

FACTORS HINDERING SUSTAINABLE FACILITIES MANAGEMENT
IN GOVERNMENT AGENCIES

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FACTORS HINDERING SUSTAINABLE FACILITIES MANAGEMENT
IN GOVERNMENT AGENCIES

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DEDICATION

Alhamdulillah, all praise be to Allah SWT for all the blessings given

This thesis is dedicated to my husband Dr Eran Sadek Said bin Md Sadek & all my lovely children; Humayra, Insyira, Mueez Qarni, Nueem Qadri and Aisya who sacrificed a lot of during my study. I have always loved you all until the moon and back

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ABSTRACT

The purpose of this paper is to identify the factors that hinder sustainable facility management (SFM) and determine critical factors that hindering it in Malaysian government agencies. Although SFM is an important factor in facilities management (FM) industry, it is still not studied in detail and is not fully implemented in the FM industry in Malaysia. There has been very little focus given on the factors that hinder SFM which may thwart the effort to make sustainable facilities management a standard practice in Malaysia. Thus, this study was undertaken to identify factors and critical factors that hinder sustainable facilities management in government agencies. The authors have used a qualitative approach to achieve the objectives in this study. The author collected secondary data sources from literature reviews from a variety of text sources to list the factors related to SFM. The validity of the factors were then validated by three (3) FM experts in government agencies. The validated factors were then surveyed among 39 respondents consisting of 5 FM practitioners who practiced FM in 8 government agencies, consisting of 5 federal government agencies and 3 state government. Frequencies analysis was carried followed by criticality indexing for identifying the most critical factor in SFM. The findings show that there are eleven factors influencing SFM in government agencies. Then, three most critical factors are awareness, knowledge and technology. The findings of this study will help to improve the level of facilities management delivery and find effective solutions to achieve the goals of sustainable facility management in Malaysia, especially in government agencies.

ABSTRAK

Tujuan kajian ini adalah untuk mengenal pasti faktor-faktor yang menghalang kelestarian pengurusan fasiliti atau *sustainability fasiliti management (SFM)* dan menentukan faktor kritikal yang menghalangnya di agensi kerajaan Malaysia. Walaupun *SFM* adalah faktor penting dalam industri pengurusan fasiliti atau *facility management (FM)*, ia masih tidak dikaji secara terperinci dan tidak dilaksanakan sepenuhnya dalam industri *FM* di Malaysia. Tumpuan sangat sedikit diberikan pada faktor-faktor yang menghalang *SFM* yang mungkin menggagalkan usaha untuk menjadikan kelestarian pengurusan fasiliti sebagai amalan standard di Malaysia. Oleh itu, kajian ini dilakukan untuk mengenal pasti faktor dan faktor kritikal yang menghalang pengurusan kemudahan lestari di agensi kerajaan. Penulis telah menggunakan pendekatan kualitatif untuk mencapai objektif dalam kajian ini. Penulis mengumpulkan sumber data sekunder dari tinjauan literatur dari pelbagai sumber teks untuk menyenaraikan faktor-faktor yang berkaitan dengan *SFM*. Kesahan faktor tersebut kemudiannya disahkan oleh tiga (3) pakar *FM* di agensi kerajaan. Faktor-faktor yang disahkan kemudian diteliti di antara 39 responden yang terdiri daripada 5 pengamal *FM* yang mempraktikkan *FM* di 8 agensi kerajaan, yang terdiri daripada 5 agensi kerajaan persekutuan dan 3 kerajaan negeri. Analisis frekuensi dilakukan diikuti oleh Criticality Indexing untuk mengenal pasti faktor yang paling kritikal dalam *SFM*. Hasil kajian menunjukkan bahawa terdapat sebelas faktor yang mempengaruhi *SFM* di agensi kerajaan. Kemudian, tiga faktor yang paling kritikal adalah kesedaran, pengetahuan dan teknologi. Hasil kajian ini akan membantu meningkatkan tahap penyampaian pengurusan fasiliti dan mencari jalan penyelesaian yang berkesan untuk mencapai matlamat pengurusan kemudahan lestari di Malaysia, terutama di agensi kerajaan.

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LIST OF ABBREVIATIONS

SFM	-	Sustainability Facility Management
FM	-	Facility Management
JPPH	-	Jabatan Penilaian dan Perkhidmatan Harta
UTM	-	Universiti Teknologi Malaysia
JKR	-	Jabatan Kerja Raya
UiTM	-	Universiti Teknologi Mara
USM	-	Universiti Sains Malaysia
Sr	-	Surveyor
Dr	-	Doctorate
UNEP	-	United Nation Environment Program
RMK	-	Draft Malaysia Plan
IFMA	-	International Facilities Management Association
BIFM	-	British Institute Facilities Management
SC	-	Sustainability of the Construction
RII	-	Relative Importance Index
PI	-	Problematic item

LIST OF SYMBOLS

k	-	Modifoed Kappa coefficient
pc	-	Probability of random agreement
N	-	Number of experts
A	-	Number of very important scores (3 and 4)
CVI	-	Content Validation Index

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Components of this research will explain in this section which it consist of background of the research, problem statement, research questions, research objectives. research scope, research significant, explanations and discussion of the research flows and methodology are also described in detail through the chart and organisation of chapter.

1.2 RESEARCH BACKGROUND

Facility management (FM) involves a lot of expertise, it is a combination of operating and maintenance activities and facilities services. The fundamental factor in the facilitation of facilities management is the combination of several components of management to support the goals, visions & missions and objectives of the business owner. In addition, there are "real estate management, financial management, change management, human resource management, health and safety, contract management, addition to building services and maintenance engineering, domestic services and utilities supply" (Alexander, 2009; International Facilities Management Association (IFMA), 2018).

FM is a more popular area in Malaysia. The construction of the mega project in the country is an booster factor towards increasing demand for facilities management services. However, as explained earlier, the FM covers various fields i.e. not for large buildings or facilities only but all building or facility types regardless of size service. This is because the buildings or facilities need to be managed efficiently and effectively to ensure the core business objectives of an organization are achieved.

Therefore, in this situation the knowledge of sustainability of facilities management (SFM) among all those involved with the facility needs to be applied and enhanced.

Sustainability is a process of maintaining change in a balanced way, where resource exploitation, investment direction, technology development orientation and institutional change all harmonize and enhance the present and future potential to meet human needs and aspirations. For many in the field, sustainability is defined through a domain or pillar that is interrelated: environmental, economic and social. Sub-domains of sustainable development have also been considered: culture, technology and politics (James et al., 2015). The Brundtland Report for the World Commission on Environment and Development (1987) introduced the term sustainable development; "Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

Most developing countries such as China, United Kingdom, Australia, Japan, Singapore and others have taken action and changed the way they work towards sustainable development and practice in every aspect of their core business. Most countries recognize that the key to a country's prosperity depends on its global competitiveness and ensuring the production of high quality products and services and meeting the demands of the world. In order to achieve and maintain a good position in this global competitiveness, sustainable development in every aspect of the economy, social environment and environment should be given priority. Competitive countries tend to have faster economic growth (World Economic Forum, 2016).

Sustainability in the development of a country can be considered as the heartbeat of development and can enhance the image as well as the quality measurement parameters between countries. Sustainable development is now recognized as a critical success factor for both the government and in any industry (Brundtland International Institute for Sustainable Development, 2017). Since then, the concept of sustainable development has been mentioned on various international platforms and, the movement towards "sustainability" has grown worldwide.

Meanwhile, awareness of sustainable development based on economic, social and environmental dimensions has increased over time both globally and in our country. This is clear where the concept of green building, the practice of building structures and implementing environmentally responsible processes is used. It is also an effective source for building a life cycle from the design, operations, maintenance, renovation and analysis of key agendas of current project development.

To ensure that all facilities reach a sustainable level of sustainability as author have mention earlier, the person who is best suited to handle this is the facility manager or facilities organization that has been appointed to manage the facility. In the Malaysian context, Nizam Kamaruzzaman, S. and Marinie Ahmad Zawawi, E. (2010) have stated that JKR is the only government agency that has used and practiced FM today, indicating that the government has played an important role in the development of Malaysia.

JKR has implemented several initiatives in the government's agenda to provide understanding to all facilities practitioners in Malaysia on FM such as holding seminars and courses in stages to all Ministries in Malaysia starting in 2008. Among the first initiatives implemented in support of the government is to introduce Government asset management practices and on March 27, 2009 with the support of Minister Abdullah Ahmad Badawi at that time the Government Asset Management Policy was gazetted.

Further, other efforts were made by issuing General Circular No. (1), 2009: Comprehensive Asset Management Manual, General Circular No. (2), 2012: Asset Management Procedures (Tatacara Pengurusan Aset Tak Alih - TPATA) including Acceptance & Disposal Procedures, Operations & Maintenance Procedures, Assessment Procedures Assets and Recovery & Upgrade Procedures. Sistem pengurusan aset tak alih kerajaan – MySpata also been introduce.

However, the initiative undertaken by JKR will not be effective if those involved with FM do not work together to ensure that all the facilities will reach a sustainable level of sustainability. One of the main challenges is the lack of understanding of the sustainability concept (Anne, 2009).

Particularly where with the increase in population the number of buildings is increasing. The same goes for the construction of government buildings especially for the provision of public service facilities. Sustainable practices are therefore an important area for FM professionals, where they need to develop their capabilities to meet future demands, challenges and opportunities for sustainable development and practice (British Institute of Facilities Management (BIFM), 2018). Video provides a powerful way to help you prove your point. When you click Online Video, you can paste in the embed code for the video you want to add. You can also type a keyword to search online for the video that best fits your document. To make your document look professionally produced, Word provides header, footer, cover page, and text box designs that complement each other. For example, you can add a matching cover page, header, and sidebar. Click Insert and then choose the elements you want from the different galleries.

Themes and styles also help keep your document coordinated. When you click Design and choose a new Theme, the pictures, charts, and SmartArt graphics change to match your new theme. When you apply styles, your headings change to match the new theme. Save time in Word with new buttons that show up where you need them. To change the way a picture fits in your document, click it and a button for layout options appears next to it. When you work on a table, click where you want to add a row or a column, and then click the plus sign.

1.3 PROBLEM STATEMENT

FM is a process that connects all elements of the organization in a way that optimizes the economy, environment and social benefits of sustainability, while SFM is extrapolated as a monitoring of sustainability delivery in the context of FM. In the ideal situation, the Facility Manager must be knowledgeable and skilled in managing the facility to achieve the goal of sustainability. Facility managers at existing facilities need to have good and well-planned strategies. Design and use existing resources efficiently and have a number of proven techniques that can make management processes more efficient, reduce negative impacts on the environment, and provide a comfortable, early and productive environment for staff and end users.

In this context, before the facility manager or facility organization plans to achieve the goal of SFM. They should be aware of and identify factors that may be a hindrance to such a plan so that initial preparation can be carried out to achieve a successful outcome. However, what happens to existing approaches to sustainable development is focused on technical, physical and cost issues and is often reactive; it only works in the event of a disaster. Unplanned construction and poor community attitudes are one of the leading causes of environmental problems, especially in developing countries (Martinez, E. et al., 2008).

While the fact is that word sustainability has always been a trend in the industry, if we look back it is similar to the green building scenario when trying to meet the growing demand for sustainable buildings starting with Green Buildings & Park World 2015 organized in Kuala Lumpur in the beginning August, 2015. Most enthusiasts of the building industry are eager to build a building that meets the following characteristics.

The need is seen as a wave where when there are issues related to facilities management then the need to establish sustainability is seen as important while in the absence of issues raised it is considered insignificant. There are many studies that discuss general and specific developments in a particular area of expertise, but no studies have been conducted on the factors that need to be taken to ensure sustainability goals are achieved in direct facility management. In fact, we don't know what that factor is.

Although SFM is an important factor in the FM industry, it is still not studied in detail. Table 1.0 shows some of the studies on sustainable development in the management and research of facilities in certain sectors that have indirectly influenced the sustainable development undertaken in Malaysia over the last 10 years.

Table 1.1 Some of the studies on sustainable development in certain factor in Malaysia

AUTHORS	RESEARCH TITLE	RESEARCH STATEMENT	RESEARCH METHODOLOGY	LIMITATIONS	FINDINGS
Alyaa Afifah Abu Talib et al (2020)	Positioning Strategic Sustainable Facilities Management (SFM) For Hotel Industry in Malaysia	Researchers emphasize their focus on sustainable facilities management strategies in the field of hotel industry in Malaysia	Field studies and qualitative meta-analysis.	Focusing only on the hotel industry	Implementation SFM initiatives is critical in the hotel industry for holistic sustainable practices. The practices are reflection of the company's sustainability in their assessment of quality and efficiency and management reporting can provide better hotel access to its capital.
Serdar Durdyev et al (2018)	A partial least squares structural equation modeling (PLS-SEM) of barriers to sustainable construction in Malaysia	This paper analyses the barriers to the adoption of the triple-bottom line of sustainability of the construction sector within the developing country of Malaysia.	Field studies and presented in the form of a hypothesized model. Quantitative analysis through the administration of survey questionnaires to 122 construction stakeholders in Malaysia and used minimal structural equation modelling (PLS-SEM) to stastically validate the final model obstruction to the sustainable construction.	Focusing only on the construction field	The findings of this paper reveal the most important factors that hinder the SC in Malaysia and reveal that clear and effective legal processes are essential for enforcement of SC integration of materials and practices and economic incentives that will ultimately lead to effective implementation of SC initiatives.

AUTHORS	RESEARCH TITLE	RESEARCH STATEMENT	RESEARCH METHODOLOGY	LIMITATIONS	FINDINGS
Asra Zaliza Asbollah et al. (2016)	Sustainability and the facilities management in Malaysia	This paper aims to understand and identify the contribution and practices of sustainable facilities management in Malaysia; focusing on the development taken in regards to SFM.	Literature and field studies	FM is quite new in Malaysia's environment	SFM required a good understanding of development plan policy and sustainable development policy. Facility Manager play a major role in realizing it.
Mahmoud Sodangi et al. / Procedia Engineering 77 (2014) 11 – 19	Best Practice Criteria for Sustainable Maintenance Management of Heritage Buildings in Malaysia	This paper is aimed at identifying and ranking the criteria that support sustainable best practice of heritage buildings in Malaysia	.Data collected through questionnaire which covered a selected sample of experts in the field of heritage building conservation. Data were analyzed using Relative Importance Index (RII), Kendall's concordance test, and Pearson's Chi-Square test	Focusing only on the maintenance of heritage buildings	The results show the maintenance staff training and expertise are the criteria that respondents consider most important. This paper is a pioneering attempt at establishing criteria that support sustainable best practices in maintenance management of heritage buildings in developing countries such as Malaysia.

AUTHORS	RESEARCH TITLE	RESEARCH STATEMENT	RESEARCH METHODOLOGY	LIMITATIONS	FINDINGS
A.A Saleh et al. / Procedia Engineering 20 (2011) 269 - 278	An Approach to Facilities Management (FM) Practices in Higher Learning Institutions to Attain a Sustainable Campus (Case Study: University Technology Mara - UiTM)	This paper highlights the opportunity to advance sustainable development goals within the campus (higher learning institutions)	Literature and field studies. The analysis for this paper is based on case study (document review - qualitative analysis)	Only focus on sustainable development in institutions of higher learning	One of the critical factor in sustainable development is a development culture in society.
Syed Abdul Haris et al (2008)	Facility Management Challenges and Opportunities in the Malaysia Property Sector	This paper focuses on changes that occur at both the corporate and governmental levels that directly impact the development of FM in Malaysia	Literature and field studies	FM is hardly reconized in Malaysia because FM is realtively new in Malaysia and much it's wider concept of FM of building msnsgement is still in the process of improving its maintenance management structure.	FM Challenges: 1. The non-existence of standard 2. Lack of local expertise as well as lack of practitioners in the local market 3. The implementations of FM is considered late for some properties as at present 4. Malaysia is still lagging behind in the aspect of FM software (technology)

Although there are few studies on the need for sustainable development, but the emphasis on the study of the factors that cause or that determine the sustainability of whether successful or not has yet to be implemented again. Then, if we do not conduct research on these factors, we may not be able to produce SFM solving, planning and recommendations. Eric Weiner, the New York's times bestselling author has written in his book *The Geography of Bliss* as follows; "Only when the last tree dies and the last river is poisoned and the last fish caught, do we realize that we cannot eat the money." These words raise awareness among the public about the importance of sustainable development. So, one of the ways to solve this problem is to conduct research and identify the factors that hinder this sustainability of development. In the context of this paper, the author focuses on the development of sustainability in government agencies.

In addition, the writing is in line with the goals of the Malaysian nation through the essence of Prime Minister Tun Dr Mahathir Mohamad's speech at the Sixth SDG Leaders Summit: 'Vision 2020-2030' in New York on September 25, 2019 led by the United Nations (UN). He said the Draft Malaysia Plan (RMK) would embark on the implementation of the Sustainable Development Goals (SDG) and one of his speeches was, "We know the assets, weaknesses and what can be achieved if we do it properly for the future of Malaysia, we have now achieved a number of goals,". Based on this statement, the identification of factors that impede the sustainability of facilities management conducted in this study is expected to assist industry practitioners especially among government agencies before implementing or monitoring their implementation in achieving Malaysia's aspirations for sustainable development.

1.4 RESEARCH GOAL

Based from the main research statement above, research questions for this study are as follows:

- (a) What are the factors hindering sustainable facilities management in Malaysian government agencies?
- (b) What are the critical factors that hinder sustainable facilities management in Malaysian government agencies?

1.5 RESEARCH OBJECTIVES

- (a) In order to achieve the research aim, the following research objective are established:
- (b) To identify factors hinders sustainable facility management in Malaysian government agencies
- (c) To determine critical factors that hinder Sustainable Facilities Management in Malaysian government agencies

1.6 RESEARCH SCOPE

This study will discuss all issues related to FM, SFM and how the process is being implemented to achieve the current level of sustainable facilities management in government agencies. It involves the collection of primary and secondary data that will be analyzed in accordance with the objectives of this study

1.7 RESEARCH SIGNIFICANT

- (a) Recommendation for this study is can be as a guide to those involved in managing facilities in government agencies in particular and private agencies in general to plan proactively in ensuring that all facilities in Malaysia are well maintained and meet the needs of present and future generations
- (b) This study can be as a guidance to government agencies during the process of monitoring the sustainable facilities management
- (c) his study will help facilities practitioner to raising their awareness levels, knowledge and improve the skills of facilities management to be more effective
- (d) This study can be used as an added knowledge and to assist further research in get more details information of sustainable facilities management especially to improve it and find an effective solution to achieve the goals of sustainable facilities management in Malaysia

1.8 RESEARCH METHODOLOGY

Methodology is an approach to conducting research. It must be a systematic way of obtaining, collecting and analyzing data accurately and effectively to obtain accurate research results at the same time to develop or create new knowledge. methodological procedures involve design selection, data collection, population determination, sample selection, testing and data analysis. The aim of the study is based on the issues raised.

The study was conducted in two phases to achieve the stated objectives. Each of these phases describes the methods used such as who is involved, the analysis techniques used to achieve each of the study objectives. The stages of the study were performed as described in the Figure 1.0 as below:

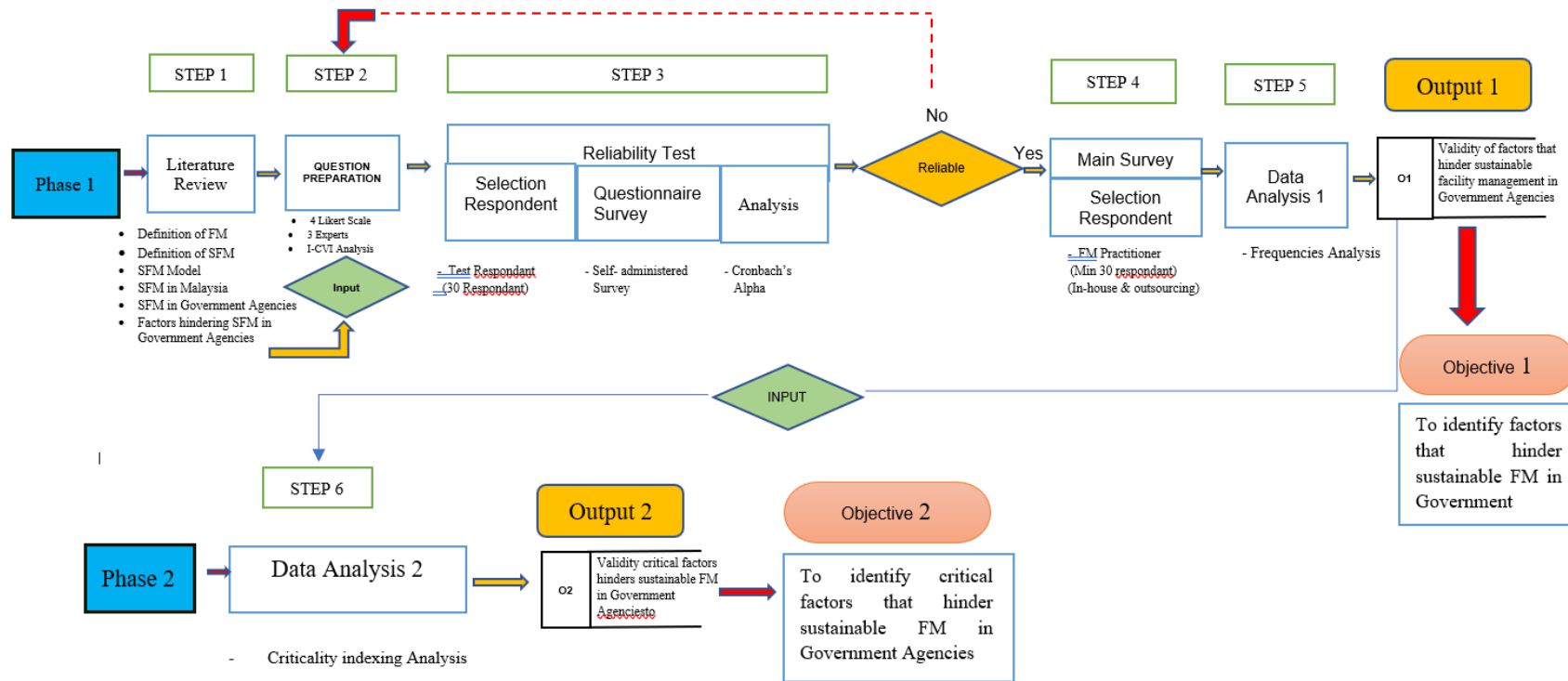


Figure 1.1 Flowchart of Research Methodology

1.9 ORGANISATION OF CHAPTER

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:

Chapter 1: Introduction

This chapter explain about 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 such as journal and relevant past theses, books, conference paper, report, websites, discussion and interview.

Chapter 2: Literatute Review

Literature review is the first stage of research. At this stage, research activities place greater emphasis on information on objectives and background. According to some authors, the literature review is a discussion of previous researchers and is documented in a descriptive form for specific research.

This chapter explain about definitions, factors hindering facilities management in government agencies and conclusions. The reader will get a clearer picture of the study being conducted. At this stage, it will help to gain insights and ideas on solutions for achieving sustainable facilities management at government agencies.

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