

FRAMEWORK FOR THE PROCUREMENT OF FACILITIES MANAGEMENT
SERVICES OF PUBLIC BUILDINGS IN FCT-ABUJA

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ABSTRACT

Deciding what to provide in-house and what to outsource is not always easy, because of the pros and cons of each approach. This study assessed the suitability of outsourcing and in-house routes for procurement of facilities management (FM) services in public buildings so as to develop a framework to assist FM practitioners in making decisions on procurement of FM services in Abuja. Mixed method research methodology was adopted involving the administration of 122 structured questionnaires and semi-structured interviews with 10 international facility management association (IFMA) members in Abuja metropolis. Findings show that the top three factors driving in-house FM services delivery are cost reduction, improved performance standard and improved customer orientation and service. While, the top three factors driving outsourcing of FM services delivery are improved quality of services, improved performance standard and improved responsiveness and cycle times. Also, from the findings, the top barriers to the delivery of in-house FM services are, financial constraints and Customer demands while lack of understanding of sustainability issues and lack of tools were indicated as the top barriers for outsourcing. The key factors considered for the development of framework to procure FM services includes the 11 core competency of FM (occupancy and human factor, operations and maintenance, sustainability, facility information and technology management, risk management, communication, performance and quality, leadership and strategy, real estate, project management, finance and business), availability of trained facility manager, new technology, management technique and cost. This indicates that the framework to procure FM services includes provision of clear policy which should consist of a policy statement, methodology resource mobilization, government policy regarding the maintenance of the facility mapping of the facility and a means of measuring performance of FM services providers. Therefore, organisation favours the use of in-house FM services in handling strategic functions while outsourcing is in charge of operational functions. Top management committee should endeavor to make progress on financial, technical and stakeholder constraints for effective growth and operation of in-house and outsourcing of FM services. The result of the study provides significant understanding that can support decision making on what FM services public organisations should provide in-house and what to outsource.

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CHAPTER ONE

1.0

INTRODUCTION

1.1 Background to the Study

There has been a ton of discussion and disarray in many researches on the source of Facility Management (FM) as a discipline. Today, many literatures have renowned FM as an evolving discipline that is getting acknowledgement continuously in every edge of the world including non-native Western countries. Price (2003) avoided that FM establishes lie in the custodial job of a structure director/overseer to a great extent worried about operational issues of support, cleaning, and occupant security. Also, Price (2003) posited that the development in the multifaceted nature of structures and the centrality cost of their activity has prompted a need to present both strategic and key administration capacities, hence raising the profile of the order nearby other help capacities, for example, the administration of HR and data innovation. FM's existence as a control is said to remain stable but in reality, there are constant changes in the present business world.

FM is a key capacity in overseeing office administrations and workplace to help the centre business of an association (Chotipanich, 2004). Although staff employed directly within organisations traditionally carried out FM wholly in-house, in recent times organisations might contract out (outsource) some or all of the FM services that were hitherto carried out in-house. Concluding whether to keep on giving in-house or which activity to outsource is not always easy. This is because each approach has its pros and cons (Campbell, 2011).

In-house procurement of FM services is the management process that delivers facilities management services by in-house staff divergently employed by organisations (Musa, 2011). In-house alternative prompts improve the degree of representatives just as consumer loyalty simultaneously (Wise, 2007). While Atkin and Brooks (2005) observed

that one of the greatest risk to the accomplishment of the in-house route is largely due to carelessness, which is effortlessly seen by clients. Williams (2003) posited that very few organisations currently employ 100% in-house operation. However, Sheng (2012) posited that in-house provisions have traditionally been esteemed to be the major methodology for the conveyance of property executives and support administrations.

The in-house approach basically refers to services that are provided by devoted assets and utilised by the customers; control of execution of such services are commonly coordinated under the provisions of conventional chief /representative relationship. At times however, inner help level understandings might be utilized as controlling instruments (Barrett and Baldry, 2003). A potential advantage that is related to the desirability of in-house over outsourcing is the arrangement of the FM organisation necessitates the building of expertise and information for enhanced client administration. Wise (2007) posited that among the most critical benefits of domestic delivery of FM services is that it offers organizations the chance to develop individuals' competencies internally, as opposed to enlisting such competencies from outside. In-house sourcing of FM services thus provides improvements in professional prospects that have the capability to lessen staff turnover.

In-house technique for getting FM administrations alludes to a type of administration arrangement wherein FM administrations are given by a devoted asset straightforwardly utilized by the customer association. Execution checking and control is directed under the details of regular manager/representative relationship; at times however, performance may be regulated through service-level agreements (Kamarazaly, 2007). An in-house approach deals with item or administrations that require ability and information so as to serve clients better The Association of People Supporting Employment first (APSE,

(2011) posited that in-house was regarded as a method for conveying proficiency and investment funds notwithstanding mounting budgetary weight.

Fuelled by the globalisation of business, outsourcing has become one of the most popular and widely practised business strategies (Cigolini *et al.*, 2011; Willcocks, 2010). Typically, organisations are pushed to adopt outsourcing because of the potential to realize cost reduction objectives, by freeing up capital, pulling together on centre corporate business, moving land related dangers and expanding word related adaptability (Jensen *et al.*, 2012). Outsourcing has been characterized as the demonstration of moving a portion of an association's repetitive inner exercises alongside dynamic rights to outside suppliers under a contract agreement (Greaver, 1999). In effect, external service providers agree to undertake some of the organisation's responsibilities for a consideration (Krell, 2006). To stay competitive in a dynamic business condition, organizations centre on centre exercises of their business and redistribute the non-centre capacities to other people who may be better able to carry them out (Kim & Won, 2007; Quinn & Hilmer, 1994). With respect to (FM), outsourcing involves the "contracting out" of FM administrations to an outer supplier (Atkin & Brooks, 2009; Barret, 2000). Outsourcing contributes significantly to the growth of FM as an industry which it is believed will in the foreseeable future become the driving force of the industry (Best *et al.*, 2003). According to Ikediashi *et al.* (2012), the global outsourcing industry is worth over \$1 trillion a year, according to the International Association of Outsourcing Professionals.

There are a few studies on how the procurement of facilities management services can be carried out (Keegan & Haden, 2000; Redding, 2007; Atkin & Brooks, 2009), but these are mainly theoretical in nature (Benjaafar *et al.*, 2007; Ren & Zhou, 2008). Some past studies (Lonsdale & Cox, 1997; Adeleye *et al.*, 2004; Hoecht & Trott, 2006) have shown

that lion's share of associations embrace re-appropriating without respects to the ramifications of the dangers in question. The ideal delivery mode of FM should be the one that adds the most value to the organisation concerned. The problem thus becomes on deciding how much value is added by any specific delivery mode (Kamarazaly, 2007).

However, in public building setting, a few associations favour an in-house FM course while others actually contract out all administrations imaginable, contingent upon the need of the administrations rendered by the association. Therefore, the procurement of framework is needed to guide FM practitioners while making decisions regarding in-house and outsourcing routes.

1.2 Statement of the Problem

The International Facility Management Association (IFMA, 2007) periodically conducts surveys on the act of redistributing in the office board field. The data obtained from these surveys revealed that there has been an expansion in the quantity of organizations that are redistributing (employing full-administration, single seller to offer numerous types of assistance packaged together). Associations for the most part re-appropriated their housekeeping, structural plan, squander evacuation and scene support exercises. The most significant standards when choosing whether or not to redistribute are budgetary in nature and incorporate controlling costs, liberating capital assets, improving return of venture (return for money invested), and diminishing turnover/preparing costs.

The theoretical background of outsourcing underlines the presumption that associations that re-appropriate their office administrations acquire an included incentive than associations that control their office benefits in-house (Perera *et al.*, 2016). Although relatively untested, this assumption has provided increasing support for the selection of outsourcing as a better route over in-house procurement of FM services. The benefits of

in-house procurement of FM services are rarely fully explored and considered when decisions on how to procure FM services are being taken (Perera *et al.*, 2016). Kamarazaly (2007) and Perera *et al.* (2016) have shown that office executive benefits that are adjusted to key capacities are most appropriate for in-house conveyance, while those that are adjusted to project management and operational capacities are best handled through outsourcing. In the Nigerian public sector, most key capacities with respect to FM services are dealt with by in-house sourcing, notwithstanding whether outsourcing would provide better value (Ikediashi, 2014). To change the status quo, research must provide easy-to-apply framework that allow FM services sourcing to be made between in-house and outsourcing by the Facility Managers in charge of public buildings.

Perusal of research efforts in the FM field revealed that consistently replicable and systematic procedure by which outsourcing decisions could be taken have been developed for commercial buildings in Malaysia (Perera *et al.*, 2016). However, such a procedure focuses on outsourcing *ab initio*, and works only for commercial buildings. Public buildings are different from commercial buildings in several ways, not the least being the absence of the profit motive in determining the facility management services to be procured. In a study focussing solely on maintenance management strategies used in tertiary institutions, the general condition of buildings and services appeared to be uninfluenced by the maintenance sourcing strategy adopted (Faremi *et al.*, 2017). In the absence of all-encompassing dynamic structure, most associations primarily centre around transient cost minimization, to the exclusion of other important criteria. This has given rise to a typical preference for a dependable guideline way to deal with tackling FM issues (Cotts, 1999).

The practice of facilities management in Nigeria has been gradually improving in recent years, with a wide variety of applications (Alaofin, 2003; Opaluwa, 2005; Adewunmi et al., 2009). With increasing complexity of FM needs of organisations, the need for a simplified yet holistic means of choosing the optimum delivery mode for FM services also increases. Research in this area has either focused on institutions and business organisations (Kamarazaly, 2007; Vitasek *et al.*, 2018), or a specific subset of public buildings (Ikediashi, 2014). The study is focused on developing a basis for selecting in-between subcontracting and domestic provision of FM services in public buildings generally, by providing solutions to the corresponding research inquiries.

1. To what extent do the managers of public buildings procure FM services through outsourcing and in-house routes in the study area?
2. What are the drivers of FM services procurement through outsourcing and in-house routes?
3. What are the challenges/barriers to the procurement of FM services through outsourcing and in-house routes?
4. What framework will be effective for procuring FM services in public buildings using either outsourcing or in-house routes?

1.3 Aim and Objectives

The aim of this study is to assess the suitability of outsourcing and in-house routes for procurement of facilities management (FM) services in public buildings by developing a framework to assist FM practitioners in making decisions on procurement of FM services.

The specific objectives of the study are to: -

1. To assess the extent to which FM services in public buildings are procured through outsourcing and in-house.

2. To determine the drivers of FM services procurement through outsourcing and in-house routes.
3. To determine the challenges/barriers to the procurement of FM services through outsourcing and in-house routes.
4. To develop a framework for procurement of FM services through outsourcing and in-house routes in public buildings.

1.4 Justification for the Study

The procurement of FM services has received notable research attention on a global scale. Lehtonen and Salonen (2006) reviewed acquisition patterns of office executive administrations. The study was however focused on describing the organization control systems that add to the accomplishment of FM associations Smit (2008) compared the further estimation of associations that have their own office the board office and associations without an office in the executive division. The study was mainly concerned with in-house sourcing of FM services. Ikediashi *et al.* (2012) broke down the hazard factors related with outsourcing of office executive (FM) administrations. Their research did not deal with in-house procurement of FM services.

In more recent times, Redlein and Zobl (2014) measured the use of outsourcing in order to understand the reasoning and patterns associated with the re-appropriating choice and procedure. This study did not also consider in-house procurement of FM services. Chua *et al.* (2015) conducted an examination among state funded colleges in Malaysia on the advancement of acquisition choice system dependent on Expository Chain of importance Procedure (AHP) method and standards. The focus was exclusively limited to educational institutions. Perera *et al.* (2016) developed a screening structure for choosing the appropriateness of redistributing versus in-house conveyance for FM administrations.

This research was however based on three levels of managerial functions prevalent in a typical commercial organization (strategic, tactical and operational), and would not apply fully to public buildings.

Owen (1994) concluded that the potential favourable circumstances and hindrances of contracting-out shift between associations, yet additionally in the manner in which they impact the conveyance of various FM benefits inside a given association. More importantly however in the context of this study, Owen (1994) also found that factors other than these focal points and weaknesses impact Clients' contracting-out dynamic. Ten years later Shaw and Haynes (2004) proposed a "hole" model which looks at administration quality and the degree of significance that clients place on each help measurement. This assertion means that FM managers may use service dimensions to assess the quality of FM service delivery.

Despite the fact that FM is becoming more widely adopted in commercial and government agencies, little research has been done on FM sourcing strategies. Specifically, there is a scarcity of literature for certain decision-making principles or frameworks for meeting the FM needs of public buildings in Nigeria. A previous attempt to determine the suitability of in-house and outsourcing approaches in institutional buildings (Kamarazaly, 2007) focused on FM practice in New Zealand. As a result, using public buildings in Abuja as a case study would allow the study to achieve its broader objectives, which include (i) prioritizing criteria underpinning the factors affecting FM services in Nigeria; and (ii) developing a structure to assess the suitability of a delivery mode for some or all FM services in public buildings in Abuja, Nigeria.

In terms of the theory of FM, the examination is justified in that lessons derived from this investigation will contribute to the development of a body of knowledge on a systematic

process of choosing between outsourcing and insourcing of FM services in public buildings in Abuja, in contrast to the existing situation where most of such research emphasize principally upon the practises of industrialised nations. The information gained from this study will also assist the government and stakeholders in refining applicable laws, regulations, and guidelines in order to establish an effective system for insourcing, outsourcing, and FM practice in Nigeria in general.

This investigation will also contribute to practice by identifying factors associated with decisions by authorities in public buildings to outsource or to retain in-house of FM services provided in such buildings. The study is not only focused on identifying the benefits of outsourcing and insourcing; it will also weigh the advantages of adopting either approach in providing a specific FM service.

1.5 Scope and Delimitation

This study covered FM professionals within Abuja, the Federal Capital Territory. The day-to-day operations of such buildings are handled by Facility Managers or Property Managers that usually belong to one professional body of the other. The most well-known professional association for facility management is the International Facility Management Association (IFMA). The study therefore focused on members of IFMA within Abuja, as it was reasonably expected that these would be the people in charge of most of the public buildings in Abuja.

The focus was on the development of a framework that aids decision making with respect to what procurement route of FM to adopt. The data collected were pertain exclusively to public buildings located in the Federal Capital of Nigeria.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 The Construction Industry

Every country's economy relies heavily on the construction industry (Odesola, *et al.*, 2013). This significance stems from a variety of factors, including the industry's unique characteristics, such as its investment-goods products (Kazaz and Ulubeyli, 2004). Since industry accounts for half of all fixed capital accumulation (Fagbenle, 2009), it is the most important single source of capital formation in any country's economy. In comparison to other single sectors, the civil and building construction industry in every country employs the most people. The industry's contribution also accounts for more than half of a country's gross capital creation (Fagbenle *et al.*, 2004), and 3% to 8% of Gross Domestic Product (GDP) in most countries (Aiyetan and Olotuah, 2006).

The construction industry, according to Kuroshi and Lawal (2014), produces and maintains infrastructures and buildings that support various social, economic, and industrial functions in any part of the world. As a result of this situation, manufacturing becomes a key driver of a country's economic development (Achuenu *et al.*, 2000). Nigeria's building sector employs the bulk of the country's workers. In addition, the sector generates more than half of the country's total capital formation (Fagbenle *et al.*, 2004). According to Olatunji *et al.*, (2000), building continues to receive the largest share of investment capital in all developing countries. The building industry, which is a subset of the construction industry, is one of the most important sectors of the Nigerian economy, according to Adedeji (2008). Because of its slow response to mechanization of construction activities, Nigeria's construction industry, like that of any other developing country, is labour intensive.

The Nigerian development industry is plagued by projects that take much longer to complete than anticipated. Odusami and Olusanya (2000) confirmed this, concluding that most projects completed in the Lagos metropolis ran 51 percent longer than anticipated. This indicates that the construction industry's contribution to national development may be severely hampered by a skilled labour shortage and low quality.

2.1.1 Characteristics of the Nigeria construction industry

When compared to the total global construction industry, the Nigerian construction industry can be described as very small. This is best demonstrated by the fact that the present worth of universal constructions is projected to be around \$4 trillion, in relation to the Nigerian construction industry's \$3.15bn (2008 value), which is only about 0.2%. Nigeria, on the other hand, has the largest construction industry in West Africa. The industry's growth rate has been quite impressive in recent years, well exceeding the global industry average growth rate. This pattern is likely to continue as long as oil prices and government infrastructure spending remain strong (Sanusi, 2008).

Over the last few years, the Nigerian construction industry has expanded faster than all other sectors of the economy. The industry expanded at more than twice the average rate of the overall economy in 2005, with a 12.1 percent growth rate (5.6%). According to the Business Monitor International community, the industry grew by more than 20% between 2006 and 2007. Apart from policy-making for the construction industry, the government is also a significant client for construction firms. In reality, the government of Nigeria, through its various Ministries, Departments, and Agencies, is the most important client for construction services (MDAs). There is a lack of precise data concerning government's share of the workload of the construction industry, but a safe assumption is that government is responsible for the overwhelming majority of the value of contracts

carried out by the industry. Individual home owners, foreign organisations such as the World Bank and the African Development Bank, large and medium-sized private firms, national and multinational oil companies, and real estate developers are among the other main clients (Mudi *et al.*, 2015).

2.1.2 Contribution of the construction industry to the national economy

One of the most important sectors of any economy is the building and construction industry. The importance of this industry is often emphasized by its contribution to the Gross Domestic Product (GDP) and the number of people working in it. The construction industry is regarded as one of the most important drivers of economic growth in a country, owing to the fact that almost all other sectors of the economy depend on the construction industry's goods and services in some way. As a result, the construction industry provides the manufacturing industry with buildings and facilities such as manufacturing plants, roads connecting raw materials to manufacturing plants, and office buildings (Isa *et al.*, 2013).

The Nigerian construction industry, like that of most other developing countries, is divided into two major classes centred on the formalization of the industry.: these are the "formal" and "informal" sectors. The informal sector is characterised by unavailability of accurate and reliable data, production of simple residential buildings and similar structures and a clientele composed almost entirely of private citizens. Other characteristics include a production process based solely on the efforts of gangs of artisans and labour, and the use of multiple primes method of construction (owner supervised construction). The influence of government on the operations of the informal sector is negligible as reflected in the fact that it raises little or no tax revenue from the informal sector. Very little mention of the informal sector is made in formal statistical data provided by government agencies (Sanusi, 2008).

The formal and planned division of the building industries, from which all the facts accessible is derived, is comprised of all the legally registered key establishments, which carry out construction works using both highly skilled expatriates and local artisanal labour. Other characteristics of the formal sector are that it operates under regulated atmosphere that includes compliance to general laws on procurement, employment, and proffering as well as international agreements on labour. As shown by the collection of taxes from businesses, the government is aware of the formal sector's operations (Sanusi, 2008).

Although the construction industry has a major impact on the Nigerian economy and is the fastest growing sector, it still contributes a limited amount compared to other industries such as agriculture, mining, and quarrying. Between 2001 and 2005, the contribution of the building and construction industry to total GDP averaged around 1.44 percent, according to the National Bureau of Statistics (NBS, 2006). Approximately 69 percent of the nation's fixed capital formation is accounted for by this industry. This means that the building industry earns approximately 70% of the country's net capital investment.

2.2 Facilities Management

Facilities management (FM) has been variously defined, owing to the fact that it is a discipline which is still evolving. The International Facilities Management Association (IFMA, 2007) defines facilities management as:

“The method of coordinating the workplace with the organization's employees and job processes by incorporating business management concepts with behavioural and engineering sciences.”

Atkin and Brooks (2009) outline facilities management as:

“A systematic approach to running, sustaining, developing, and adapting an organization's building and facilities in order to establish an atmosphere that clearly supports that organization's primary objectives.”

Over the last 25 years, the use of outsourcing has grown dramatically in popularity, according to Haugen and Klungseth (2016), in their exploration of the management of FM services in practice, education and research. Ikediashi *et al.* (2012) found a lack of studies on best practice decision support methods for FM as well as effective methodologies for defining and handling FM outsourcing risks on their own. This was especially true of the developing economies such as Nigeria.

2.2.1 Facilities management functions

Facilities management functions are wide and varied; Within his or her day-to-day job, the facilities manager can be in charge of a broad variety of management functions (Barrett and Baldry, 2009). These may vary depending on both the type of organization and the sector of the economy concerned. Some of the key management functions that may be classified under Facilities Management are explained in the following paragraphs.

2.2.1.1 People management

The Facilities Manager will normally have a team of people to assist him or her in completing the various activities that the FM department is responsible for. Not only good People Management skills, but also good leadership skills are needed to effectively manage the Facilities Management team (Barrett and Baldry, 2009). Roles that a facilities manager will perform in relation to the people carrying out FM tasks will include (i) Capacity planning, (ii) Evaluations, (iii) Punitive & Criticism, and (iv) Pressure.

2.2.1.2 Health and Safety management

FM programs provide a large portion of health and safety. A main role of the FM department is to effectively handle an organization's or site's health and safety. Although it is true that Health and Safety is regulated by a complicated web of legislation, Facilities Managers support an organization's core business by ensuring that it remains consistent with current H and S legislation (Barrett and Baldry, 2009). Failure to follow health and safety regulations may have serious consequences. Aside from the risk of an employee or visitor being injured or worse, such effects may include (i) fines, (ii) detention, (iii) negative publicity, (iv) customer loss, and (v) staff loss.

2.2.1.3 Budget management

The FM services department carries out budget management on two levels. There is a budget for the FM department in order for it to run effectively. Secondly, the FM department makes inputs into the overall budget of the organization. The FM department must be able to balance its budget in order to avoid incurring a negative variance – real spending exceeding receipts (Kincaid, 1994). Budget management is a time-consuming and challenging task that necessitates close collaboration between the FM and Finance departments to keep the budget on track.

2.2.1.4 Project management

It is possible that the FM department will be active in the execution of a project at some stage. Projects, large and small, are described as one-time activities that are not part of the day-to-day job. Office relocations and office upgrades are examples of programs. To allow the FM department to learn lessons for the future, such a project must be planned, carried out, and then evaluated. All of this necessitates meticulous project management to ensure that the project is completed on schedule, delivers exactly what the client desires, and, most significantly, stays within budgets (Chotipanich, 2004).

2.2.1.5 Contract management

Many FM services are commonly outsourced to contractors, and the FM department would be involved in the contracting process to provide the service or products. To ensure that what has been procured is actually delivered, these contracts require careful management (Atkin and Brooks, 2005). Contractors need special attention because their agenda can vary from that of the FM department.

2.2.1.6 Customer relationship management

Ultimately, the Facilities Manager must be capable of managing the customer relationship. The old adage, "the consumer is king," remains true today just as much as it did years ago. If the customer is dissatisfied with the service, the Facilities Management department will be tasked with resolving the issue. Frequently, the consumer expects a gold-plated service, but the client who pays the bill just needs a bronze service, leaving the weak FM to justify why the service did not meet standards! The secret to effective customer relationship management is good communication, receiving customer input and, most importantly, acting on it when necessary, as well as ensuring that the customer, and the client, are kept in the loop at all times (Chotipanich, 2004).

2.3 Procurement of Facilities Management Services

Facilities management services may be procured in a variety of ways, although two routes have received greater attention in the literature. These are the in-house and outsourcing routes. Although outsourcing has sometimes been touted as the panacea to the shortcomings of the in-house procurement route, it is not without its own failings. For example, in the Malaysian property maintenance and management (PMM) sector, Sheng and Baharum (2015) discovered that a service chasm exists in the implementation and practice of outsourcing.

On the African continent, Nakanjako (2016) in a bid to establish the effect of outsourcing on performance of public institutions found that outsourcing IT functions most significant to institutional performance. However, there are other factors that influence institutional performance other than outsourcing which are leadership experience, academic rank of the managers, applied policy and procedures, making professional learning community, enduring efficient financial management and accountability. An investigation of maintenance management strategies used in tertiary institutions was carried out by Faremi *et al.* (2017). The authors also examined the extent to which physical and functional conditions of buildings are impacted by such strategies. The study found that the general condition of buildings and services in tertiary institutions appeared to be uninfluenced by the maintenance sourcing strategy adopted. Aliyu *et al.* (2015) found a low application of facilities management in high rise commercial properties; the use of outsourcing and in-house sourcing was influenced by the level of familiarity with the procurement routes. Ikediashi *et al.* (2014) examined the key determinants of the decision to outsource facilities management (FM) services. The study established 14 key determining factors of outsourcing decision for FM services provision.

2.3.1 Factors that influence the selection of procurement routes for facilities management

The level of risk associated with the procurement routes for FM services is one of the main factors that influence decisions on how FM services are procured. Findings from a research by Ikediashi *et al.* (2012) which analysed the risk factors associated with outsourcing of facilities management (FM) services, revealed that “poor quality of services” was rated the most critical risk factor. Other risk factors that had strong influence on selection of outsourcing for FM services procurement were “security” and “inexperience”. Ikediashi *et al.* (2014) identified 14 factors that affect the decision to

outsource facilities management (FM) services in their study of key determinants. “Improve company focus,” “make expense transparent,” and “improve stakeholders' satisfaction” were the top three rated factors; several of the highly rated factors had a clear association with other factors.

Potkány *et al.* (2016) carried out a quantification of the cost savings arising from use of outsourcing in Slovakian SMEs. The paper found however that most SMEs are drawn to use outsourcing because of potential cost savings, they do not compute such potential cost savings before adoption of outsourcing. Most of the companies that were surveyed reported that this problem was usually solved intuitively. The SMEs quantify cost savings from use of outsourcing only after a conclusion of the accounting period during which outsourcing was employed. Another research carried out by Zailani *et al.* (2017) obtained results that conflicted with that of Potkány *et al.* (2016). Zailani *et al.* (2017) wanted to know more about the processes that underpin the relationships between factors that affect logistics outsourcing practices and outsourcing efficiency. Superior outsourcing efficiency is connected to the firm's capital, according to the report. Theoretically, companies use a logistics outsourcing approach to minimize costs; nevertheless, this was not demonstrated in this analysis since only one of the four logistics outsourcing practices examined contributed positively to the financial gain. The findings of the study back up the argument that businesses outsource non-core operations in response to the transaction volatility of their business climate.

Redlein and Zobl (2014) investigated outsourcing decision-making patterns. The study's findings revealed that businesses must strike a balance between the costs of complex administration and coordination of a large number of external service providers and their reliance on a single or few external service providers when making outsourcing decisions.

Effective management of the change from one mode of FM services procurement to another mode might also influence how FM services are procured. Sridarran and Fernando (2013) acknowledged this when they created a conceptual model for change management in order to efficiently outsource FM services. Significant change management requirements that can affect the efficiency of outsourcing FM services were established in the report.

Ikediashi (2014) established a system for outsourcing facilities management services in Nigerian public hospitals. The study discovered that 25 factors played a role in the decision to outsource FM services. The study also discovered that there are 24 risk factors to consider when deciding whether or not to outsource FM services.

2.3.2 In-house sourcing of facilities management

Facilities management services that are related to strategic functions are ideal for in-house implementation, according to Perera *et al.* (2016), while those that are aligned to tactical and organizational functions are better managed by outsourcing. However, the study was confined to FM services in a typical commercial enterprise, with the goal of developing a screening system for determining the suitability of outsourcing versus in-house delivery.

According to Wise (2007), in-house FMs have the advantage of keeping control of the works, and therefore are more likely to perform well than outsourced FMs. Galamba and Nielsen (2016) worked on the development of capabilities of public in-house FM organisations. This paper introduced a structure for a long-term FM code of conduct that would prioritize and make decisions based on politics, strategy, strategies, and everyday practice. Commercial entities, in particular hotels, are yet to leverage on the possible positive contributions that outsourcing of FM services can make to the hospitality business. Durodola *et al.* (2014) in an assessment of the management of support services

in hotels located in South-Western Nigeria, found that hotels are engrossed in in-house sourcing. This might be the result of non-availability of a means by which hotels could determine whether insourcing or outsourcing would best deliver any FM service under consideration.

2.3.2.1 Advantages of in-house facilities management

Within the right setting and with the proper level of motivation, organisations can realise a lot of benefits from in-house facilities management. These benefits of in-house facilities management spring from an understanding of the culture of the organization, total control over FM activities, improvement of workers' capacity and services provision include alignment of interests of both the organization and the in-house FM department, safe guarding of important secrets of the organization, improved assurance of security and shorter decision making time (Usher,2003). This last advantage comes from the fact that all is handled in-house; inquiries do not need to be sent to a facilities management firm, which would follow its own protocol before making a decision. As a result, response times would be greatly reduced.

According to Wise (2007), in-house facilities management has the following advantages: workers who work in-house maintain control of their work, and in-house employees generally perform better than out-sourced employees who make decisions based on how they would impact their immediate employer rather than the people they work for. Furthermore, instead of recruiting from outside, in-house FM recruitment helps companies to expand and provide job opportunities that minimize staff turnover. This is why, in most cases, long-term financial planning favours in-house rather than out-sourcing. Finally, providing FM services in-house increases employee and customer satisfaction simultaneously. Finally, Christuduson (2008) argued that providing in-house facilities management provides consistency, power, and ease of communication.

2.3.2.2 Disadvantages of in-house facilities management

The use of in-house FM services provision comes with a lot of disadvantages as well; these can however be avoided if the in-house FM services team possesses the capability required to handle the responsibilities in a manner that is comparable to that of a peripheral benefactor. The drawbacks of providing in-house FM services are also dependent on the venue, availability of FM experts, and senior management's attitude toward in-sourcing. Employee knowledge and abilities, according to Atkins and Brooks (2005), are extremely essential in in-house facility management. In-house FM service teams, on the other hand, must be able to adapt to change in order to sustain the organization's core business. How to assess the efficiency of in-house staff, complacency from the in-house team, higher monitoring, and lower customer satisfaction are some of the challenges faced when providing in-house FM services.

The drawbacks of in-house facilities management, according to Conors (2003), are: (i) the continued application of increasingly obsolete principles to the organization's evolving requirements. (ii) Well-managed in-house departments also drive up facility costs well above the outsourced average simply by over-delivering on service quality. (iii) In-house departments do not always have the same jurisdiction as their external counterparts when it comes to hiring temporary relief personnel. (iv) In-house FM service provision is typically plagued by a shortage of relevant professionals, higher costs, a greater administrative burden, poor employee efficiency, and liability.

2.3.3 Outsourcing of facilities management services

In order to deepen existing knowledge about the practice of outsourcing, Redlein and Zobl (2014) attempted to measure the use and practices of outsourcing. This was for the purpose of understanding the functions, merits and drifts tangled in both the verdict and procedure of outsourcing FM services. Cleaning, winter service, and

heating/ventilation/air conditioning are the three most outsourced utilities, according to their findings. The majority of commercial FM service users have between three and ten external service providers.

Table 2.1: Factors that influence outsourcing decision as identified from Literature

S/n	Factors	Author(s)
1	Cost/financial To make costcost transparent To convert fixed cost to variable cost To reduce cost To instill cost efficiency To eliminate fixed cost of internal staff To reduce investment in assets To reduce invested capitalfunds in non-core functions To control operating costs To assess outside provider's lower cost structure To achieve cost reduction with enhanced performance To conserve capital To reduce capital expenditures	Wagenberg, 2003, Quelin and Duhamel, 2009; Jiang, 2006, Bustinza et al., 2005; Ghodeswar et al., 2008; Kroes and Ghosh, 2010; Hsiao et al.,2010
2	strategic To focus on core competencies To improve strategic positioning To increase flexibility and profitability To have greater trust on market positioning and new product To be more flexible/dynamic in meeting challenging opportunities To improve control of operational process for example risk management To improve process responsiveness and cycle times To improve volume capability To multiply sourcing in case of uncertainty To handle varying demand effectively through economies of scale To explore operations in new geographical region To focus on enablers of business growth and strategies To increase competition To focus on internal business improvements	Bustinza et al., 2005; Ghodeswar et al., 2008; Kroes and Ghosh, 2010
3	Innovative To gain access to products, services and emerging technologies To obtain expertise, skills and innovative ideas	Abraham and Taylor, 1996; Deaver, 1997; Wagenberg, 2003; Ghodeswar et al., 2008; Kroes and Ghosh, 2010

Source: Compiled by Author (2019)

In the process of changing from in-house provision of FM services to outsourcing the services to an external provider, most corporate entities might not derive optimum efficiency from such a change. To improve this situation, Sridarran and Fernando (2013)

developed a conceptual model for effective change management of the process of outsourcing Facilities Management services. The study identified the main change management criteria that can influence the efficiency of outsourcing Facilities Management services and proposed that the efficiency of outsourcing Facilities Management services can be enhanced by managing change. Table 2.1 contains some of the significant determinants of outsourcing decision from the literature.

The factors that affect outsourcing decisions, as defined by Ikediashi *et al.* (2012) in a review of literature on the concepts of outsourcing and facilities management, have largely been studied in industries other than facilities management. Ikediashi (2014) developed a system for outsourcing facilities management services using data from Nigerian public hospitals. 25 out of the 31 factors listed in Table 2.1 were found to be important in explaining the decision to outsource FM services, according to the author.

2.3.3.1 Advantages of outsourcing

Wongleedee (2016) has comprehensively identified the advantages of outsourcing of FM services. The key advantages to be derived from this practice include: (i) Expertise and fast delivery: Since activities or projects are outsourced to companies that specialize in a specific area, the outsourced vendors have specialized equipment and technological skills beyond what the outsourcing company has. (ii) The opportunity to focus on key processes rather than supporting processes: Outsourcing the supporting processes frees up time for the organization to concentrate on its core business process or work assignment. (iii) Risk-sharing: Outsourcing certain aspects of a company's business process can allow the company to delegate certain responsibilities to the outsourced vendor, who must be able to manage those risks more effectively. (iv) Lower costs due to the reduction of costs such as set-up, organizational, and recruiting. Time and effort can therefore be saved and focused on something else.

2.3.3.2 Disadvantages of outsourcing

According to Wongleedee (2016) the following represent the key disadvantages of outsourcing of FM services. (i) Loss of confidentiality: Outsourcing HR, Payroll and recruiting systems come with the possibility of revealing sensitive business data and technologies to a third party. (ii) Quality of service: when organization pick unsuitable outsourcing vendors, common problem that arise include stretched delivery time frames, substandard quality output, defects, and inappropriate categorization of responsibilities. These problems are more easily mitigated within an organization rather than with an outsourced partner. (iii) Possibility of hidden costs: the concept of outsourcing is generally cost-effective but there may be hidden costs involved in a contract for outsourcing especially where rights and obligations of parties cut across international boundaries. (iv) Lack of customer focus: An outsourced provider may be responsible for several businesses and organizations at once. The vendor has no direct relationship with the customers of any one company; customer pressure does not therefore influence how well they discharge their duties.

2.4 Drivers and Barriers of FM Services Procurement through Outsourcing and In-House Routes

There has not been much vigorous research activity in the area of establishing the factors that drive the selection of procurement routes for FM services as well as the factors that serve as hindrances or barriers. Much of the research has been focussed on the factors driving or hindering the adoption of outsourcing for the provision of FM services. This section of the thesis attempted to bring together the scant information on drivers and barriers of FM services procurement route selection.

2.4.1 Drivers of FM services procurement decision

According to Pitt and Hinks (2001), facilities managers' perceptions of FM's position as a key to advancing the cause of sustainability are changing. The implication here is that the procurement route that best enhances the sustainability agenda is the one that should be selected. This places sustainability of the FM services as a key driver of FM services procurement decision. In fact, Pitt and Hinks (2001) proposed that FM should be incorporated into strategic management functions. Legislation, corporate image, and organizational culture are among the seven drivers for sustainable FM practice defined by Elmualim *et al.* (2012). Barriers such as lack of education, perceived higher upfront costs, and lack of government policies when reversed can serve as drivers of sustainable FM services procurement decision-making.

Government policies are seen as a primary factor of sustainability on a global scale. According to Ang and Wilkinson (2008), policies are the government's instrument for steering the construction industry toward sustainability. The promotion of new technology skills creation among building professionals, according to Gleeson and Thomson (2012), is a catalyst toward sustainable buildings. Government policies will aid in the growth of digital technology skills.

Cooperation among members of the design and construction teams is another catalyst for sustainable building practices (which includes the decision to purchase FM services). BIM, according to Schlueter and Thesseling (2009), is a software tool that encourages greater collaboration among construction teams. During the design and construction phases, all project stakeholders, including the client, architects, consultants, contractors, and facilities managers, have access to all aspects of the project's design, specification, materials, project schedule, and costs (Malina, 2012).

2.4.1.1 Specific drivers of FM services procurement

This section brings together the various factors that have been mentioned as drivers of FM services procurement. Such drivers and their associated source are presented in a tabular format as Table 2.2. A certain amount of duplication of drivers may be observed as a result of the multiple sources employed, but this rather enriches the summary, since it underscores the importance of drivers through mentions in multiple studies.

Table 2.2: Drivers of FM services procurement decision

Drivers identified	Source
To reduce capital funds in non-core functions; achieve cost reduction with enhanced performance; improve strategic positioning; focus on core competencies; share risks; compare in-house performance with vendor's staff; handle varying demands more effectively; gain access to new products and services; permit quicker response to new needs; improve performance standard; improve quality of services; improve timely delivery of services; improve responsiveness and cycle times; improve stakeholders' satisfaction; create jobs for local communities	Ikediashi (2014)
To reduce cost and advance financial ratios	Kakabadse and Kakabadse, 2000; Liou and Chuang, 2010, Sreedevi and Tanwar, 2018
To concentrate on core business	Burdon and Bhalla, 2005; Amos and Gadzekpo, 2016
To use vendor's competencies and facilities	Sandhu et al. (2018)
To improve quality, productivity and operational efficiencies	Amos and Gadzekpo, 2016
For increased flexibility	Kremic et al. (2006)
For increased innovation	Sreedevi and Tanwar (2018)
To transfer risk	Elmuti, 2003; Vaxevanou and Konstantopoulos (2015)

Table 2.2a Drivers of FM services procurement decision

Drivers identified	Source
To achieve right-sized employees and reduced space	Amos and Gadzekpo (2016)
For improved customer orientation and service	Usher (2003)
As a solution for lack of initial and major capital investments for service provision	Amos and Gadzekpo (2016)
To achieve competitive advantage	Liou and Chuang (2010)
Legislation; corporate image; organisational ethos; senior management or directors' leadership; pressure from clients; life-cycle cost reduction; pressure from employees and shareholders on sustainable practices	Elmualim <i>et al.</i> , (2012)
Building information modelling (BIM)	Schlueter and Thesseling (2009)
Government policies	Taylor-Wessing (2009)
Rising energy costs, lower life-cycle costs, client demand and environmental conditions	Smith and Baird (2007)
Life-cycle costing (LCC)	Wiggins (2010)

Source: Author (2019)

2.4.2 Specific barriers of FM services procurement

Factors that can be termed as barriers to FM services procurement decision-making include: inadequate technical knowledge, a lack of understanding and preparation (Finch and Clements-Croome (1997)). Given the recent evolution of emerging technology, Brown and Pitt (2001) suggest that the facilities manager's lack of technical and science training is an obstacle. Barriers identified in the literature with regards to sustainable building practice include lack of education, perceived higher upfront costs, and lack of government policies (Smith & Baird, 2007; Gleeson & Thomson, 2012; Murray and Cotgrave, 2007; Häkkinen and Belloni, 2011; Rydin *et al.*, 2006; Djokoto *et al.*, 2014).

Gleeson and Thomson (2012) see a lack of adequate training of building professionals as a barrier to sustainability in buildings; selection of the optimum procurement route for FM services could help make buildings more sustainable. Lack of awareness of sustainability problems is described by Elmualim *et al.* (2012) as an obstacle to

sustainable FM practice. In terms of a lack of experience, Dair and Williams (2006) found that design and construction teams are lacking in their understanding of the best available information on products and resources for sustainable building.

Another obstacle to sustainable building practice identified in the literature is perceived higher upfront costs. This barrier, according to Bond (2010), is one of the most widely cited arguments against sustainable building practices. The unfamiliarity of the design and construction team with sustainable building practices, according to Hydes and Creech (2000), adds to the upfront expense. Another way to get around the perceived higher upfront costs barrier is to use life-cycle costing (LCC). The LCC model allows a building owner to anticipate running costs from the start of the design process, allowing them to compare the cost advantages of sustainable decisions to the initial outlay (Roaf *et al.*, 2004). LCC is a method used to assess the most cost effective choice among various alternatives in relation to constructing, operating and maintaining, and final disposal of a building, according to Wiggins (2010), and it is an area of expertise for the facilities manager. Government policies can impede the construction of environmentally friendly structures (Rydin *et al.*, 2006). Regulations, according to Samari (2012), should be created, revised, and implemented on a regular basis. Governments may use a number of tools to aid in the construction of sustainable structures.

This section brings together the various factors that have been mentioned as barriers of FM services procurement. Such barriers and their associated source are presented in a tabular format as Table 2.3.

Table 2.3: Barriers of FM services procurement decision

Barriers identified	Source
Inexperienced client; Interruption to supply of services; Unclear responsibilities and targets; Financial failure of chosen vendor; Poor quality of services; Vendor underperformance; Absence of benchmark for quality; Inadequate definition of scope of services; Lack of standard forms of contract for FM; Inadequate planning of policies implementation; Loss of strategic flexibility; Poor relationship between vendor and clients; Conflict of interest; Security requirement issues; Fear of uncertainty	Ikediashi, Ogunlana, Boateng and Okwuashi, (2012)
Inadequate technical knowledge and understanding of intelligent buildings that can foster innovation in technology by facilities managers, lack of awareness, lack of training and tools	Finch and Clements-Croome (1997)
Inadequate training	Tarja and Belloni (2011)
Lack of understanding of sustainability issues	Elmualim <i>et al.</i> , (2012)
Perceived higher upfront costs	Bond (2010)
Lack of government policies	Rydin <i>et al.</i> , (2006)
Incorporation of building services as an afterthought	
Financial constraints, cost of certification, lack of in-house knowledge, customer demands and constraints, physical and historical constraints and organisational engagements	Malina, 2012
Commitment of FM profession to the SD agenda and revealed time constraints, lack of senior management commitment	Elmualim <i>et al.</i> , (2010)

Source: Author (2019)

2.5 Frameworks for Procurement of FM Services

Most frameworks for the procurement of FM services focussed on the adoption of outsourcing, with little or no mention of insourcing as a procurement option. Some studies have however attempted to provide guidance on how insourcing can be employed as an FM delivery mode. Some of these studies are provided in Table 2.4 and Table 2.5, along with brief descriptions of the essence of the studies and key limitations.

2.5.1 Frameworks for Outsourcing of FM Services

Most of the frameworks for outsourcing did not address outsourcing in public buildings or in environments similar to the study area of this study. Some studies were literature review-based. Focus on the decision-making process for selecting either outsourcing or

in-house procurement was also rare in the literature. Most studies simply focussed on one procurement route only. The import of this finding is that studying the process of making decisions regarding the selection of either outsourcing or in-house procurement remains a research gap in the literature.

Table 2.4: Summary of FM Outsourcing Studies from Literature

Author(s)	Type	Description	Limitation(s)
Hassannain and Al-Saidi (2005)	Outsourcing framework	5 sequential processes for outsourcing asset management services	No empirical investigation; specific to Saudi Arabia municipality;
Mohammed and Baba (2005)	Outsourcing contractual framework	Involved mainly literature review to develop best practice framework	No statistical investigation; anecdotal evidence only;
Kremic et al., (2006)	Outsourcing decision support framework	System showed typical elements of outsourcing decision	Focused mainly on profit-oriented organizations
Ghodeswar and Vidyanathan (2008)	Business process outsourcing model	Processes for outsourcing decision and management in a business environment	Decision and management variables not clearly defined; Focused mainly on profit-oriented organizations
Kumar et al. (2010)	Closed loop outsourcing decision model	Business model that dealt with key enablers and barriers to successful outsourcing	Focused on case study in profit-oriented manufacturing firm in US;

Source: Ikediashi (2014)

2.5.2 Frameworks for in-house sourcing of FM Services

The frameworks for in-house sourcing neither applied specifically to public buildings nor were they carried out in environments similar to the study area of this study. Studies on insourcing were mostly literature review-based. Most of the empirical studies in the FM field did not qualify for inclusion because their focus was not aligned to the selection of procurement route for FM services.

Table 2.5: Summary of FM Insourcing studies from Literature

Author(s)	Type	Description	Limitation(s)
Bernard Williams Associates (1999)	Demerits of in-house sourcing	Posited that cost, quality, flexibility, motivation and skills availability considerations do not support in-house mode	Limited to premises audits as a means of tools for facilities economics
Barret and Baldry (2003)	Best practices in FM	Mainly literature review of the merits and demerits of delivery modes for FM services.	No fieldwork based statistical investigation
Connors (2003)	Comparative study of in-house and outsourcing in terms of innovativeness	In-house staff lose cutting-edge knowledge once removed from cross-company competitive environment of out-sourcing.	Focused on innovativeness in FM; No statistical investigation
Atkin and Brooks (2005)	Disadvantages of in-house sourcing	Providing a total view of FM	No statistical investigation; anecdotal evidence only;
Wise (2007)	Advantages of in-house sourcing	Geared towards improving leadership in project management	No statistical investigation; anecdotal evidence only;

Source: Author (2019)

2.6 Variants of Outsourcing for FM

Although the practice of outsourcing might seem to refer to a homogenous process, yet this is far from the case. Different organisations carry out outsourcing in different ways. Reichard (2015) identified the term ‘outsourcing’ as covering the variants of contracting out, contractual PPP and privatisation. The paper compared the strengths and weaknesses of these different forms of outsourcing. The main conclusion drawn by the paper is that outsourcing is not generally the most preferable institutional solution, but rather one possible option after a careful assessment of its pros and cons.

The role of comprehensive public sector reforms in developing the Norwegian FM market through joint ventures between former public administrations and the FM suppliers was explored by Boge (2010). An important finding of the study is that public sector reforms have made at least three of Norway’s major FM-suppliers more similar in terms of provision of integrated FM. Lehtonen and Salonen (2006) undertook a review of procurement trends of facilities management (FM) services and corporate entities were

moving towards closer relationships. In most cases, organisations chose the partnering approach; this allowed FM services suppliers to introduce more variety into their service packages.

Six (6) of the different types of outsourcing that have been used, mainly in the Information Technology (IT) context, are professional outsourcing, manufacturer outsourcing, multi-sourcing, process-specific outsourcing, business process outsourcing and project outsourcing. The differences between these variants of outsourcing include the Outsourcing arrangements' transactional, contractual, and relational administration, as well as their underlying characteristics (Chaudhary and Kishore, 2010). The use of self-employed employees is an example of labor outsourcing; it is prevalent in the insurance industry of developed economies. Workers under this form of outsourcing contract are lawfully entrepreneurial but work under circumstances that are comparable to those of workers (Muehlberger, 2007). However, Harvard (2010) opined that there are four forms of outsourcing approaches: comprehensive business process outsourcing (BPO); selective BPO and two out-tasking models, which are licensing and contracting. These types of outsourcing are located at different points of scales that measure complexity, duration and scope.

2.6.1 Professional outsourcing

Professional outsourcing facilitates the access to high-quality resources in the field of professional services; this can significantly reduce overhead costs. The professional services covered include accounting, legal, purchasing, information technology (IT), administrative support and other specialized services (Chaudhary and Kishore, 2010).

2.6.2 Manufacturer outsourcing

Manufacturer Outsourcing is a variant of outsourcing that transfers blue collar jobs to a third party within the same industry. This form of outsourcing might be carried out for various reasons such as expertise, human capital, time to market and cost factors (Chaudhary and Kishore, 2010).

2.6.3 Multi-sourcing

Chaudhary and Kishore (2010) posited that multi-sourcing is an IT services term that refers to operating a ‘partnership relationship’, usually with more than one supplier of a particular service. Multi-sourcing is characterised by a strategy and a network of relationships. The major advantage of this method is the promotion of competitive pricing and elimination of the dependency on ‘one’ company.

2.6.4 Process-Specific outsourcing

Process-Specific Outsourcing farms out specific operation-related aspects of a production process to other companies or units that specialize in that specific aspect of the production process. This helps to reduce costs and time to delivery (Chaudhary and Kishore, 2010).

2.6.5 Business Process outsourcing

Business Process Outsourcing involves transfer of the provision of specialized activities such as machine maintenance and equipment repair, landscaping, cleaning services, and facilities maintenance or property management to a third party (Chaudhary and Kishore, 2010).

2.6.6 Project outsourcing

Project Outsourcing might involve contracting out either the project management function or the entire project development to an external specialist project management

services provider (Chaudhary and Kishore, 2010). The most frequently cited reason for this type of outsourcing is the lack of requisite skills in-house or unavailability of the necessary people (who may be occupied with other projects).

2.6.7 Comprehensive Business Process outsourcing

A comprehensive BPO is the most complex, long term and strategic relationship a corporate organisation can create with an external materials or services supplier. Under a comprehensive BPO, an external supplier might be contracted to manage a comprehensive set of processes across all functional process areas of the organization (administration, content, delivery, or technology). Such contracts are usually for periods longer than a year (Harward, 2010).

2.6.8 Selective Business Process outsourcing

Selective BPO is also a very complex engagement, but a bit lower down the scale of scope. Selective BPO is somewhat less comprehensive because an external supplier might be contracted to manage multiple processes within one functional area of activity (administration, content, delivery, or technology), not across functional areas. There is thus reduced integration of functional processes, but selective BPO contracts are usually also longer than a year (Harward, 2010).

2.6.9 Licensing Agreement

Licensing Agreement is a form of outsourcing or more accurately, out-tasking. Licensing agreement is used when an organisation needs to procure a tangible asset, such as a technology or real estate for training (Harward, 2010). Licensing agreements might run from a month to a few years, depending on what the costs of implementation and set-up are. When such costs are high, licensing agreements might be multi-year; clients can thus amortize costs over longer periods of time.

2.6.10 Contracting

Contracting is the most common form of outsourcing in the consultancy services industry. Contracting can be in respect of consulting, instructional design, delivery of a course. Where cheaper labour from another country is involved lol, the appropriate term for this form of outsourcing is offshoring. It has been pointed out that offshoring and outsourcing often retain their scale through recessionary as well as growth periods (Willcocks and Lacity, 2014). This makes them attractive businesses for developing economies, given the minimal requirement for capital intensive infrastructure. When a country is able to offer the right mix of attractive pricing, reliable service, and secure location, a myriad of opportunities is available on a global scale. Another variant of this type of outsourcing is near-shoring, where the developed nation and developing economy that are contractual partners are separated by a land border. Examples include the USA in Mexico and Germany in the Czech Republic (Harward, 2010).

2.7 Facilities Management Services that are procured through Outsourcing

Haugen and Klungseth (2016) in an exploration of the development of knowledge about facilities management (FM) found that the use of outsourcing increased significantly in popularity during the last 25 years. This view was however not supported in the study carried out by Bello *et al.*, (2016). Their study reviewed the use of FM services for provision of optimal quality municipal services of local government in Malaysia. Their findings showed that low use of FM services in local governments renders service deliveries inefficient. Still within institutional environments, Nakanjako (2016) studied the effect of outsourcing on performance of public institutions. The results of the study revealed that outsourcing IT functions was the most significant contributor to institutional performance; however, there were other factors other than outsourcing that influence institutional performance.

A research by Ikediashi (2014) which developed a framework for outsourcing facilities management services also found that 6 facilities management services were entirely subcontracted in the whole 74 hospitals that were surveyed. These FM services included (i) plant management and repairs; (ii) general cleaning services; (iii) waste disposal and environmental management; (iv) landscape maintenance; (v) security; and (vi) catering/restroom management.

Sheng and Baharum (2015) ascertained the existence of a service chasm in the implementations and practice of outsourcing in the property maintenance and management (PMM) sector in Malaysia. Notwithstanding the types of services being procured, outsourcing clients and outsourcing service providers perceived the quality, risk and liabilities associated with the services in different ways. In their own contribution, Perera *et al.* (2016) discovered that in a typical commercial organization, the FM services that can be classed as strategic functions are suitable for in-house delivery, while those that are related to tactical and operational functions can be outsourced.

2.8 Related Works

From as far as two and a half decades back, the issue of how to choose between which FM services to offer in-house and which to outsource has been prominent in the literature. Owen (1994) concluded that the potential advantages and disadvantages of contracting-out not only vary between organisations, but also in the way they influence the delivery of different FM services within a given organisation. More importantly however in the context of this study, Owen (1994) also found that factors other than these advantages and disadvantages influence Users' contracting-out decision-making. Shaw and Haynes (2004) suggested a "gap" model that compares service quality and the value customers place on each service dimension ten years later. This assertion means that FM managers

may use service dimensions to assess the quality of FM service delivery. From research into institutional buildings in New Zealand According to Kamaraly (2007), outsourcing is better for providing financial, property development/project management, and general services, while an in-house approach is better for providing strategic FM functions.

Current Malaysian maintenance policy procedures, according to Yahya and Ibrahim (2011), are focused on house rules and contract agreements that do not directly relate maintenance needs to performance management, strategic management, and facilities management. Ikediashi (2014) described 25 significant factors that influenced the decision to outsource FM services in Nigeria's healthcare facilities. Sheng and Baharum (2015) through a 'chasm analysis' showed the ineffectiveness of the current property and maintenance management (PMM) services outsourcing practices in Malaysia. Perera *et al.*, (2016) agreed with the findings of Kamaraly (2007) that FM services that are aligned to strategic functions are suitable for in-house delivery, while outsourcing is best for those that are aligned to operational functions.

Table 2.6: Literature findings on choice of delivery mode for FM services

Author	Year	Place	Research Methodology adopted	Summary of Findings
Owen	1994	UK	'Research review'	The potential advantages and disadvantages of contracting-out not only vary between organizations, but in the way they influence the delivery of different FM services within a given organization.
Shaw and Haynes	2004	UK	focus group; questionnaire	Proposes a “gap” model which makes a comparison between service quality and the level of importance that customers place on each service dimension.
Lehtonen and Salonen	2006	Finland	questionnaire	In most cases, the choice of the partnering approach is related to developing wider service packages. When implementing partnering relationships, the task of top management is to provide the shared values and visions.
Cardellino and Finch	2006	UK	Survey	The research suggested that service innovation is highly active in the UK FM sector. Generally, the innovations were one-shot commitments at the early stage. None of the innovations studied failed to proceed to full adoption stage.
Kamaraly	2007	New Zealand	questionnaires and interviews	Outsourcing was perceived to be more suited than in-house for providing operational, property development/project management and general services; in-house was more suited for the provision of strategic FM functions.
Smit	2008	Austria	questionnaire	There is a relation between the different ways of structuring facility management & the added value of organizations
Schultmann and Sunke	2008	Germany	Case study	RFID could unveil its benefits even under the harsh environmental influences in construction. However, the construction industry is still lagging behind applying & adapting technologies already successfully implemented in other industrial sectors.

2.6a: Literature findings on choice of delivery mode for FM services

Author	Year	Place	Research Methodology adopted	Summary of Findings
Lindkvist and Elmualim	2009	UK	case study	Higher management knowledge is important in ensuring that the technology fits the overall strategy of the organization & entrepreneurial knowledge was central for combining the knowledge from each role.
Boge	2010	Norway	case study	New public management (NPM) inspired public sector reforms have paved the way for outsourcing of FM services in Norway. These reforms also helped develop the Norwegian FM market through joint ventures.
Yahya and Ibrahim	2011	Malaysia	interviews	The current maintenance policy procedures in Malaysia are based on house rule and contract agreement, which do not explicitly link maintenance needs with performance management, strategic management and facilities management
Musa	2011	UK	questionnaire	The main findings of this research have identified that in UK shopping centres the current provisions of FM services in the majority are practicing outsourcing.
Nielsen et al.	2012	Denmark	questionnaire and case studies	An analysis of the strengths and weaknesses of 3 different constellations of strategic facilities management organisation (SFMO), reflecting 3 different types of ownership: Social housing, owner occupied/private co-ops and private rented.
Ikediashi, Ogunlana, Boateng and Okwuashi,	2012	Nigeria	questionnaires	“Poor quality of services” was rated the most critical risk factor associated with facilities management outsourcing, while “security” and “inexperience” closely followed in that order.
Ikediashi, Ogunlana, Bowles and Mbamali,	2012	Nigeria	literature review	Outsourcing decision factors identified from past studies have largely been investigated under sectors other than facilities management. There is paucity of research on best practice outsourcing decision support tools as well as appropriate methodologies for identifying and managing outsourcing risks.

Table 2.6b: Literature findings on choice of delivery mode for FM services

Author	Year	Place	Research Methodology adopted	Summary of Findings
Taylor	2012	UK	questionnaire	Councils predominantly adopted: a support relationship outsourcing 2/3 (27%) services at a value of £0-5m (29%) or a reliance/alliance relationship with >5 (30%) services at a value of >£20m being outsourced. 29% had outsourced facilities management services with satisfaction levels (fair 23%, good 28%, very good 42%)
Elmualim, Valle and Kwawu	2012	UK	questionnaire	Legislation is the most important driver for the implementation of sustainable practices. Corporate image and organisational ethos are also recognized. Financial constraints are the main barriers while legislations are the main driver for implementing sustainability.
Gavu, Tudzi and Ayitey	2012	Ghana	Interviews; questionnaires; observations	The study revealed that the current state of the facility and management approach does not promote effective teaching and learning
Doleman	2013	Australia	Grounded Theory	Core knowledge categories included finance as a central theme within the facility management domain with building services and business providing an indication as to the broad nature of facility management knowledge construct.
Fraser, Gunawan and Goh	2013	Austria /Switzerland	questionnaire	“communication”, “teamwork”, and “training” were identified as being key to the day-to-day success of team-based cellular manufacturing.
Sridarran and Fern & o	2013		literature review	It was suggested that through managing the change, the efficiency of outsourcing the facilities management services can be improved.
Redlein and Zobl	2014	Austria	Mixed Method	The most outsourced services are cleaning, winter service and heating/ventilation/air condition. Most of the companies had between 3 to 10 external service providers under contract.

Table 2.6c: Literature findings on choice of delivery mode for FM services

Author	Year	Place	Research Methodology adopted	Summary of Findings
Ikediashi	2014	Nigeria	questionnaire and case study	25 of 31 factors explained decision to outsource FM service; plant management; general cleaning; waste disposal; landscape maintenance; security; and catering/restroom management are completely outsourced in all 74 hospitals.
Durodola, Lroham and Sanni	2014	Nigeria	Questionnaire	Hotels are engrossed in in-house sourcing as against outsourcing for accomplishing facilities management.
Ikediashi, Ogunlana and Boateng	2014	Nigeria	questionnaire	14 factors are key determinants of outsourcing decision for FM services provision. The top three rated factors were “to improve company’s focus”, “to make cost transparent” and “to improve stakeholders’ satisfaction”
Gerritse, Bergsma and Groen	2014		case study	FM adds value (besides cost control) in the area of ‘support of productivity’, ‘risk control’, ‘increase satisfaction’, ‘support image’ and ‘increase sustainability’.
Galamba and Nielsen	2016	Denmark	Case study	Described the phenomenon of public SFM and suggestd a framework for a sustainable FM code of conduct. The SFM code of conduct” support the employees in taking a proactive strategic position in which translation between politics, strategy, tactics and daily practice becomes the basis for prioritization and decion-making.
Reichard	2015	EU	Literature review	An assessment of the effects of the different forms of outsourcing and discussing their strength and weaknesses in a comparative view.
Tudzi, Gavu, Ayitey, and Boakye-Agyeman	2015	Ghana	desk study	CREM focuses on proactive professional management of real estate & related facilities in a holistic manner to achieve goals of corporate entities. It deals with all types of properties; public, private, quasi-public.
Gao	2015	Hong Kong	questionnaire	The cooperative abilities of an owner group vary with building age, management style, group size, owners’ average income level and age level.

Table 2.6d: Literature findings on choice of delivery mode for FM services

Author	Year	Place	Research Methodology adopted	Summary of Findings
Sheng and Baharum	2015	Malaysia	questionnaire	Chasm analysis which stemmed from the mean result derived from the study depicts the ineffectiveness of the current PMM services outsourcing implementations and practices.
Author	Year	Place	Research Methodology adopted	Summary of Findings
Chua, Ali and Alias	2015	Malaysia	Interview	Analytic Hierarchy Process (AHP) based decision making framework was proposed for its capability, applicability and validity in assisting building maintenance personnel to select the most appropriate procurement method.
Armai, Abdul Hakim and Mat Naim	2015	Malaysia	Literature review	Ten fundamental elements of SLA are identified. SLA affect outsourcing facilities management. Precisely drawn SLA facilitates effective service partnerships, whereas the incorrect SLA can be detrimental.
Aliyu, Ahmad and Alhaji	2015	Nigeria	questionnaire	Extent of application of facilities management is below average. Use of facilities management tools such as outsourcing & in-house sourcing was influenced by the level of familiarity with the tools.
Olusegun	2015	Nigeria	grounded theory and case study	Organisation structure of FM department and their roles depend on the nature of the housing estate concerned and their purpose. The most pressing challenges were financial constraints and residents' behaviour.
Issa	2015	UAE	questionnaire	Organisations may consider implementing a decision-making process to choose outsourcing as a procurement strategy for their projects, rather than deciding irrationally based on short-term benefits.
Gadzekpo and Amos	2016	Ghana	Literature review	The paper presents a theoretical framework for outsourcing, a platform for further research on outsourcing & for improvement of knowledge.

Table 2.6e: Literature findings on choice of delivery mode for FM services

Author	Year	Place	Research Methodology adopted	Summary of Findings
Doval	2016	Hungary	narrative presentation	When there is too much integration, costs and overheads tend to increase thus necessitating outsourcing.
Bello, Martin, Kasim and Aliyu	2016	Malaysia	Literature review	FM services are paramount for effective service delivery most especially in local government. But FM services are not much recognized in Malaysia which makes many local government service deliveries inefficient.
Abdul Wahab	2016	Malaysia	Literature review	transformation strategies framework were developed in order to act as a knowledge contribution for the FM industry in Malaysia to improve the current situation towards FM continuous improvement.
Muhammad	2016	Malaysia	questionnaire	Inflexibility in strategy by most firms gives rise to usurpation and sub-optimality, which failed to take the facilities management (FM) profession beyond the reactive maintenance culture of the past century.
Van Sprang, Ghuijs and Groen	2016	Netherlands	Interview	This study shows that IFM-suppliers are limited to measuring their strategic impact on costs, satisfaction and sustainability.
Haugen and Klungseth	2016	Norway	case studies	While the use of outsourcing increased significantly in popularity during the last 25 years, the Norwegian profile continues to have limited use of outsourcing.
Potkány, Stasiak-Betlejewska, Kováč and Gejdoš	2016	Slovakia	questionnaire	Both in theory & practice there is no generally available methodology for calculating potential cost savings from outsourcing. Companies solve this problem intuitively.
Perera,Ahamed, Rameezdeen, Chileshe, and Hosseini	2016	Sri Lanka	interviews and questionnaire	The findings showed that facilities management services that are aligned to strategic functions are suitable for in-house delivery, while those that are aligned to tactical and operational functions for outsourcing.
Weerasinghe, Disanayake and arawera	2016	Sri Lanka	Interview	The market for FM services in Sri Lanka is considered as a niche market with a slower growth which is still in its infancy. Market boundaries are still undefined; new entrants can define their own market share.

Table 2.6f: Literature findings on choice of delivery mode for FM services

Author	Year	Place	Research Methodology adopted	Summary of Findings
Bernhardt, Batt, Houseman, and Appelbaum	2016	US	Literature review	Detailed a major research initiative on domestic outsourcing, discussing the questions it should answer and providing a menu of research methodologies and potential data sources.
Nakanjako	2016	Ug &a	questionnaire, interview and document review	Outsourcing IT functions was the most significant contributor to institutional performance. There was a relationship between outsourcing IT & HR functions & institutional performance.
Zailani, and Shaharudin, Razmi and Iranmanesh	2017	Malaysia	questionnaire	Superior output is linked to the company's capital. The degree to which various logistics outsourcing approaches are used is influenced by the lack of human and physical asset capacities, as well as transaction uncertainty.
Mohd.Nur and Musa	2017	Malaysia	Questionnaire	11 types of FM services are currently practiced in Klang Valley (KV) shopping centres, which deliver FM services using both in-house and outsourcing but majority still favour in-house FM service delivery.
Isa, Kamaruzzaman, Mohamed and Berawi	2017	Malaysia	literature review	Addresses five elements of FM functions and their impacts on VM studies. Both FM and VM should be applied throughout a building's whole life cycle, starting with the early design stages.
Faremi, Adenuga and Ameh	2017	Nigeria	questionnaire	Physical & functional condition of buildings & services in tertiary institutions uninfluenced by the adopted maintenance management sourcing strategy.
Olaniyi	2017	Nigeria	interviews and questionnaire	There are 51 constituents that are critical to achieving a sustainable building and 44 specific roles of facilities managers in the attainment of sustainable buildings, across design, construction and operations stages.
Chen	2017	UK	Literature review	Provides case studies to justify the relevance and value of the six FM principles, with regard to improving professional leadership and technical capability in the provision of FM services.

2.9 Knowledge Gap

It has been shown in the reviewed literature that frameworks for procuring FM services have been developed by other researchers. However, such frameworks focussed exclusively on procurement of FM services through outsourcing. Another shortcoming of such frameworks was that of not focussing on FM services in public buildings. In the case of Ikediashi (2014) whose work focussed on public buildings, two limitations were observed. First, the study focussed specifically on only hospitals; secondly, there was no attempt to expand the developed framework to accommodate insourcing as well as outsourcing. There thus exists a knowledge gap with regards to how the choice to procure FM services through either outsourcing or insourcing should be made in public buildings.

CHAPTER THREE

3.0

RESEARCH METHODOLOGY

3.1 Research Design

The arrangement of conditions for data collection and analysis in a way that seeks to combine relevance to the research intention with procedure economy is referred to as research design (Kothari, 2004). The study employed a mixed methods research design, which pursued the study objectives through the use of questionnaire survey and interview.

Figure 3.1 is a visual representation of the research design for this study. This consists of a varied technique of research design which was used as a guide for data collection

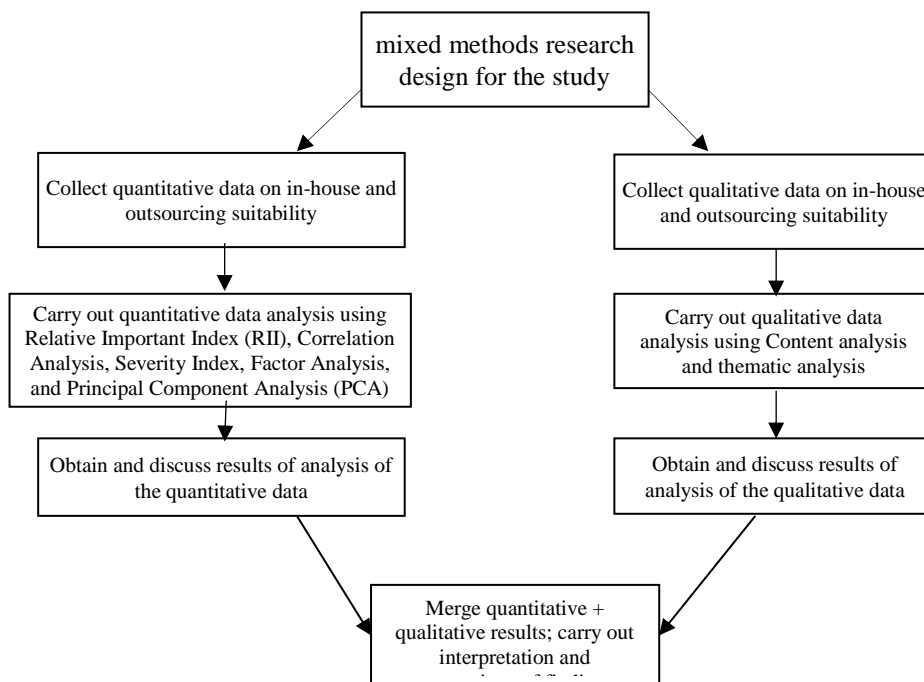


Figure 3.1: Research design of the study

Source: Author, 2019

Mixed methods research design help to offset the weaknesses inherent in single method designs made up of either qualitative or quantitative methodology. Mixing the two methods together in the same study allows the strengths of one to complement the

weaknesses of the other. This increases the researcher's confidence in findings and provides the opportunity to better understand the task under study (Dunning *et al.*, 2008). The concurrent mixed method approach involved the collection of a combination of quantitative and qualitative data at the same time in order to find out whether there exists any sort of convergence, differences or combination (Greene, 2005).

3.2 Data Collection Technique

Both qualitative and quantitative data was collected for this study. The qualitative data involved semi-structured interview with International Facility Management Association (IFMA) members while relevant quantitative data involved the use of questionnaire.

3.2.1 Sources of data

Data for the study was obtained mainly from primary sources; these involved members of IFMA in the study area.

Based on the mixed method research design adopted for the study, two main types of primary data were collected. This includes quantitative data that was collected through the use of structured questionnaires and qualitative data that were obtained from the interviews conducted.

3.2.2 Research population

The population for the study includes FM professionals, most especially members of IFMA that were involved in managing public buildings in Abuja. From preliminary visits to the study area, the population of IFMA members was ascertained to be 176 as retrieved from IFMA Abuja chapter in August 2019.

3.2.3 Sample frame

A sample frame provides quantitative information for estimation of population parameters based on sampled observation. The numbers of FM professionals, who as members of

IFMA are involved in the management of public buildings in Abuja was obtained from IFMA to be 176. A list of the members along with their work addresses were procured; the researcher thus visited public buildings in the study area to serve IFMA members with the research questionnaire.

3.2.4 Sample size

The size of the sample of respondents for the questionnaire survey that was targeted were obtained from the use of the sample size determination formula as developed by (Yamen, 2013). The formula is:

$$n = \frac{N}{1+N(e)^2} \quad \text{Equation (1)}$$

Where n = sample size; N= target population, which is 176; E= level of precision or sampling of error which is $\pm 5\%$.

Using this formula, the minimum returned sample size for this study was 122. Since the number is sufficiently large as to make it necessary for the research to reach most of the IFMA members within the study area. Some form of random sampling was carried out to ensure that the sample size was achieved.

3.2.5 Sample technique

The size of the membership of IFMA within the study area being 176, and the required sample size was determined to be 122, random sampling technique was used. This involved administering the research instrument randomly on every IFMA member in public and private organization until the required sample size was achieved. On the interview, purposive-snowball technique was employed. Where necessary, participants were asked to provide the addresses of other IFMA members that are known to them.

3.2.6 Design and Administration of research instruments

3.2.6.1 Questionnaire

The research instrument for quantitative data collection was developed from similar instruments employed by Kamarazaly (2007) and Ikediashi (2014). The questionnaire was developed for the purpose of gathering information from respondents. Which comprised of sections designed to be answered by respondents. It is the vehicle used to offer the conversation starters that the analyst needs respondents to reply (Clark and Creswell, 2014).

3.2.6.2 Interview

An interview protocol was developed in line with the work of Kamarazaly (2007) for the purpose of collecting qualitative data from facility managers of 10 selected public agencies in Abuja. The IFMA members selected were targeted through purposive-snowball, and were selected based on experience of FM in public agencies and willingness to participate in the study. It contained semi-structured questions that led to discussion with the selected IFMA members. All participants were officially communicated and a convenient time was agreed for the exercise. At the commencement of the interview, the consent and permission of the participants were sought to record all of their conversation using a digital recorder. Each interview was planned to take between 30 minutes and one hour.

3.3 Method of Data Analysis

The data gathered from the respondents via the research questionnaire was first coded into Microsoft Excel as numbers representing the options selected by the respondents. Next, as presented in Table 3.1, analysis of the data in relation to the stated objectives of the study was carried out.

Table 3.1: Methods of Data Analysis

1	To assess the extent to which FM services in public buildings are procured through outsourcing and in-house.	Questionnaire	Relative Important Index, Principal Component and ANOVA
2	To determine the drivers of FM services procurement through outsourcing and in-house routes.	Questionnaire/Interview	Relative Important Index, Correlation Analysis and Factor Analysis
3	To determine the challenges/barriers to the procurement of FM services through outsourcing and in-house routes.	Questionnaire	Relative Importance Index and Severity Index
4	To develop a framework for procurement of FM services through outsourcing & in-house routes in public buildings.	Questionnaire/Interview	Content analysis

Source: Author (2019)

Relative important index and severity index was used in analysing data gotten from respondent with the following formula. where: $S = \sum nW$

Where:

S = is the rank sum,

n = number of respondents

W = corresponding weight/score of rank category

RI = is the relative index

The relative index is calculated as $RI = S/4n$

The relative index ranges from 0 – 1. The item with the highest relative index is considered the first in the rank order.

Using the mathematical expression and the scale on the rating of the issues in interpreting the degree of severity adapted from (Agboje *et al.*, 2014).

Severity Index (S.I) = $\sum a (n/N) * 100/5$

a is Weight or points assigned

n is Number of respondents

N is total number of responses obtained for that variable

Where:

$0.00 \leq SI < 12.5$ implies extremely insignificant barrier

$12.5 \leq SI < 37.5$ implies insignificant barrier

$37.5 \leq SI < 62.5$ implies moderately significant barrier

$62.5 \leq SI < 87.5$ implies very significant barrier

$87.5 \leq SI \leq 100$ implies extremely significant barrier

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Data Presentation

This chapter presents the findings from the quantitative and qualitative research conducted using questionnaires and semi-structured interviews respectively. Ninety-three (93) registered IFMA took part in the questionnaire survey and 10 IFMA members participated in the semi-structured interviews.

4.2 Analysis of the Questionnaires

The questionnaires administered were 122 and 93 questionnaires were returned from the 122 distributed. The data collected was based on the experience and qualification of the respondents, and majority of the respondents work with public organisations.

Table 4.1: Questionnaires Response Rate

	Frequency	Percentage
Questionnaire administered	122	100.0
Questionnaire received	93	76.2

Table 4.1 shows the response rate of the questionnaires distributed of which from the 122 questionnaires distributed, 93 were fully filled and returned amounting to a response rate of 76.2 percent.

Table 4.2: Demographic Information of the Respondents

Variables	Characteristics	Frequency	Percentage	Cumulative
Age	20-30yrs	24	25.81	25.81
	31-40yrs	39	41.94	67.74
	41-50yrs	20	21.51	89.25
	>50yrs	10	10.75	100.00
Gender	Female	17	18.28	18.28
	Male	76	81.72	100.00
Work Experience	11-15yrs	16	17.21	18.28
	5-10yrs	36	38.71	55.91
	<5yrs	21	22.58	78.49
	>15yrs	20	21.51	100.00
Level Of Education	HND/Bsc	43	46.24	46.24
	Msc	45	48.39	94.62
	OND/NCE	2	2.15	96.77
	Phd	3	3.23	100.00
Work Designation	Administrative Assistant	3	3.23	3.24
	Architect	18	19.35	22.59
	Builder	12	12.90	35.49
	Civil Engineer	16	17.21	52.70
	Estate Manager	18	19.35	72.06
	Facility Manager	13	13.98	86.04
	Project Manager	1	1.08	87.12
	Quantity Surveyor	9	9.68	96.80
	Technical Officer	3	3.23	100.00
Ownership Of Building	Government	56	60.22	60.22
	Private	37	39.78	100.00
Gross Floor Area of Building	0-1000sq.M	18	19.35	19.35
	1001-2500sq.M	40	43.01	62.37
	2501-5000sq.M	19	20.43	82.80
	>5000sq.M	16	17.20	100.00
No of Floors	1	29	31.18	31.18
	2	35	37.63	68.82
	3	18	19.35	88.17
	>3	11	11.83	100.00

Table 4.2 shows the respondents age distribution with respect to the quantitative data.

As indicated in Table 4.2 majority of the respondents fall between the age group of 31-40 years, representing 41.94 % of the total respondents. Respondents between the age group

of 41-50 years were 21.51%, while above 50 years were 10.75% and the least age distribution of the respondents was the age distribution of between 20-30 years which was 25.81%. Gender distribution of respondents indicates that the construction industry is generally dominated by the male gender. It was not different result in this study as indicated in Table 4.2 where the male gender represented 81.72% of the total respondents and the female gender was only 18.28%.

The professional distribution of respondents shows that amongst the respondents, architects and estate managers were the most dominating with both profession having 19.35% from the questionnaires collected, followed by the civil engineers with 17.21%, the facility manager is next with 13.98%. Others are builders with 12.90%, quantity surveyors were 9.68%, technical officer and administrative assistant are both 3.23% and project manager was 1.08%. The result indicates that other professionals are dominating in the practice of facility management than facility manager's practitioners. The result also shows that it's not only the estate managers that are dominating in facility management practices but also the architecture professionals. In respondent's academic qualification. Masters, dominated the chart with 48.39% as indicated, HND/BSc were 46.24%, PhD were 3.23% and ND was 2.15% respectively. The quality of data needed for the study made the targeted respondents to be personnel with advanced educational background also, the result shows that the qualifications of the respondents fits in the study target.

Table 4.2 shows the years of experience of respondents. 5-10 years is 36%, less than 5 years is 22.58%, above 15 years is 21.51% and 11-15 years is 17.21%. The experience of professionals was sorted based on the result gotten from the quantitative data. The building ownership of respondents indicates that government takes majority ownership with 60.22% and private owning 39.78%. The study required public building and most of

it are owned by government which is consistent with the chart shown. The floor area of respondents building, 1001-2500 m² were 43.01%, 2501-5000 m² were scored with 20.43%, 0-1000 m² were 19.35% and above 5000 m² were 17.20%. As indicated in Table 4.2 the work space allocated to professionals handling facility management services was 1001-2500 square metre that dominated the chart. The number of floors of respondents indicated that, 2 floors represented 37.63%, 1 floor were 31.18%, 3 floors were 19.35% and above 3 floors were 11.83%. 2 floors dominated the chart with the number of public buildings handling facility management services

4.3 Extent to which FM services are procured in public buildings

To achieve the first objective of the study, responses on the extent to which FM services in public buildings are procured through outsourcing and in-house was collected and ranked using the relative important index analysis. Relative importance index analysis is an important tool for prioritising indicators rated on Likert type scales and it allows for identifying most important services or factors based on respondent's feedbacks (Rooshdi *et al.*, 2018). Tables 4.3 shows the FM services delivered in public buildings. As suggested by Akadiri (2011), five important levels are transformed from relative important index analysis values: high (H) ($0.8 \leq RI \leq 1$), high medium (HM) ($0.6 \leq RI \leq 0.8$), medium (M) ($0.4 \leq RI \leq 0.6$), medium-low (ML) ($0.2 \leq RI \leq 0.4$) and low (L) ($0 \leq RI \leq 0.2$).

Table 4.3: FM Services Delivered in Public Buildings

Codes	FM service delivered to organization	RII	Rank order	Importance Level
A	Real Estate/Property Management			
A01	Real Estate/Property portfolio Management	0.8791	6	H
A02	Leasing & sub-letting services	0.7955	12	HM
A03	Retail outlet & space renting	0.7775	15	HM
A04	Extension & Alterations	0.7457	20	HM
A05	Demolitions	0.6500	22	HM
B	Maintenance & Repairs			
B01	Facility refurbishment	0.9089	2	H
B02	Plant maintenance & repairs	0.9000	3	H
B03	General cleaning services	0.8882	5	H
B04	Waste disposal & environmental management	0.9097	1	H
B05	Landscaping maintenance	0.8511	7	H
C	Administration Management & Office Services			
C01	Security	0.8911	4	H
C02	Courier services	0.7341	21	HM
C03	Reception & telephone operator	0.7793	14	HM
C04	Public relation/liaison services	0.7756	17	HM
C05	Car park maintenance	0.7912	13	HM
C06	Purchasing & contract control & negotiation	0.8239	11	H
C07	Office furniture & stationary provision	0.8505	8	H
C08	Human resource management	0.8489	10	H
D	Employee Support Services			
D01	Crèche administration	0.7667	19	HM
D02	Recreations	0.7762	16	HM
D03	Catering/Restroom management	0.8494	9	H
D04	Residential accommodation	0.7698	18	HM

Based on the results in Table 4.3, of the 22 services shown, 11 FM services were ranked to be in the high importance level of FM services delivered to organisations. While the other 11 services were ranked to be in the high-medium level of importance. The 11 FM services ranked to be in the high importance level as indicated in Table 4.3 are Waste disposal and environmental management with relative important index of 0.9097, is significant as proper disposal of waste and well managed environment improves healthy life style. Facility refurbishment with relative important index of 0.9089, is essential in improving the cleaning, decorating and re-equipping any facility irrespective of the size

and this may include elements of retrofitting with the aim of making a building more efficient and sustainable. The lifecycle of a building can be significantly extended by effective refurbishment. Plant maintenance and repairs with relative important index of 0.9000, making repairs very engaging for efficient running of a facility. Security with relative important index of 0.8911, security is being held with high regards in most organisations and even more, most companies outsource their security services for smooth running of the organisation. General cleaning services with relative important index of 0.8882. According to the respondents General cleaning services is one of those rendered by the facility management team, and the best result is what the organisation get from it. It was also reported to be among the most outsourced FM services. Real estate/property portfolio management with relative important index of 0.8791. This service was also reported as one of the main services rendered by management itself in an organisation in order to satisfy customers and give them value for their money. Others are Landscaping maintenance, Office furniture and stationary provision, Catering/Restroom management, Human resource management, and Purchasing, contract control and negotiation with relative important index of 0.8511, 0.8505, 0.8494, 0.8489 and 0.8239 respectively.

4.3.1 Validity Analysis of FM Suitability Constructs

To validate the constructs used in the study, Table 4.4 shows validity analysis of FM suitability constructs. A principal component analysis was carried out. According to Van der Plas *et al.* (1998), a factor must have an eigenvalue greater than zero to be retained. The results indicate that all the constructs have eigenvalue greater than 0 and are therefore retained. However, only the first eleven constructs appear to be more meaningful considering their higher eigenvalues.

Table 4.4: Validity Analysis of FM Suitability Constructs (using Principal Component Analysis)

Codes	Constructs	Eigenvalue
A	Real estate/Property management	
A01	Real estate/property portfolio management	4.07101
A02	Leasing & sub-letting services	2.78558
A03	Retail outlets & space renting	2.16414
A04	Extension & alterations	1.98107
A05	Demolitions	1.64746
B	Maintenance & Repairs	
B01	Facility refurbishment	1.20476
B02	Plant maintenance & repairs	1.16363
B03	General cleaning services	1.01771
B04	Waste disposal & environmental management	.941364
B05	Landscaping maintenance	.771768
C	Administration Management & Office Services	
C01	Security	.742633
C02	Courier services	.614127
C03	Reception & telephone operator	.496778
C04	Public relation/liaison services	.476359
C05	Car park maintenance	.384723
C06	Purchasing & contract control & negotiation	.359428
C07	Office furniture & stationary provision	.300148
C08	Human resource management	.228208
D	Employee Support Services	
D01	Crèche administration	.207683
D02	Recreations	.193986
D03	Catering/Restroom management	.139682
D04	Residential accommodation	.107765

4.3.2 Extent to which FM services in public buildings are procured through In-house

Table 4.5 shows the FM services delivered in public buildings which are procured through in-house mode. As suggested by Akadiri (2011), five important levels are transformed from relative important index analysis values: high (H) ($0.8 \leq RI \leq 1$), high medium (HM) ($0.6 \leq RI \leq 0.8$), medium (M) ($0.4 \leq RI \leq 0.6$), medium-low (ML) ($0.2 \leq RI \leq 0.4$) and low (L) ($0 \leq RI \leq 0.2$).

Table 4.5: FM Services Delivered in Public Buildings procured through In-house Mode

Codes	FM Services Delivered in Public Buildings procured through In-house Mode	RII	Rank order	Importance Level
A	Real estate/Property management			
A01	Real estate/property portfolio management	0.7655	3	HM
A02	Leasing & sub-letting services	0.7095	13	HM
A03	Retail outlets & space renting	0.7111	12	HM
A04	Extension & alterations	0.6800	20	HM
A05	Demolitions	0.6198	22	HM
B	Maintenance & Repairs			
B01	Facility refurbishment	0.6988	15	HM
B02	Plant maintenance & repairs	0.6840	19	HM
B03	General cleaning services	0.6964	16	HM
B04	Waste disposal & environmental management	0.7060	14	HM
B05	Landscaping maintenance	0.7133	11	HM
C	Administration Management & Office Services			
C01	Security	0.6905	17	HM
C02	Courier services	0.6785	21	HM
C03	Reception & telephone operator	0.7333	8	HM
C04	Public relation/liaison services	0.7632	4	HM
C05	Car park maintenance	0.7295	9	HM
C06	Purchasing & contract control & negotiation	0.7839	1	HM
C07	Office furniture & stationary provision	0.7494	5	HM
C08	Human resource management	0.7800	2	HM
D	Employee Support Services			
D01	Crèche administration	0.7293	10	HM
D02	Recreations	0.7459	7	HM
D03	Catering/Restroom management	0.6860	18	HM
D04	Residential accommodation	0.7463	6	HM

In accordance with Table 4.5 shows that all 22 facility management services are ranked to be in the high-medium level of importance with purchasing and contract control and negotiation with the relative index of 0.7839, is used to obtain a discount, agree on a timescale for launch, and come to an agreement in FM services delivered in-house. Human resource management under office services with relative important index of 0.7800, which is responsible for motivating, hiring, training and maintaining the workforce of an organisation, human resource management is significant in dealing with

employee related issues. Real estate/property portfolio management under real estate/property management with the relative index of 0.7655 is rated high-medium in giving customers satisfaction and value for their money. Public relation/liaison services and office furniture and stationary provision with the relative index of 0.7632 and 0.7494 respectively. Public relation is responsible for spreading vital information about the organisation and the public, which is important in raising awareness and the advertisement of FM services. While office furniture and stationary provision is essential in making supplies readily available in the organisation for efficient and effective results.

Residential accommodation and recreations under employee support services with the important index of 0.7463 and 0.7459 are part of the services rendered to employees in an organisation for comfort and relaxation in order to get the best out of the employees. The result in Table 4.5 shows that the delivery mode of in-house FM services, Reception and telephone operator, car park maintenance, crèche administration and landscaping maintenance, with the relative index of 0.7333, 0.7295, 0.7293 and 0.7133 are used in order to sustain and improve productivity and efficiency in the work place.

4.3.3 Extent to which FM services in public buildings are procured through Outsourcing

Table 4.6 shows the FM services delivered in public buildings which are procured through outsourcing mode. Based on the ranking results on Table 4.6, of the 22 services ranked, 3 FM services were ranked to be in the high importance level of FM services delivered to organisations. While the other 19 services were ranked to be in the high-medium level of importance. The 3 FM services ranked to be in the high importance level as indicated in Table 4.6, security with the relative index of 0.8138. security in an organisation is important because it protects confidential information and enables organisation function in dealing with outsourced FM services delivery mode. Catering/restroom management

with the relative index 0.8116, the comfort zone of employees is essential for effective contribution and effective results. Landscaping maintenance with the relative index of 0.8047, keeps the working environment clean, green and fresh, it represents the company image and the people in it.

Table 4.6: FM Services Delivered in Public Buildings procured through outsourcing

Mode

Codes	FM Services Delivered in Public Buildings procured through outsourcing Mode	RII	Rank order	Importance Level
	Real estate/Property management			
A01	Real estate/property portfolio management	0.7095	13	HM
A02	Leasing & sub-letting services	0.7024	14	HM
A03	Retail outlets & space renting	0.6434	20	HM
A04	Extension & alterations	0.6824	16	HM
A05	Demolitions	0.6854	15	HM
B	Maintenance & Repairs			
B01	Facility refurbishment	0.7548	7	HM
B02	Plant maintenance & repairs	0.7586	6	HM
B03	General cleaning services	0.7705	5	HM
B04	Waste disposal & environmental management	0.7859	4	HM
B05	Landscaping maintenance	0.8047	3	H
C	Administration Management & Office			
C01	Security	0.8138	1	H
C02	Courier services	0.7238	10	HM
C03	Reception & telephone operator	0.6674	18	HM
C04	Public relation/liaison services	0.6238	21	HM
C05	Car park maintenance	0.6814	17	HM
C06	Purchasing & contract control & negotiation	0.6217	22	HM
C07	Office furniture & stationary provision	0.7122	11	HM
C08	Human resource management	0.6643	19	HM
D	Employee Support Services			
D01	Crèche administration	0.7106	12	HM
D02	Recreations	0.7398	8	HM
D03	Catering/Restroom management	0.8116	2	H
D04	Residential accommodation	0.7318	9	HM

According to Table 4.6 all three (3) high ratings of FM services delivered through outsourcing are among the common services outsourced by organisations. Waste disposal

and environmental management with relative index of 0.7859, is necessary in reducing the adverse effects of waste on human and the environment. General cleaning services with the relative index of 0.7705, basic cleaning of an organisation is necessary in maintaining the self-image and productivity of an organisation. Plant maintenance and repairs with the relative index of 0.7586, for smooth running of operations, it is essential for plants to be regularly maintained and repaired. Facility refurbishment with the relative index of 0.7548. Taking good care of facility is important whether big or small to improve the level of operational reliability. Others are recreations, residential accommodation, courier services, and office furniture and stationary provision with the relative index of 0.7398, 0.7318, 0.7238 and 0.7122 respectively.

4.4 Differences in Responses on the Constructs for In-house Suitability and the Constructs for Outsourcing Suitability for FM Services Procurement

To determine whether there were any differences in the responses on the constructs for in-house suitability and the constructs for outsourcing suitability a ANOVA analysis was carried out. The result of the ANOVA test is shown in Table 4.7. Considering the Wilks' lambda statistics which is the most commonly recommended statistics, the p-value = 0.0020 which is less than 0.05. the result is statistically significant. Therefore, there is a difference in the responses on the constructs for in-house suitability and the constructs for outsourcing suitability.

Table 4. 7 ANOVA Result of the responses on the constructs for in-house suitability and the constructs for outsourcing suitability.

Number of obs =59							
Source		Statistic	df	F(df1,	df2) =	F	Prob>F
Model	W	0.0000	45	495.0	69.1	1.77	0.0020
	P	9.0909		495.0	143.0	1.38	0.0114
	L	553.9543		495.0	13.0	1.32	0.2931
	R	401.0364		45.0	13.0	115.85	0.0000
Residual							13

W = Wilks' lambda; L = Lawley-Hotelling trace; P = Pillai's trace; R = Roy's largest root

Source: Fieldwork 2019

4.5 Factors Driving Decisions on Delivery Mode for FM Services

To accomplish objective two (2) which states “to determine the drivers of FM services procurement through outsourcing and in-house routes”, the responses gotten from quantitative data is discussed. Table 4.8 shows factors driving In-house delivery mode for FM services.

Table 4.8: Factors Driving FM Services In-house Delivery Mode Decisions

Codes	Factors Driving In-house Delivery Mode for FM Services	RII	Rank order	Importance Level
A	Financial			
A01	To achieve cost reduction with enhanced performance (e.g. in financial ratios etc)	0.8847	1	H
A02	Absence of initial and major capital investments for service provision	0.7741	31	HM
A03	To achieve life-cycle cost reduction	0.8253	16	H
A04	To reduce capital funds in non-core functions	0.7605	32	HM
A05	As a response to rising energy costs	0.7167	35	HM
B	Labour			
B01	To achieve right-sized employees and reduced space	0.7976	29	HM
B02	To focus on core competencies of staff	0.8634	4	H
B03	To use vendor's competencies and facilities	0.6762	36	HM
C	Strategy			
C01	To achieve competitive advantage	0.8405	11	H
C02	To concentrate on core business of organisation	0.8442	8	H
C03	To improve/maintain corporate image/organisational ethos	0.8442	9	H
C04	To gain access to new products and services	0.7885	30	HM
C05	To improve strategic positioning	0.8115	24	H
D	Operational			
D01	To achieve improved customer orientation and service	0.8636	3	H
D02	To increase operational flexibility	0.8292	14	H
D03	To achieve increased innovation	0.7977	28	HM
D04	To obtain access to Building information modelling (BIM) for FM	0.8112	26	H
D05	To conform to senior management or directors' leadership	0.8202	20	H
E	Institutional			
E01	In response to environmental conditions	0.8182	21	H
E02	Government policies	0.8386	12	H
E03	Legislation (Acts, Decrees, Edicts)	0.8114	25	H
F	Productivity			
F01	To compare in-house performance with vendor's staff	0.8494	7	H
F02	To be able to handle varying demands more effectively	0.8136	23	H
F03	To improve quality, productivity and operational efficiencies	0.8437	10	H
G	Quality			
G01	To improve performance standard	0.8773	2	H
G02	To improve quality of services	0.8614	5	H
H	Risk			
H01	In order to share risks	0.7573	33	HM

Table 4.8a: Factors Driving FM Services In-house Delivery Mode Decisions

Codes	Factors Driving In-house Delivery Mode for FM Services	RII	Rank order	Importance Level
H02	As a way to transfer risk	0.7258	34	HM
I	Stakeholder			
I01	In response to client demands	0.8205	19	H
I02	As a way to create jobs for local communities	0.8180	22	H
I03	To improve stakeholders' satisfaction	0.8247	18	H
I04	As a way to respond to pressure from clients	0.8267	15	H
I05	As a way to respond to pressure from employees and shareholders on sustainable practices	0.8250	17	H
J	Time			
J01	To improve responsiveness and cycle times	0.8382	13	H
J02	To improve timely delivery of services	0.8533	6	H
J03	To permit quicker response to new needs	0.8089	27	H

Based on the results on Table 4.8, of the 36 services ranked and rendered according to respondents, 27 FM services were ranked to be in the high importance level of factors driving FM services delivered to organisations. While the other 9 services were ranked to be in the high-medium level of importance. The factors driving FM services in-house that are ranked to be in high importance level as indicated in Table 4.8 shows that, to achieve cost reduction with enhanced performance have relative index of 0.8847. Finance stands as one of the major goals for profit making organisation, so it is necessary to achieve cost reduction with quality and performance still at its peak. To improve performance standard, to achieve improved customer orientation and service, to focus on core competencies of staff, to improve quality of services and to improve timely delivery of services, with relative index of 0.8773, 0.8636, 0.8634, 0.8614 and 0.8533 respectively. The indicated factors are among the top factors used in improving productivity, effectiveness and efficiency of employees. All stated factors from (1st to 6th) are what organisations achieve if their staff are well trained, motivated and comfortable.

To compare in-house performance with vendor's staff, to concentrate on core business of organisation, to improve/maintain corporate image/organisational ethos, to improve quality, productivity and operational efficiencies, and to achieve competitive advantage, with a relative index of 0.8494, 0.8442, 0.8442, 0.8437 and 0.8405 respectively. The indicated constructs (8th and 9th) are ranked with same RII. The factors play an inescapable role and their impacts to operation in organisations give value to customers and greater recognition to employees.

To reduce capital funds in non-core functions; achieve cost reduction with enhanced performance; improve strategic positioning; focus on core competencies; share risks; compare in-house performance with vendor's staff; handle varying demands more effectively; gain access to new products and services; permit quicker response to new needs; improve performance standard; improve quality of services; improve timely delivery of services; improve responsiveness and cycle times; improve stakeholders' satisfaction; create jobs for local communities (Ikediashi, 2014).

4.5.1 Reliability Analysis of FM Drivers Constructs

Reliability analysis was conducted using Cronbach alpha coefficient for internal consistency of the constructs for the factors driving delivery mode for FM services. The results of the Cronbach alpha are summarized in Table 4.9. The reliability coefficients for the constructs used in this study are all above 0.7 and the data is deemed to be sufficiently reliable following Shanmugapriya and Subramanian (2013).

Table 4.9: Reliability Analysis of FM Drivers Constructs

Codes	Constructs	Cronbach's alpha
A	Financial	
A01	To achieve cost reduction with enhanced performance (e.g. in financial ratios etc)	0.9436
A02	Absence of initial and major capital investments for service provision	0.9462
A03	To achieve life-cycle cost reduction	0.9433
A04	To reduce capital funds in non-core functions	0.9444
A05	As a response to rising energy costs	0.9455
B	Labour	
B01	To achieve right-sized employees and reduced space	0.9439
B02	To focus on core competencies of staff	0.9435
B03	To use vendor's competencies and facilities	0.9446
C	Strategy	
C01	To achieve competitive advantage	0.9422
C02	To concentrate on core business of organisation	0.9417
C03	To improve/maintain corporate image/organisational ethos	0.9434
C04	To gain access to new products and services	0.9426
C05	To improve strategic positioning	0.9429
D	Operational	
D01	To achieve improved customer orientation and service	0.9434
D02	To increase operational flexibility	0.9438
D03	To achieve increased innovation	0.9426
D04	To obtain access to Building information modelling (BIM) for FM	0.9422
D05	To conform to senior management or directors' leadership	0.9442
E	Institutional	
E01	In response to environmental conditions	0.9427
E02	Government policies	0.9438
E03	Legislation (Acts, Decrees, Edicts)	0.9438
F	Productivity	
F01	To compare in-house performance with vendor's staff	0.9432
F02	To be able to handle varying demands more effectively	0.9423
F03	To improve quality, productivity and operational efficiencies	0.9420
G	Quality	
G01	To improve performance standard	0.9420
G02	To improve quality of services	0.9426
H	Risk	
H01	In order to share risks	0.9433

Table 4.9a: Reliability Analysis of FM Drivers Constructs

Codes	Constructs	Cronbach's alpha
H02	As a way to transfer risk	0.9440
I	Stakeholder	
I01	In response to client demands	0.9422
I02	As a way to create jobs for local communities	0.9430
I03	To improve stakeholders' satisfaction	0.9422
I04	As a way to respond to pressure from clients	0.9418
I05	As a way to respond to pressure from employees and shareholders on sustainable practices	0.9417
J	Time	
J01	To improve responsiveness and cycle times	0.9412
J02	To improve timely delivery of services	0.9414
J03	To permit quicker response to new needs	0.9422

4.5.2 Factors Driving Decisions on Outsourcing Delivery Mode

Towards achieving objective 2, Table 4.10 shows factors driving outsourcing decisions on delivery mode for FM services.

Table 4.10: Factors Driving FM Services Outsourcing Delivery Mode Decisions

Codes	Factors Driving Outsourcing Decisions on Delivery Mode for FM Services	RII	Rank order	Importance Level
A	Financial			
A01	To achieve cost reduction with enhanced performance (e.g. in financial ratios etc)	0.7238	30	HM
A02	Absence of initial and major capital investments for service provision	0.7143	33	HM
A03	To achieve life-cycle cost reduction	0.6867	34	HM
A04	To reduce capital funds in non-core functions	0.6682	35	HM
A05	As a response to rising energy costs	0.6141	36	HM
B	Labour			
B01	To achieve right-sized employees and reduced space	0.7318	27	HM
B02	To focus on core competencies of staff	0.7690	15	HM
B03	To use vendor's competencies and facilities	0.7205	31	HM
C	Strategy			
C01	To achieve competitive advantage	0.7747	13	HM
C02	To concentrate on core business of organisation	0.7379	25	HM
C03	To improve/maintain corporate image/organisational ethos	0.7535	23	HM
C04	To gain access to new products and services	0.7839	11	HM
C05	To improve strategic positioning	0.7674	16	HM

Table 4.10a: Factors Driving FM Services Outsourcing Delivery Mode Decisions

Codes	Factors Driving Outsourcing Decisions on Delivery Mode for FM Services	RII	Rank order	Importance Level
D	Operational			
D01	To achieve improved customer orientation and service	0.7718	14	HM
D02	To increase operational flexibility	0.7767	12	HM
D03	To achieve increased innovation	0.7907	8	HM
D04	To obtain access to Building information modelling (BIM) for FM	0.7553	22	HM
D05	To conform to senior management or directors' leadership	0.7153	32	HM
E	Institutional			
E01	In response to environmental conditions	0.7624	18	HM
E02	Government policies	0.7524	24	HM
E03	Legislation (Acts, Decrees, Edicts)	0.7667	17	HM
F	Productivity			
F01	To compare in-house performance with vendor's staff	0.7341	26	HM
F02	To be able to handle varying demands more effectively	0.7881	10	HM
F03	To improve quality, productivity and operational efficiencies	0.8047	6	H
G	Quality			
G01	To improve performance standard	0.8437	2	H
G02	To improve quality of services	0.8541	1	H
H	Risk			
H01	In order to share risks	0.7571	20	HM
H02	As a way to transfer risk	0.7277	29	HM
I	Stakeholder			
I01	In response to client demands	0.7929	7	HM
I02	As a way to create jobs for local communities	0.7310	28	HM
I03	To improve stakeholders' satisfaction	0.7561	21	HM
I04	As a way to respond to pressure from clients	0.7576	19	HM
I05	As a way to respond to pressure from employees and shareholders on sustainable practices	0.7904	9	HM
J	Time			
J01	To improve responsiveness and cycle times	0.8165	3	H
J02	To improve timely delivery of services	0.8115	5	H
J03	To permit quicker response to new needs	0.8163	4	H

Based on the results on Table 4.10, of the 36 services ranked and rendered according to respondents, 6 FM services were ranked to be in the high importance level of factors driving FM services delivered to organisations. While the other 30 services were ranked to be in high-medium level of importance. The FM services ranked to be in high and high-medium importance level as indicated in Table 4.10 are as follows, to improve quality of services, with relative index of 0.8541. Quality, explains the standard of products and services rendered in an organisation. To improve performance standard, to improve responsiveness and cycle times, to permit quicker response to new needs, to improve timely delivery of services and to improve quality, productivity and operational efficiencies with the relative index of 0.8437, 0.8165, 0.8163, 0.8115 and 0.8047 respectively. The stated constructs make up the top spot in outsourcing decisions. In order to accomplish maximum productivity with high level of quality, time, proper motivation and worker's empowerment have to be maintained.

In response to client demands, achieve increased innovation, as a way to respond to pressure from employees and shareholders on sustainable practices, to be able to handle varying demands more effectively and to gain access to new products and services with the relative index of 0.7927, 0.7907, 0.7904, 0.7881 and 0.7839 respectively.

4.5.3 Factor Analysis Result of the FM Drivers

To further validate the constructs, a factor analysis was carried out on the variables serving as drivers to both outsourcing and in-house FM services procurement. Variables with communality value ranges from 0 to 1 with values closer to 1 said to have more communality and suggested to be ideal for inclusion (Zeynivandnezhad *et al.*, 2019).

Table 4.11: Factor Analysis Result of the FM Drivers

In-house FM Drivers			Outsourcing FM Drivers		
Variable	Uniqueness	Communality	Variable	Uniqueness	Communality
Financial	0.5001	0.50	Financial	0.4103	0.5897
Labour	0.2978	0.7022	Labour	0.6055	0.3945
Strategy	0.1692	0.8308	Strategy	0.1075	0.8925
Operational	0.2780	0.722	Operational	0.1340	0.866
Institutional	0.3549	0.6451	Institutional	0.2657	0.7343
Productivity	0.2266	0.7734	Productivity	0.1218	0.8782
Quality	0.2053	0.7947	Quality	0.1494	0.8506
Risk	0.2910	0.709	Risk	0.2714	0.7286
Stakeholder	0.1130	0.887	Stakeholder	0.1100	0.89
Time	0.2910	0.709	Time	0.2851	0.7149

The results indicate that all the constructs have communality values closer to 1 and are therefore retained.

4.6 Relationships between the Drivers for In-House and Outsourcing of FM Services Responses.

Spearman Correlation analysis was conducted to determine the associations between the responses for the drivers of in-house and that for outsourcing of FM services.

Table 4.12: Correlations Between the Drivers for In-House and Outsourcing of FM Services Responses.

Constructs	Financial	Labour	Strategy	Operational	Institutional	Productivity	Quality	Risk	Stakeholder
Labour	0.9929	0.1838	0.3028	0.7118	0.9410	0.2129	0.4737	0.2619	0.8569
Strategy	0.7694	0.7629	0.7129	0.0909	0.2519	0.2987	0.4960	0.0918	0.3732
Operational	0.2913	0.0443	0.1159	0.0068	0.0472	0.0285	0.3136	0.4042	0.0530
Institutional	0.4442	0.1392	0.3688	0.0553	0.1300	0.1043	0.2752	0.1799	0.1621
Quality	0.7304	0.8317	0.1512	0.7311	0.9240	0.2317	0.7709	0.5193	0.4616
Risk	0.5074	0.4468	0.0994	0.8349	0.6948	0.7729	0.2902	0.0916	0.5733
Stakeholder	0.2691	0.3660	0.3521	0.1165	0.8335	0.2129	0.5605	0.0788	0.1301
Time	0.4984	0.9437	0.1955	0.6652	0.9504	0.3745	0.6527	0.0296	0.9158

4.7 Barriers to the procurement of FM services through in-house route

To achieve objective three (3) which states “To determine the challenges/barriers to the procurement of FM services through outsourcing and in-house routes”. The responses gotten through quantitative data is discussed. Table 4.13 shows factors serving as barriers to in-house delivery mode of FM services.

Table 4.13: Barriers to In-House Delivery Mode of FM Services

Codes	Factors serving as Barriers to in-house Delivery Mode of FM services	RII	Rank order	Importance Level
A	Financial			
A01	Financial constraints	0.8609	1	H
A02	Financial failure of chosen Vendor	0.7775	13	HM
A03	Perceived higher upfront costs	0.8068	6	H
B	Institutional			
B01	Commitment of FM profession to the Sustainability agenda	0.8182	3	H
B02	Cost of certification	0.7841	10	HM
B03	Incorporation of building services as an afterthought	0.7012	34	HM
B04	Lack of government policies	0.7126	33	HM
B05	Lack of standard forms of contract for FM	0.7409	31	HM
B06	Physical and historical constraints	0.7568	25	HM
C	Quality			
C01	Absence of benchmark for quality	0.7955	7	HM
C02	Poor quality of services	0.7839	11	HM
C03	Vendor underperformance	0.7432	30	HM
D	Relationship			
D01	Conflict of interest	0.7909	8	HM
D02	Poor relationship between vendor and clients	0.7822	12	HM
E	Risk			
E01	Fear of uncertainty	0.7775	14	HM
E02	Inadequate definition of scope of services	0.7689	21	HM
E03	Interruption to supply of services	0.7578	24	HM
E04	Lack of awareness	0.7523	26	HM
E05	Unclear responsibilities	0.7750	15	HM
E06	Unclear targets	0.7721	19	HM
F	Stakeholder			

Table 4.13a: Barriers to In-House Delivery Mode of FM Services

Codes	Factors serving as Barriers to in-house Delivery Mode of FM services	RII	Rank order	Importance Level
F01	Customer demands	0.8364	2	H
F02	Customer constraints	0.7511	27	HM
F03	Inexperienced client	0.7187	32	HM
F04	Security requirement issues	0.7640	23	HM
G	Strategy			
G01	Inadequate planning of policies implementation	0.8111	4	H
G02	lack of senior management commitment	0.7506	28	HM
G03	Loss of strategic flexibility	0.7730	18	HM
H	Technical			
H01	lack of in-house knowledge	0.7444	29	HM
H02	Inadequate technical knowledge	0.7659	22	HM
H03	Inadequate training	0.7733	16	HM
H04	Inadequate understanding of intelligent buildings that can foster innovation in technology	0.7708	20	HM
H05	Lack of training	0.7733	17	HM
H06	Lack of tools	0.7865	9	HM
H07	Lack of understanding of sustainability issues	0.8090	5	H

Based on the results on Table 4.13, out of the 34 services ranked and rendered according to respondents, 6 FM services were ranked to be in the high importance level of factors serving as barriers in FM services delivered to organisations. While the other 28 services were ranked to be in the high-medium level of importance. The FM services ranked to be in high and high-medium importance level as indicated in Table 4.13, financial constraints, with the relative index of 0.8609. financial constraints restrict in-house from performing better. Customer demands, commitment of FM profession to the sustainability agenda, inadequate planning of policies implementation, lack of understanding of sustainability issues and perceived higher upfront costs with relative index of 0.8364, 0.8182, 0.8111, 0.8090 and 0.8068 respectively. The stated constructs indicated tops the table on barriers to procurement of FM services through in-house route, without all these services properly rendered the organisation faces difficulties.

Absence of benchmark for quality, conflicts of interest, lack of tools, cost of certification, poor quality of services and poor relationship between vendor and clients, with the relative index of 0.7955, 0.7909, 0.7865, 0.7871, 0.7839, and 0.7822 respectively.

Inexperienced client; Interruption to supply of services; Unclear responsibilities and targets; Financial failure of chosen Vendor; Poor quality of services; Vendor underperformance; There is no quality benchmark; the scope of services is inadequately defined; and there are no standard types of FM contracts. Inadequate policy development preparation; Lack of strategic flexibility; a strained relationship between the vendor and the client; a conflict of interest; security concerns; apprehension about the future (Ikediashi, *et al.*, 2012).

4.7.1 Barriers to the Procurement of FM Services through Outsourcing route

Towards achieving objective 3, Table 4.14 shows the factors serving as outsourcing barriers to delivery mode of FM services

Table 4.14: Outsourcing Barriers to Delivery Mode of FM services

Codes	Factors serving as outsourcing barriers to Delivery Mode of FM services	RII	Rank order	Importance Level
A	Financial			
A01	Financial constraints	0.7610	11	HM
A02	Financial failure of chosen Vendor	0.7512	13	HM
A03	Perceived higher upfront costs	0.7590	12	HM
B	Institutional			
B01	Commitment of FM profession to the Sustainability agenda	0.7494	14	HM
B02	Cost of certification	0.7071	29	HM

Table 4.14a: Outsourcing Barriers to Delivery Mode of FM services

Codes	Factors serving as outsourcing barriers to Delivery Mode of FM services	RII	Rank order	Importance Level
B03	Incorporation of building services as an afterthought	0.6675	33	HM
B04	Lack of government policies	0.6643	34	HM
B05	Lack of standard forms of contract for FM	0.7116	27	HM
B06	Physical and historical constraints	0.7264	21	HM
C	Quality			
C01	Absence of benchmark for quality	0.7386	18	HM
C02	Poor quality of services	0.7310	20	HM
C03	Vendor underperformance	0.7425	17	HM
D	Relationship			
D01	Conflict of interest	0.7468	16	HM
D02	Poor relationship between vendor and clients	0.7696	7	HM
E	Risk			
E01	Fear of uncertainty	0.7317	19	HM
E02	Inadequate definition of scope of services	0.7619	10	HM
E03	Interruption to supply of services	0.7241	23	HM
E04	Lack of awareness	0.7153	26	HM
E05	Unclear responsibilities	0.7116	28	HM
E06	Unclear targets	0.7181	24	HM
F	Stakeholder			
F01	Customer demands	0.7906	3	HM
F02	Customer constraints	0.7060	30	HM
F03	Inexperienced client	0.7181	25	HM
F04	Security requirement issues	0.7256	22	HM
G	Strategy			
G01	Inadequate planning of policies implementation	0.7476	15	HM
G02	lack of senior management commitment	0.7048	31	HM
G03	Loss of strategic flexibility	0.6952	32	HM
H	Technical			
H01	lack of in-house knowledge	0.7690	8	HM
H02	Inadequate technical knowledge	0.7814	5	HM
H03	Inadequate training	0.7667	9	HM
H04	Inadequate understanding of intelligent buildings that can foster innovation in technology	0.7816	4	HM
H05	Lack of training	0.7791	6	HM
H06	Lack of tools	0.7907	2	HM
H07	Lack of understanding of sustainability issues	0.8119	1	H

Based on the ranking results on Table 4.14, of the 34 services ranked and rendered according to respondents, 1 FM service were ranked to be in the high importance level of factors serving as barriers in FM services delivered to organisations. While the other 33 services were ranked to be in the high-medium level of importance. The FM services ranked to be in high and high-medium importance level as indicated in Table 4.14 are, lack of understanding of sustainability issues, with relative index of 0.8119. The problem of not understanding what to do/not suitable for the job assigned is a serious technical problem which leads to distrust and doubt in the workplace. Lack of tools, customer demands, inadequate understanding of intelligent buildings that can foster innovation in technology, inadequate technical knowledge and lack of training with the relative index of 0.7907, 0.7906, 0.7816, 0.7814 and 0.779 respectively. The indicated constructs are high-medium according to Table 4.14, without proper work relationship, communication and lack of necessary resources for employees to carry out their tasks, outsourcing services would be faced with issues.

Poor relationship between vendor and clients, lack of in-house knowledge, inadequate training, inadequate definition of scope of services, financial constraints, and perceived higher upfront costs with relative index of 0.7696, 0.7690, 0.7667, 0.7617, 0.7610 and 0.7590 respectively.

According to Finch and Clements-Croome (1997), Lack of technological expertise and understanding of intelligent buildings, which can promote technology advancement by facilities managers, as well as a lack of awareness, training, and tools, are all obstacles in FM services.

4.7.2 Severity Index of the Barriers to FM Delivery

To determine the effect of the variables serving as barriers to FM services, a severity index analysis was conducted as shown in Table 14.15.

Table 14.15: Severity Index of the Barriers to FM Delivery

Codes	Factors serving as in-house barriers to Delivery Mode of FM services	SI	Rank
A01	Financial constraints	86,09	1
F01	Customer demands	83,64	2
B01	Commitment of FM profession to the Sustainability agenda	81,82	3
G01	Inadequate planning of policies implementation	81,11	4
H07	Lack of understanding of sustainability issues	80,90	5
A03	Perceived higher upfront costs	80,68	6
C01	Vendor underperformance	79,55	7
D01	Conflict of interest	79,09	8
H06	Lack of tools	78,65	9
B02	Cost of certification	78,41	10
C02	Poor quality of services	78,39	11
D02	Poor relationship between vendor and clients	78,22	12
A02	Financial failure of chosen Vendor	77,75	13
E01	Fear of uncertainty	77,75	14
E05	Unclear responsibilities	77,50	15
H03	Inadequate training	77,33	16
H05	Lack of training	77,33	17
G03	Loss of strategic flexibility	77,30	18
E06	Unclear targets	77,21	19
H04	Inadequate understanding of intelligent buildings that can foster innovation in technology	77,08	20
E02	Inadequate definition of scope of services	76,89	21
H02	Inadequate technical knowledge	76,59	22
F04	Security requirement issues	76,40	23
E03	Interruption to supply of services	75,78	24
B06	Physical and historical constraints	75,68	25
E04	Lack of awareness	75,23	26
F02	Customer constraints	75,11	27
G02	lack of senior management commitment	75,06	28
H01	lack of in-house knowledge	74,44	29
C03	Vendor underperformance	74,32	30
B05	Lack of standard forms of contract for FM	74,09	31
F03	Inexperienced client	71,87	32
B04	Lack of government policies	71,26	33
B03	Incorporation of building services as an afterthought	70,12	34

using the mathematical expression and the scale on the rating of the issues in interpreting the degree of severity adapted from (Agboje *et al.*, 2014). From the result of the severity index analysis show in Table 14.15, all the variables are considered as ‘very significant barriers’ to the procurement of FM services.

4.8 The Interview

The interviews were conducted to 10 various IFMA members in Abuja. The data collected was based on the experience and qualification of the participants. The participant’s characteristics are presented in table 4.16.

Table 4.16 Characteristics of Interviewed Participants

Participants I.D	organisation	Discipline
Participant 1	public	facility manager
Participant 2	public	facility manager
Participant 3	public	builder
Participant 4	public	facility manager
Participant 5	private	facility manager
Participant 6	private	facility manager
Participant 7	public	facility manager
Participant 8	public	facility manager
Participant 9	public	estate manager
Participant 10	public	civil engineer

4.9 Key Factors Considered when Providing FM Services

To add to the accomplishment of objective two (2) which states “to determine the drivers of FM services procurement through outsourcing and in-house routes”, the responses gotten from qualitative data is discussed. Table 4.17 shows the key factors considered when providing FM services and their satisfaction level.

Table 4.17: Key Factors Considered when Providing FM Services and their Satisfaction Level

Participants	key factors you consider when deciding to provide FM services in-house	key factors you consider when deciding to provide FM services outsourcing	satisfaction with the quality of externally provided services and Reasons for level of satisfaction	satisfaction with the quality of in-house provided services and Reasons for level of satisfaction
P1	<ul style="list-style-type: none"> • Availability and competence of in-house staff • The policy of the organization • Legal/regulatory requirement 	<ul style="list-style-type: none"> • Technical competence • Cost 	<ul style="list-style-type: none"> • Good • The responsiveness of the outsourced service provider. 	<ul style="list-style-type: none"> • Fair • The public service officers do not have the same motivation with outsourced companies • Their responses and services are regulated as public servants.
P2	<ul style="list-style-type: none"> • Strength • Right tools • Right personnel (if it is what we can cope with) 	<ul style="list-style-type: none"> • Track record of the company • Human resource • Materials and equipment 	<ul style="list-style-type: none"> • Average • It’s over 20 years we have been on the FM business and at the initial stage most outsourced companies bring in their best then with time they begin to slack. So after discovering that we brought in the evaluation criteria and use that to score them. 	<ul style="list-style-type: none"> • Good • The quality of service provided can be controlled and if a staff is not doing well they can be reassign to something else.

Table 4.17a: Key Factors Considered when Providing FM Services and their Satisfaction Level

Participants	key factors you consider when deciding to provide FM services in-house	key factors you consider when deciding to provide FM services outsourcing	satisfaction with the quality of externally provided services and Reasons for level of satisfaction	satisfaction with the quality of in-house provided services and Reasons for level of satisfaction
P3	<ul style="list-style-type: none"> • The organization uses in-house only 	<ul style="list-style-type: none"> • Experience base for smooth running of the company 	<ul style="list-style-type: none"> • No idea, because we don't outsource. 	<ul style="list-style-type: none"> • Highly satisfied • It is in our control
P4	<ul style="list-style-type: none"> • The technical officers are always around • Competency • Availability at all-time • Efficiency 	<ul style="list-style-type: none"> • financial stability • Track record • Experience • Staff qualification 	<ul style="list-style-type: none"> • Satisfied for services like cleaning and security • Their performance are measured and it is very effective in terms of timeliness and quality 	<ul style="list-style-type: none"> • Very satisfied • The TFM is very effective and with them there is a better working environment.
P5	<ul style="list-style-type: none"> • Sensitivity • Security • Worth of service 	<ul style="list-style-type: none"> • Quality • Cost 	<ul style="list-style-type: none"> • Yes satisfied • It is relative and it depends on the pressure you put • What is obtainable in the service agreement • They are been monitored so they give their best 	<ul style="list-style-type: none"> • Partially Satisfied • Since human being are involve they are some factors that in-house can't force because we are colleagues and from different backgrounds so, expectations can't be same. Everybody delivery differs

Table 4.17b: Key Factors Considered when Providing FM Services and their Satisfaction Level

Participants	Key factors you consider when deciding to provide FM services in-house	Key factors you consider when deciding to provide FM services outsourcing	satisfaction with the quality of externally provided services and Reasons for level of satisfaction	satisfaction with the quality of in-house provided services and Reasons for level of satisfaction
P6	<ul style="list-style-type: none"> • Standard of the facility • Condition of maintenance • Caution sign • Safety requirement • Architectural structure of the building • Early involvement of FM 	<ul style="list-style-type: none"> • Qualification of Personnel 	<ul style="list-style-type: none"> • Not satisfied • Management does not provide the necessary funds for maintenance 	<ul style="list-style-type: none"> • Satisfied • Experts are employed and everything fall into place
P7	<ul style="list-style-type: none"> • Punctuality/time • Attitude 	<ul style="list-style-type: none"> • Integrity/trust 	<ul style="list-style-type: none"> • Average and we are trying to improve • In FM we set out scores, the feedback we get sometimes are high and low • Sometimes it is because of malfunction 	<ul style="list-style-type: none"> • Satisfied • If consistent because the best is what we are after otherwise we disengage
P8	<ul style="list-style-type: none"> • Work ethic • Personnel involve • Experience • Safety • Professional qualification of personnel's 	<ul style="list-style-type: none"> • Qualify with good practice/experience 	<ul style="list-style-type: none"> • Very satisfied • Because we get results and we keep upgrading and we are completely involve with FM with good training 	<ul style="list-style-type: none"> • Not satisfied • They don't care because it is non-professionals that handle that handle FM in-house

Table 4.17c: Key Factors Considered when Providing FM Services and their Satisfaction Level

Participants	Key factors you consider when deciding to provide FM services in-house	Key factors you consider when deciding to provide FM services outsourcing	satisfaction with the quality of externally provided services and Reasons for level of satisfaction	satisfaction with the quality of in-house provided services and Reasons for level of satisfaction
P9	<ul style="list-style-type: none"> • Capacity to carry out the services • Availability of funding • The policy involve in utilizing in-house staff because sometimes they are manpower resources that will not enable you to utilize FM the way you want to. So, you outsource 	<ul style="list-style-type: none"> • Capacity of the organization for which the assignment is to be outsourced • Quotation/amount they are asking for • Capacity involves qualification, experience and track record 	<ul style="list-style-type: none"> • Average • The large ones are good but small and medium ones are not either because of inexperience or lack of manpower, they don't perform well. 	<ul style="list-style-type: none"> • Good • When I was a practitioner I had to train the in-house staff continuously and their first training was on mind-set because that of a FM is different and once you get that right the next step is to train their intellectual capacity, • Management aspect then finance
P10	<ul style="list-style-type: none"> • Cost • Customer satisfaction • Service delivery • Environmental health and safety performance 	<ul style="list-style-type: none"> • Cost • Customer satisfaction • Service delivery • Environmental health and safety performance 	<ul style="list-style-type: none"> • Somewhat satisfied • In outsourced arrangement, buying power is likely to be greater when procuring specialist, increasing the likelihood of cost reduction 	<ul style="list-style-type: none"> • Very satisfied • In-house provides FM the opportunity to recruit personnel with significant experience and select staff that match the culture of your business

Table 4.17 shows, the key factors you consider when deciding to procure FM services in-house which are:

- Availability and competence of in-house staff
- Policy of the organisation
- Legal/regulatory requirement
- Strength
- Right tools

- Efficiency
- Sensitivity
- Security
- Worth of service
- Standard of the facility
- condition of maintenance
- environmental health and safety requirement
- early involvement of FM
- punctuality/time
- attitude
- professional qualification of personnel
- experience
- availability of funding/cost
- customer satisfaction

While the key factors you consider when deciding to procure FM services through outsourcing are:

- technical competence
- cost
- track record of the company
- human resource
- availability of materials and equipment
- experience base/practice
- financial stability
- staff qualification
- quality
- integrity/trust
- customer satisfaction
- service delivery
- environmental health and safety performance

The data gotten from both questionnaire survey and interview are consistent, in comparing the top fifteen (15) gotten from questionnaire survey of both in-house and outsourcing

factors with that gotten from the interview shows their relationship. Ikediashi (2014), states that to reduce capital funds in non-core functions; achieve cost reduction with enhanced performance; improve strategic positioning; focus on core competencies; share risks; compare in-house performance with vendor's staff; handle varying demands more effectively; gain access to new products and services; permit quicker response to new needs; improve performance standard; improve quality of services; improve timely delivery of services; improve responsiveness and cycle times; improve stakeholders' satisfaction; create jobs for local communities.

4.9.1 Satisfaction of In-house Provided Services and Reasons for Level of Satisfaction

7 out of the 10 participants stated that they were satisfied with the level of service provided while 2 stated that the level of service provided was fair and on 1 stated partially satisfied.

The reasons for their level of satisfaction are:

- Participant one (1) and eight (8) stated fair and not satisfied reasons that “the public officer do not have the same motivation like those in outsourced companies and that their responses /services are regulated as public servants”, while the other stated that “they don't care about it because it is non-professionals that handle FM work in-house”, then participant five (5) stated partially satisfied reasons that “Since human being are involve they are some factors that in-house can't force because we are colleagues and from different backgrounds so, expectations can't be same. Everybody delivery differs”.
- The remaining seven (7) participants stated satisfied reasons that “the quality of services can be controlled, experts are employed and consistent because it is the best we are after, continuous training on mind-set, intellectual capacity,

management and finance” and “in-house provides FM the opportunity to recruit personnel with significant experience and select staff that match the culture of your business”.

- Participant 8 shows its non-satisfaction stating that non-professionals handle FM job in-house. Therefore, 60% of the participant stated satisfied because quality can be controlled and it is consistent

4.9.2 Satisfaction of Outsourced Provided Services and Reasons for Level of Satisfaction

Four (4) out of ten (10) participants were satisfied with the level of outsourced services, four (4) others stated average satisfaction, one (1) participant stated not satisfied and also, the other one (1) stated no idea because they don't outsource.

Their reasons for satisfaction are:

- The four (4) participants that stated satisfied reason are: “the responsiveness of the outsourced service provider, for services like cleaning and security their performance are measured in terms of timeliness and quality, they are being monitored, what is obtainable in the service agreement and completely involve with FM with good training”.
- The other participants that stated average, their reasons are: “at the initial stage most outsourced companies bring in their best then with time they begin to slack, sometimes it is because of malfunction, the large ones are good but small and medium ones are not either because of inexperience or lack of manpower, they don't perform well, in outsourced arrangement, buying power is likely to be greater when procuring specialist”. While the one participant that stated not satisfied reason was “management does not provide the

necessary funds for maintenance” and finally, the last participant stated no idea, because its organisation does not outsource.

According to participant four (4) cleaning and security are part of the services outsourced and it is consistent with Ikediashi (2014), which developed a framework for outsourcing facilities management services also found that 6 facilities management services were completely outsourced in all the 74 hospitals that were surveyed. These FM services included (i) plant management and repairs; (ii) general cleaning services; (iii) waste disposal and environmental management; (iv) landscape maintenance; (v) security; and (vi) catering/restroom management.

4.10 FM Services Framework Development Policy

Towards achieving objective four (4) which states “To develop a framework for procurement of FM services through outsourcing and in-house routes in public buildings”.

Table 4.18 shows the services policy development.

Table 4.18: Services Policy Development

Participants	Key factors you consider when deciding to procure FM services	Development of a clear policy on how to procure FM services (What are the main ingredients/components of the policy)	means of measuring the performance of FM services providers, whether internal or external
P1	<ul style="list-style-type: none"> • Applicability • Ease of understanding 	<ul style="list-style-type: none"> • Policy statement • Methodology resource mobilization • Trading and mapping of the facility and management regime 	<ul style="list-style-type: none"> • By monitoring and documenting their efficiency and effectiveness in handling FM requirements.
P2	<ul style="list-style-type: none"> • track record, • level of success story, • human resource they have at their disposal, materials and equipment 	<ul style="list-style-type: none"> • It depends on the type of FM services we are taking up • The magnitude of the work at hand whether in-house or outsourced • For in-house strength, requirement, capable hands, because the framework and schedule of activities for various facility is in our possession already. • For bigger works we look at outsourcing and that is because some of the works required we don't do them, so we outsource them to professionals but, before outsourcing to this companies we profile and evaluate them. 	<ul style="list-style-type: none"> • We do performance evaluation periodically for service provider based on their performance evaluation. It determines whether their contract will be renewed or terminated
P3	<ul style="list-style-type: none"> • The smooth running of the working environment 	<ul style="list-style-type: none"> • The policy was formulated based on our experience, FM is one of the core business of the organization. 	<ul style="list-style-type: none"> • This company uses in-house only • We render it as a service, we look at the satisfaction from our clients, • The income we are generating from the services rendered if it is on the increase or decrease • Most of this services are evaluated yearly or periodically • So, at the end of the period it is subjected to either renewal or not and that depends on the performance'

Table 4.18a: Services Policy Development

Participants	Key factors you consider when deciding to procure FM services	Development of a clear policy on how to procure FM services (What are the main ingredients/components of the policy)	means of measuring the performance of FM services providers, whether internal or external
P4	<ul style="list-style-type: none"> • Cost • Quality of service • Customer satisfaction because it is tax office 	<ul style="list-style-type: none"> • Total facility management are responsible for every FM services in the organization • Formerly the organization was doing everything in-house until recently they decided to outsource some of this services because of cost. 	<ul style="list-style-type: none"> • The total facility management(TFM) are for the infrastructure buildings • We evaluate them quarterly, qualitatively and quantitatively • They are been supervised
P5	<ul style="list-style-type: none"> • Quality • Cost 	<ul style="list-style-type: none"> • In the policy it talks about assets • The kind of service divided into different components we have the plants, equipment, aspect of housing, security (long and short services). 	<ul style="list-style-type: none"> • For in-house we have key performance indicators which monitors what every person is doing and we usually report by what we call quarterly appraisal report. • We measure individual performance and department depending on how they perform at the end of each quarter. • For outsourcing service, each of the service level agreement have tools we use to measure their performance base on monetary level. • Evaluation forms and physical monitoring are used to measure their service monthly or quarterly • Physical inspections are used to get feed backs from end users.
P6	<ul style="list-style-type: none"> • Safety • Accessibility • Availability • Maintenance • Human factor • Project management skills • In fact the 11 core competency of FM 		

Table 4.18b: Services Policy Development

Par tici pan ts	Key factors you consider when deciding to procure FM services	Development of a clear policy on how to procure FM services (What are the main ingredients/components of the policy)	means of measuring the performance of FM services providers, whether internal or external
P7	<ul style="list-style-type: none"> • Efficiency • Faith/experience • Cost(the most important) 	<ul style="list-style-type: none"> • Providing a framework and incorporating it in the plan 	<ul style="list-style-type: none"> • We have key performance , we send out questionnaires to our clients on monthly bases • Supervise them with a checklist, when all data is been collected • We evaluate to know our short comings and readjust
P8	<ul style="list-style-type: none"> • A trained facility manager have to be hired • A blue print of what you want to do 	<ul style="list-style-type: none"> • It varies depending on the field and • Type of facility you are providing FM services to 	<ul style="list-style-type: none"> • Personnel involve • Type of business • Then the management keep track of what they are to do and know which areas they are lacking, which area need improvement even in procurement, budget and human factor
P9	<ul style="list-style-type: none"> • What is useful • Efficient that is, it has to be operationally easy to use and at the same time budget friendly 	<ul style="list-style-type: none"> • Government policy regarding the maintenance of the facility • The element of the facility that is drawings, designs and elements • Schedule of maintenance • Time • funding • Personnel required • Framework for its implementation 	<ul style="list-style-type: none"> • We review every outsourced service monthly for payment and we also review our own performance quarterly because we present our report to the board of the organization
P10	<ul style="list-style-type: none"> • New technologies • Management techniques • Customer requirements 	<ul style="list-style-type: none"> • Occupancy and human factors • Operations and maintenance • Sustainability • Facility information and technology management • Risk management • Communication • Performance and quality • Leadership and strategy • Real estate • Project management • Finance and business 	<ul style="list-style-type: none"> • We use balance score card which enable the evaluation of external service providers against multiple criteria such as cost, customer satisfaction, service delivery. which help set alignment and focus, identify improvement opportunities, enhance performance reporting and conduct constructive discussion with other FM providers

4.10.1 Key factors you consider when deciding to procure FM services

The key factors to consider when deciding to procure FM services for framework development policy are track record, level of success story, human resource they have at their disposal, materials and equipment, applicability, ease of understanding for smooth running of the organisation, cost, quality of service, customer satisfaction, safety, accessibility, maintenance, human factor and Project management skills. Others are the 11 core competency of FM (occupancy and human factor, operations and maintenance, sustainability, facility information and technology management, risk management, communication, performance and quality, leadership and strategy, real estate, project management, finance and business), a trained facility manager have to be hired, a blue print of what you want to do, efficiency, new technologies, management techniques and customer requirements.

4.10.2 Availability of a Clear FM Policy

Nine out of the 10 participants in the interviews indicated that their organisation have a clear FM policy and the main components of the organisations FM policies are as follows:

- policy statement, methodology resource mobilization. trading and mapping of the facility and management regime (**P1**).
- It depends on the type of FM services we are taking up, the magnitude of the work at hand whether in-house or outsourced, for in-house; strength, requirement, capable hands, because the framework and schedule of activities for various facility is in our possession already and for bigger works we look at outsourcing and that is because some of the works required we don't do them, so we outsource them to professionals but, before outsourcing to this companies we profile and evaluate them (**P2**).

- Experience, total facility management (TFM) handling everything in the organisation, assets and the kind of service divided into different components we have the plants, equipment, aspect of housing, security (long and short services) **(P3, P4 and P5).**
- Providing a framework and incorporating it in the plan, it varies depending on the field and type of facility you are providing FM services to **(P7 and P8).**
- Government policy regarding the maintenance of the facility, the element of the facility that is drawings, designs and elements, schedule of maintenance, time, funding, personnel required and framework for its implementation **(P9).**
- Occupancy and human factors, operations and maintenance, sustainability, facility information and technology management, risk management, communication, performance and quality, leadership and strategy, real estate, Project management, Finance and business **(P10).**

4.10.3 Means of Measuring Performance of FM Service Providers

The participants stated that monitoring and documenting, profiling, periodic and quarterly performance evaluation, physical inspection and supervision, and track record of services provided with the use of questionnaire and checklist are the measures they follow in keeping track of performance by FM service providers.

4.11 Framework for Procurement of FM Services through Outsourcing and In-House Routes

The framework for outsourcing and in-house facilities management suitability developed in this study are through results gotten from quantitative and qualitative data as shown in Figure 4.1. Client and FM practitioners can use the framework in aiding decisions on which FM route is most suitable for procuring FM services.

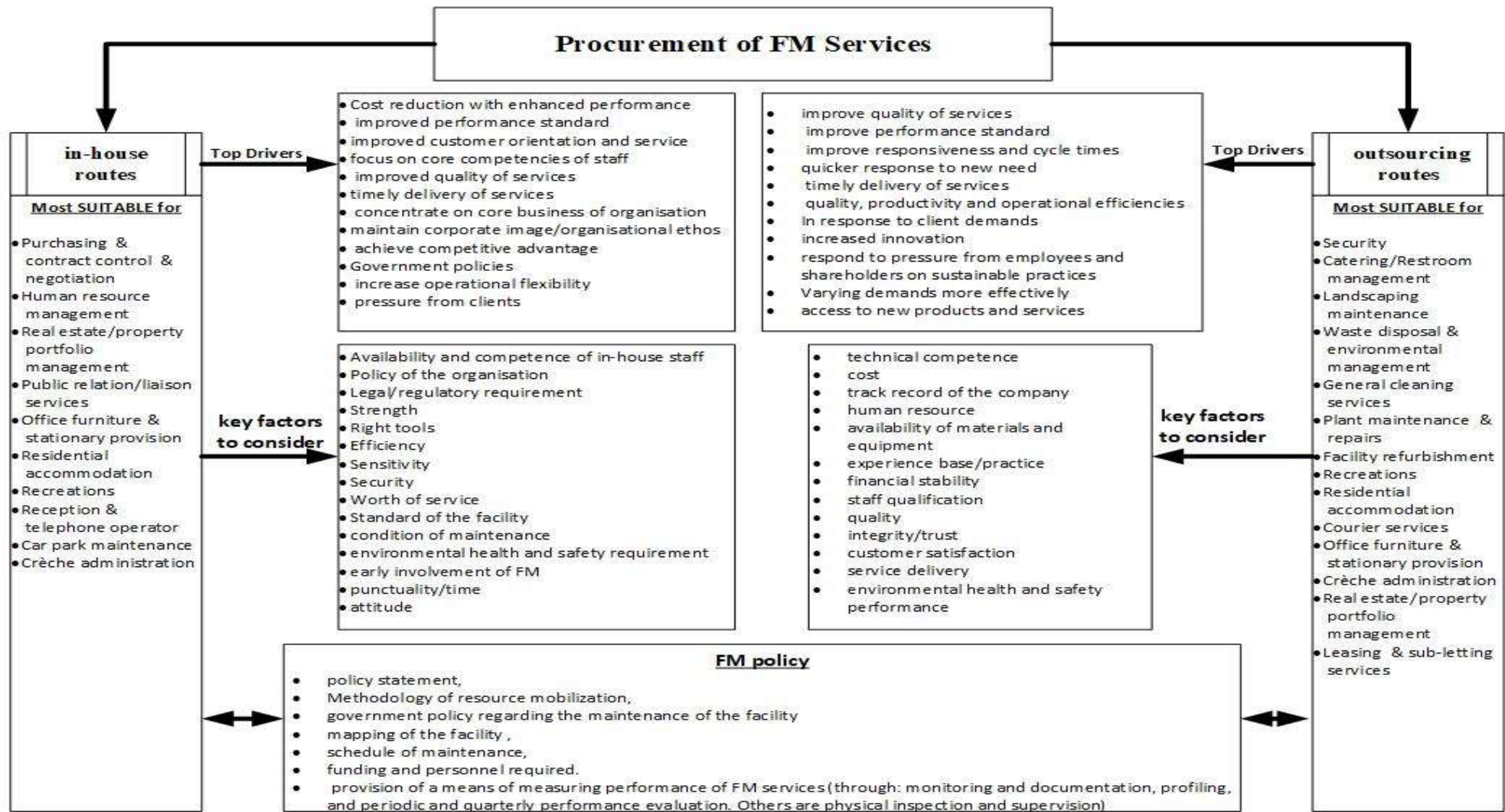


Figure 4.1 Framework for in-house and Outsourcing Suitability for FM Services Procurement (Author, 2019)

As can be seen from the framework (Figure 4.1) strategy functions are carried out by in-house while outsourcing handles tactical and operational functions. The in-house routes are most suitable for administration management and office services, real estate/property management and employee support services. While outsourcing is most suitable for maintenance and repairs, administration management and office services, employees support system and real estate/property management. The top drivers to be considered to achieve smooth FM operations of in-house routes are financial, quality, operational, labour, strategy, institutional and stakeholder are the top drivers to look out for when engaged on in-house of FM services. In outsourcing the top drivers are quality, time, productivity, stakeholder, operational and strategy.

They are the main constructs that make up the top drivers on outsourcing of FM services. This would then lead to the key factors to consider in procurement of FM services. The in-house services key factors to be considered are availability and competence of in-house staff, policy of organization, legal/regulatory requirement, security, environmental health and safety requirement, Strength, Right tools, sensitivity, worth of service, standard of the facility, condition of maintenance, punctuality/time, attitude towards work, early involvement of FM. While for outsourcing services the key factors to be considered are technical competence, cost, track record of the company, human resources, experience base/practice, availability of materials and equipment, quality. staff qualification, customer satisfaction, financial stability, integrity and trust, service delivery and environmental health and safety performance.

When the key factors are considered effectively, FM policy for in-house and outsource services have to be included for positive results. The FM policy for both FM routes are policy statement, methodology resource mobilization, government policy regarding the maintenance of the facility, mapping of the facility, schedule of maintenance, funding and

personnel required. At this point the means of measuring the performance of FM services are visited to ensure smooth operations, maintain good organisational image and customer satisfaction at its peak. The means of FM services performance measurement are through monitoring and documentation, profiling, periodic and quarterly performance evaluation, and inspection/supervision.

4.12 Summary of Findings

- I. From the relative important index carried out, the top FM services delivered in public organisations are: waste disposal and environmental management, facility refurbishment, plant maintenance and repairs, security, general cleaning services and real estate/property portfolio management. Others are landscaping maintenance, office furniture and stationary provision, catering/restroom management, human resource management, and Purchasing, contract control and negotiation, which are all ranked to be in the high level from the relative index analysis.
- II. The FM services delivered in public buildings procured through In-house mode are: purchasing and contract control and negotiation, human resource management, real estate/property portfolio management, public relation/liaison services, office furniture and stationary provision, and residential accommodation. Others are recreations, reception and telephone operator, car park maintenance and crèche management are the top ranking factors of in-house FM services.
- III. The FM services delivered in Public buildings procured through outsourcing mode are: security, catering/restroom management, landscaping maintenance, waste disposal and environmental management, and general cleaning services are the top ranking factors of outsourcing FM services.

- IV. The study discovered that in-house FM services handles strategic functions such as purchasing and contract control and negotiation, human resource management, real estate/property portfolio management, public relation/liaison services, office furniture and stationary provision, and residential accommodation while outsourcing are in charge of operational functions such as security, catering/restroom management, landscaping maintenance, waste disposal and environmental management, and general cleaning services.
- V. The factors driving FM services in-house delivery mode decisions are to achieve the following: cost reduction with enhanced performance, improved performance standard, improved customer orientation and service, core competency of staff and improved quality of service. While others are improved timely delivery of services, to compare in-house performance with vendor's and to concentrate on core business of organisation, improved/maintained corporate image/organisational ethos and improved quality, productivity and operational. All the factors are indicated high on factors driving in-house FM services.
- VI. Factors driving FM services outsourcing delivery mode decisions are to achieve the following: improved performance standard, improve quality of services and improve responsiveness and cycle times. Others are to permit quicker response to new needs, improved timely delivery of services and improved quality, productivity and operational, are the high factors indicated in driving of outsourcing FM services.
- VII. The significant barriers for procurement of in-house FM services are: financial constraints, customer demands, commitment of FM profession to the

sustainability agenda, inadequate planning of policies implementation, lack of understanding on sustainability issues and perceived higher upfront costs are all indicated high on barriers of in-house FM services.

- VIII. The significant barriers for procurement of outsourcing FM services are: lack of understanding of sustainability issues, which is the only high factor indicated on outsourcing barriers of FM services. Others are lack of tools, customer demands, inadequate understanding on intelligent buildings that can foster innovation in technology and inadequate technical knowledge.
- IX. The key factors considered in the procurement of in-house FM services are as follows: Availability and competence of staff, policy of organization, legal/regulatory requirement, security, environmental health and safety requirement, and cost. Others are customer satisfaction, Strength, Right tools, sensitivity, worth of service, standard of the facility, condition of maintenance, architectural structure of the building, early involvement of FM, Professional qualification of personnel's, service delivery, work ethic and experience.
- X. The key factors considered in the procurement of FM services using outsourcing route are as follows: technical competence, cost, human resources, experience base/practice, availability of materials and equipment, and quality. Others are staff qualification, customer satisfaction, financial capacity, track record of the company, capacity of the organization for which the assignment is to be outsourced, quotation and service delivery.
- XI. In-house procurement of FM services provides more satisfaction when compared to outsourcing. The main reasons for the level of satisfaction of in-house FM services are: controlled quality, expert is involvement, continuous training, intellectual involvement, recruitment of personnel, management and

finance. While the reasons behind outsourcing of FM services are: service provider responsiveness, timeliness, security, quality and good training. However, lack of motivation, lack of professional involvement and impartial delivery from staff are the reasons for fair and partial satisfaction of in-house FM services and the reasons for fairly satisfactions and un-satisfaction on outsourcing are complacent performance over time, malfunction, inexperience, lack of manpower on small firms, corruption and lack of managerial funds While few others are fairly and partially satisfied

- XII. The key factors considered for the development of framework to procure FM services are as follows: the 11 core competency of FM (occupancy and human factor, operations and maintenance, sustainability, facility information and technology management, risk management, communication, performance and quality, leadership and strategy, real estate, project management, finance and business), availability of trained facility manager, new technology, management technique and cost. Others are quality of services, customer requirement & satisfaction, project management skills, human factor/resources and efficiency.
- XIII. The framework to procure FM services includes clear policy which involves: policy statement, methodology resource mobilization, government policy regarding the maintenance of the facility and mapping of the facility. Others are trading, schedule of maintenance, time, funding and personnel required.
- XIV. The framework to procure FM services includes means of measuring performance of FM services providers through: monitoring, documentation, profiling, and periodic and quarterly performance evaluation. Others are physical inspection and supervision, track record of services provided.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Based on the quantitative and qualitative research conducted via questionnaires survey and semi-structured interviews with IFMA members in Abuja metropolis, this study concludes that. Organisation favours the use of in-house FM services in handling strategic functions while outsourcing is in charge of operational functions. The factors driving FM services in-house and outsourcing delivery mode decisions are cost reduction with enhanced performance, improved performance standard, improved customer orientation and service, core competency of staff improved quality of service, and improve responsiveness and cycle times. The significant barriers for procurement of in-house and outsourcing FM services are financial constraints, customer demands, commitment of FM profession to the sustainability agenda, inadequate planning of policies implementation and lack of understanding on sustainability issues. The use of in-house operation is posited to be more suitable in carrying out FM services as compared to outsourcing.

5.2 Recommendations

The following are recommendations based on the results obtained.

- a) Public organisations that engage in-house and outsourcing FM services are encouraged to improve and maintain their standards on financial, quality, operational and labour in order to keep the company image on point by giving customers full satisfaction and value for their money.
- b) Top management committee should endeavour to make progress on financial, technical and stakeholder constraints for effective growth and operation of in-house and outsourcing of FM services

- c) Top management committee in FM organisation should enhance training and motivation to staff on new technologies, managerial issues, sustainable issues, and intelligent buildings in order to perform effectively on in-house and outsourcing of FM services
- d) FM practitioners should ensure the availability of health and safety requirement when procuring FM services

5.3 Contribution to Knowledge

In this study, a framework was developed for the procurement of facility management services for public organizations within the FCT-Abuja. The outcome to the study will be significant in supporting facility management practitioners in deciding which FM route to follow for FM services procurement. In addition, the outcome of the study will be significant to academia as it can provide a reference in facility and construction management researches.

5.4 Area for Further Studies

Similar study should be carried out to cover more metropolitan cities like Lagos and Port-Harcourt where they are more volume of facilities and this will allow for cross comparison of views from the different cities.

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Appendix A: Questionnaire



FEDERAL UNIVERSITY OF TECHNOLOGY MINNA
DEPARTMENT OF BUILDING
MAIN CAMPUS GIDAN-KWANO, MINNA, NIGER STATE.

Department of Building,
School of Environmental Technology,
Federal University of Technology,
P.M.B. 65,
Minna, Niger State.
4th September, 2019

Dear Participant,

**Re: Framework for Outsourcing and In-House Facilities Management
Suitability in Public Buildings in Abuja, Nigeria.**

My name is **AYEGBA, Queen Jennifer**, a Master Student in Facilities Management, Department of Building, School of Environmental Technology, Federal University of Technology Minna, Niger State conducting research on *“Framework for the Procurement of Facilities Management Services of Public Buildings in FCT-Abuja, Nigeria”*.

Please note that all information provided will be used for academic purposes, therefore do not include your name or telephone number in your response. Your participation in filling of questionnaire will be helpful.

If you have questions or observations at any time about the survey or procedures, please contact me:

Thank you very much for your support.

AYEGBA, Queen Jennifer
Phone: 08106725704
e-mail: Nomaye93@gmail.com

Prof. R. A. Jimoh
Project Supervisor
email: rosney@futminna.edu.ng

Research Survey
**Framework for Outsourcing and In-House Facilities Management Suitability in
Public Buildings in Abuja, Nigeria**

Section A: FM services that are delivered in-house or outsourced

Relative importance ratings: 5 (VI) = *Very Important*; 4 (I) = *Important*; 3 (SI) = *Somewhat Important*; 2 (LI) = *of Little Importance*; 1 (NI) = *Not Important*.

Suitability ratings: 5 (VS) = *Very Suitable*; 4 (JS) = *Just Suitable*; 3 (SS) = *Somewhat Suitable*; 2 (LS) = *Less Suitable*; 1 (NS) = *Not Suitable*.

FM service delivered to organization	Suitability ratings														
	Relative importance of FM service to organization					Use of in-house delivery mode for FM services					Use of outsourcing delivery mode for FM services				
	5 VI	4 I	3 SI	2 LI	1 NI	5 VS	4 JS	3 SS	2 LS	1 NS	5 VS	4 JS	3 SS	2 LS	1 NS
A Real estate/Property management															
A01 Real estate/property portfolio management															
A02 Leasing & sub-letting services															
A03 Retail outlets & space renting															
A04 Extension & alterations															
A05 Demolitions															
B Maintenance & Repairs															
B01 Facility refurbishment															
B02 Plant maintenance & repairs															
B03 General cleaning services															
B04 Waste disposal & environmental management															
B05 Landscaping maintenance															
C Administration Management & Office Services															
C01 Security															
C02 Courier services															

FM service delivered to organization	Suitability ratings														
	Relative importance of FM service to organization					Use of in-house delivery mode for FM services					Use of outsourcing delivery mode for FM services				
	5	4	3	2	1	5	4	3	2	1	5	4	3	2	1
	VI	I	SI	LI	NI	VS	JS	SS	LS	NS	VS	JS	SS	LS	NS
C03 Reception & telephone operator															
C04 Public relation/liaison services															
C05 Car park maintenance															
C06 Purchasing & contract control & negotiation															
C07 Office furniture & stationary provision															
C08 Human resource management															
D Employee Support Services															
D01 Crèche administration															
D02 Recreations															
D03 Catering/Restroom management															
D04 Residential accommodation															
Other FM services (please specify)															
E01															
E02															

Section B: Factors driving decisions on delivery mode for FM services

Relative importance ratings: 5 (VI) = Very Important; 4 (I)= Important; 3 (SI)= Somewhat Important; 4 (LI) = of Little Importance; 5 (NI) = Not Important.

Factors driving decisions on delivery mode for FM services		Importance of factors on choice of									
		In-house delivery mode for FM services					Outsourcing delivery mode for FM services				
		5	4	3	2	1	5	4	3	2	1
		VI	I	SI	LI	NI	VI	I	SI	LI	NI
A	Financial										
A01	To achieve cost reduction with enhanced performance (for example, in financial ratios)										
A02	Absence of initial and major capital investments for service provision										
A03	To achieve life-cycle cost reduction										
A04	To reduce capital funds in non-core functions										
A05	As a response to rising energy costs										
B	Labour										
B01	To achieve right-sized employees and reduced space										
B02	To focus on core competencies of staff										
B03	To use vendor's competencies and facilities										
C	Strategy										
C01	To achieve competitive advantage										
C02	To concentrate on core business of organisation										
C03	To improve/maintain corporate image/organisational ethos										
C04	To gain access to new products and services										
C05	To improve strategic positioning										
D	Operational										
D01	To achieve improved customer orientation and service										
D02	To increase operational flexibility										
D03	To achieve increased innovation										

Factors driving decisions on delivery mode for FM services		Importance of factors on choice of									
		In-house delivery mode for FM services					Outsourcing delivery mode for FM services				
		5	4	3	2	1	5	4	3	2	1
		VI	I	SI	LI	NI	VI	I	SI	LI	NI
D04	To obtain access to Building information modelling (BIM) for FM										
D05	To conform to senior management or directors' leadership										
E	Institutional										
E01	In response to environmental conditions										
E02	Government policies										
E03	Legislation (Acts, Decrees, Edicts)										
F	Productivity										
F01	To compare in-house performance with vendor's staff										
F02	To be able to handle varying demands more effectively										
F03	To improve quality, productivity and operational efficiencies										
G	Quality										
G01	To improve performance standard										
G02	To improve quality of services										
H	Risk										
H01	In order to share risks										
H02	As a way to transfer risk										
I	Stakeholder										
I01	In response to client demands										
I02	As a way to create jobs for local communities										

Factors driving decisions on delivery mode for FM services		Importance of factors on choice of									
		In-house delivery mode for FM services					Outsourcing delivery mode for FM services				
		5	4	3	2	1	5	4	3	2	1
		VI	I	SI	LI	NI	VI	I	SI	LI	NI
I03	To improve stakeholders' satisfaction										
I04	As a way to respond to pressure from clients										
I05	As a way to respond to pressure from employees and shareholders on sustainable practices										
J	Time										
J01	To improve responsiveness and cycle times										
J02	To improve timely delivery of services										
J03	To permit quicker response to new needs										
K	Other drivers (please specify)										
K01											
K02											

Section C: Factors serving as barriers to the procurement of FM services through outsourcing and in-house routes.

Relative importance ratings: 5 (VI) = *Very Important*; 4 (I) = *Important*; 3 (SI) = *Somewhat Important*; 2 (LI) = *of Little Importance*; 1 (NI) = *Not Important*.

Factors serving as barriers to delivery mode for FM services	Relative Importance of factors on choice of									
	In-house delivery mode for FM services					Outsourcing delivery mode for FM services				
	5	4	3	2	1	5	4	3	2	1
	VI	I	SI	LI	NI	VI	I	SI	LI	NI
A Financial										
A01 Financial constraints										
A02 Financial failure of chosen Vendor										
A03 Perceived higher upfront costs										
B Institutional										
B01 Commitment of FM profession to the Sustainability agenda										
B02 Cost of certification										
B03 Incorporation of building services as an afterthought										
B04 Lack of government policies										
B05 Lack of standard forms of contract for FM										
B06 Physical and historical constraints										
C Quality										
C01 Absence of benchmark for quality										
C02 Poor quality of services										
C03 Vendor underperformance										
D Relationship										

Factors serving as barriers to delivery mode for FM services	Relative Importance of factors on choice of									
	In-house delivery mode for FM services					Outsourcing delivery mode for FM services				
	5	4	3	2	1	5	4	3	2	1
VI	I	SI	LI	NI	VI	I	SI	LI	NI	
D04 Conflict of interest										
D05 Poor relationship between vendor and clients										
E Risk										
E01 Fear of uncertainty										
E02 Inadequate definition of scope of services										
E03 Interruption to supply of services										
E04 Lack of awareness										
E05 Unclear responsibilities										
E06 Unclear targets										
F Stakeholder										
F01 Customer demands										
F02 Customer constraints										
F03 Inexperienced client										
F04 Security requirement issues										
G Strategy										
G01 Inadequate planning of policies implementation										
G02 lack of senior management commitment										
G03 Loss of strategic flexibility										
H Technical										
H01 lack of in-house knowledge										

Factors serving as barriers to delivery mode for FM services	Relative Importance of factors on choice of																			
	In-house delivery mode for FM services					Outsourcing delivery mode for FM services														
	5	4	3	2	1	5	4	3	2	1										
	V I	I	SI	LI	N I	V I	I	SI	LI	NI										
H02	Inadequate technical knowledge																			
H03	Inadequate training																			
H04	Inadequate understanding of intelligent buildings that can foster innovation in technology																			
H05	Lack of training																			
H06	Lack of tools																			
H07	Lack of understanding of sustainability issues																			
I	Other barriers (please specify)																			
I01																				
I02																				

Section D: Demographic information of respondents

Please provide information about the respondent as requested by selecting one of the options provided. Thank you.

A Age: 20 yrs - 30 yrs () ; 31 yrs-40 yrs () ; 41 yrs- 50 yrs () ; Above 50 yrs ()

B Gender: Female () ; Male ()

C Work designation

D Education: OND/NCE () ; HND/BSc () ; MSc () ; PhD ()

E Work experience

Less than 5 yrs () ; 5 yrs – 10 yrs () ; 11 yrs – 15 yrs () ; More than 15 yrs ()

F What is the ownership structure of your building?

Government ()

Private ()

G What is the approximate gross floor area of your building?

0 – 1000 Sq.M ()

1001 – 2500 Sq.M ()

2501 – 5000 Sq.M ()

More than 5000 Sq.M ()

H What is number of floors in your building?

1 floor ()

2 floors ()

3 floors ()

More than 3 floors ()

Thank you!

Appendix B: Interview Guide



FEDERAL UNIVERSITY OF TECHNOLOGY MINNA
DEPARTMENT OF BUILDING
MAIN CAMPUS GIDAN-KWANO, MINNA, NIGER STATE.

Department of Building,
School of Environmental Technology,
Federal University of Technology,
P.M.B. 65,
Minna, Niger State.
4th September, 2019

Dear Participant,

Re: Framework for the Procurement of Facilities Management Services of Public Buildings in FCT-Abuja.

My name is **AYEGBA, Queen Jennifer**, I am a master research student in Facilities Management, Department of Building, School of Environmental Technology, Federal University of Technology Minna, Niger State conducting research on *“Framework for Outsourcing & In-House Facilities Management Suitability in Public Buildings in Abuja, Nigeria”*. I would like to invite you to participate in this study through a semi- structured interview on the subject matter. The interview might last between 30 minutes to an hour and may also involve a follow up interview if the need arises for further clarification. But will be at the time convenient to you and at your own space. please note:

- Your taking part is voluntary; you have the right to not participate in the study, the right to decline to answer any interview question and right to withdraw from participating at any time with no adverse consequences.
- With your permission, the interview will be audio recorded so that I can get all the details and at the same time be able to carry on an attentive conversation with you.
- Your participation is anonymous, your name and identity will not be disclosed or contained in any final report of the study.

If you have questions or observations at any time about the survey or procedures, please contact me:

Thank you very much for your support.

AYEGBA, Queen Jennifer

Phone: 08106725704

e-mail: Nomaye93@gmail.com

Prof. R. A. Jimoh

Project Supervisor

Email: rosney@futminna.edu.ng

INTERVIEW GUIDE

Developing a Framework for Outsourcing & In-House Facilities Management

Suitability

1. Has your organisation developed a clear policy on how to procure FM services?
 - What are the main ingredients/components of the policy?
2. What are the key factors you consider when deciding to procure FM services?
3. Does your organisation have a means of measuring the performance of FM services providers, whether internal or external?
 - How is this done?
4. What are the key factors you consider when deciding to provide FM services in-house?
5. What are the key factors you consider when deciding to provide FM services outsourcing?
6. How satisfied are you with the quality of externally provided FM services?
 - What are the reasons for your level of satisfaction?
7. How satisfied are you with the quality of in-house provided FM services?
 - What are the reasons for your level of satisfaction?