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A Study on the Critical Success Factors of Facilities Management in Private Malaysia's Healthcare

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ABSTRACT

Facilities management (FM) focuses on combining people, spaces, processes, and technology to create a safe and efficient built environment, comfortable, functional, and efficient. As healthcare facilities dedicated to providing medical services are no exception to the need for effective facilities management. Various studies have explored, identified, described, and discussed the Critical Success Factors (CSFs) that contribute to the successful implementation of FM, especially in the healthcare sector. As a result, this study was conducted to examine the CSFs for implementing FM in private healthcare facilities in Malaysia. The eight (8) key Critical Success Factors identified in this study are crucial for the effective performance of facilities management, based on a review of the literature and a questionnaire survey conducted with facilities management experts, which provided valuable insights. The study will utilized the key methodologies of the Cronbach's Alpha and Descriptive Statistics. The results revealed that "top management commitment and support" ranked highest, followed by "budget and cost effectiveness" and "strategic planning," as the most critical success factors for facilities management (FM) in Private Malaysia's healthcare sector. The importance of top management commitment in the successful implementation of FM is showed, as their decisions and support are key to enhancing overall FM performance. This study is expected to benefit healthcare practitioners by raising awareness about the importance of critical success factors in FM implementation.

Keywords: Facilities management; critical success factors; Malaysia private healthcare

INTRODUCTION

Facilities management (FM) is essential to maintain clean, safe, and healthy environments within buildings (Kadir et al. 2025; Mohd Isa et al. 2016). In the context of healthcare, FM shares similarities with other industries and is defined as the management of healthcare facilities, which are spaces dedicated to providing medical services (Pakrudin et al. 2017). Facilities Management (FM) originated in the late 1980s and early 1990s, initially emerging from the property and construction industries before evolving into a distinct sector (Meng 2015). Facilities management plays a crucial role in optimizing an organization's physical assets, encompassing the proposing, drawing, and operation of buildings, systems, tools, and furnishings. This integrated approach enhances infrastructure, supporting sustainability, efficiency, and competitive advantage in a rapidly evolving environment (Kadir et al. 2025; Ramli, 2023; Isa et al. 2016). FM can be defined as a process that ensures the maintenance and functionality of buildings and technical systems, supporting the organization's operations. As a result, there has been a growing focus on improving FM practices in healthcare to enhance competitiveness and efficiency. There has been an increasing emphasis on effective FM in the healthcare industry to enhance competitiveness afterward efficiency (Kadir et al. 2025). This study aims to this study was conducted to examine the CSFs for implementing FM in private healthcare facilities in Malaysia, focusing on key elements such as training, strategic planning, customer needs, teamwork

effectiveness, top management commitment and support, the competence and expertise of facilities managers, and budgetary or cost-effectiveness and operational efficiency.

In the healthcare sector, achieving successful outcomes requires not only a focus on clinical performance but also on the efficient management of healthcare facilities, which is equally crucial for the overall success of the system. The concept of Critical Success Factors (CSFs) pertains to the core elements that are most instrumental in ensuring the successful completion of a project, standing out in importance relative to other variables (Ebrahimipour et al. 2024). Within the healthcare context, identifying these CSFs is essential for pinpointing the key determinants that drive the effective delivery of healthcare projects. As such, defining the CSFs for a particular initiative becomes a fundamental step toward securing its successful implementation. In the Malaysian healthcare industry, an in-depth analysis of these CSFs is vital for advancing the effective deployment of Facilities Management (FM). This examination complements existing research and historical data, which, while valuable, may not fully address the unique challenges and evolving needs of the sector. Therefore, a focused inquiry into CSFs in this context not only aids in informed decision-making but also contributes to the overarching goal of enhancing healthcare facility management in Malaysia.

In numerous industries, Facilities Management (FM) has become a key strategy due to its ability to reduce costs. FM is widely acknowledged as an efficient tool for cutting operational expenses, particularly through outsourcing services (Mohd Noor & Pitt, 2010). The successful implementation of FM to achieve cost savings has contributed to its rapid expansion as a profession, especially in the UK (Myeda and Pitt, 2014). In Malaysia, the government has been instrumental in promoting the development of FM, particularly since the 1990s. In 1996, the Malaysian government began privatizing non-clinical support services in government hospitals by awarding contracts to three private FM companies (Nizam Kamaruzzaman and Marinie Ahmad Zawawi 2010; Ramli 2023)

This privatization initiative was driven by the desire to harness private sector resources to more effectively manage government assets and improve the quality of services in public hospitals(Isa et al. 2016). The three private companies involved in this privatization project were Radicare (M) Sdn. Bhd, Faber Medi-Serve Sdn. Bhd, and Pantai Medivest Sdn. Bhd (Saddum, 2015) These concessionaires took on a range of responsibilities, including Clinical Waste Management Services (CWMS), Linen and Laundry Services (LLS), Cleansing Services (CLS), Biomedical Engineering Maintenance Services (BEMS), and Facility Engineering Maintenance Services (FEMS).

LITERATURE REVIEW

FACILITIES MANAGEMENT

A facility is typically regarded as a physical or solid asset that facilitates an organization's operations (IFMA,2024;Alalade et al. 2024). Consequently, the buildings and solid assets used to deliver healthcare services are referred to as healthcare facilities. The efficacy of the healthcare industry relies on proficient facilities management, which integrates resources and operations to promote a productive and secure working environment (Lai et al. 2022). Although FM emerged as an independent industry in the 1970s and 1980s in the United States, it has largely been neglected in academic literature. This has resulted in a misconception that FM can be implemented without acknowledging its supply structure as a core competency, a notion that has not been thoroughly addressed. Over the years, various authors have provided definitions of FM, with most highlighting three common elements: people, place, and process. Facility managers across various sectors frequently possess varying educational backgrounds and are generally not background of FM programs, which exacerbates the issues faced in facility management (Mewomo et al. 2022). Nevertheless, in the healthcare industry, the implementation of FM is focused on creating an environment that supports the primary goal of providing high-quality services to patients. However, executing FM can be complex, as it involves a wide range of activities, such as managing the physical environment, ensuring facilities perform well from the customer's perspective, addressing financial considerations within the healthcare sector, and more (Lavy & Shohet, 2007). Facilities Management is an activity that requires input from various skill levels. The process involves strategic planning of the working environment and alignment of stakeholders with the core business objectives (Mohd Isa et al. 2017).

DEVELOPMENT OF FACILITIES MANAGEMENT IN MALAYSIA'S PRIVATE HEALTHCARE

Malaysia's healthcare system shares similarities with certain European models, particularly the German model, which differentiates with the public and private healthcare sectors (Thomas et al. 2011a). Thus, private commercial healthcare sector primarily serves wealthier segments of the population. Households and individuals account for 42% of healthcare expenditures, while the government funds the remaining 58% (Madding, 2011). Since its independence in 1957, Malaysia has experienced considerable evolution in its healthcare system. The

colonial healthcare system in Malaysia was initially designed to cater to the plantation sector, civil servants, and other government employees. Over time, however, this system was expanded to serve the broader population. During the colonial period, healthcare facilities were largely concentrated in urban centres, with a predominant focus on curative care (Olanrewaju et al. 2022). In the aftermath of World War II, there was a concerted effort to expand healthcare services to rural areas, driven not only by broader development objectives but also as a strategic response to the Communist insurgency (Ramli 2023; (Quek 2014). In Malaysia, the government has been instrumental in the development of facilities management since the 1990s, therefore in 1996, The government transferred the non-clinical support services of public hospitals, delegating these functions to three commercial facilities management firms. through a formal privatization process (Kamaruzzaman and Ahmad Zawawi 2010). Thus, in 2002, Malaysia's total health expenditure accounted for 3.8% of its GDP, with 56% of this amount allocated to the public sector. According to Ministry of Health (MOH) was the principal source of public health funding, accounting for 86%, primarily financed through general taxation. In contrast, the private sector received 74% of its funding from out-of-pocket expenditures by households. At that time, only 19 private hospitals in Malaysia held accreditation. In 2024, the Malaysian Society for Quality in Health (MSQH) had accredited 74 private hospitals, out of a total of 216 private hospitals in the country (MOHE 2025; MSQH 2024).

CRITICAL SUCCESS FACTORS

The crucial elements that must be effectively managed to ensure the success of a manager or organization are the definition of critical success factors (CSFs). In the perspective of healthcare, facilities management must prioritize these CSFs to ensure the successful implementation and optimal performance of FM within private healthcare organizations, particularly hospitals (Pakrudin et al. 2017). Since FM focuses on service functions, its success does not stem from a single source but requires contributions from various factors and disciplines to meet the needs of the community (Boynton and Robert, 1984; Kam-shim 1999; Boynton et al. 2001) Numerous studies particularly within the healthcare sector, have been undertaken by researchers to identify and propose CSFs for facilities management. These factors, which are pivotal to the effective implementation and performance of FM, have been thoroughly examined, described, and analysed in a range of scholarly works (Pakrudin et al. 2017). This study identifies and determine eight (8) CSFs, derived from a inclusive review of extant literature and prior research. Among these, the provision of adequate training and staff development is consistently highlighted as a fundamental element for the successful adoption of facilities management in hospitals (Pakrudin et al. 2017; Dahlan and Zainuddin 2018; Low & Zhu 2016; Sapri et al. 2016), next a proper and strategic planning must be conducted if an organization is intended to initiate a new way to run the operation and business (Pakrudin et al. 2017; Asbollah et al. 2016). Follow by customer needs is a vital factor that led to success FM in private healthcare sector (Pakrudin et al. 2017; Low & Zhu 2016a; Mukelas et al. 2012). The most significant teamwork effectiveness factor has been identified as this factor is contributing to the improvement on the effectiveness of FM adoption (Pakrudin et al. 2017; Mukelas et al. 2012; Sapri et al. 2016). The aspect of top management support and commitment as a CSFs across many sectors and areas (Pakrudin et al. 2017; Low and Zhu 2016a; Sapri et al. 2016).However, the facilities manager must be competent and knowledgeable to ensure success in their roles and responsibilities. They are tasked with ensuring the comfort, safety, functionality, and efficient operation of buildings by integrating the building and the people within it (Low and Zhu, 2016a;Sapri et al. 2016). Strategy indicator of FM services in healthcare, especially regarding healthcare equipment, is crucial to prevent errors that could potentially result in loss of life (Pakrudin et al. 2017; Dahlan and Zainuddin 2018; Low and Zhu 2016a) and lastly Cost-effectiveness and efficiency are key factors contributing to the success of the FM services provided by the organization (Dahlan and Zainuddin 2018; Low and Zhu 2016a).

METHODOLOGY

The figure 1 shown a study diagram, predominantly employed a quantitative research approach to achieve its objectives, utilizing a questionnaire survey as the primary data collection method. A thorough literature review was conducted to enhance the understanding of the subject matter and identify existing gaps in research regarding the Critical success factors of facilities management in private Malaysia's Healthcare, with a particular focus on Malaysia. The literature review involved an extensive analysis of relevant academic journals, conference papers, news articles, e-books, and other online resources.

This study employed two primary approaches which are primary data with secondary data. Primary data referring to initial, unpublished information that remains intact and unmodified by any individual (Taherdoost 2021). A quantitative data collection approach was utilized to

obtain primary data from a substantial sample population, ensuring the reliability of the findings and their alignment with the research objectives. Additionally, secondary data was acquired through an extensive and systematic review of pertinent literature (A.-S. T. Olanrewaju et al. 2020).

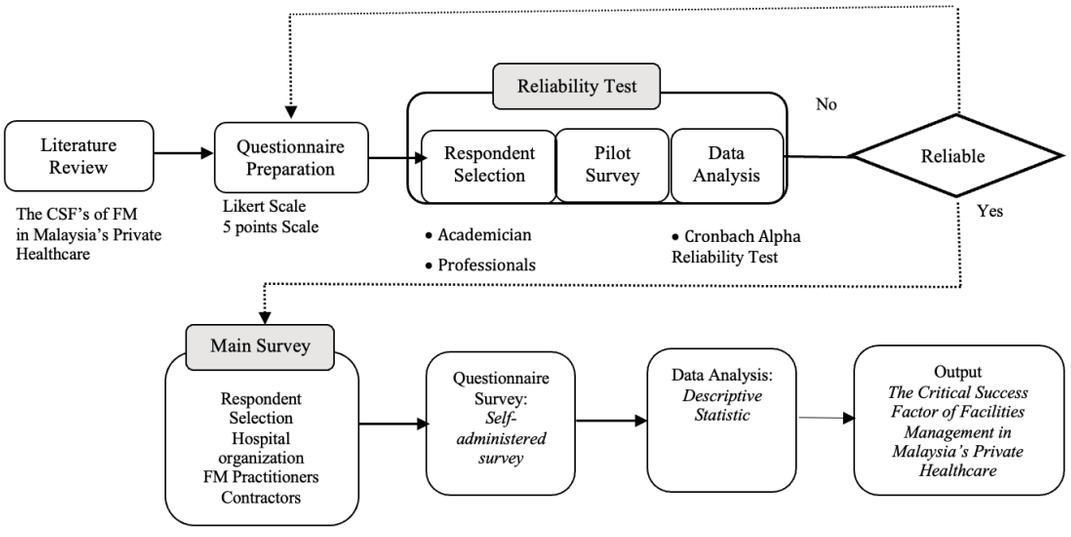

FIGURE 1. The study's Research Diagram

QUESTIONNAIRE PREPARATION

The questionnaire employed in this study comprised closed-ended questions using a 5-point Likert scale, extending from the strongly disagree to the strongly agree, with a midpoint option representing neutrality (Joshi et al. 2015). The 5-point scale was chosen to accommodate respondents who may be unsure or unable to express a clear agreement or disagreement, allowing them to select a neutral or not sure response. Subsequent, a pilot survey is a preliminary the design to assess the validity, reliability, and effectiveness of research instruments such as questionnaires, interviews, checklists, or observation schedules using a small-scale study (Hassan et al. 2006). It intends to reduce the likelihood of respondents facing challenges while answering questions, resolve any data recording issues, and evaluate both the validity of the questions and the dependability of the data to be gathered (Saunders et al. 2023). In addition, one advantage of conducting a pilot survey is that it can help find any problems with the measurement processes. This includes finding any questions that are not clear or ambiguous. Hence, A pilot survey is conducted to vigilant the researcher about potential issues the main research may face and to determine whether the proposed methods or instruments are unsuitable or exceedingly complicated (Fellows & Liu 2008).

RESPONDENT SELECTION

This study comprises three group of the respondent, hospital organizations, facilities management teams and contractors of private hospitals. They were selected due to the role they play in the FM in Healthcare. The scope of FM for private healthcare covers civil and infrastructure, biomedical, mechanical, and electrical etc. The respondent selected involved are from Klang Valley, Malaysia. A total of 120 respondents were aimed from private hospitals in Klang Valley.

The eight Critical Success Factors (CSFs) identified in the literature were analyzed to ascertain the relevant determinants for facilities management within the private hospital sector. Given the impracticality and cost inefficiency of conducting a census of the entire population (Mujere, 2016), a sample approach was adopted to facilitate a more manageable and effective research process, while still providing valuable industry insights. The study specifically targeted facilities management professionals and contractors operating in private hospitals within the Klang Valley, which encompasses the Wilayah Persekutuan Kuala Lumpur (WPKL) and Selangor regions. These areas were selected due to the high concentration of hospitals in the region. According to the Ministry of Health (2025), by 2025, Malaysia will have 216 licensed hospitals under Act 586, with 99 located in the Klang Valley, highlighting the region's significance.

The varied professional backgrounds of the respondents were considered a key strength of the study, as their diverse roles across different operational areas are expected to offer distinct perspectives on the implementation of CSFs. Consequently, the study aimed to include respondents irrespective of their age, gender, or educational background, ensuring a comprehensive representation of the sector.

SAMPLE SIZE

In this study, the Central Limit Theorem (CLT) was employed to ensure reliable population inferences and robust results. The CLT asserts that, with a sufficiently large sample size, the sampling distribution of the mean will approximate a normal distribution, thereby simplifying statistical analysis and inference (Ganti 2024). This implies that a well-chosen sample will yield statistics or characteristics that are closely representative of the entire population (Mweshi & Sakyi 2020; Salari 2019). Generally, a sample size of 30 or more is considered adequate for the CLT to apply. Accordingly, this study set a minimum sample size of 30 for each group to ensure that the analysis would produce valid and meaningful results.

QUESTIONNAIRE SURVEY

A questionnaire was selected as the primary data collection method for the targeted respondents. This tool consists of a series of structured questions aimed at gathering specific information from a chosen sample of the population (Ramli, 2023). The decision to use this approach was driven by its efficiency in distribution through online platforms, enabling faster data collection compared to alternatives such as interviews, which are often more time-consuming and require extensive coordination with participants. As a result, this method proved both practical and advantageous, allowing for the rapid gathering of extensive data from a diverse range of construction professionals. Additionally, it ensured the responses were reliable, consistent, and comparable, simplifying the data analysis process in later stages. In contrast, the qualitative method was deemed less suitable for this study, as it focuses on individual experiences, opinions, and perspectives, which was not the primary aim of this research.

The study targeted a total of 120 respondents, with 106 completed questionnaires returned. A self-administered survey was conducted among 120 selected hospital organizations, hospital organizations, facilities management teams and contractors. Respondents were provided with a four-week period to complete the survey. At the end of this period, 106 completed questionnaires were successfully returned from the facilities management professionals and contractors.

DATA ANALYSIS

The validity of the questionnaire content was assessed through a pilot survey involving 30 selected respondents, including both academics and professionals. Furthermore, reliability was assessed through the application of Cronbach's Alpha test, wherein items achieving a Cronbach's Alpha coefficient exceptional 0.7 were considered to exhibit appropriate internal consistency and reliability (Taber, 2018). Based on the Cronbach's Alpha values presented in Table 1 below, the results for all eight (8) CSFs of facilities management in this study are considered reliable, exhibiting strong internal consistency, as the Cronbach's Alpha values for each section surpass the threshold of 0.7 (Morera & Stokes, 2016). Therefore, out of the 120 questionnaires distributed to the relevant respondents, 106 were successfully returned. The data were subsequently analysed using statistical methods; frequency and Descriptive Statistic.

TABLE 1. Reliability Test

Description	Cronbach's Alpha	N of items
Critical Success Factors of FM	0.755	8

Derive from the data collected, the study identified a total eight (8) CSFs of facilities management in Malaysia's private healthcare. These CSFs are proper training and staff development, proper and strategic planning, customer needs, teamwork effectiveness factor, top management support and commitment, Competent and knowledgeable, Performance measurement of Facilities Management and Cost-effectiveness and efficiency. The result of questionnaire shown on Table 2.

TABLE 2. The Result of Questionnaire Survey

Critical Success Factors	Mean	Standard Deviation	Ranking
Provide proper training and staff development.	3.82	1.498	7
Provide proper strategy planning.	4.06	1.358	3
Focus and improve of customer needs	3.98	1.272	6
Teamwork effectiveness factor	4.01	1.320	5
Top management support and commitment	4.51	0.784	1
Facility manager/staff competent and knowledgeable in FM Healthcare.	4.02	1.227	4
Equipment's Performance measurement of Facilities Management	4.02	1.277	4
Cost-effectiveness and efficiency (Budget)	4.22	1.138	2

Table 2 presents the eight (8) CSFs identified for the implementation of facilities management within Malaysia's private healthcare sector. The findings highlight top management commitment and support as the most critical factor, followed by budget and cost-effectiveness and strategic planning. The pivotal role of top management commitment in the effective execution of facilities management is evident, as their decisions and support show a crucial part in optimizing overall FM performance within the private healthcare industry. This finding is consistent with earlier research, which highlights the critical importance of strategic planning when organizations seek to implement new operational strategies and business models hospitals (Pakrudin et al. 2017; Dahlan and Zainuddin 2018; Sapri et al. 2016). Furthermore, cost-effectiveness and operational efficiency were identified as essential contributors to the success of FM services within healthcare organizations hospitals (Dahlan and Zainuddin 2018; Low & Zhu 2016) reinforcing the importance of well-conceived strategic planning for organizations pursuing innovative operational strategies (Pakrudin et al. 2017; Alalade et al. 2024).

The respondents identified top management commitment and support as the most crucial factor for the successful implementation of facilities management, assigning it the highest mean value of 4.51. This support is essential because top management controls most of the organization's resources (Pakrudin et al. 2017; Ebrahimipour et al. 2024). Their involvement not only ensures adequate resource allocation but also motivates staff by fostering a positive and supportive environment, encouraging enthusiasm and commitment toward their responsibilities.

Additionally, the survey results highlighted the importance of budget allocation and cost-effectiveness as key success factors in facilities management within the healthcare sector. With a mean value of 4.22, these factors ranked second among the eight items surveyed. Adequate budgeting is critical for facilities management in healthcare institutions, particularly hospitals, given the high costs associated with healthcare services and infrastructure. This finding corresponds with (Low and Zhu, 2016a) study, which stressed the significant financial investment necessary for effective facilities management in healthcare environments.

The survey further underscored the importance of strategic planning for successful facilities management implementation, ranking it third with a mean value of 4.06, as detailed in Table 2 Strategic planning is a fundamental component in achieving effective facilities management, particularly in healthcare organizations (Thomas et al. 2011b; Pakrudin et al. 2017).

Moreover, the survey data presented in Table 2 revealed that respondents rated the competence and expertise of facilities managers as the fourth most critical factor for successful facilities management, with a mean value of 4.02. Equipment performance measurement was also rated in the same position, with a mean value of 4.02.

The knowledge and competence of facilities managers are vital to the success of facilities management, as they play a key role in guiding staff and ensuring the proper implementation of practices. According to Pheng and Rui (2016), facilities managers in healthcare settings must be highly skilled and proficient to prevent operational failures, facilities management at private hospitals is which can have serious consequences, including potential loss of life.

Additionally, the measurement of equipment performance was recognized as an essential success factor, ensuring the smooth operation of healthcare services and facilities. Regular performance assessments help maintain the efficiency and quality of hospital facilities, supporting the findings of (Sapri et al. 2016) who emphasized the role of performance measurement in improving facilities management effectiveness and overall healthcare service quality.

CONCLUSION

In conclusion, this study identifies eight (8 the CSFs that are fundamental to the effective execution of facilities management (FM) services within Malaysia's private healthcare sector. These factors are instrumental in enhancing the efficiency and success of FM operations, particularly within the healthcare domain. While existing research underscores the importance and benefits of these CSFs, there is a notable absence of a specific standard or guideline tailored to FM practices in private healthcare sector.

Investigating FM practices in Malaysia's private healthcare sector provides valuable insights for organizations to make important resolutions regarding their FM strategies, although the presence of diverse risks and challenges. Therefore, the development of a comprehensive and systematic framework for FM services in healthcare, particularly within government hospitals, is essential. Additionally, exploring strategic implementation factors through mixed-method approaches, including case studies, is crucial for gaining deeper insights into best practices and optimizing FM effectiveness.

Although various rating tools and guidelines outline these factors and services, there is a lack of research on their contribution to achieving sustainable hospital performance. To address this gap, the current study adopts a quantitative method approach, integrating questionnaires, multiple case studies, observations, and document reviews to collect in-depth data. Moreover, a range of statical analysis including Frequency and Descriptive Analysis, and Thematic Content Analysis are employed to ensure a robust and comprehensive interpretation of the data.

By establishing a strong basis Critical Success Factors (CSFs) of facilities management in private hospitals, this study helps to bridge the existing gap in the literature related to hospital building operations and maintenance.

The proposed for Critical Success Factors (CSFs) intended to promote ongoing improvement. Previous studies have highlighted the challenges associated with facilities management in private hospitals, especially due to the absence of standardized guidelines and the complexities involved in managing facilities management processes. The 8 identified factors offer valuable insights and direction for key stakeholders, including facilities management teams, hospital organizations, and contractors. Each of these factors plays a critical role in ensuring the success of facilities management, underscoring the importance of adopting a structured and effective approach to outsourcing management.

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DECLARATION OF COMPETING INTEREST

None.

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