Identifying critical success factors (CSFs) of Facilities Management (FM) in non-low cost high-rise residential buildings

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Abstract. Critical success factors (CSFs) are important key areas of activity that must be performed well in any Facilities Management (FM) organisation to achieve its missions, objectives or goals. Before implementing CSFs, an FM organisation must identify the key areas where things must be done properly to enable the business to flourish. Although many performance measurements in FM organisation have been discussed in previous research, not much research has been done on CSFs from the perspective of FM business in non-low cost high-rise residential buildings. The purpose of this study is to develop a methodology in developing the CSFs group and CSFs for FM organisation in non-low cost residential buildings. This research will involve three (3) phases of research strategy to achieve the objective of this research.

1. Introduction

High-rise residential building living is unlike that in a freestanding house. The actions, activities and attitudes of residents, residents’ association and the management can have significant living and environmental impacts on the satisfaction and enjoyment of others [1]. The main difference in high-rise living as compared to that in landed property is the need for residents to set up a Management Corporation (MC), the residents’ association, as enacted by the Strata Management Act 2013, to regulate and manage all the facilities and amenities together with the common area [2] such as the parking area, lighting and other common facilities that are shared, which were provided by the developer. Maintenance service charges payment which is collected from the residents, is the sources of fund for the MC to smoothen the activities of managing, maintaining and operating the building, services and facilities to ensure its optimal performance over its life cycle [3].

The major issue in high rise residential buildings is the dispute between the residents and the management of the MC [4][5]. Lai [6], consistent with Che Ani et al. [7] and Rahman et al. [8] claimed that the dispute was due to the existence of a management gap when there is a significant difference in the satisfaction levels among respondents regarding various components of facility management including finances, maintenance, and resident aspects, as well as regarding the efficiency of the management. Che Ani et al. [7] emphasized the dispute between residents and MC that occur due to the existence of a gap between FM service expectation and FM service quality received and those problems are unresolved regardless of the size and owners of the housing project. This gap results in the failure to keep up the payment, leading to insufficiency of funds, which in turn, affects the FM capacity to provide good service quality [9].

The failure to keep up payment by residents had led to building quality deficiencies [10] [11], rendered unreliable cost estimates [11] [10] and compromising safety and health issues [12]. To ensure that the buildings remain in good condition and to avoid the potential risk of accidents, excellent and
efficient FM is needed [13]. The Deming Theory of Management 1982 claimed that organisations should improve the system of service constantly. This theory also highlighted that in any product or service, the quality should be considered in the first place. According to Rochart [15], critical success factors (CSFs) are the few key areas that must go right and receive constant and careful attention from the management for the business to flourish. The author claimed that if results in these areas are not adequate, the organisation’s effort for the period will be less than desired. Previous research on CSFs of FM in non-low cost high-rise residential buildings in Malaysia, categorized with the built up area of 800 square feet to more than 1000 square feet [14] are still scarce. Therefore, the purpose of this research is to develop a methodology for the development of CSFs groups and CSFs which is an extension of earlier study by Che Ani et al. [7].

2. Literature Review

This research attempts to identify the CSFs group and CSFs from the perspective of FM in non-low cost high-rise residential buildings. Therefore, the Deming Theory of Management 1982, underpinned this research. This theory highlights product quality as the mainstay. In terms of service quality, an organization should focus on identifying quality which serves as key factors as their CSFs to be successful [15]. Previous research on CSFs efficiency of FM in non-low cost high-rise residential buildings in Malaysia are still scarce. In Hong Kong, using the Structural Equation Modelling (SEM), Hui and Zheng [16] identified that the service quality delivered to the residents significantly affects management quality instead of safety consciousness, security level, fire services equipment, and also professional knowledge of staff. Meanwhile, Lai and Yik [17] revealed that the result from an interview conducted on residents in Hong Kong showed that the cost effectiveness of FM services is the significant factor for evaluating the FM services delivered by the company. In addition, their findings also discovered that the quality of facilities, environmental quality and construction quality have a significant factor for achieving a quality and sustainability environment. Further study done by Lai [18] in three (3) different residential estates (public, semi-public and private) found that the highest service performance and cost levels was the private estate followed by the semi-public estate and public estate. However, the cost effectiveness was found reversed between the estates. Another study by Lam [30] on the perspective of outsourcing FM organisations found that instead of the transaction monitoring factor, market competition was also found as the fundamental economic forces for efficient FM in Hong Kong.

Previous studies in the Malaysian context done by Che Ani et al.[7], Mohd Ali et al.[21] and Ali et al.[22] discovered the financial factor as the crucial factor for efficient FM in high-rise residential buildings. Che Ani et al.[7] identified financial effectiveness, financial sources, financial allocation and financial expenses as the factors that need to be highlighted the most by FM organisations towards efficient FM. Another research by Mohd Ali et al. [21], who took sampling from flats, apartments and condominiums in Klang Valley revealed that the maintenance aspect and the financial factor influence the management capabilities. However, another study done by Douglas [25] focusing on outsourcing Malaysian FM companies in various types of property, revealed that flexibility strategy, integration of goals and companies strategy were the factors that can sustain the business of FM organisations.

Studies on CSFs of efficient FM focusing on non-low cost high-rise residential buildings had not been discussed a great deal and they were not comprehensive where the researchers only focused on the financial factor, human factor and economic factor. However, limited studies provide a comprehensive approach as the concept of the FM in organizations as defined by Douglas [25] theoretically lies in three elements, namely process, place and people. Therefore, the financial, human and economic factors are insufficient to achieve a more holistic approach towards attaining efficient FM. Those CSFs groups include; financial, customer base, internal process, learning & growth as well as design & construction quality.

In order to identify the CSFs group and CSFs, this research will involve three (3) phases of methodology to achieve the objective of this research.
| No | Critical Success Factors (CSFs) | Authors |
|----|---------------------------------|---------|
| 1  | Financial                        | Kalumbu, Mutingi, & Mbohwa [19], Yongtao, Liyin, Craig, Weisheng, and Michael [20], Tucker, Turkley, and Holgate [23] |
|    | Cost efficiency/value for money  | Kalumbu, Mutingi, & Mbohwa [19], Yongtao, Liyin, Craig, Weisheng, and Michael [20], Tucker, Turkley, and Holgate [23] |
| 2  | Customer                         | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12] |
|    | Communication between organization and customers | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12] |
|    | Customer expectation              | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12] |
|    | Relationship with customers       | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12] |
|    | Customer expectation              | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12] |
| 3  | Internal Process                 | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12] |
|    | Top management support           | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12] |
|    | Clear policy, strategy & planning | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12] |
|    | Experience in maintenance process & familiarity with maintenance & other maintenance plans | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12] |
|    | Adequate resources & expertise   | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12] |
|    | Appointment of capable manager   | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12] |
|    | General training & awareness for suppliers & customers | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12] |
|    | General training & awareness for suppliers & customers | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12] |
|    | Necessity & usage of audit/opinion for performance & quality assessment | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12], Abdul Mutalib, M. Sapri, and J. S. Mohammad [26] |
|    | Document control system (hard or soft version) | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12], Abdul Mutalib, M. Sapri, and J. S. Mohammad [26] |
|    | Company reputation/certification | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12], Abdul Mutalib, M. Sapri, and J. S. Mohammad [26] |
|    | Working conditions/working practice/good communication | Yongtao, Liyin, Craig, Weisheng, and Michael [20], Ganisen, Mohammed, Jawahr Nesn, Kamnyapan [12], Abdul Mutalib, M. Sapri, and J. S. Mohammad [26] |
| Learning & Growth |  |
| --- | --- |
| **Contract and risk management** | Yongtao, Liyin, Craig, Weisheng, and Michael [20] |
| **Lesson learnt** | Ganisen, Mohammed, Jawahr Nesan, Kanniyapan [12] |
| **Employee training** | Zushi and Sohal [24], Kalumbu, Mutingi, & Mbohwa [19], Yongtao, Liyin, Craig, Weisheng, and Michael [20], Tucker, Turley, and Holgate [17], Ganisen, Mohammed, Jawahr Nesan, Kanniyapan [12] |
| **Cultural changes/innovativeness** | Zushi and Sohal [24], Yongtao, Liyin, Craig, Weisheng, and Michael [20], Tucker, Turley, and Holgate [23], Ganisen, Mohammed, Jawahr Nesan, Kanniyapan [12], Abdul Mutalib, M. Sapri, and I. S. Mohammad [26] |
| **Learning from other organisations’ experiences and benchmarking** | Zushi and Sohal [24] |
| Design & Construction Defects |  |
| **Defective construction materials** | Waziri [28] |
| **Poor supervision** | Waziri [28] |
| **Defects due to specification** | Waziri [28] |
| **Poor quality control on site** | Waziri [28] |
| **Incompetent workforce** | Waziri [28] |
| **Architectural defects** | Waziri [28] |
| **Use of new & untested materials** | Waziri [28] |
| **Incompetent workforce for construction** | Waziri [28] |
3. Methodology
This research will involve three (3) phases of methodology to achieve the objective of this research. The flow chart of the research strategy is shown in Figure 1.

![Flow Chart](image)

**Figure 1. Research Strategy Flow Chart**

4. Result and Findings
This research highlights issues related to the dispute between the residents and the management of the MC. Leading journals between 2013 and 2017 have been analyzed under these keywords: success factors, critical success factors, facilities management and high-rise residential building.

The aim of this research is to develop a CSFs structural modeling for efficient FM in non-low cost high rise residential buildings, involving three (3) phases of research strategy. From this theoretical framework, five (5) group factors and 34 factors have been identified. The results are shown in Table 1.

5. Conclusion
This research is intended to narrow the gap in the efficiency of FM in non-low cost high-rise residential buildings by developing CSFs structural modelling. There are 5 CSF groups and thirty four (34) CSFs that have been analysed. The CSFs group and CSFs can be seen to help in producing successful competitive performance for the non-low cost high-rise residential buildings in the area of FM. This research is also intended to provide a useful guideline and can be used as a benchmark for the efficiency of FM especially for non-low cost high-rise residential buildings that will enhance the current practice.

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