of the people, not used effectively. According to the Bursar UPM, there are 346 PTIs across Malaysia. Most of these PTIs rely on government financial resources to carry out their functions. If space utilisation management is not managed efficiently and effectively, it will increase the financial burden of the government. INSPEN is one of the PTI in Malaysia which has the same problem and space management as the other PTIs.

In large organizations such as INSPEN, space management plays an important role in effectively managing space without wasting space where they indirectly impact costs. Space management is important for the INSPEN whether in office hours or not and this awareness has been rising since the 1960s (Ahmad Fauzi, 2005). Information about space is important to know the effectiveness of space utilisation of a building. INSPEN should provide efficient and excellent space for teaching and learning (Amaratunga D, Baldry D, 2000).

There is one department, Academic Division in INSPEN that is responsible in teaching and learning program. Space management at INSPEN not only increases student enrollment, but it can lead to insufficient space too. Based on preliminary observations, some lecture rooms are idle and are not used as their original purpose.

There are also problems with the use of space in non-efficient INSPEN buildings. One aspect of the effectiveness of INSPEN building is measured based on the space provided by the building. Space management is the most important portfolio for managing a building. Space is valuable and limited and it can impact on management costs.

Use of space should be carefully planned and managed efficiently. Existing space should be used optimally to bring the return for the government. Unused spaces can be marketed to the general public to generate income and can reduce the dependence on national financial resources. While the acquisition of new space should be in line with the INSPEN needs. To achieve effective use of space several aspects need to be considered such as the space should be properly planned, efficiently managed and the space provided for useful purposes (Muir, 2003). INSPEN need to identify these issues and then identify the causes factors of the problem and why it is important to identify the factors that cause the space management problems in INSPEN.

1.3   Problem Statement

Space utilization management is an important portfolio for managing buildings as the effectiveness of building space can be measured. Management of space utilization at INSPEN is to ensure that all available space is fully utilized. Generally, UPHF (Property Management and Facilities Unit), the unit that is responsible for managing and maintaining all the spaces in INSPEN. It includes all academic and non-academic spaces. The breakdown of space available in the Academic Block, INSPEN is as follows;

Table 1.1   Space Available in INSPEN (Block Academic)

Level	No.	Space name	Function Used	Function Current Used
LEVEL 1	1	Bilik Hakim (B-G-Q02), (B-G-03)	Ruang Badan Kehakiman Lain	no change
	2	Mahkamah Jauhari (B-G-05), (B-G-Q02)	Ruang Bicara	no change
	3	Bilik Pameran Loji Dan Jentera - (B-G-02)	Ruang Pameran	change from lecture room to showroom
	4	Makmal Komputer – Mutiara 5 (B-G-01)	Ruang Komputer (Bilik / Makmal)	no change
	5	Makmal Komputer – Mutiara 3 (B-G-12)	Ruang Komputer (Bilik / Makmal)	no change
	6	Makmal Komputer – Mutiara 2 (B-G-11)	Ruang Komputer (Bilik / Makmal)	no change
	7	Makmal Komputer – Mutiara 1 (B-G-16)	Ruang Komputer (Bilik / Makmal)	no change
	8	Bilik Firus 2 (B-G-08)	Ruang Bilik Darjah/ Kuliah/ Kelas	no change
	9	Bilik Firus 1 (B-G-07)	Ruang Bilik Darjah/ Kuliah/ Kelas	no change
Level 2	1	Stor 1 (Perabot) (B-1-04)	Ruang/ Bilik Simpanan/ Stor	change from lecture room to store 1
	2	Bilik Sri Makmur B	Ruang Bilik Darjah/ Kuliah/ Kelas	used for exam only
	3	Bilik Sri Makmur A	Ruang Bilik Darjah/ Kuliah/ Kelas	used for exam only
	4	Bilik Sri Makmur 3	Ruang Bilik Darjah/ Kuliah/ Kelas	no change
	5	Bilik Sri Makmur 4	Ruang Bilik Darjah/ Kuliah/ Kelas	no change
	6	Bilik Sri Makmur 5	Ruang Kreatif (Studio/ Suntingan)	no change
	7	Bilik Sri Intan 1	Ruang Kreatif (Studio/ Suntingan)	no change
	8	Bilik Sri Intan		no change
	9	Bilik Sri Intan		no change
LEVEL 3	5	Makmal Sri Cendana 5 (B-2-03)	Ruang Komputer (Bilik/ Makmal)	no change
	6	Makmal Sri Cendana 4 (B-2-04)	Ruang Komputer (Bilik/ Makmal)	no change
	7	Makmal Sri Cendana 3 (B-2-05)	Ruang Komputer (Bilik/ Makmal)	no change
	8	Makmal Sri Cendana 2 (B-2-06)	Ruang Komputer (Bilik/ Makmal)	no change
	9	Makmal Sri Cendana 1 (B-2-07)	Ruang Komputer (Bilik/ Makmal)	no change

Source : (Inspen, 2019)

Table 1.1 shows the number of spaces available in Block Academic, INSPEN. There are spaces that have been transformed into new uses. There are item 3 from level 1, item 1, 2 and 3 from level 2. This indicates that there is an inefficiency in managing space usage.

The inefficient of space usage is not only measured from the perspective of existing uses, but also from the angle of how much space is being used at a given time and how often it is used over a given period. Space utilisation management problems can be solved by identifying the factors that are causing the space problem. Problems that occur and the identified causes can help the management of INSPEN to operate smoothly and systematically. These factors will be the root cause for solving all the

space management problems. Problem-solving analysis in space management is a technique for identifying the root causes of problems in each process that occur through data collection. All problem-solving techniques can be classified according to different characteristics (Alvaro et al., 2009). According to Dennis Beecroft (2002), one of the characteristics of problem solving is by identifying factors. Identifying and eliminating an organization's free space can reduce costs (Knapp, et al., 2009). In addition, there are some researchers who focus on effective space management as this strategy can increase productivity and reduce unused space (Unwin 2008).

The space management issue of whether existing and used space is occupied or unoccupied is the topic of current conversation in INSPEN. Issues such as failure of a space to function optimally as well as lack of facilities and components that support the function of space are often addressed. However, the problem of inefficient space use remains in effect and prolonged. The problem of inefficiency in space management should be addressed immediately. UPHF needs to look at the existing policy, is it enough to manage the space? There are spaces that are not used as lecture rooms and in some cases are used as a storage. This will cause a waste of space.

Existing issues within Federal Government's assets as mentioned by Tan Sri Dato' Setia Ambrin Bin Buang, Ex-Auditor General of Malaysia (2011) are assets procured not used/not used optimally, poor control over usage of Government vehicles and assets, improper records such as non/late registration of assets, assets not tagged or labelled as Government property, insecure storage of poor office security resulting in loss of Government assets, lack of space for proper storage of assets, delays in write offs further aggravate space storage creating inefficient store management, annual inspections on assets not carried out and overall Maintenance Program not prepared and/or maintenance not carried out as scheduled.

Based on statement problem by Ex-Auditor General of Malaysia, the systematic use of space does not contribute to the waste of space. Space wasting occurs when costs associated with space such as electricity, cleaning, maintenance and other costs associated with space use are not used properly. Space management is not only in terms of optimization of usage, but also in terms of operating costs and maintenance

costs. The more space is used, the higher the operating and maintenance costs will have to be released. Space is a catalyst for other operating costs (Lawrence, 1989 and Williams, 1994). The operating costs incurred by INSPEN are high and are increasing over the years. Marsh & Griffith (1985) stated that the cost of operating a student's academic space is about US $ 2,000.00 per year. The information shows that these costs correspond to the cost of space for an employee in a corporate organization (Hammer, 1988). These costs can be saved through prudent management (Ahmad Fauzi, 2005).

Previous studies only discussed aspects of consumer satisfaction and did not include studies that focused on the factors of space use management problems. These studies are as described in Table 2.1 Research on Space Management in Malaysia. Therefore, the key question that arises is to identify the factors that influence use of space and space efficiency management in INSPEN. If these factors cannot be identified and resolved, they will adversely affect the operations of INSPEN.

1.4   Research Question

Based from the main research statement above, research questions for this study is, what are the factors that contribute to the inefficient use of space in INSPEN?

1.5   Research Objectives

Research objectives for this study is, to identify factors that contribute to the inefficient use of space in INSPEN.

1.6   Research Importance

   i.   This study can contribute to organizational management team in the process of monitoring the space management activities provided.

  ii.   This study can determine the efficiency of the space utilisation management as well as the proposed improvements that can be made to improve the quality of its services in the future.

 iii.   The study is also expected to contribute and benefit the parties with the tendency and interest to implement more efficient space management.

1.7   Research Importance

The research that is being conducted is focused only on the factors that lead to the inefficient use of space encountered by INSPEN in space management, especially the teaching and learning space used. These rooms are mostly not completely used and left empty a well as a place of storage. It will determine if the concept is more suitable for space management in the INSPEN or not? Therefore, the authors will undertake a review with UPHF, the unit that regulates the management of buildings at INSPEN.

1.8   Research Methodology

The study methodology is the method used throughout the study to achieve the objectives of the study. The methodology of the study is to ensure that the study can be done in more organized and organized manner. The stages of the study were performed as described in the diagram1.
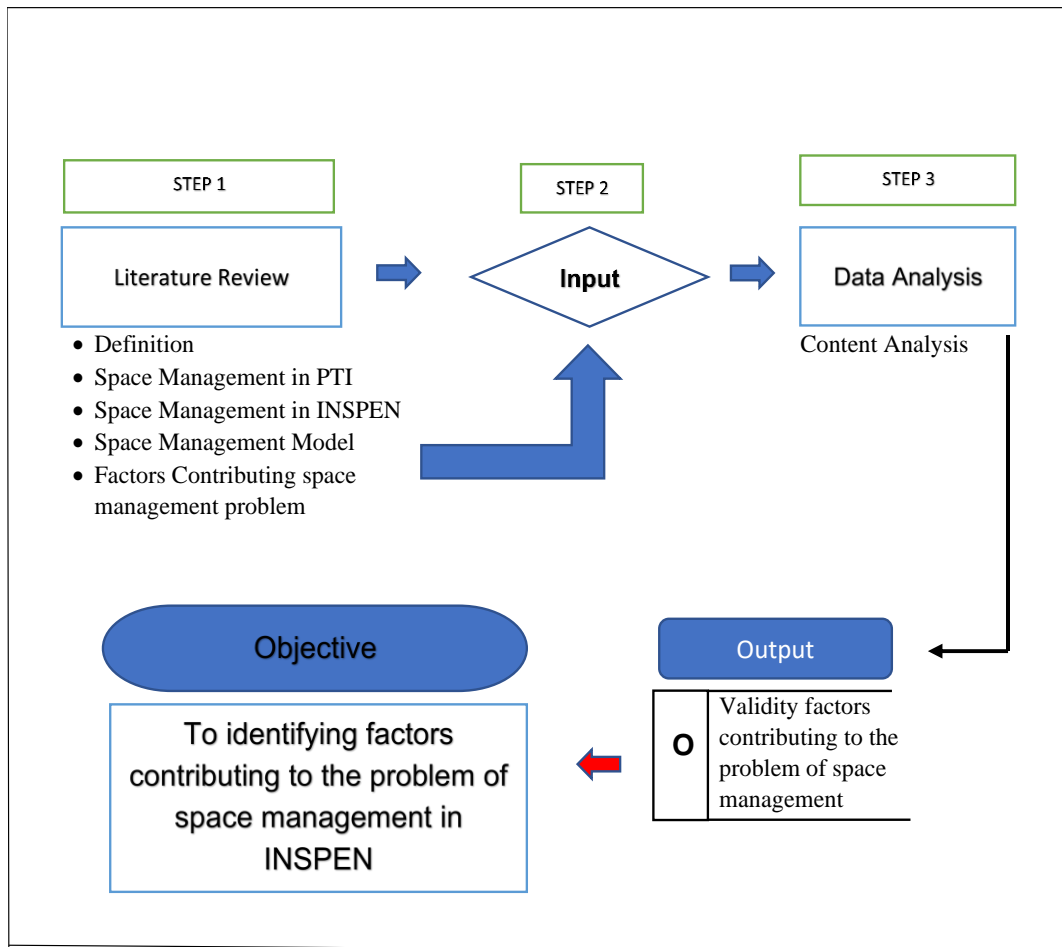
Figure 1.1   Flowchart Methodology

1.9   Chapter Organize

This approach to the structure of this research will explain the five chapters that will carry out this research. The study will explain the entire process used to conduct the study from the beginning of the study which is the collection of data until the end of the study which is the proposal and conclusion.The five chapters are as follows:

i.   Chapter 1: Introduction

This chapter describes the process of reviewing the study such as the background of the study, the problem statement, the research question, the objective

of the study, the scope of the study, the importance of the study and the methodology of the study. Through reading the journal, relevant past theses and websites.

ii.   Chapter 2: Literature Review

This chapter describes definitions, factors that influence space management problems, and conclusions. This will provide the reader with a better understanding of the topic of research.

iii.   Chapter 3: Space Management in INSPEN

This chapter aims to discuss the study methodology by explaining each step of the study and the methods used for data collection and analysis to achieve the goal. This chapter also discusses the preparation of the questionnaire and the selection of respondents.

iv.   Chapter 4: Research Metodology

This chapter aims to discuss the study methodology by explaining each step of the study and the methods used for data collection and analysis to achieve the goal. This chapter also discusses the preparation of the questionnaire and the selection of respondents.

v.   Chapter 5: Data Analysis

This chapter describes the analysis performed to achieve the objectives of this study. All data from the literature review and other sources will be aggregated and analyzed through appropriate analysis methods. The data analyzed, were collected according to a group of identified factors.

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