

**EXAMINATION OF THE RELATIONSHIP
BETWEEN ORGANISATIONAL AND
FACILITY MANAGEMENT STRATEGY AND
VALUE ADDED**

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Abstract

Facility Management (FM) is a profession in which facility managers are employed to manage a diverse set of services, personnel, and built environments to accomplish organisational goals. The findings of this study showed that many organisations are focusing on achieving strategic goals and objectives without considering FM as a supportive function of the whole strategic plan. It is generally recognised that the stakeholders who are involved with the organisation should examine that there is a misalignment between FM and strategic management, and the associated need to minimise this misalignment with the contribution of facility management and strategy professionals.

The aim of this research was to develop an alignment model in order to examine how value was added by FM services and how they can enable organisational effectiveness through perceiving business needs. Four objectives were set for the study: to examine the phenomenon of Facility Management in relation to alignment as a contributor to the organisations' aim and objectives. This was to assess the role and position of FM and explore some of the challenges and dilemmas occurring within their organisational environment, to explore and analyse the complexities of FM processes and assets in various types of organisations, and finally to develop and validate an alignment model for evaluating the value added through the alignment between FM and the organisation.

The methodology adopted for this research included a combination of literature review, three case studies (with semi-structured interviews) and a web-based questionnaire (WBS). This was in order to identify the alignment between FM and organisation. More specifically, the FM literature review evaluated some classification frameworks of various organisational models presenting an in-depth analysis. The associated web-based questionnaire was designed and circulated among facility managers from different organisations. The total numbers of respondents of the WBS was 60. In addition, data was collected from three semi-

structured interviews with associated decision makers. Three case studies were selected from different types of organisations based in the Middle East. The findings of the research revealed that there is a misalignment that exists in the organisation with the lack of acceptance of the facility management role in the strategic level of the organisation.

This research has contributed to the existing body of knowledge on FM by identifying the misalignment between FM and organisation and the FM added value into the organisation. This thesis has contributed to knowledge in this field through its explanation of the background of the alignment models in relation with the organisational models. It has also contributed to synthesis of the organisation models with the FM alignment variables. A synthesis of the organisation models and the alignment variables revealed that most organisation models utilised the variable supply and demand, the management by agent utilised the organisation variable, and the FM-in house utilised the FM resource alignment variable.

The findings of this research helped to develop a value added alignment model (VAAM) for the achievement of alignment in the organisation. This was done through the facility manager's role which supported the development of the strategic plan in the organisation. Moreover, the alignment model also revealed outcomes that can enable the FM's role in the strategic management, and this included awareness of the FM's role in the organisation among executive management. Finally, this study draws the conclusion, that in order for the developed alignment model to work facility managers need to be involved in all the strategy phases of the organisation.

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Abbreviations

BE	Built Environment
BIFM	British Institute of Facilities Management
CFM	Centre for Facilities Management
EFM	Estate Facilities Management
FEFC	Further Education Funding Council
FM	Facility Management
FMA	Facilities Management Agent
IFMA	International Facility Management
NAO	National Audit Office
PFI	Public Finance Initiative
PPP	Public-Private Partnership
QMF	Quality Managed Facilities
TFM	Total Facilities Management

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Chapter 1 Introduction

1.1 Background of the study

In principle, Facility Management (FM) can coordinate the interaction of employees with an organisation's physical environment (Yiu, 2008). It is an organisational function which integrates people, place and processes within the built environment with the purpose of improving the quality of life of people and the productivity of the core business. FM plays a pivotal role in organisations, but it is still not recognized as well enough as it should as strategic contributor to the core business (Kaya et al., 2004). According to Then et al., (2014) and Coen et al., (2010) one of the main issues are relationship issues. For instance, rather than focusing more on the value and quality of the services which will improve the value of the FM, facility managers put more emphasis on the technical role assigned to them. The inability of the facility managers to unify with the core operations of the business is labelled as identity crisis by Yiu (2008) and Price (2002).

FM facilitates with a wide range of services that are both tangible and intangible for e.g. real estate management (Chotipanich, 2004). Aligning these diverse services into an organisation's core business presents a significant challenge the reason for that is because the services provided by the facility management do not fit strategically with an organisation's core business (Price, 2002).

FM has not reached the status and recognition of other management fields, like organisational management, financial management or strategic management. There exists a shortage of factual studies and publications in journals of management for the FM research area. Subsequently, the facility management is an under-researched discipline resulting in a limited knowledge base of published literature (Yiu, 2008; Ventovuori et al., 2007; Anker Jensen et al., 2012). In addition, researchers had suggested different models of alignment for Corporate Real Estate Management (CREM) strategies (Thoh, 1993; Ventuori et al. 2007). Therefore, it is necessary to highlight the fact that FM and CREM may

greatly in terms of their field. CREM mainly focuses on real estate as physical and economic assets utilised by an organisation, while FM has a wider service focus including demands related to space and infrastructure as well as people and organisation (CEN, 2006a). Therefore, the alignment concept between FM and the organisation becomes a key consideration for adding value and improving the productivity of the core business.

This research seeks to develop an alignment model that can serve as a supportive function in the whole strategic plan of the organisation, taking into account the previous limited research studies (Nourse & Roulac, 1993). The value adding alignment model (VAAM) is a combination of the alignment between the support strategy of FM organisations models and business organisations. This model is required for adding value to the organisation supporting from FM area. Effectively this research analyses the facility manager's role in relation to different types of organisations as presented in chapter 3 and focuses on improving the alignment support through the enhancement of the facility manager's role in order to meet the organisation goals and objectives.

1.2 Problem Statement

The issue that this research addresses is the misalignment between FM service and the organisational strategy. To address this problem, the purpose of this research has been explored the added value in the organisation. The concept of alignment is associated with optimising the added value of FM services to the core business services. Alignment is shown differently on the strategic, tactical and operational level into the organisation. It is reflected respectively to the strategic direction and issues that play a part in the outcome of the core business services, and that lead to the functional availability and suitability of the facilities. Due to the long-term perspective of strategic decisions, alignment in this level is indicative and qualitative in nature. At the tactical level there is a relationship between the quality of FM services and the result from core business services which can be determined using quantitative methods. At the operational level, a

possible causal relationship between the behavioural response of the users and the utilisation of FM's serviced can be established and observed quantitatively.

Throughout the research process, the researcher identified that in the field of facility management, the FM services added value by supporting the organisation in delivering its business objectives. In order to achieve this, FM alignment is even more important at the strategic level than it is on the operational or tactical levels. The need for FM alignment stems from the effect FM services have on the results of other core services, which is key to achieve FM added value. (Kok et al. 2011).

In this thesis, the research is constructed on the organisation's strategic level and FM's contribution is enhanced by analysing data and its interpretation. However, in order to reach to conclusions of whether the FM alignment is a way to achieve improvements on the business goals and objectives within the organisation, the following question is needed to be answered:

- How is value added by the FM services where alignment is created at the strategic level?

Associated research aim and objectives have been set to facilitate in answering the aforementioned question and are seen below.

1.3 Scope of Research

The scope of this research was to compare the alignment between facility management services and an organisation's core business from the perspective of the strategic alignment. The term strategic alignment means desired results between the functional units of the organisation and the core business strategy (Martinez-Olivera, 2010).

1.3.1 Aim and Objectives

The aim of this research is to *develop an alignment model in order to examine how value is added by FM services and how they can enable organisational effectiveness through perceiving business needs.*

To achieve this aim, the objectives of this research are as follows:

1. Examine the context of FM in relation to alignment as a contributor to the organisations' aim and objectives.
2. Assess the role and position of FM and explore some of the challenges and dilemmas which occur within the organisation environment.
3. Explore and analyse the complexities of FM processes and assets in various types of organisations.
4. Develop and validate a model for evaluating the value added through the organisational alignment between FM and the organisation.

1.4 An overview of the research process

The process of research relies on three phases, as shown in Figure 1. The details of the methodological approaches used to fulfil the objectives of each phase are elaborated more in Chapter 5. The results of each of the phases will then be presented in subsequent chapters of this research.

The first phase includes a review of the relevant literature. The researcher presents a review of the facility management area, the relationship and the role of FM inside the organisation, as well as different alignment models between FM and business strategies.

The second phase includes the research methodology. This research was categorised under the applied and explorative research categories. The method adopted for the data collection strategy is called mixed method. The qualitative analysis was followed by a series of case studies with semi-structured interviews in order to achieve a deeper knowledge of the role of FM into the different levels of the organisation. The quantitative analysis focused on developing a questionnaire research instrument. For the quantitative analysis, a web-based

questionnaire was distributed among professionals in the field of FM to identify the relationship and the importance of FM at a strategic organisational level. This was done through the development of the questionnaire, a series of workshops with facilities managers were held in Dubai, UAE and Riyadh, KSA.

The third phase included the development of the value adding alignment model (VAAM). In addition, the findings of the case studies and web-based questionnaire, from phase two then assisted for the development of the VAAM model for identifying the value added from FM services into the organisation levels, as described in chapter eight. Subsequently, the validation of the VAAM model was undertaken through interviews with FM practitioners. A summary of the research methods (literature review and data collection analysis) for completing each objective is illustrated in Figure 1:

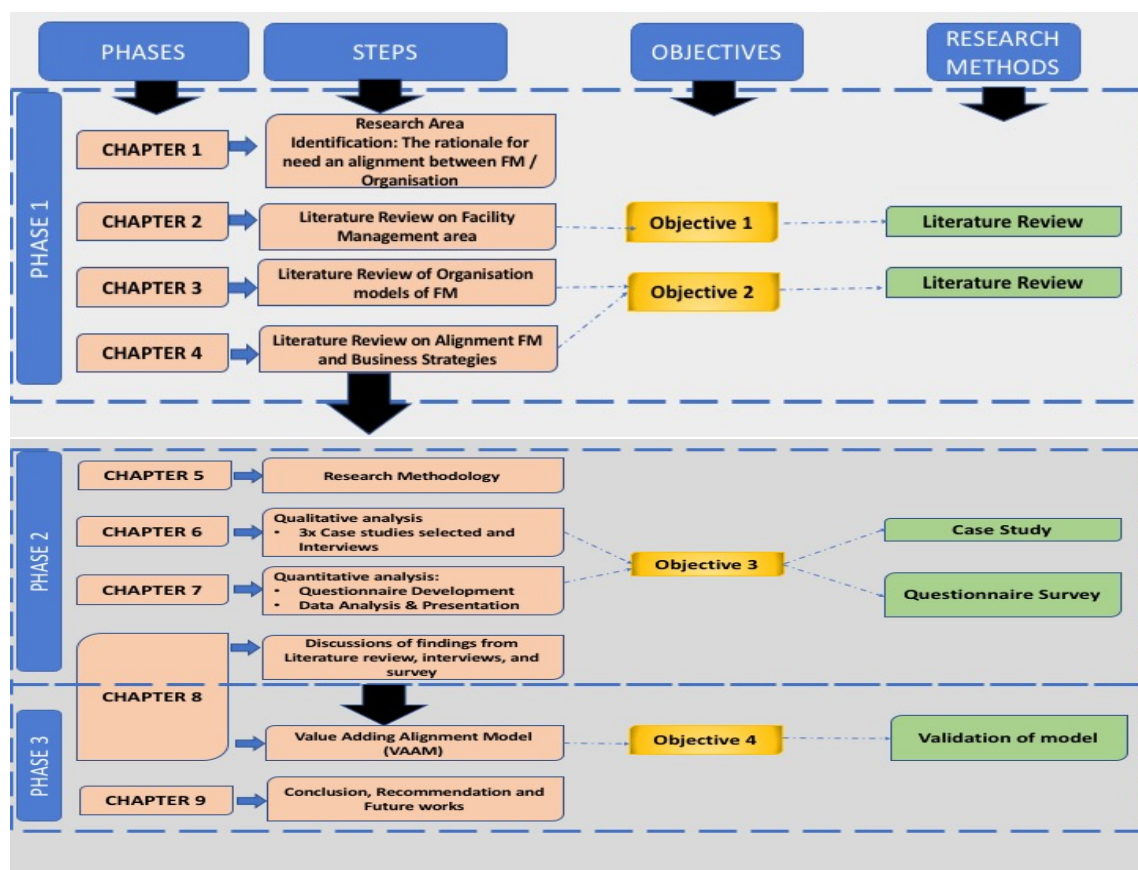


Figure 1: An overview research process

In the next section, the structure of the thesis is presented.

1.5 Structure of the Thesis

This thesis consists of nine chapters and each chapter covers specific areas of the research. The contents of each of these chapters are summarised below:

- **Chapter 1** provides a general introduction to the thesis describing the nature and rationale of the research problem. This chapter also includes the aim and objectives of this research as well as an overview of the research process which also takes into account the three stages as shown in Figure 1 in Section 1.4.
- **Chapter 2** provides a literature review of facility management (FM) terms and their meanings from different bodies and institutions. It presents the IFMA model, showing the link between FM and the organisation. The classification and roles of FM organisation are discussed and stakeholder mapping for the real estate industry.
- **Chapter 3** classifies various organisation models in relation to facility management and presents different views in relation to organisation models and how facility management differs from them.
- **Chapter 4** presents a review of alignment models between corporate and FM strategies.
- **Chapter 5** addresses the methods used for collecting data and the research methodology adopted for this research in order to achieve the aim and objectives of the research. It establishes the theoretical framework in which the research was conducted, and the methods of data analysis used for the study are described in detail.
- **Chapter 6** discusses the specifics of the qualitative data analysis conducted in relation to the selected three case studies. The chapter also presents the findings of the results of the semi-structured interviews and establishes the development of the proposed alignment model.
- **Chapter 7** presents and discusses the information collected from the questionnaire survey which was conducted out due to the alignment between FM and organisation. It discusses the analysis of the data in

relation to their role in environmental, social, economic and management aspects.

- **Chapter 8** discusses the information gathered from the literature review, including qualitative and quantitative analysis. It presents the value adding alignment model (VAAM) which has been developed as a guide for FM added value at a strategic organisational level. This VAAM model is the ultimate result of the study, and the validation of the alignment model is presented using interviews from three FM practitioners.
- **Chapter 9** shows the results and main findings of this thesis. It provides a summary of the whole research process and also presents the conclusions drawn from the research findings, recommendations, and suggestions for further research.

Chapter 2 Facility Management (FM)

2.1 A historical evolution

This chapter aims to focus on investigating and to analyse in a critical way about Facility Management (FM) as a whole and also its various roles and functions. It is intended to provide a historical journey of the FM evolution as a profession which developed over the last four decades, highlighting that the job and role of a facility manager since the very beginning has been comprehensively developed.

The evolution of FM over the last 40 years is shown in Figure 2. In the 1980s a proliferation of single-source outsourcing is observed beginning with soft FM services (cleaning, catering, food services, etc.), and a move in the late 1980s towards hard FM services (mechanical, electrical, heating, ventilation, plumbing, building control, management, fire and life safety systems, etc.) (ISS World, 2013). Usually these services were achieved by bundling individual service contracts.

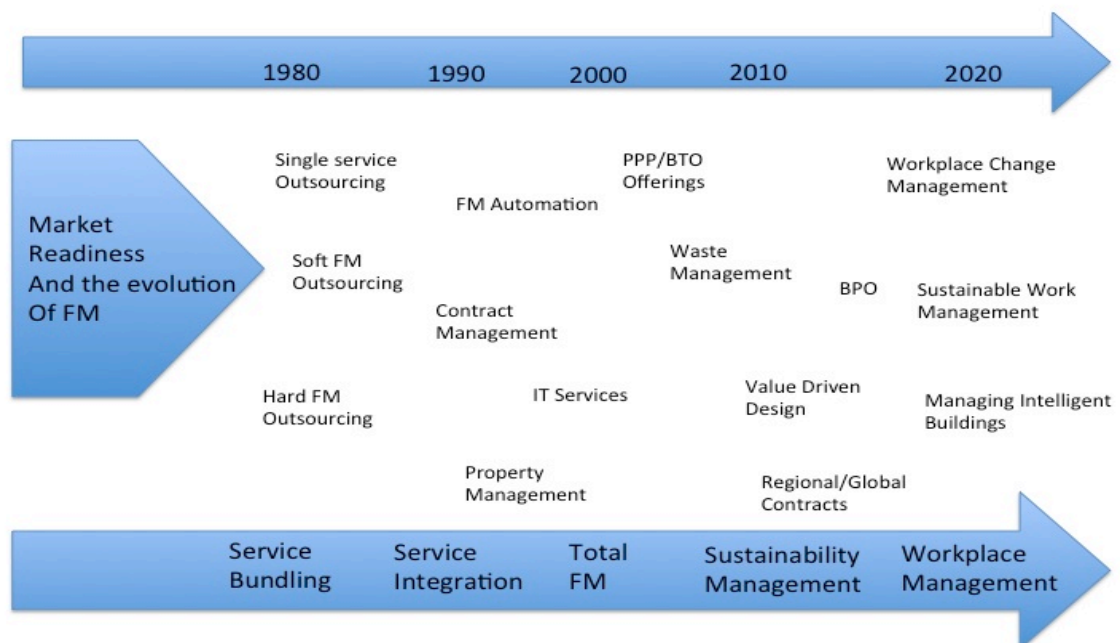


Figure 2: Evolution of FM (Source: ISS World, 2013)

In the 1990s, centre automation of facility management (CAFM) aided in going towards service integration. The FM services developed to such an extent that it brought management field like property management, contract management, asset management, disposal, and relocation management under its banner (Becker,1990). Another perspective was given to FM services portfolio when further integration was witnessed when private investors were involved in contracts of public-sector through Public-Private Partnerships (PPPs) and Public Finance Initiatives (PFIs). This trend started originally started in the UK but is now being used in the rest of the world. The providers of FM service now are even associated with the energy management.

In the early 2000s, many companies started outsourcing business process outsourcing (BPO)-payroll, human resources, finance, waste management and others using FM organisations. Throughout the 2000s, value-driven design entered the equation, and regional and global contracts started to become more common (Nutt, 2000). As a result, many of the past developments indicate that FM operates on a huge competing marketplace with many roles or functions such as FM-suppliers, FM-contractors, FM-consultants and in-house FM-teams (Kincaid, 1994).

In a short period of time in terms of FM practice and education progress and success have been achieved. A secure basis has been established to support the next stages of development in FM. But the same is not true for research as for the past decade a huge shift was seen towards facility of outsourcing and real estate services globally.

An extremely diverse field of activities is covered by FM (Nutt, 1999), it is also deemed responsible for the provision of many varied services (Barrett, 1995). It has adopted a wider range of services even more than that of building operations and maintenance (Aston, 1994; Best et al., 2003). Compared to the past, currently the dominion of FM has been broader. Fields like workplace, facility, support services, property, corporate real estate, and infrastructure are covered by FM. Effectively, there are a variety of positions out of which the FM practice is

conducted which give priority to property management, business support, customer and employee support, or to a different combination of these (Nutt, 2000).

The function and role of FM are in turn wide, despite its fast growth in the past 10 years. The reason for this is because historically the definitions of FM are associated to be focused more on the workplace side of the spectrum. The main problems engulfing FM are location, type, quantity as well as quality to improve FM's professionalism. There is debate that the role and scope of FM in the industry and organisation should be agreed at the beginning.

Despite the considerable achievements of the last few years, the field of FM remains at a very early stage of development in which: it operates in an ever widening and ill-defined sphere of activity. The claims it makes are not backed up by tested results. It is not backed by many secure practices which it can claim is its own nor is it backed by a knowledge base which can prove to be enough. Even today its growth and development are not supported by practical theory, it is immensely under researched (Nutt, 1999).

The following section discusses the definition of Facility Management (FM) as defined by different authors in FM literature.

2.2 Definitions of Facility Management (FM)

Along with developments and the increasing role of FM, the profession is defined in many different ways. Almost every definition underline "*the aspect of an integrating approach*" as well as a combination of people, processes, place and technology is mentioned. But not all the definitions differentiate the relationship between supporting the primary process.

Hamer (1988) described FM "as the process of planning, implementing, maintaining and accounting for appropriate physical spaces and services for an organisation; while simultaneously seeking to reduce the associated total cost". This definition was first presented in the workplace as a strategic management,

which led IFMA to include research into the calculations of its per employee cost in North America. For this reason, Hamer (1988), views FM as an accounting instrument for reducing cost and improving profit for available space and services. The varied definitions of FM demonstrate the fact that it is a field still in development phase (Hamer, 1988), showing facilities management as an all-embracing and evocative instrument which should usually be a feature of the organisation chart of any going concern organisation, but also an strategic tool that could be used to counter the decreasing trend of aligning organisations.

Jim Steinmann (cited in Hamer (1988:1) defined facilities management as *“the systematic method of inventorying, planning, designing and maintaining space, equipment and furniture for general or special purpose facilities that are subject to a need to be flexible to accommodate change”*. This definition included space inventory and recognition of FM as a tool to support the “change” programme of an organisation.

Regterschot (1988), describes facilities management as *“the integral management (planning and monitoring) and realization of housing, services and means that must contribute to an effective, flexible and creative realization of an organisation’s objectives in an ever-changing environment”*. Regterschot (1988) views it as a tool for reducing cost and making profits grow for accounting for available space and services.

Barrett (1995) defines facilities management as *“an integrated approach to operating, maintaining, improving, and adapting the buildings and infrastructure of an organisation in order to create an environment that strongly supports the primary objectives of that organisation”*. But neither definition refers to the process or activities which are linked with FM.

Alexander (1996) defines facilities management as *“the process by which an organisation ensures that its buildings, systems and services support core operations and processes as well as contribute to achieving its strategic objectives in changing conditions”*. It focuses on meeting users’ needs to support the key role of people in organisations, and strives to continuously improve

quality, reduce risks and ensure value for money which are clearly an important management function and business service.

Fefc/Nao (1997), list about property management, financial management, organisational management, innovation, change management and human resources management and considers it the core services of facilities management.

Park (1998) sees FM as *“the structuring of building plant and contents to enhance the creation of the end product”*. What really matters is the benefit or advantage gained by the business or activity, not the system itself. The final product can, in this case, be either a tangible manufactured item or a service; in both cases the product benefits in competitiveness and quality.

Becker (1999) defined facilities management as *“being responsible for coordinating all efforts relating to planning, designing and managing buildings and their systems, equipment and furniture to enhance the organisation’s ability to compete in a rapidly changing world”*. This definition pays attention on building and attempts to make FM wider than necessary. Nonetheless this description can be compared with the RICS definition that is *“the total management of all services that support the core business of an organisation”*.

Spedding (1999), accepted the definition of facilities management as adopted by the International Facilities Management Association (IFMA) in its early days as: *“the practice of coordinating the physical workplace with the people and work of the organisation, integrating the principles of business administration, architecture/ behavioural and engineering sciences”*. This meaning pays attention on unity in diversity that must importantly be a concern in organisations and achieving such by tapping on the knowledge and capability of various professionals. However, the business area of FM i.e. management of space and support service management was not mentioned in this definition.

Then (2000) recognises six areas of management that FM needs to cover which are strategic management, asset management, services management, change management, people management and information management.

The British Institute of Facilities Management (2000) defines FM as *“the integration of multi-disciplinary activities within the built environment and the management of their impact upon people and the workplace”*. This definition identifies the contribution of processes, principles, laws, theories and practices from other professions and reiterates the need to manage the tremendous impacts that such diverse background could have on people and the workplace of the organisations.

Maas & Pleunis (2001) see FM as *“the responsibility for coordinating efforts to ensure that buildings, technology, furniture and organisational trends are responded to, over time.”* However, these definitions do not put emphasis which well-managed facilities can make to an organisation.

Tay & Ooi (2001) present how to coordinate eight current and influential meanings of FM which led to the recognition of facilities management as the integrated management of the workplace to improve the performance of the organisation.

Brochner (2003), identifies facilities managers being responsible for making building and related facilities are managed cost effectively. Thus, developing an environment that supports the activities of the user of the building, and their past knowledge and experience would provide an important background to decisions related to building.

A definition of facility management accepted by the CEN (2006) and the European Committee Standardisation is:

“Integration of processes within an organisation to maintain and develop the agreed services which support and improve the effectiveness of its primary process”.

Similarly, to the definition, the CEN describes that facility management is a function that is for the development of the success of the primary process of an organisation. However, when the FM profession evolved, it wasn't immediately the case as it became a general management function and an integral part of the organisation.

A definition of Facility Management (FM) provided by IFMA (2017) is:

“A profession that encompasses multiple disciplines to ensure the functionality of the built environment by integrating people, place, process and technology. (International Facility Management Association)”

A definition of Facility management (FM) provided by ISO 41001:(2018) is:

“As an organizational function which integrates people, place and process within the built environment with the purpose of improving the quality of life of people and the productivity of the core business”.

The Centre for Facilities Management (CFM) defines FM as *“the process by which an organisation delivers and sustains support services in a quality environment to meet strategic needs”*. This definition examined the FM from a total quality management point of view. Thus, this definition is in tandem with the total quality management's definition of service to the client because a strategic need could be the need of the customers, employees, suppliers, investors or even the community.

In this section, two different definitions of facility management and facilities management were presented. The main difference between these two terms is that facilities management encompasses a range of disciplines and services to ensure the functionality, safety, efficiency of built environment buildings, grounds, infrastructure and real estate. Facilities management is divided into two basic areas: Hard Facilities Management (Hard FM) and Soft Facilities Management (Soft FM). Hard FM deals with physical assets such as cooling, heating, plumbing

and elevators. Soft FM focuses on tasks performed by people such as security, grounds keeping and lease accountings (Smartsheet, 2019).

Facility management (FM) “in its widest and truest sense concerns itself not merely with the management of premises, but with the services, people and facilities those buildings contain” (British Association for Facility Managers, 2005). It is a concern that runs from the initial design of the buildings to the day-to-day maintenance, and focuses on using energy, manpower and other related resources as intelligently and cost efficiently. In this research, the term of Facility Management (FM) is selected because the researcher aimed to identify the FM as a support function for the strategy of the organisation and not for the management of the buildings.

2.3 Facility Management (FM) positioning in an organisation

This section discusses the FM's positioning and the classification roles in an organisation. Moreover, in depth explanations on the functions, characteristics, roles and main activities of FM, including the relationship of all functions which are interrelated are discussed.

2.3.1 IFMA Model

The IFMA model of a triangle of "Ps" consists of three factors people, process and place. These are independent and have direct reciprocal relationships. Armstrong (1982) has pointed out, *"we know there is a need to manage the physical environment in concern with people and job processes."*

FM is positioned in the IFMA model at the intersection of these three factors as depicted in the following Figure.3.

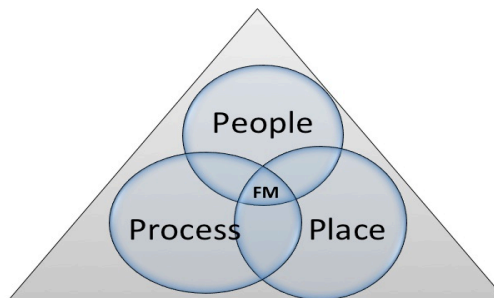


Figure 3: Triangle of "Ps" and FM (source: IFMA, 1982)

This strategy is logical, because FM covers the whole organization and the three main factors of an organization are people, process and place. The position of FM at the centre shows more coordination among the key factors of the organisation.

But when factors are related to the place that is when FM is most active. This reason for this is that fruitful FM leads to workplaces, which add value and lead to cost reduction while at the same time support the flow of productive processes.

FM factors like activities, responsibilities, skills, knowledge, scope and range of services of FM all are considered to integrate and join together better the existing organisational factors.

The scope of FM is made clear in the framework suggested by Kincaid (1994), because it elaborates different aspects of management practice. Kincaid, views FM as more of a role/service that provide support to a part of the organization non-core business (supply side) and fulfilling the needs of primary activities or core business (demand side).

The function of FM is to reconcile demand and supply aspects in the organisation as depicted in Figure.4.

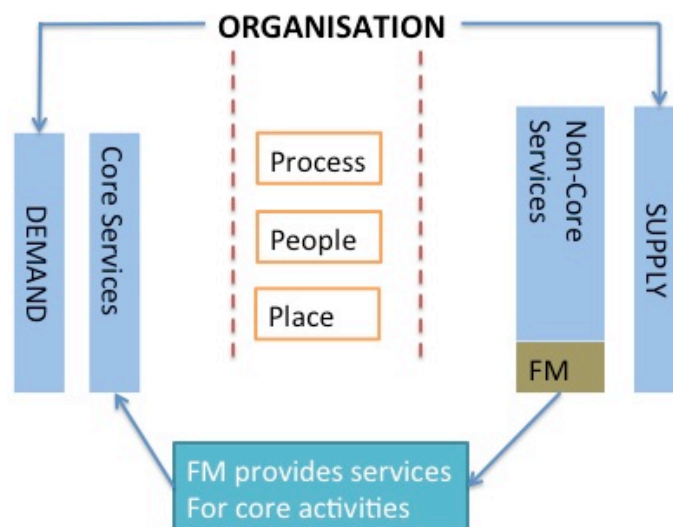


Figure 4: Relationships among place, people, processes and FM in an organisation (Source: Adapted Kincaid, 1994)

According to the IFMA model, FM main role is to work in the area of the place, but with responsibilities to also support the process and people that are linked with those places. IFMA's model has failed to identify FM as one of the support tools for the organisation strategy.

2.3.2 Classification of FM organisations

The pioneers of the idea of classifying FM organisations were Gerard Davis and Franklin Becker. According to their research, they used classification to recognise the most appropriate FM strategies for different organisational types (Becker, 1990; Davis et al., 1985).

Davis et al. (1985), classified 18 context organisations as per the type of change (low change/high change) according to the type of work (routine/non-routine). According to them, FM works uniquely in different contexts in order to fit in the organisational change.

Similarly, Becker (1990), said that FM can be classified as per context organisation and his theory stands on FM's response to its context. Price (2004), suggested a generic classification system. The system takes into account the relationship between the customers and the context organisation. Price refers to customers as not the employees of a workplace paid by the context organisation and serviced by FM, but the customers of the context organisation.

2.3.3 Facility Management (FM) roles classification

Then & Akhlaghi (1990) categorized that FM works into three different groups that are: strategic FM, tactical FM, and operational FM. The balance between technical, managerial and business acumen is vital in the strategic, tactical and operational decision-making processes.

Then & Akhlaghi (1992) highlighted that all items of the FM tasks constitute a category of decisions that are needed to be made at different stages of different management with skills required to form and implement them or to access their effectiveness and performance. The author's classification of the facilities management tasks is illustrated in the following Table 1. The table shows typical executive responsibilities, management roles and project tasks associated with the three distinct classes of FM as discussed above.

Table 1: Classification of FM tasks (Source: Then & Akhlaghi, 1992)

FM class	Executive responsibilities	Management roles	Project tasks
Strategic	<ul style="list-style-type: none"> • Mission Statement • Business Plan 	Investment Appraisal Real Estate ^[1] _{SEP} Decisions Premises Strategy Facility Master Planning IT Strategy	<ul style="list-style-type: none"> • Strategic Studies • Estate Utilization • Corporate Standards • FM Operational • Structure • Corporate ^[1]_{SEP} Brief
Tactical	<ul style="list-style-type: none"> • Corporate Structure • Procurement Policy 	<ul style="list-style-type: none"> • Setting Standards • Planning Change • Resource • Management • Budget Management • Database Control 	<ul style="list-style-type: none"> • Guide-line Documents • Project Program • FM Job Description • Prototypical Budgets • Database Structure
Operational	<ul style="list-style-type: none"> • Service Delivery • Quality Control 	<ul style="list-style-type: none"> • Managing Shared Facilities • Building Operations • Implementations • Audits • Emergencies 	<ul style="list-style-type: none"> • Maintenance • Procurement • Refurbishment • Inventories • Post-occupancy Audits • Furniture Procurement

Thompson (1990) used an analogy to back this approach that used computer language. “Software” representing the strategic level of facilities planning and general/office services. The operational level is figured as the “hardware”. This includes real estate, building construction, building operations and maintenance. The correct choice of “software” enables “hardware” to function. That is, the correct management plan allows implementation of the optimal facilities.

Barrett & Owen (1992) present a different approach dividing FM into two wide categories as per function analysis; management and operational levels, as presented in Figure 5. Management levels can be distinguished at strategic and tactical levels. When we talk about strategic level, there is consultation and non-routine planning focused at making the best long-term use of the organisation's physical resources and overall facilities.



Figure 5: How FM is carried out (Source: CEN, 2006)

Tactics are known as action plans which involve routine, specific and short-term preventive or managerial operations. The operational level is the implementation of the works performed by different contractors (CEM, 2006). Classifying FM activities in strategic, tactical and operational levels links with Kincaid (1994) are three core strands of integrated activity as presented in Figure 6:

- Property management: strategic activities.
- Property operations and maintenance activities: operational functions.
- Office administration: tactical activities.



Figure 6: The types of tasks and activities categorized by function and FM task characteristics (Source: adapted from Kincaid, 1994)

Kincaid (1996), identified three distinctive characteristics of FM as follows:

- Facility management either provide support service to the organisation or is given a support role within an organisation.
- It is necessary that FM relates strategically, tactically and operationally to other support activities and primary activities in order to create value.
- It is important that managers are fairly knowledgeable when it comes to facilities and management

Alexander (1996) stated that identifying business needs and requirements is the strategic role of FM and involves formulating and communicating a facilities policy. This is in order to ensure continuous improvement of the quality of service provided.

The scope of FM strategic is settling service level agreements (SLAs), establishing effective purchasing, contract strategies and establishing service partnerships. While on the other hand, the tactical FM works are basically stressed upon on the organisation and administration procedures. It includes the controlling, monitoring and managing the operational FM; in order to ensure that

the operations are well performed as per the organisation's requirements or standards and also implementing the policy, strategy and plan.

The scope of operational FM covers all types of daily and routine services that take place in the workplace. It is also related to the effectiveness of the service functionality in an organisation.

Johnson & Scholes (2002) discuss management strategy as dealing with the complexities of ambiguous non-routine situations, which can not only affect the direction but also the future of the whole organisation. An integrated approach is required by strategic decisions because the whole organisation should move in unity and the same development direction. Operational and tactical levels rely upon on policy direction from strategic planners. The field of tasks envisioned by strategists appears sophisticated and complex. The reason for this is that many processes and people are involved, and many features of the organisation need to be orchestrated.

A strategy is required to keep up with the fact of an unknown and changing future since it might usually be said that "*the further we look ahead, the more uncertain we become*" (Nutt, 2002). Even though forecasting for a long term can only hypothesise about the future. Strategic planning aims to reduce uncertainty by choosing a preferred path and a reasonable long-term route for the growth of the organisation (Nutt, 2002).

There are two objectives of strategic overviews (Nutt, 2004):

- Negative aims (Reactive): to decrease risk and constraint, and to avoid failure and undesirable outcomes.
- Positive aims (Proactive): to increase opportunities and advantages, to attain positive result, to improve value and to achieve planned outcomes.

Thus, short and long-term types of support can be provided by support activities in FM in order to carry out particular tasks at the operational stage, coming up with projects and plans from strategies and policies, with keeping in mind what is waiting in the distant future.

Chotipanich (2002), presented a different level of activity and service derived from operational FM, management FM, and the strategic FM, as presented in Figure 7. Service levels start with simple actions which are easily carried out and developed into complex processes which are more difficult to implement.

		FUNCTION	GOALS	CONCEPTS
FM	Strategic FM	-direct facilities -direct services -direct practise	-income -productivity -sustainability	-strategic -integrative
	Management FM	-implement -control & monitoring -project management	-achievement -satisfaction -performance	-proactive -integrative -planning
	Operational FM	-run facilities -services	-minimum cost -meet needs -quality	-cost-effective -quality assurance

Figure 7: Characteristics of FM works at different levels (Source: Chotipanich, 2002)

2.4 Stakeholder mapping in Facility Management

In this section, the stakeholder mapping approach is used to identify FM stakeholders and responsibilities within the real estate environment. Stakeholder mapping is a collaborative process of research, debate, and discussion that determines a list of various stakeholders but also the different professionals involved and engaged in the FM area. The main steps of mapping can be broken into four phases namely: identify, analyse, map and prioritise. In the following sections, the definitions of each stakeholder involved and their different roles and responsibilities in the real estate properties are described. In this research, study of the stakeholder mapping has used a combination of power/interest and stakeholder engagement/participation as presented in the following paragraphs.

By undertaking a mapping exercise, an organisation can recognise which stakeholders are important and whether they will prove to be useful or create problem in an important project (Olander & Landin, 2005). Subsequently, the identification of various groups of stakeholders can help an organisation to decide what type of stakeholder management strategy should be implemented for each group.

Low & Cowton (2004), identify two specific techniques that allow organisations to manage and relationship with stakeholders. Firstly, engagement with stakeholder needs to meet and discuss with different stakeholder groups and at the same time they have little or no influence in the decision-making process (Low & Cowton, 2004). Secondly, participation of stakeholders consists of a more inclusive style of management strategy that allows stakeholder groups to be actively involved in decision-making and merging them within the governance structure of an organisation (Low & Cowton, 2004).

Mendelow (1991) presents the mapping process by using an interest/power matrix. The interest/power matrix ranks stakeholder on the reliance on the level of power and also the level of interest they possess in the operations of the organisation. Stakeholders who are classified high in both areas are considered to have an important relationship with the organisation (Feurer & Chaharbaghi, 1996).

An organisation can point out stakeholders and apply a management strategy for a particular stakeholder group as shown in Figure 8 by simply integrating together the interest/power matrix, stakeholder engagement and participation strategies.

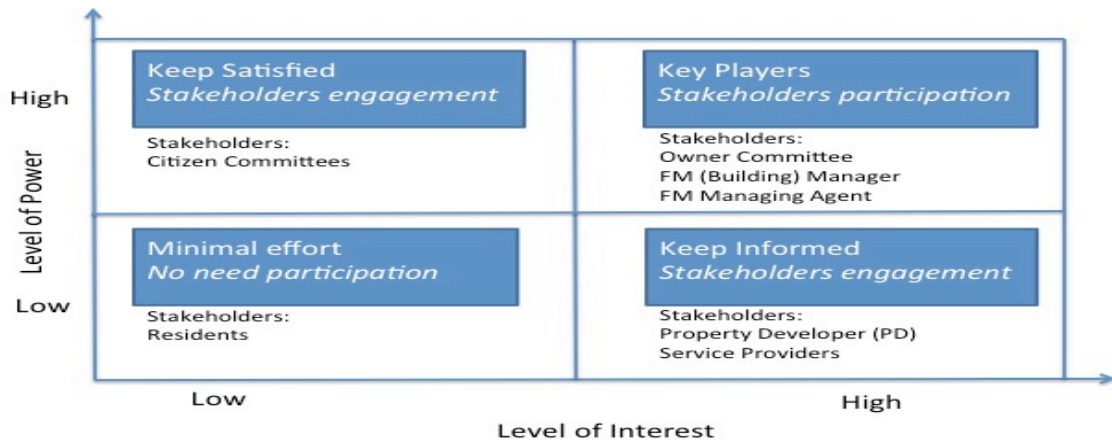


Figure 8: Stakeholder mapping adapted from Mendelow (1991) and Low & Cowton (2004)

In the following sections, the stakeholder roles and responsibilities involved in the real estate properties are described.

2.4.1 The Property Developer

Generally, the property developer (Mendelow, 1991), is the one that owns the property, however most of the residential developers that are multi-unit do not keep possession of the property throughout its estimated operational life. As property sells, developer's ownership reduces as each new buyer becomes a part of the Owners Corporation and this keeps on going until all properties are sold. When the change of ownership takes place, the obligation of building workmanship may be passed to the Owner Corporation under contract and/or transferred to developer's contractors. There are many instances when there is little or no communication between the future owners and developers or Facilities Managers and thus results in, some design aspects specific to multi-unit residential facilities such as the provision of adequate waste facilities can be ignored. Moreover, the property industry is witnessing the advantage of Facilities Managers and developers consulting and working with each other to make sure that the requirements of the operations are clear amidst the design stage of the building.

2.4.2 The Owners Corporation

All unit owners spontaneously become members of the Owner Corporation and they take the authority for all decision-making that affects the Owner Corporation like its common property, assets and shared services (Mendelow, 1991). An Owners Corporation has legal existence and in the end it moulds the general route of maintenance and FM. The steps taken can differ immensely among the owners' corporation. An owner corporation can assign roles and powers to its committee, hence, allowing them to make most of the decisions on the owner corporation's behalf during the gap between annual general meetings. However, an owner corporation is not mandatory for all the buildings.

2.4.3 The Board

The board consists of member of an organisation that are selected in an AGM (annual general meeting) held once a year. It is also known as the Executive Committee, Managing Committee, Committee of Management or Council (Mendelow, 1991). Being in the board gives the members right to make decisions and take steps on behalf of other owners in the maintenance and management of common areas and shared service through a collective decision-making process. They may also have the right to manage financial and administrative factors of the property. The FM manager is also required to collaborate with the members of the committee to put their decisions into action.

2.4.4 The FM Managing Agent

The role of a FM managing agent (Mendelow, 1991) is to manage, direct and administer the property as per the directives of the owner corporate committee. It assists in establishing a secure and ample surrounding environment for the residents, their guests, and facility employees and contractors. This typically includes:

- Accounting, budgeting and financial reporting
- Invoicing and collecting levies and service charges
- Contract management
- Communication with property stakeholders
- Enforcement of rules/by-laws
- Issuance of notices, orders and certificates
- Meeting preparation and general secretarial tasks.

In smaller facilities, the FM Managing Agent may act as the Facilities Manager.

2.4.5 The Facilities Manager

Facilities Manager (Mendelow, 1991) is the one who maintains, administers and coordinates the strategic and operational management of the facilities and the buildings so that all physical aspects can operate smoothly and efficiently and thus establishing a safe and secure environment for residents.

Owners' corporate can decide to outsource the management and maintenance of the assets of larger properties to third parties (such as a facilities management service provider). Owner corporate need to be observant and have a keen eye to make sure that they outsource to such provider who have good knowledge and are experts in their respective fields.

2.4.6 The Resident Manager

It is common practice by Owner Corporate to outsource rights such as caretaking and leasing to the Resident Manager (Mendelow, 1991). The Resident Manager can be either a company or an individual and takes on FM services for an agreed period. During this period, they live own and work from within a lot in the complex. Their fee is paid by owners and the resident manager in real estate can replace or work together with an FM company.

2.4.7 The Residents

People who live in a multi-unit residential building and form the local community are called residents (Mendelow, 1991). A key feature of FM within a building of residents is the capability to respond and react to various issues of residents in short amount of time. The residents are contempt when they know their concerns are being heard and acted upon by the Facilities Manager.

When the residents are provided with some control this can lead to many problems being resolved easily or even being prevented from occurring (e.g. access to blinds and lighting controls). They come more understanding and considerate when they understand how different functions, assets, and equipment are supposed to work. It is very essential that a strong communication channel is present between the residents, OCs, and the FM managers in order to make sure that everybody's needs, and expectancies are met.

2.4.8 Relationship Building

A decent link and communication between the Facilities Manager and the Facility Agent supports the successful functioning of a developer scheme (Mendelow 1991). Communication disruption is the main cause as to why issues usually occur. Thus, it is necessary that relationship starts smoothly and have a close dialogue/ collaborative approach.

2.4.9 Effective Communication

Most of the building initiatives will have an impact on residents and other stakeholders of the facility at some point thus, it is very important to involve key stakeholders in the decisions making process will ensure their “buy-in”. It means to constantly inform the stakeholders about new developments by using a variety of channels, such as emails, newsletters, notice boards, presentations, etc.

2.4.10 Service Providers

There are different experts like service providers who are contacted by FM manager or Owner Corporate (OC) to start a big project or to support even maintenance (including long term maintenance contracts) (Mendelow,1991). Such providers may include:

- Auditors • Architects • Asbestos surveyors / removal contractors • Building trades (plumbing, electrical, etc) • Energy and environmental consultants • Interior designers • Insurers • Lawyers • Planners • Quantity surveyors.

As with any engagement, the selection of the service providers is made by the OC and is his responsibly to make sure that the selected service providers are trained and competent to provide the necessary services.

2.4.11 Citizen Committees

Citizen committees are one of the most well-suited stakeholder engagement techniques for residential facilities (Mendelow, 1991). There also called public advisory committees. Citizen committees consist of a group of representatives from a defined community. They are assigning with the duty of commenting and

giving their suggestions on a specific issue with participants. This method is commonly used by local councils to communicate planning decisions and thus can be applied to guide the OC in making decisions.

Interacting with non-owner residents and other building stakeholders will aid in making sure that decisions are made keeping in mind multiple stakeholder needs and their point of views. This includes providing the chance to leverage value through the experience and resource support of the individuals involved.

2.5 Summary

In this chapter, the Facility Management as a professional practise with different definitions was presented. Facility Management over the years, has changed roles in the contemporary working environment. The present trend for FM is managing the non-core services into the organisation, and this includes both “hard” and “soft” functions. Nowadays it is also a developing practice among organisations to focus on the core business activities while outsourcing all non-core activities which also includes FM.

Facility management (FM) is categorised into three levels: strategic, tactical and operational. All these responsibilities, roles and functions for each level are unique, illustrating that FM decisions should be taken at management level and incorporated into the overall organisation strategy. In the next chapter, various organisation models in the FM area will be presented.

Chapter 3 Organisation Models

Classification of Facility Management (FM)

3.1 Introduction

The purpose of this chapter is to present various organisation models in the area of FM. Organisations have strived for various models aiming at a greater match of supply and demand. The central theme of this chapter is to better knowledge the classification of different organisation models for facility management. This chapter starts with emphasis on an analysis of the positives between the FM role and the role of supporting organisations in meeting business needs and the alignment of supply and demand.

3.2 Classification of organisational models for Facility Management

The objective of this study is to present a classification framework for the different organisational models, the proposed methodology deployed involves an analysis of the literature review of the organisational models for FM suggested by earlier studies and underpinned by empirical evidence.

Williams (1996) and Varcoe (2000) analysed the relation between procurement and service provider perspective, in elaboration and categorising the patterns in FM organisations and the industry. Williams (1996), models Facility Management organisations in the following categories:

- Total in-house facilities management
- Outsourcing as "Single" or "Packaged" contracts
- Total facilities outsourcing management contract
- Total facilities outsourcing managing agent

Williams (1996: p.31) describes managing contracting as *“a system in which the company responsible for directing and coordinating the work of task contractors is paid a fixed or sliding scale fee”*.

Although the management agent method is also fee based, the main distinguishing feature between a management contract and managing agent is that a management agent is not the one who initiates the task contracts- these are all direct with the customer.

Varcoe (2000) extended these categorisations and presented some of the future trends. He named the different business proposals as Total Workspace Management, Integrated Service Delivery, Total Infrastructure Provision, and Resource Platform Approach.

In comparison to Varcoe (2000), Williams (1996) makes the contractual arrangements as the characterising variable in service provision and shows the relationships patterns between clients and service providers of Facilities Management.

Facility Management Services delivery can be categorised into the following five types:

- Providers of single services
- Providers of multi-services
- Providers of total FM Concepts
- Providers of software solutions
- Providers of consultant services

For the companies who have specialised in being providers of FM services, FM is clearly the core business of the company. This is irrespective of whether they are providers of single services, multi-services or total FM concepts. Such companies often use FM as their core business and as an essential element in their marketing.

Organisational models for non-core services can be organised as per Williams (1996) and presented in the following sections. In general, the plan for FM services delivery is composed of three stages from FM sourcing plan through the procurement to delivery as depicted in Figure 9.

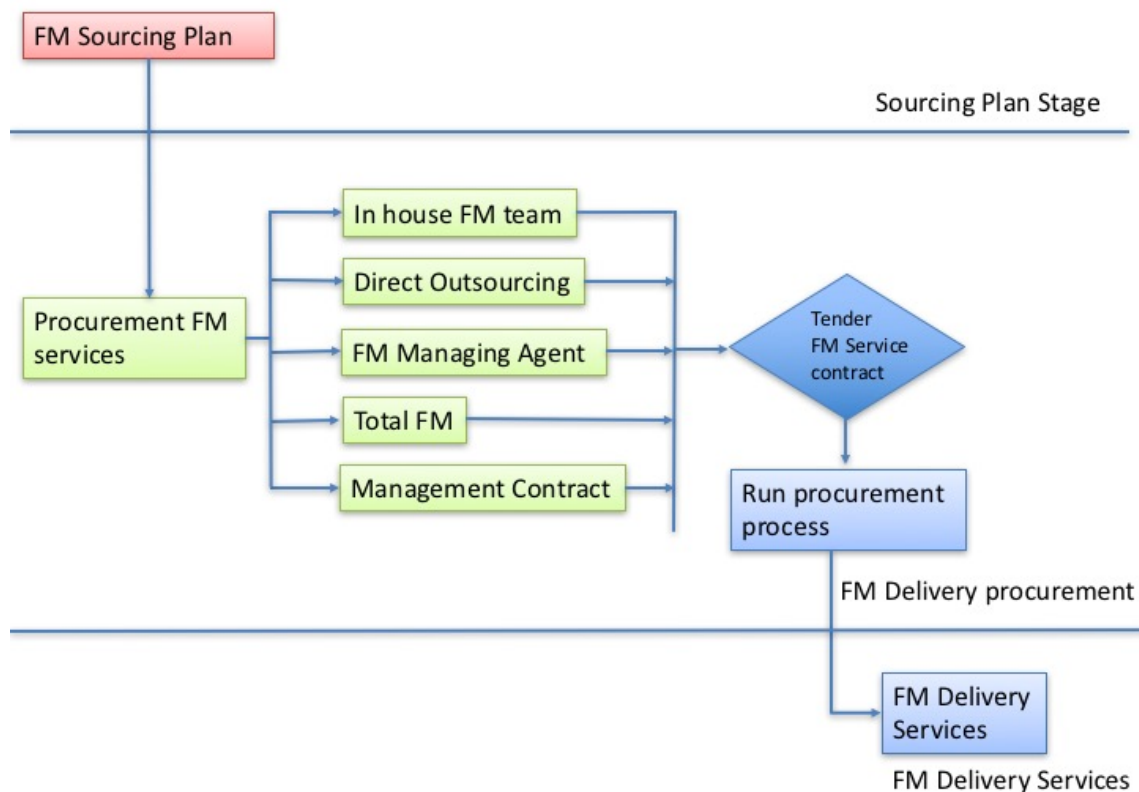


Figure 9: Facility Service delivery process

In the next sections, different organisation models for the procurement and sourcing of FM services are presented.

3.3 Organisational model for total in- house FM (Types A/B/C)

In this organisational model type A, all the functional operational units have the ability to provide FM services without the presence of a facility management personnel or company (Galbraith 2002).

In general, organisations that utilise their own employees for providing non-core services, a supervisor or coordinator is normally assigned to the facility manager role. This approach (organisation model type B) is generally for small-medium enterprises (SME), and the facility manager is a member of the committee and supervises all the functional units.

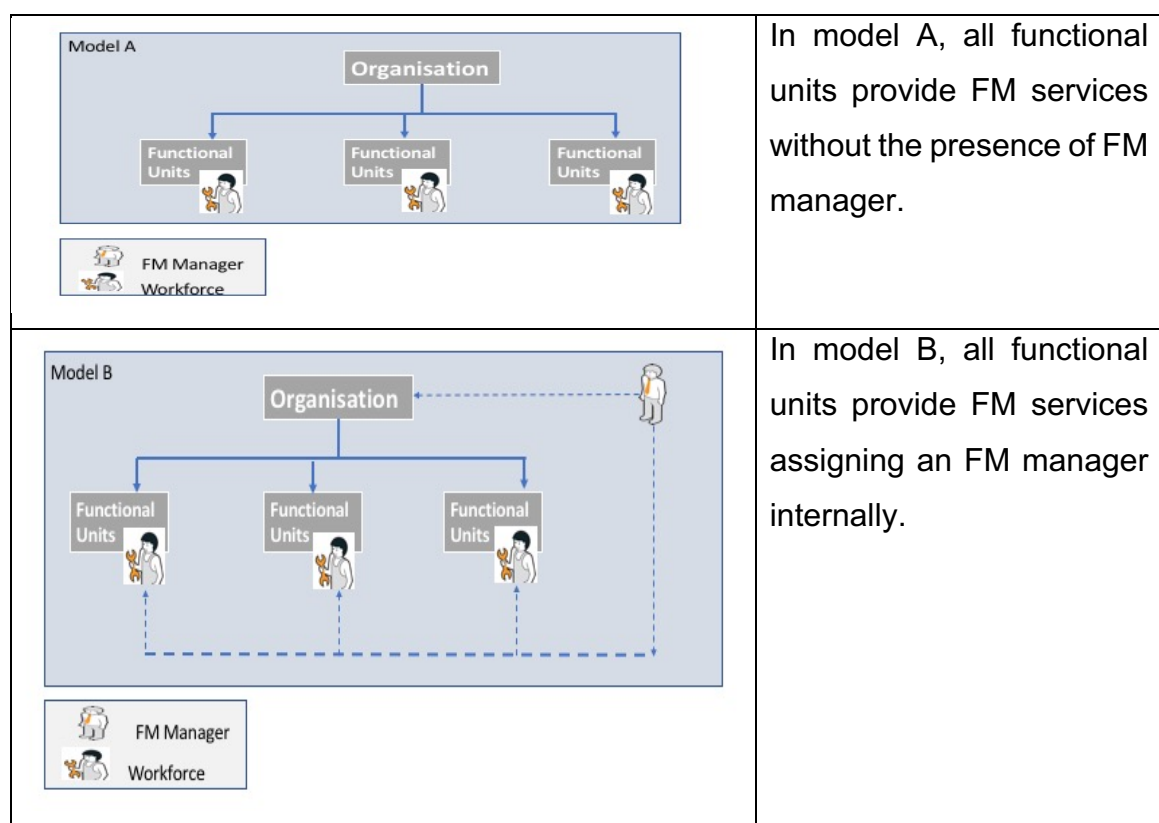


Figure 10: Organisation Models- Type A and B

In other organisations, the research identified a particular business unit (organisation model type C) internal to the company and responsible for performing such activities (Barrett 1995).

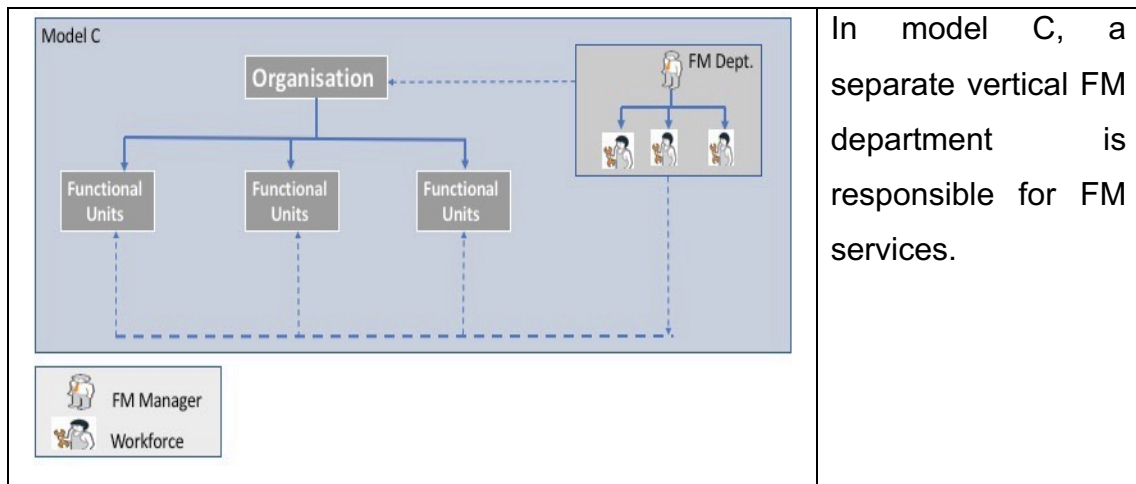


Figure 11: Organisation Model-Type C

The facility manager has a responsibility to manage the whole unit. Examples of organisations that have adopted this organisational model are Rabobank and ING Bank (Krumn 1998). Similarly, the National Park Service (Dept. of Interior 2004) uses a similar business unit for the facility management activities.

3.4 Organisational model for management by an agent (Type D)

Many organisations without the experience or know-how on how administer and run non-core FM processes proficiently and productively, choose an external FM consultant company to execute FM activities (organisational model type D). This type of organisational model is called the FM managing agent.

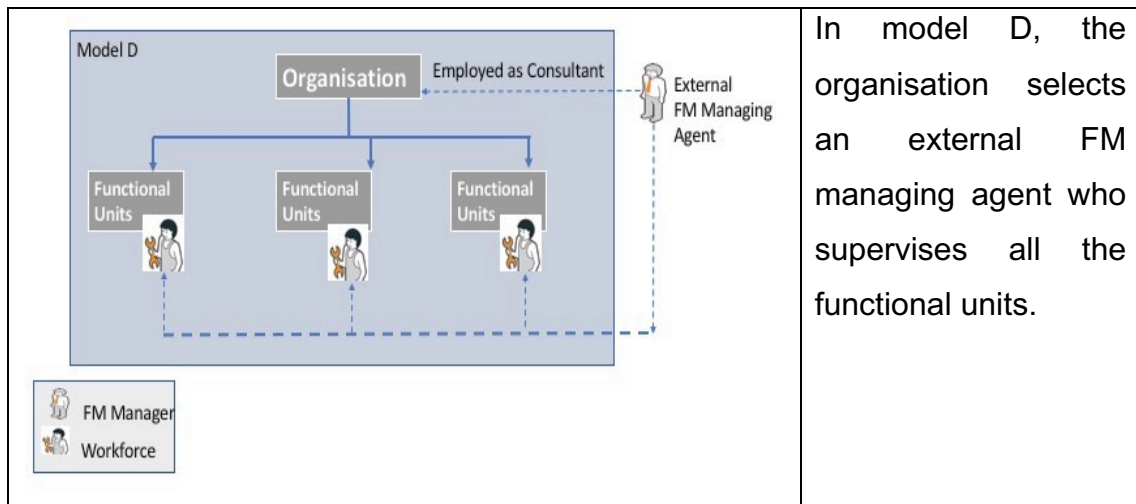


Figure 12: Organisation Model- Type D

This strategy contemplates the existence of a managing agent (Alexander, 1996; Atkin & Brooks, 2005) that is hired by the organisation as a consultant for a medium or long-term period. The primary role and responsibility of the FM agent are to monitor or manage the FM services. Examples of typical consulting firms are Atkins (Atkins 2011), Arup, Interserve, and Morson International (Vagadia, 2012).

3.5 Organisational models for direct outsourcing (Types E/F)

Today, FM services have become more complex and specialised. Organisations have moved towards outsourcing FM activities in a non-integrated form. Outsourcing has many advantages and some of them include a reduction of internal personnel engaged, an increase of internal usage, flexibility to other functional units, and extra control over the costs for each non-core service Vagadia, 2012).

Another type of outsourcing is direct outsourcing (Vagadia, 2012), in which the facility manager is absent (organisational model E) or is a customer's employee (organisational model type F). In the organisation model E, the customer might divert to three distinct FM providers.

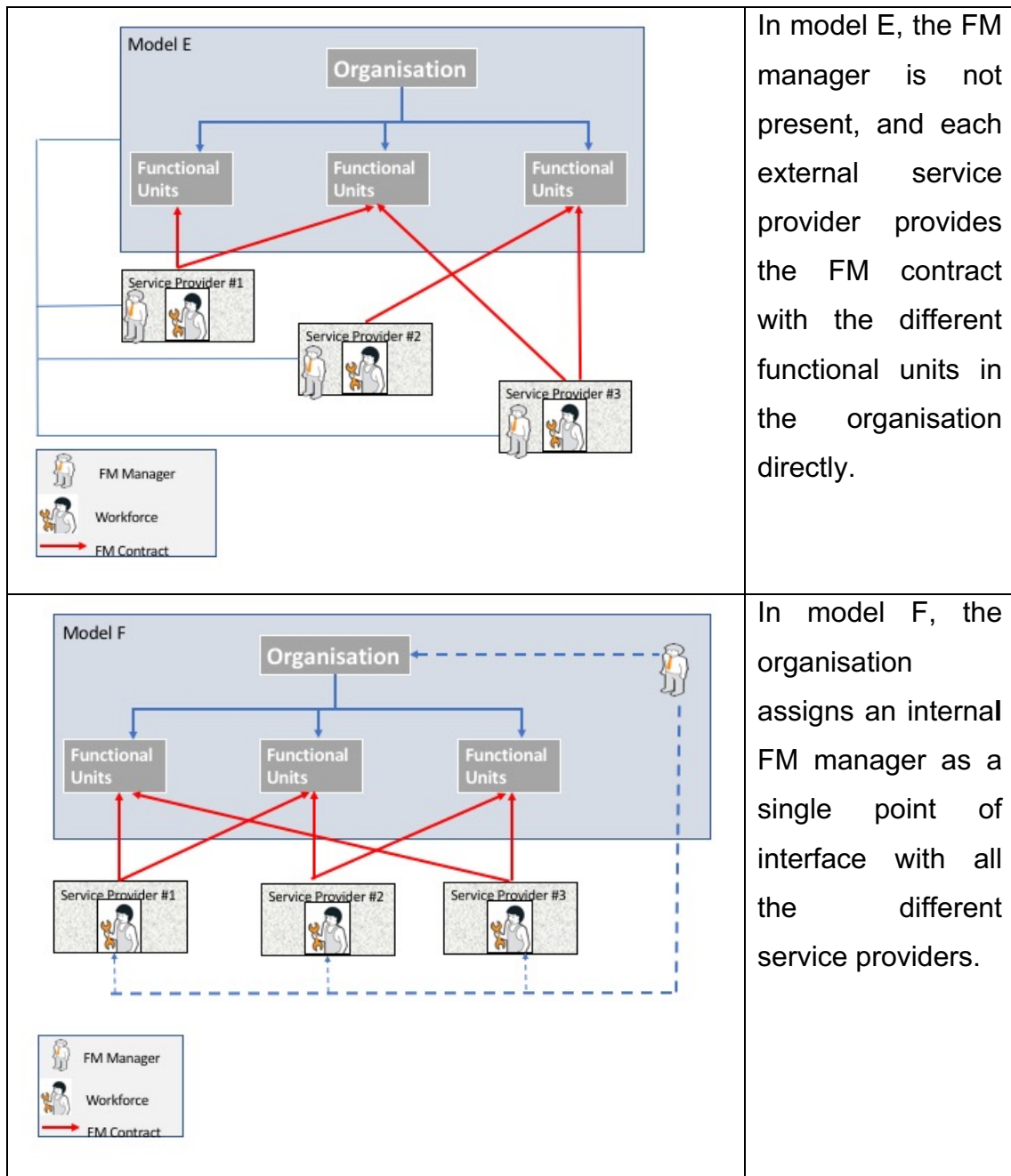


Figure 13: Organisation Models : Type E-F

Hewlett-Packard utilises the organisation model type E in which facility operations are provided by different companies offering a sole typology of services to one or more customers' business units. Alcatel Italia (Pedrali 2007) has an internal facility manager and it is representative of the organisational model type F. However, it outsources the administration of records, mail, maintenance and logistics.

3.6 Organisational model for management contract (Type G)

The single strategy for this organisational model (type G) is managed by a contractor, with the facility manager designated as the contract manager (Atkins & Brooks 2005).

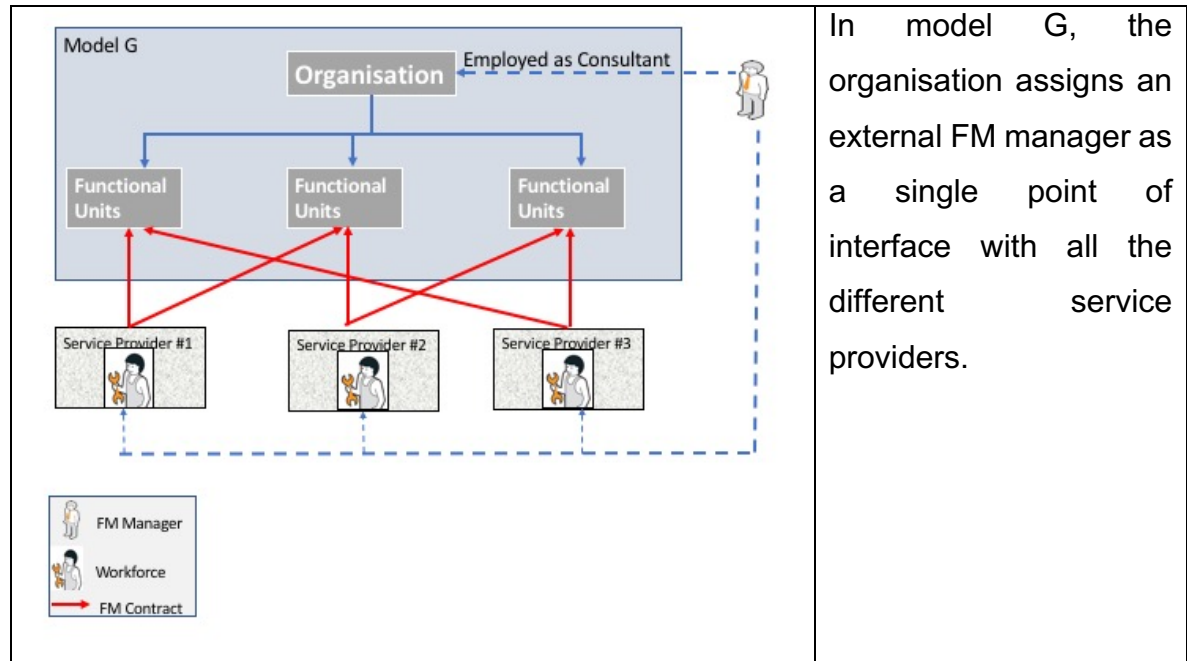


Figure 14: Organisation Model: Type G

3.7 Organisational models for total facility management (Types H, I)

In these organisational models, the non-core support services are supplied by a different FM approach called "total facilities management" or "integrated facility management" (Atkins & Brooks 2005). The term integrated facility management means that the organisation assigns facility management to companies that are capable of providing services in a synchronized, integrated, and independent manner (Batistella & De Toni 2011).

Non-core integrated outsourcing providers follow the models H and I proposed in the literature (Alexander 1996, Atkin & Brooks 2005, Cotts 1999). The organisational model type H provides an internal facility manager that operates

for the customer, and who is the single point of contact (SPOC) between the customer and the service provider's facility manager. In this model, the service provider's facility manager handles the external relations with the customer and supervises the customer agreements. In organisational model type H, the service facility manager's role is to report to the company management committee and coordinate the non-core services.

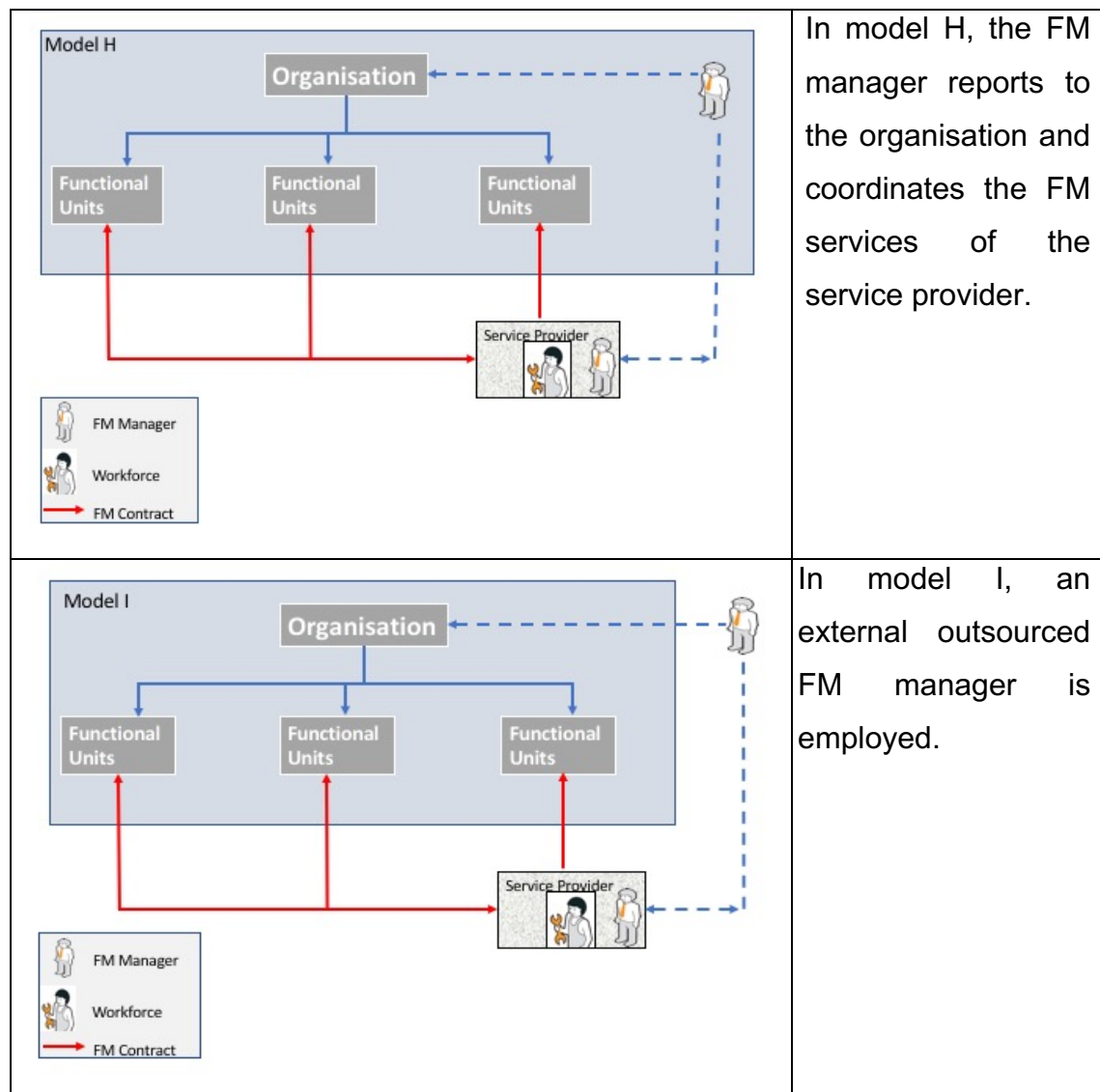


Figure 15: Organisation Models: Type H-I

In the organisational model type I, employs an independent outsourced facility manager, who is not employed by the FM service provider or the customer. The last three models (G, H and I) are applied by many facility management companies operating in the Middle East such as Johnson Controls, ARUP, and Interserve.

3.8 Analysis of organisational models

Each of the organisational models has both advantages and disadvantages, hence the need for the alignment of organisational models with facility management. The strengths and weaknesses analysis are as follows of the organisational models and present:

Organisation model type A is better used when the FM services are not too specialised, and involvements are not too repeated. However, this model has some limitations because of the absence of service coordination (Galbraith, 2002).

Organisation models type B and C are aimed at organising and making the coordination of resources by improving the efficiency of facility activities. The internal facility manager is a member of the management of the organisation, which gives them authority to managing the business units (Barrett, 1995). In the following Figure 16 summary of FM models is presented.

FM MODELS SUMMARY					
Organisation Roles	FM Strategies	No in-house Facilities Manager	In-house Facilities Manager	Consultant (employed by organisation)	FM Service Provider
Internal Workers or Employees	FM Total In House	A	B		
	Management by Agent strategy			D	
Organisation Functional Units	FM Total In House		C		
Service Provider	Direct Outsourcing strategy	E	F		
	Management Contract strategy				G
Total FM Strategy	Total FM Strategy			H	I

Figure 16: Summary of FM models (Source: Author)

The facility management agent has the authority to advise on the activities of each business unit and propose procurement options. Thus, the client organisation has the option to select the internal provisioning of the services and outsourcing services.

In organisational model D (Figure 12), service quality is boosted with the presence of an outsourced consultant and the company personnel carry out the non-core business services. The main difference between the organisational models type B and D is the relation between the facility manager and the company.

In both the organisational models' type C (Figure 11) and model type D (Figure 12), the facility manager is responsible for the coordination of different business units.

Organisational models type E and F (Figure 13) utilise the direct outsourcing strategy with the management of many providers. Here, the customer might hire a facility manager to supervise and coordinate subcontracted providers. This is because the facility manager is the single point of contact (SPOC) between the service providers and the company.

In the organisational models, type F (Figure 13) and type G (Figure 14), the managing contractor strategy is applied. The company turns to both FM service providers and a subcontracted facility manager. This approach is used when the company needs to negotiate supply contracts at regular intervals. On the other hand, within outsourcing non-core services for operations and the coordination of management services such as the models' type F and H (Figure 15), the company has limited control to evaluate the costs.

The total FM strategy subcontracts all support for non-core processes/services to enormous facility management companies. In the organisation model type H (Figure 15), the customer organisation preserves its skills and know-how (DeToni et al. 2011).

3.9 Summary

This chapter presented different organisation models under the FM perspective. All the models have pros and cons, and each organisation according to their needs and strategy have decided on the best option for them.

Developments in previous years have encouraged the extension of FM in private and public sector around the globe. The globalisation of supply chain integration, rapid technological advances, markets, and shifting management priorities have changed not only the provision and management of building facilities but also support services.

Chapter 4 Alignment between business strategy and FM

4.1 Introduction

The purpose of this chapter is to present and critically review the alignment between business strategy and FM. It is also intended to present a literature review of the models which were developed in the last four decades. The alignment concept is applied and summarised by the following quotations from the book title: “Alignment” by Kaplan & Norton (2006):

“When the enterprise aligns the activities of its disparate business units and its support units, it creates additional sources of value...”. (p.5)

“Corporations must continually search for ways to make the whole more valuable than the sum of its parts. Alignment is critical if enterprises are to achieve synergies throughout their business and support units...”. (pp. 26-27)

“Alignment is NOT a one-time event”. (p. 245)

“By its very nature, alignment requires cooperation across organisation boundaries, and therefore the process must be managed proactively....”. (p. 257)

Summary, alignment in an active sense, means going in the same direction. It is supporting a common purpose, synchronised in timing, direction, being appropriate for the purpose and in a passive sense, the non-appearance or disagreement.

The first idea for the corporate strategic management was presented by Tregoe & Zimmerman (1980), where the authors defined a list of ten driving strategies. These driving strategies consider all areas to be of pertinence for the corporation. However, there is only one that is of utmost importance which drives

organisation's decision making and Nourse & Roulac (1993), Scheffer et al. (2006); Singer et al. (2007) used this theory. The ten corporate strategic drivers are shown in the following Table.2.

Table 2: Ten corporate strategies (Source: Tregoe & Zimmerman (1980))

Corporate Strategies	1. Products offered
	2. Market needs
	3. Natural resources
	4. Technology
	5. Production capacity
	6. Method of sale
	7. Method of distribution
	8. Natural resource
	9. Size/growth
	10. Return/Profit

The early work of Nourse & Roulac (1993) set an excellent case because many have used either their real estate strategies list or the corporate strategies list. As per Nourse & Roulac (1993), to efficiently support various organization objectives, more than one single real estate strategies may be needed. However, Nourse & Roulac (1993) also facilitate knowledge of work from other operations. These include flexibility as a real estate strategy and identify that real estate strategies can be investigated with other functional strategies, such as human resources and marketing.

Tranfield & Akhlaghi (1995) have suggested that the facility strategy should be related to the central business aims, using performance indicators, for example, customer satisfaction or service delivery.

Hinks & McNay (1999) developed an alteration mechanism that classifies gaps of the facility achievement among the business units along with internal customers.

This mechanism does not explain how facilities can support the process that allows the structure to fulfil their strategic objectives.

For the alignment of FM knowledge and business performance, numerous researchers (such as Then, 2005; Then et al. (2014); Then & Tan (2013); Price, 2004; Valence, 2004) have argued that there is a need of an integrated approach that is a mixture of different approaches in managing the business resources available to an organization. The only way to ensure that real estate actions are connected to the corporation's strategic goals is an integrated corporate strategy that leads to a real estate strategy. Corporate strategy's roles and parts should not be restricted to minimize the cost of the physical structure or outsourcing activities based on operational effectiveness (Krumman, 2001).

The process of the strategic planning should align the infrastructure of the FM with the core business and also direct corporate real estate initiatives related to process, people, and allowing systems while many corporate real estate organisations' are developing property portfolio strategies. Still today most do not take part in strategic planning for service offerings and capabilities to support the core business (Acoba & Foster, 2002).

By producing strategic real estate plans that address the business units' objectives (e.g. efficiency, customer satisfaction, productivity etc.) corporate real estate executives can best demonstrate their value and provide a platform for being involved in the broader corporate planning process (Lambert et al., 1995). This will assist executives of the corporate real estate to overcome the difficulties connected with being excluded from the strategic planning process cited in previous research (Pittman & Parker, 1989; Veale, 1989; Teoh, 1993; Carn et al., 1999; Gibber et al., 2002; Arkesteijn et al., 2013;).

4.2 FM alignment with business organisation

This section presents an alternative alignment approach proposed by Then & Tan (2013). The authors presented the alignment of facility management performance to business needs and supplied a model connecting FM with the business strategy, as shown in the following Figure 17.

The need for alignment between the facility management infrastructure and business needs is mandatory for any strategic plan to support the organisation's success.

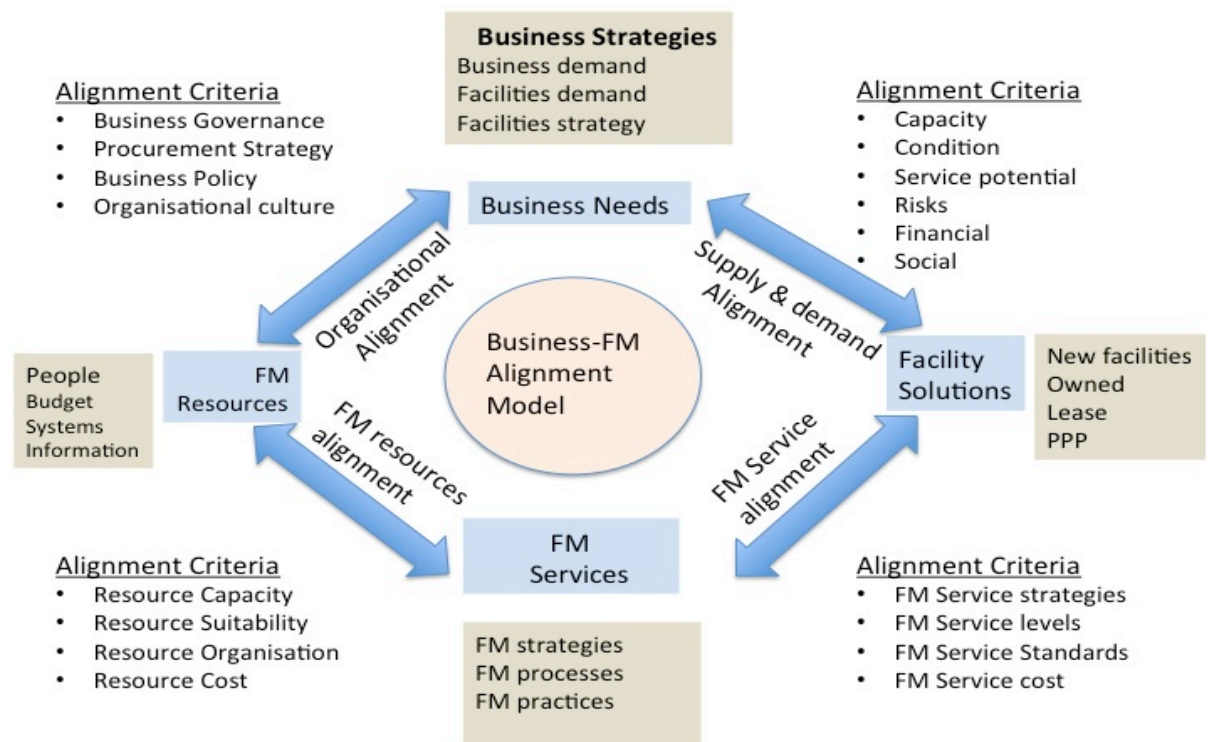


Figure 17: Alignment FM with Business Needs (Source: Then & Tan (2013))

Each variable can be described by many criteria's that can not only be used to achieve but also to assess alignment. The concept of the business domain and FM domain is described by Figure 17. Taking a horizontal delineation, the top segment of the figure consists of the business domain. In that what the business

needs to do is direct facility solutions and the selection of FM resources through FM strategy. This is constructed by the organisation's core business strategies and competencies. The bottom segment describes the FM domain in which the suitable facility solutions, FM resources and FM services are delivered to support the achievement of the organisation's facilities strategies and business objectives.

The quality of alignment between business needs and FM services is determined by the appropriateness of facility solutions since they define facility requirements and the required services performance. Similarly, how FM resources are harnessed and managed (in alignment with business needs) will influence the FM service organisational culture, innovation and quality of responses to current and future facility solutions.

Taking a vertical delineation, Figure 17 also points out how business organisational culture as shown by the way Facility Management resources are assembled and administered will influence its capacity to innovate and continuously improve (LHS). In the same way, the quality of facility solutions applied is a product of appropriate strategy which, in turn, is a function of the internal (and external) capability to define, assess and illuminate how real estate resources and services can fulfil planned business objectives in the best way (Then & Tan, 2013).

To define the alignment of Facility Management with business four links have tentatively been recognised and observed. Each link represents an "*alignment variable*" as shown in Table.3

Table 3: Alignment Variables

No of variables	Alignment Variable
Variable 1	Supply and Demand alignment
Variable 2	FM service alignment
Variable 3	FM Resource alignment
Variable 4	Organisational alignment

In this research, the three alignment variables FM Resources, Supply and Demand, and Organisation were selected for the alignment between the FM organisation models and FM services in the proposed model VAAM in chapter 8.

A summary of each of the alignment variables is given below. For every alignment variable, a number of “alignment criteria” have been recognised as being of use to assess the degree of “fit” or “alignment” with a vision to promote continual improvement (Then & Tan, 2013).

4.2.1 The Alignment of FM Services with Business Solutions

There is a commonly recognised principle that business needs must initiate the procurement, ownership and leasing of facilities solutions (real estate). In this context, the main variable is that of supply and demand management to make sure that facilities solutions meet business needs efficiently. The alignment of facilities services with business requirements is described as the best “fit” between supply and demand.

4.2.1.1 Alignment Criteria – Description (Then & Tan, 2013)

Capacity – It is the physical space of the facilities for fulfilling the needs of the business which also support the delivery of business services or products.

Condition – The physical condition of the facilities which is relevant to the facilities’ functional purpose.

Service potential – This is the facilities potential to fulfil future business needs and the sustainability of the facilities into the future.

Risks – These are the risks related to the facilities that can affect the business productivity and continuity.

Financial – They determine how to make decisions with respect to the financial viability of the facilities and constitute of capital value, operating costs and depreciation.

Social – These are attributes that refer to the social responsibility factors of the facilities like heritage and ecological sustainability to which the organisation is committed to as part of their responsible business.

4.2.2 The Alignment of FM Services with Facility Solutions

The alignment of FM services and facility solutions require FM services to support and allow occupancy and utilisation. To allow the facility to operate appropriately and productively it is important to facility management services are suitable to the type of facilities solutions (e.g. office space, hospitals, factories and schools).

4.2.2.1 Alignment Criteria – Description (Then & Tan, 2013)

FM service strategies – These list the service strategies that are made for the facilities in order to allow them to perform their designated role in supporting business. They provide the service portfolio required for implementing the FM service strategy.

FM service levels – They refer to the amount of work and the intensity of each Facility Management services to meet the facility's needs.

FM service standards – The standards of quality of the FM services with the condition that they lead to customer satisfaction.

FM service costs – The costs of FM services including procurement, management and transaction costs.

4.2.3 The Alignment of FM Resources with FM Services

The alignment of FM services and FM services require FM services to support and allow occupancy and utilisation. Thus, the FM services need to be appropriately resourced with people, systems and budgets to allow them to efficient and meet the requirements of the facilities they serve.

4.2.3.1 Alignment Criteria – Description (Then & Tan, 2013)

- **Resource capacity** – The ability of the resources to do the desired functions to the necessary standard.

- **Resource suitability** – The appropriateness of the resources to allow them the needed functions to be performed with best possible efficiency and effectiveness.
- **Resource organisation** – The organisation or arrangement of the resources to allow the needed functions to be performed with best possible efficiency and effectiveness.
- **Resource costs** – The costs of the resources, including procurement and management.

4.2.4 The Alignment of FM Resources with Business Needs

The Facility management resources that allow the delivery of FM services need to work within business parameters of policy, culture, corporate image and the needs and expectations of its customers. Whether the FM services are subcontracted or in-house these resources will apply.

4.2.4.1 Alignment Criteria – Description (Then & Tan, 2013)

- **Business governance** – The structure of the FM organisation and the effectiveness of its positioning within the organisation management and reporting levels.
- **Procurement strategy** – How FM is sourced as a support function and the extent of compliance with business policy and procurement strategy.
- **Business policy** – The extent to which the operations and services of FM functions fulfil and support business policies.
- **Organisational culture** – The harmony of the FM resources (people) with the organisation culture and environment.

The researcher identified that the alignment model proposed by Then & Tan (2013) has revealed different criteria between FM and business organisation. For this study, the alignment criteria related to organisation and FM services have selected as the part of the proposed VAAM model presented in chapter 8.

4.3 Supply and demand chain alignment within the organisation

In this section, a different approach proposed by Nelson (2008, 2010) is examined. The author presented the alignment of supply and demand chain value with various organisation units.

Value chain management in FM includes not only Demand Chain Management (DCM) but also Supply Chain Management (SCM) thus showing that it takes a holistic and integrated approach (Figure 18). The issues of culture are spread out through both DCM and SCM, on the other hand underlying themes are issues of process and relationship management. It is necessary to align both chains in order to provide the best value to the organisation. This theory of the FM value chain is presented in Figure 18.

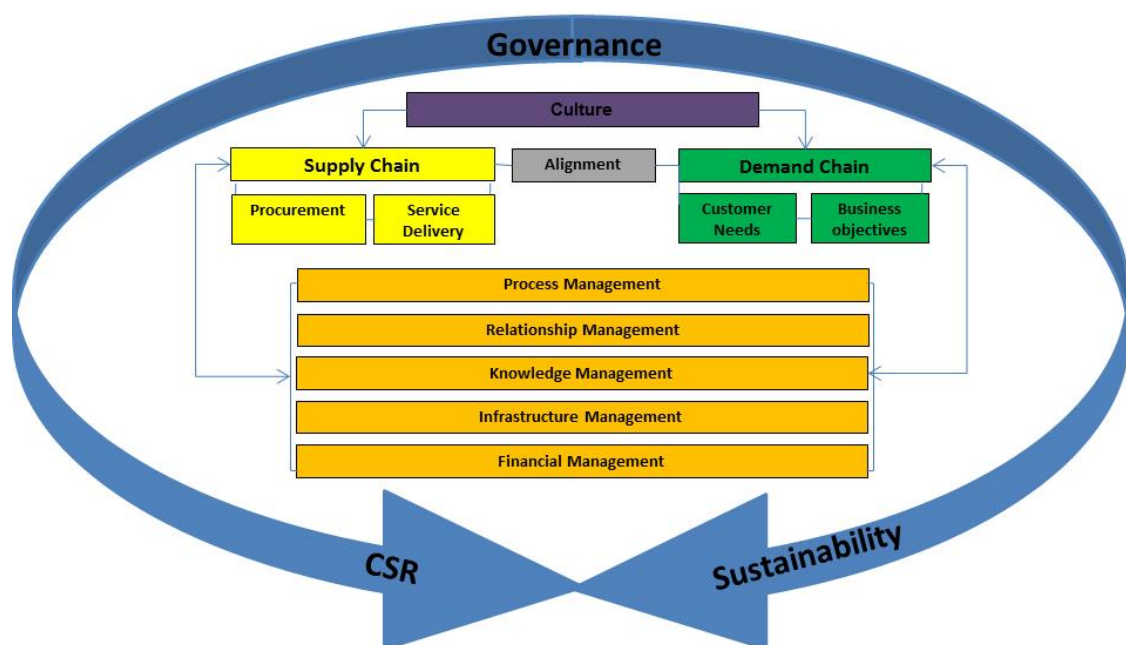


Figure 18: FM Value Chain (Nelson, 2008, 2010)

The core issue of FM is the fact that in order to apply effective SCM the organisation needs to have resources.

However, FM is normally seen being driven by cost rather than the value and is usually the first component of the organisation where savings of costs are sought. FM also plays more of a responsive than a proactive role in the organisation. This intensifies the requirement to elevate the FM profile and address SCM at not the strategic level but also at tactical and operational levels.

There is a clear need for the alignment of FM functions, processes, resources and relationships with the organisational objectives and strategy to enhance business performance.

4.4 Comparison between corporate strategy and facility management

In this section, a comparison is drawn between corporate and real estate strategies together with the process and procedures to how the strategy is in line the real estate or corporate real estate (CRE).

Joroff et al., (1993) presented corporate real estate (CRE) as the fifth corporate resource and the growth of corporate real estate management (CREM) has started from being technical building engineers into business strategists. Swayne et al., (2006) developed a strategic thinking map which provided an alignment and synthesis. This was to differentiate among strategic thinking, strategic planning and strategic momentum (see Figure 19). Strategic planning at the corporate level should induce strategic thinking at the divisional level; thus, leading to strategic planning at this level to be picked up again for strategic thinking at a lower level in the organisation.

The Corporate Real Estate Management (CREM) process has combined three steps: strategic thinking, planning, and momentum, as presented in the following figure.



Figure 19: Strategic Synthesis Map (Source: Swayne, Duncan and Ginter (2006))

At the corporate level, the CRE manager (business strategist) should take part in the strategic thinking and planning, because CREM is then defined as:

“The management of a corporation’s real estate portfolio by aligning the portfolio and services to the needs of the core business (processes), in order to obtain maximum added value for the businesses and to contribute optimally to the overall performance of the corporation”. (Dewulf, Krumm and De Jonge, 2000).

Observing at the corporate strategies, the quote of Mintzberg, Ahlstrand & Lampel (1998) mentioned before is confirmed again. Of all the work only half of the studies describe their corporate strategies by previous work (by Tregoe & Zimmerman, 1980; Kaplan & Norton, 2006 or Porter, 1996), while others “make up” their own list. Therefore, the lists exploited to decide the corporate strategy vary immensely.

Osgood (2004) studied and presented the strategic thinking map. The map shows that the strategic planning process begins with situational SWOT-analysis,

followed by strategy formulation. Defining directional strategies is the first step in formulation of strategy and must be based on mission, vision and goals (Swayne, Duncan and Ginter, 2006). Both the theory of the driving forces as the aspects presented by Osgood (2004) are built on by a directional strategy, so they are part of the first step of the formulation of the strategy.

The study of Roulac (2001) does not mention a list of corporate strategies and Acoba & Foster (2002) do not explain their strategies in detail, so they would be deemed as being marked as unusable. The downfall for others is that they have narrow focus on either finance (Krumm & De Vries, 2003; Gibler & Lindholm, 2012) or competitive strategies (Singer et al., 2007). As per the strategic thinking map these can be decided later. Thus, a lot more similarities can be witnessed by looking at the real estate strategies.

The first to discover CRE strategies were Nourse & Roulac (1993), and their efforts has been embraced by others (Roulac, 2001; Gibler & Lindholm, 2012). Around the same time, the work of a Dutch De Jonge (1996) published a list of CRE strategies that has been acknowledged by some European scholars (Krumm & De Vries, 2003; Scheffer et al., 2006, Beckers et al., 2015). Lindholm et al. (2006) merge both the lists because they virtually cover the same aspects. This then leads us to a complete overview of 7 CRE strategies:

Table 4: Corporate Real Estate (CRE) Strategies (Source: Lindholm et al. (2006))

Corporate Real Estate Strategies	Increase the value of assets
	Promote marketing and sales
	Increase productivity
	Reduce costs
	Increase innovations
	Increase employee satisfaction
	Increase flexibility

The list developed by Acoba & Foster (2003) has a drawback that it misses a productivity strategy. Osgood (2004) list is not elaborated deeply, and Singer et al., (2007) takes a unique point of view by focusing on a higher-level strategy. Thus, both these studies are labeled as not helpful.

Next, corporate strategies are not utilised by Roulac (2001) and once analysed, there is not really an alignment-taking place. It is the same for Singer et al., (2007). This is because the alignment is used only with the competitive strategies. Moreover, the alignment of Osgood (2004) seems to have promise but is not discussed thoroughly. Therefore, these three studies are marked in red in the following Figure. 20.

It can be argued that the disadvantages of the method of alignment of Krumm & De Vries (2003) and Lindholm et al., (2006) lies in the limited scope of their corporate strategies. Similarly, the disadvantage of Acoba & Foster (2002) is that they form groups of possible real estate strategies for a specific corporate strategy, which makes it less defined.

The most useful and completed alignments methods are made by Nourse & Roulac (1993) and Scheffer et al., (2006). This is because they use defined and thoroughly explained lists of not only corporate strategy but also real estate strategies, and they cover the entire first step of formulation of strategy. Both methodologies denote to each possible pair of strategies, whether they should be aligned.

Nourse & Roulac (1993) go a step further because they measure the value in terms of the strength of each pair. If we return back to the driving forces theory, this would seem more practical because every real estate strategy cannot have the same impact on the driving force. This effect is essential data for ample decision-making. Although the process of aligning strategies seems logical and elaborate; the alignment itself stays doubtful in both studies. It is not defining as to why specific strategies need to be aligned, and why others not; nor what decides the power of alignment.

Next, Figure 20 shows an overview of both lists of strategies with each (group of) author(s) used and values them using colours (green = best, yellow = has disadvantage, red = not useful).

Author (s), year	Corporate Strategies		Real Estate Strategies		Alignment
Nourse & Roulac (1993)	1.Products offered 2.Market needs 3.Technology 4.Production capacity 5.Method of sale	6. Method of distribution 7.Natural resource 8.Size/Growth 9.Return/profit	1. Occupancy cost minimization 2.Flexibility 3. Promote HR 4. Promote marketing 5. Promote Sales and selling	6.Facilitate/control production, operations, service delivery 7. Facilitate managerial process and knowledge work 8. Capture real value creation of business	
Roulac (2001)	X		See Nourse & Roulac (1993)		
Acoba & Foster (2002)	1.People strategies 2.Processes 3.Enabling system strategies		1.Real Estate acquisition 2.Space alteration 3.Organizational structure 4.Sourcing strategies 5.CRM	6.Employee development 7.Workplace standards 8.Fee-for-service/charge back systems 9.Info management and IT	
Krumm & De Vries (2003)	1.Revenue Growth 2.Costs reduction		1.Increasing productivity 2.Cost reduction 3.Risk control 4.Increase of value	5.Increase of flexibility 6.Changing the culture 7. PR and marketing	
Osgood (2004)	1.Mission & Vision 2.Customers & Markets	4.Distinctive competences 5.Values and culture	1. Quality of space 2. Cost of space 3. Quantity of space 4. Location of space	6. Practices for providing space	

	3.Products & services	5. Technology of space	
Scheffer, Singer & Van Meerwijk (2006)	See Nourse & Roulac (1993)	See Krumm & De Vries (2003)	
Lindholm, Gilber, & Levainen (2006)	1.Revenue growth 2.Profitability growth	1.Increase value of assets 2. Promote marketing and sales 3. Increase innovations 4. Increase employee satisfaction 5. Increase productivity 6. Increase flexibility 7. Reduce costs	
Singer, Bossink & Van De Putte (2007)	1.Lowest costs 2.Differentiation 3.Focus	1.Incremental strategy 2.Value-based strategy 3.Standardization Strategy	

Figure 20: Literature review for corporate and real estate strategies

(Source: Rianne Appel et al. (ERSE 2010))

Qi et al., (2008) developed a Quality Managed Facilities (QMF) as a FM performance measurement tool. The QMF tool was focused on three FM aspects: strategy, process and performance. The additional value achieved by a total quality approach is being more renowned in business and same goes for the scope of its application. TQM pays attention towards all activities and processes when it comes to satisfying the needs of its customers. Every organization has customers that depend on the quality of its performance. For an organisation operating quality circles, the key to success is for teams within the organization to function and produce results as quickly as possible. TQM can then prolong the working environment and give support services to fulfil the strategic requirements of an organization.

Nine business drivers and related FM outputs were recognised by Research at the CFM (2003) as presented in the following figure.

FM OUTPUTS

	Business Drivers	Quality			Value			Risk		
		Communication	Comfort & Satisfaction	Service Delivery	Cost Effectiveness	Asset Value Management	Investment Appraisal	Health & safety	Corporate Social Responsibility	Minimum Disruption
Adaptability	Flexibility									
	Continuity									
	Innovation									
Performance	Performance									
	Productivity									
	Viability									
Image	Reputation									
	Morale									
	Identity									

Figure 21: CFM QMF Performance Matrix (Source: Alexander,2002)

These include “hard” issues: performance, productivity, viability, as well as “soft” issues: flexibility, continuity, innovation, reputation, morale, and identity (Alexander, 2002). The outputs of Facility Management were related to the value, quality and risk functions linked with FM (Figure 21). Although the business drivers, Facility Management needs to respond to are generic, the FM outputs are not only sector but also organisational specific. The recognition and measurement of these business drivers against the FM outputs become essential in deciding the value adding activities of FM. This study identified these business drivers as important criteria for the developing the questionnaire survey adding value in FM.

FM organisations can utilise the QMF model to develop a set of KPIs derived from their strategic objectives. Also monitoring the data collected for the KPIs, FM activities become more valuable, contributing to organisational effectiveness and add value to the business. KPIs as measurement of performance is the part of the proposed VAAM model presented in chapter 8.

4.5 Literature Review Synthesis

Chapters’ two to three a literature review was conducted on the main theories used in this research. The review started with an overview of the FM as an

evolving management discipline providing different definitions in this context. Facility management is usually not considered as value driven rather than cost driven, and it is normally the first sector of business where the costs are applicable. Also, facility management (FM) plays a responsive, rather than a proactive role in the organisation. During the literature review, the researcher identified that facility management (FM) has developed in its part as a business support management discipline from a building service management-based discipline.

Second, a classification of nine different organisation models was shown established on the procurement of FM services. The findings of the literature review for the delivery of FM services were significant, and every organisation has different procedures for the selection of FM services. The FM services identified in-house, outsourcing, agent management, total FM, and management contract service. Among the findings from the study of the organisation models is that an important element in the possibility for FM to create added value is a change in responsibility not only between core business and in-house FM but also in-house FM and providers. Another observation from the FM services is to recruit and retain highly competent and creative knowledge workers and managers can be a vital leverage for adding value in FM.

4.6 Summary

In this chapter, the alignment models and classification between cooperate strategy and facility management were presented. It also provides a literature review of the corporate models developed over the past decades. The gap between facility management and corporate strategies is noted during the study and the proposed alignment model extends to narrow this gap using some elements from the corporate strategies (vision, mission, goals).

With respect to this, the requirement for alignment between the organisation's facility management and the business needs is the main part of any strategy in supporting business success. The concept of alignment between available resources and business needs is a topic that has appeared in recent years in the field of facility management. Also, the alignment between business needs and

facility management and provision as an objective or strategy has been increasingly mentioned.

Then & Tan (2013) revealed the alignment of FM performance to business requirements and provided a model connecting FM with the business strategy using four alignment variables. This study also presents that the alignment of Facilities Management resources and steps taken to support the organisational business plan needs a critical evaluation of a several alignment variables – Supply and Demand Alignment, FM Service Alignment, FM Resources Alignment, and Organisational Alignment.

The study identified that five organisational models presented in chapter 3 utilised the alignment variable supply and demand. Except of the management by agent strategy which utilised the organisational alignment and three In-house FM models which utilised the variable FM resource alignment.

Chapter 5 Research Methodology

“Researchers should be clear about what is the essence of their enquiry, and should express this as an “intellectual puzzle” with a clearly formulated set of research questions” (Mason, 2002:13)

5.1 Introduction

This chapter introduced and discussed the theoretical and practical perspectives of the research methodology which was used in this study. In general, the theoretical position is shown by the “research philosophy” that mainly focuses on the ontological and epistemological parts of the study. The real taxonomy of a research study is decided by the “research design” that shows the reason of the research philosophy, qualitative method, inductive approach, time dimensions, data collections method, validity and reliability aspects.

Most research related textbooks describe research as a multistage process (Johnson & Scholes, 2002; Saunders et al., 2007; Rea & Parker, 2005). However, the actual or accurate number of stages differ. For example, these may include formulation, clarification of the topic, literature review, methodology approach, analysis and collection of data, derived conclusions and in last the write up.

A research methodology can be described as the basic structure or the blueprint of a scientific study that mainly consists of the philosophy of research and its design (Saunders et al.,2007). A strong methodology collects rich data, makes

rational assumptions and guarantees acceptable results, while placing the research in the correct theoretical position. On the other hand, the lack of a strong and compelling methodology in scientific research can create dull conclusions that could result in low credibility and poor results. Thus, it is important to choose the most authentic methodology for undertaking a particular research investigation.

According to Saunders et al., (2007), the research approach can be based on the research onion as presented in Figure 22.

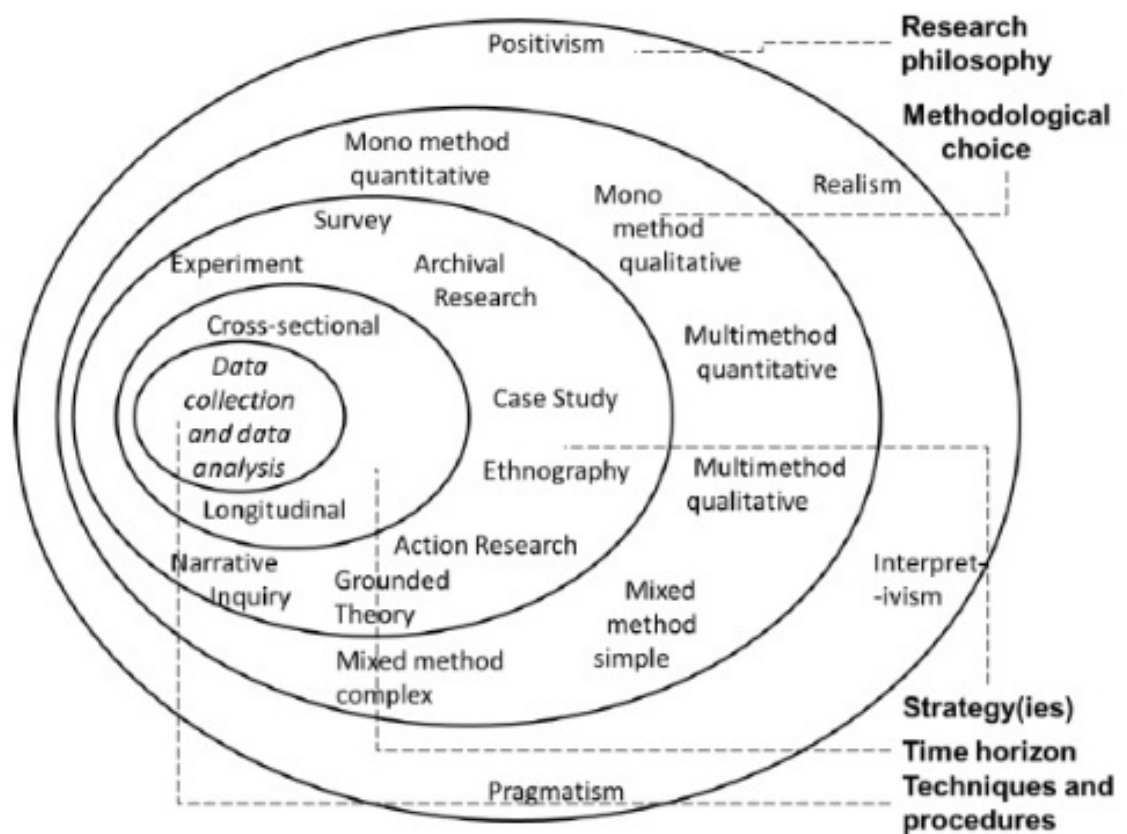


Figure 22: The research onion (Source: Mark Saunders, Philip Lewis and Andrian Thornhill(2007))

The Research Onion is divided into five segments, namely: Research Philosophy, Research Methodology, Research Approach, Research Strategy, Time horizon techniques and data collection procedures. There are various options for each

stage and for this thesis, the following will be applied, which will be talked about in the following sections:

- Research classifications: Applied research
- Research Philosophy: Phenomenological
- Research Methodology: Qualitative
- Research Approach: Inductive
- Research Strategy: Case Study
- Time Horizons: Cross Sectional
- Data Collection Methods: Questionnaires and Interviews

5.2 Research Classifications

Research is a “voyage of discovery” (Fellows & Liu 2008) that “begins with a curiosity” (Stebbins 2001) and carries on with a “systematic process” to find an answer to a current problem. The basic problems for designing a research attempt, therefore, underpin the selection of suitable methods (qualitative, quantitative and mixed), concern the research question and the associated problem context.

Any scientific research is started with a research question and it lays the groundwork for the research to do it within an appropriate time period and within reasonable cost and quality. An initial literature review is usually utilised to identify the research problem and further decide the objectives of the research. Usually, research starts with a purpose/s that are encompassed by wider contextual phenomena. From this broader context, an authentic research question needs to be identified and well explained to provide an achievable goal within the assigned limits.

Corbin & Strauss (2015: p.12) analytically discuss that a “research question should dictate the methodological approach that is used to conduct the research”. Well-constructed research questions are better able to identify what is to be measured or explored, while ensuring the reliability and validity of the research. A thorough literature review and arguments were exploited to purify the research

question and to plan the research objectives. Therefore, it is worth it to elaborate these various options and discuss the best selection for this research. Traditionally there are three classifications for research and that are: applied research, pure research and action research (Easterby-Smith et al., 2002). Applied research can be undertaken not only in scientific but also social science research. Pure research is mostly connected with scientific research, whereas action research is mostly undertaken in social science research.

5.2.1 Applied versus Pure Research

Research can be classified to applied and pure research by studying the “use” of it. Applied research is termed as a realistic problem-solving tool that attempts to find solutions for known problems on the other hand pure research is carried out in order to enlarge knowledge and discover the unknown (The New Encyclopaedia Britannica, 2007). The core differentiating factor between these dichotomies is the fact that in pure research the researcher doesn't define the research problem (Vogt, 2005). It is usually the case that applied research is rarely conducted to construct, test or build a link to theory, but offers realistic solutions for a problem within a short span of time (Neuman 2011). Because This study is placed under the classification of applied research it seeks reasonable solutions to a contemporary problem.

5.3 Research Philosophy

The word research philosophy talks about the theoretical model, which underpins the research process. The model gives a sound direction and a variety of acceptable tools that assist the researcher to find an answer to the research questions they have posted. The paradigms of positivism and phenomenology are renowned in FM research.

5.3.1 Positivism versus Phenomenology

The widely acceptable example of positivism refers to a hypothetic-deductive approach where quantitative methods are usually taken to gather and study data (Thakore et al. 1998, Easterby-Smith et al. 2002, Silverman 2005). Useful methods of data collection such as surveys are considered to give useful

evidence and rely on data which is gathered methodically and systematically. This is carried out by applying statistical techniques to this data, to generalise from the findings.

While, phenomenological structures like case studies, try to find data which is gathered from a site or context; often using the researcher's personal observations of the and data specific to the case. While generalising from these studies may be a nuisance, an elaborated case study can give great understanding from which handy conclusions can be drawn.

This research strives to discover a suitable solution to the present problem of the value added through the alignment between the facility management and the corporate strategy of the company. So, the complication researched in this study is neither testing a theory that already exists, nor forming a new theory for the alignment but efforts are made for an appropriate solution to an evolved problem. Thus, for the purpose of this research, the phenomenological paradigm is selected.

5.4 Research Methodology

The methodology is explained as “a system of ways of doing, teaching or studying something” (Cambridge Dictionary, 2018). The research methodology employed is considered as the core chapter being the primary link between the literature review, data analysis findings and the conclusions. It is guidance chapter for the readers to comprehend the various steps of the research.

Traditionally there are a couple of distinct research approaches for data collection and handling. These are namely the qualitative and quantitative approaches which are closely linked to the philosophical position of the research and researcher.

The primary difference between the approaches is the fact that quantitative analysis is comprised mostly on scientific methods. Usually, quantitative analysis is dependent on data that is measurable and statistics in order for objectiveness

to be maintained. The learnings are mostly drawn from empirical data and through the mathematical utilisation of formulae and measurements from statistical data.

Contrarily qualitative analysis is usually dependent on subjective data that either is too difficult or even impossible to measure. As an example, opinions or behavioural aspects come under the classification of subjectivism instead of facts that can be measured.

When we cannot arrive to certain findings through statistical procedure or other methodologies so as per Strauss & Corbin (1998) qualitative research is the research that gives those findings. The research is multi-method in focus and involves an interpretive and naturalistic approach to its subject matter (Denzin & Lincoln, 2000).

5.4.1 Qualitative versus Quantitative

Purpose of qualitative research is to “explore issues” or “understand phenomena” that “individuals or groups ascribe to a social or human problem” (Hakim, 1987; Flick, 2006; Creswell 2009, p.3). Quantitative research is a “means for testing objective theories by examining the relationships among variables”, whereas mixed-method research takes into account both qualitative and quantitative approaches to find solution of a problem (Creswell 2009, p.3). Qualitative data were used in this thesis to accomplish the objectives set. The distinctive factor between qualitative and quantitative research have been clarified by a number of authors (including Maxwell 1996; Corbetta 2003).

Maxwell (1996, p.70) described the key criteria for qualitative research design:

“In a qualitative study, the activities of collecting and analysing data, developing and modifying theory, elaborating or refocusing the research question, and identifying and dealing with validity threats are usually going on more or less simultaneously, each influencing all of the others. In addition, the researcher may need to reconsider or modify any design decision during the study in response to new technologies changes in some other aspect of the design”.

It was the opinion of Corbetta (2003) that qualitative research is open and interactive with the participants (two-way communication), and theory follows the observation; whereas quantitative research is structured, and theory precedes observation. Maxwell (1996) and Corbetta (2003) showed the impact of adopting a qualitative approach in a research design during all stages. Crotty (1998) had a different opinion with them and reduced these differences to the level of methods.

Furthermore, Perry (1999) showed that research questions “how do” and “what are” are descriptive rather than perspective and in which need a theory-building approach (inductive) instead of a theory testing (deductive).

The main difference between qualitative and quantitative approaches is the nature of data. In qualitative approach the data is subjective and non-typical whereas in the quantitative approach, the data is objective and typical (Corbetta, 2003). Furthermore, the qualitative approach allows the researcher to consider the personal experiences of people more profoundly and better than does the quantitative approach (Gummesson, 2002; Patton, 1987).

In this research study is used the qualitative research approach. The study aims to gain an ample and complete picture concerning the value added from FM services in alignment with the business strategy of each organisation.

5.5 Research Approach: Inductive

The inductive research approach was found to be most relevant to this study. This is because the inductive approach is the reverse of the deduction approach, where the logical steps move from observing the empirical data to the constructing explanations and theories about what has been perceived. There exists a long history between those who support of induction and those who support deduction in not only the natural but also social sciences (Ryan, 1970; Johnson, 2000).

Messick et al., (1996) and Partington (2000) state that in comparison to the unproven and a priori nature of deductive theory. The theory possible to be useful and accessible to executing managers is the theory that develops inductively out of a procedural empirical research empirical research.

The outcome of the inductive approach is the theory. Whereas in contrast, the deductive approach is in which a conceptual and theoretical structure is constructed before moving to empirical research. However, the common explanation for taking an inductive approach in the social sciences does tend to be used.

5.6 Research Strategy: Case Study

Facility Management professionals and academics have slowly recognised the requirement for greater empirical research (Alexander, 1996; Price & Akhlaghi, 1999; Nutt, 1999). There are two approaches used in the research strategy: grounded theory and case studies. The selection criteria for the use of these approaches are based on how to build theory by using the data (i.e. the theory is “grounded” in the data) or from other data. For this reason, a case study strategy was chosen for this research.

In their book “The Discovery of Grounded Theory” (Glaser & Strauss, 1967) noted that for many researchers working within the inductive approach, if they are not grounded in observation and experience so the explanation of social phenomena is not worth it. Moreover, grounded theory is *“an inductive theory discovery methodology that allows the researcher to develop a theoretical account of the general features of the topic, while simultaneously grounding the account in empirical observation of data”* (Martin & Turner, 1986: p.141).

Denscombe (1998) claimed that case studies pay attention towards one instance of a phenomenon to provide associations, experiences or procedures happening in that specific moment.

The approach usually chosen for research strategy is case study approach and this is when the goal is to develop new theories and test and retest old theories that are well developed in foundations (Yin 2018). Thus, it is necessary to state that theory plays a huge part in case study research. The ample situation for case study design is when it's important to study situation in a real life and that too in real time (in a limited space and time) with immediate impact and relevance (Johns 2008).

Other than that, another way to utilize the case study design is by gathering or analysing information related to a number of samples as a way of researching a bigger phenomenon. Usually, the case is restricted by time and activity, and different data collection methods (interviews, document, record analysis and observations) are normally utilised to gather elaborate information over a longer period (Stake, 1995). A distinguishing feature of the case study is the utilisation of various sources of evidence to examine the case holistically (Tan 2002). Thus, case studies absorb various pros and cons (Gillham, 2000).

As per Yin (2003), he is of the opinion that many social scientists believe that exploratory or descriptive investigations cannot utilise the full potential of case studies, but exploratory research can use case studies to the fullest. The opinion of Walsham (1995), is that the best method for doing empirical research in the interpretative tradition is the in-depth case study but it is also true that these types of studies are not necessarily qualitative (Stake 1995). The strong point of case study is the fact that it allows to study practice in a real situation and real participants can give their input to the research with actual knowledge (Blakstad, 2001; Simons, 2009).

The method/design of case study is a design for particularisation (Stake, 1995). Because the data that is collected is more qualitative than it is quantitative (Sekaran, 2003). The most pointed out limitation of case study research is its poor ability with regards to generalisation (Stake, 1995). Eisenhardt (1989) argues that binding the emergent theory with existing literature strengthens the internal validity, generalisability (external validity) and theoretical level of theory

building from case study research. The types of case studies and their main features (Yin, 2018) are discussed in the following sections.

Moreover, case studies have been factored in management research (Yin, 1994) and often used in associated FM studies. A case study method was selected for this research because this research study explores a system that is open (Robson, 2002). This is because the studied phenomena (elements of corporate and real estate strategy) is in the context of its real-life, and the limitations between the phenomenon and the context are not evident (Yin, 1994).

Yin (2018) presents that there are four types of case study designs: a) single-case (holistic) designs, b) single-case (embedded) designs, c) multiple-case (holistic) designs, and d) multiple-case (embedded) designs as depicted in the following Figure 23.

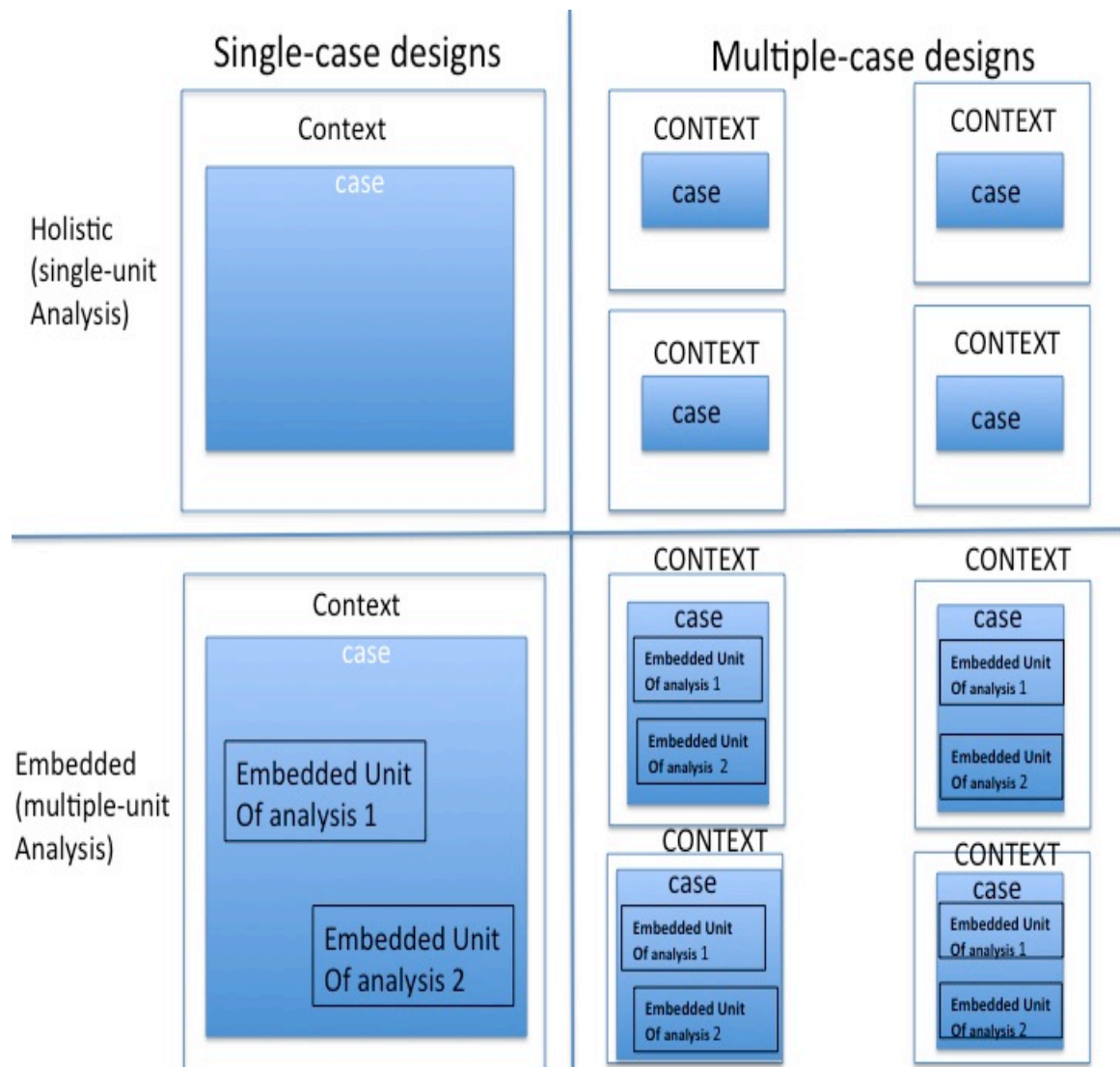


Figure 23:Case Studies Design (Source: Cosmos Corporation, Yin Robert, 2018; p.48)

The principle goal of the research, the availability of appropriate cases and the research budget decides whether to choose single case design or multiple case design for case studies. If goal of the research is evaluation of the program or testing casual relationships in this case multiple case studies are preferred (hypothesis testing). The multiple-case design allows the researcher to generalise based on the observations of patterns or replications among the cases. We prefer single case research design when the case is an extreme, unique, revelatory case, a representative, typical case, or a longitudinal case (Yin, 2018).

Single case is reasonable for example when researchers have an important case in examining a theory that is well-formulated, or when the case presents an extreme or unique case. On the other hand, we use a multiple case study the same situation is compared in various contexts. It depends on the research questions and selected horizon of research; we can take a holistic or embedded view to the case study, i.e. a multiple or single use of analysis.

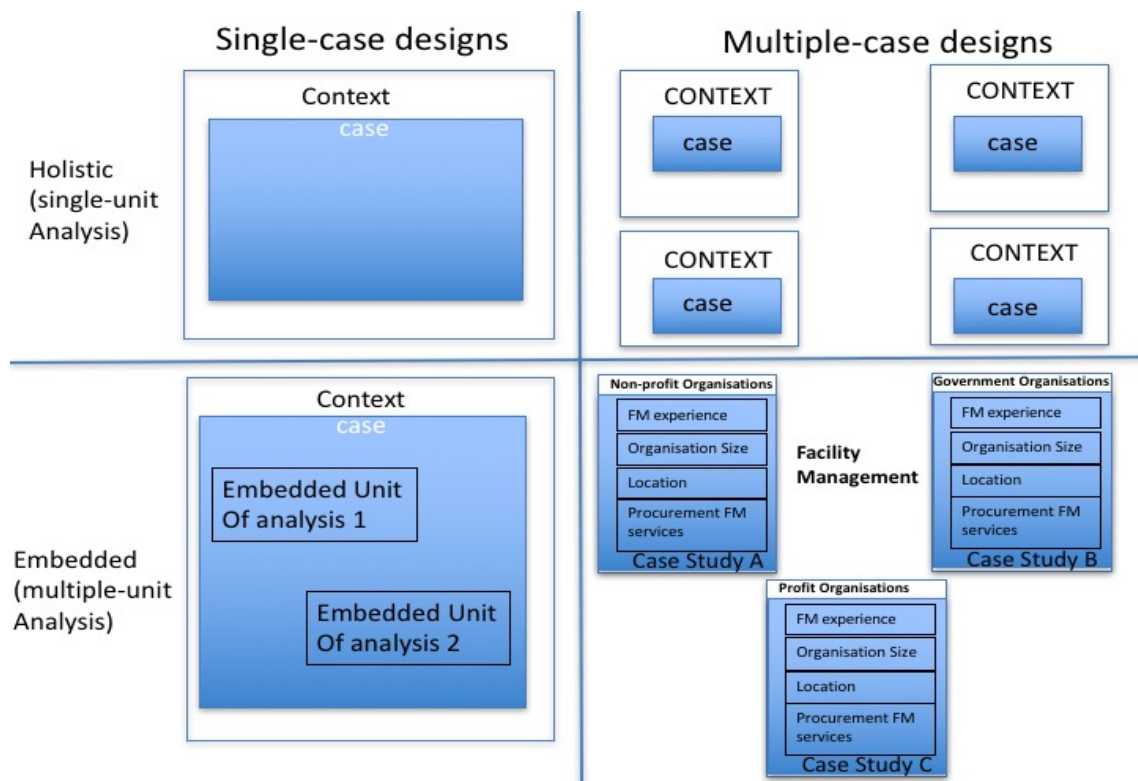


Figure 24: Multiple case studies design for this research study

Glaser & Strauss (1967) and Strauss & Corbin (1998) focus on reaching a state of “saturation” when additional cases no longer add any new information and If new data containing a repetition of a relationship already observed in the data no longer add any new aspect to the theory being developed, the research then indicates that the resulting theory is empirically grounded in the research data.

5.6.1 Choosing a suitable number of cases

The case study examples that Yin (2018) quotes a range from five to fifteen cases, while Eisenhardt (1989) suggests a minimum of three with a maximum of ten as the level beyond this makes the process unmanageable.

After selecting a case study design, these three cases can be looked upon clearly and thoroughly. Apart from this, in order to justify the chosen case as a classic representative case primary data (interviews) from the project were used; by showing a pattern with similarity of facility management change of use in another type of organisation and this data is gathered in chapter 6.

To determine who or what to analyse, unit of analysis of case studies is used. This study investigates patterns of FM strategy, organisation and size change; thus, FM organisations are thought of as the unit of analysis. Moreover, the study contributes to theories of Facility Management alignment change and their organisation's impact. The main factors of the case study design are discussed in the literature chapter 4 (Yin, 2018).

As mentioned earlier, over-replication can lead to over saturation, but not less reliability. It is quite evident that this study surpasses the requirements typically used in qualitative studies, and the extra effort will be anticipated to be rewarded with data.

5.6.2 Case study selection process

Before proceeding with the chronology of the process of data collection, there needs to be a clear knowledge of how the cases had been selected. This study is the first to investigate stakeholder's levels and FM development and begins to examine a variety in the model, size and location of Facility Management organisations rather than traditional models and circumstances.

In this case, it is not the replication of models but a diversity of models. These could then provide new theory towards developing new ideas and benchmarking measures. In deciding which facilities management organisations to target, the following requirements will be established:

- FM procurement services: To provide diversity and different types of FM procurement services namely: i) in house ii) outsourcing iii) managing agent and iv) outsourcing models.
- FM organisation: In order to gain insights about the challenges of FM managers in the establishing and running of an FM organisation.

- **FM Size:** Different sizes of FM organisations should be involved to facilitate interaction with managers of large size FM's as well as small size FM's to compare issues.
- **FM strategy:** To provide different types of FM strategy to evaluate different criteria of how FM is adding value to the organisation.

5.7 Research Time Horizons: Cross-sectional

As per Neuman (2011) we can further categorised research in cross-sectional or longitudinal categories that includes time dimension. The difference between both categories is that cross-sectional research accumulates data at a single point in time whereas longitudinal research collects data over a period. There are three differentiation characteristics of cross-sectional research design and that are: no time dimension, dependence on existing differences (rather than change following intervention), and choosing groups based on existing differences rather than random allocation.

Only differences among various people, subjects and phenomena can be measures the cross-sectional design but not a process of change. Thus, researchers adopting this design can only use a comparatively passive approach to making causal inferences based on findings.

5.7.1 Benefits using Cross-sectional approach

The advantages of using a cross-sectional approach, are as follows (Neuman, 2011):

- A clear picture is provided by cross sectional studies of the outcome and the characteristics linked with it at a particular point in time.
- Unlike an experimental design where there is an active intervention by the researcher to make, measure change or to produce differences. Cross-sectional designs pay attention on researching and extracting inferences from existing differences between people, subjects, or phenomena.
- Entails gathering information at a single point in time. While longitudinal studies mean taking various measures over a long time, cross-sectional

research is works towards finding relationships between variables at single moment in time.

- When identifying groups for studies are chosen based on already prevalent distinctions in the sample instead of seeking random sampling.
- Unlike observational studies cross-section studies are not bound by boundaries and can use data from many subjects.
- Can estimate the prevalence of an outcome of interest because the sample is usually taken from population as a whole.
- Added benefit of cross-sectional designs is that they are comparatively cheaper and consume less time. they generally use survey techniques to accumulate data.

5.7.2 Drawbacks of Cross-Sectional approach (Neuman,2011)

- It was very difficult to find people, subjects, or phenomena to research that are same, except in one specific.
- Results are fixed and bounded by time, therefore, given no indication of a sequence of events or reveal historical or temporal contexts.
- Studies can't be used to establish cause and effect relationships.
- This only shows a picture of the analysis as a possibility exists that various results could exists for the same study if it were conducted at any other time.
- There is no follow up to the findings.

5.7.3 Benefits of Longitudinal Research

In longitudinal research (Creswell, 2009) we discover relationships between variables that are unrelated to different background variables. In this observational research technique, we study the same group of individuals over a long time period.

The advantage of this research is that it lets the researchers observe changes overtime. And this is the reason why longitudinal methods are especially useful when researching development and lifespan problems. It is also powerful research; especially when the researchers search for answers to questions about social change.

5.7.4 Drawbacks of Longitudinal Research

An enormous time frame is required by longitudinal studies (Creswell, 2009). It is also more complicated and expensive as compared to cross-sectional research. And for this reason, these researches have a limited group of subjects that makes it a tough task to apply results to a bigger population. One of the other problems include participants dropping out of the research, decreasing the size of the sample and reducing the amount of data collected. For this research, the time series study will be selected.

There exist three main types of longitudinal studies (Creswell, 2009):

Time Series Study: In this type of longitudinal research similar type of information is gathered on a group of people or other companies time periods. In this case, the researchers can check stability or changes in the features of the units over time.

Panel Study: A harder research to do as compared to time series research since researcher samples the same group, people or corporation across time periods. People are followed over time and this is very difficult and the reason for that is some people either can't be located or are dead. Nevertheless, the results from a well-designed panel study are precious.

Cohort Study: Like the panel study but the main difference is how the researchers examine a selecting group based on a particular event such as birth, geographic location or historical experience and are not the exact individuals.

5.8 Data Collection Methods

Data collection needs to fulfil two main criteria to be part of a research design (Lankshear & Knobel 2004). Firstly, it needs to be carried out by eyeing towards a problem, and after it needs to support explanation or interpretation in place of only providing information. So, for getting strong information ample tools need to be for taking out and choosing the proper data. Research can be espoused by undertaking either a mono-method or a multi-method approach for collecting

data. Several authors (Tashakkori & Teddlie 1998; Creswell, 2009; Saunders et al., 2000, Bryman 2008) talks about the main advantages of the multi-method approach over the mono-method approach.

The main sources for collecting data are interviews, focus groups and surveys/questionnaires. As per Robson (2002), an “interview is a kind of conversation with a purpose. Interviews carried out for research are a very commonly used approach. This is because the interview appears to be a straightforward and non-problematic way of finding things out”. According to Hussey (1997) “focus groups are normally associated with a phenomenological methodology”. They collect data related to the suggestions of a group of people who are involved in a typical situation or industry sector.

Furthermore, Hussey (1997) described questionnaire as “a method for collecting data in which a selected group of participants are asked to complete a written set of questions to find out what they do, think or feel”. The questionnaire is used in both phenomenological and positivism paradigms.

5.8.1 Structured interview model

Within the structured interviews, the researcher opted for the raising of questions rather than the testing of hypotheses. Hypotheses require only a negative or affirmative response, whereas research questions are of a more complex and deeper nature. Questions are often influenced by context and have more than one answer depending on perspective. They thereby probe deeper into the real causes and effects of situations, rather than finding an agreement or disagreement which has already taken position.

Structured interviews are guided by direct questions in the form of a short questionnaire and the semi-structured interviews were guided by questions representing loose themes concerning to financial and social objectives and challenges.

5.8.2 *Semi-structured interview model*

The base for research was laid by the structured interview whereas semi-structured interviews were provided the dominant source of data for this study.

During the last decades, semi-structured interviews have been presented by German (Hopf, 2002) and UK researchers (Smith, 1995). The characteristics that semi-structured methods have in common are that they are all loosely guided/ pre-meditated and that they all consist of open questions that are posed in a conversational manner. It aids the researcher in making little uplifting noises during the “conversation” of the interview. Observation aids the researcher to understand and pick when something of importance has been said. The person taking the interview should not show favouritism towards comments that makes the interviewer happy and do not show their point of view on reality.

In this way, rapport and interview dynamics are assisted through a sharing of concerns. The researcher thereby hopes that questions are answered freely by the interviewee (Flick, 2002). This chronology of the interviewee is formed by the knowledgeable questioning of informational questioning also establishes the chronology of the interviewee and: “...subsequent events within that person’s reflections” (Charmaz, 1990: p.1167).

The phenomenologist could argue here that pre-meditated questions could be restrictive. However, not using any boundaries poses the problem that the interviewer continuously must decide which questions need to arise during the interview for the research to be useful and meaningful. The semi-structured method is used as a useful way for the researcher to keep within the boundaries of the research questions and it is the primary source of data for the case studies presented in chapter 6.

5.8.3 *The development of the questionnaire*

It is of importance to state that “qualitative research” has come to mean various kinds of inquiry; including attempts that might include statistical data analysis. For example, a grounded theory analysis can employ an analysis of cases, and it can

also be dependent on data collected using a questionnaire and spreadsheet to generate findings (Mâkelâ & Turcan, 2007).

The design of questionnaires is covered widely in methodology literature and essential elements identified are: careful wording, the use of categorisation, the methods of scaling and coding of the responses and the overall quality of appearance (Cavana et al., 2001; DeVaus 2002; Dillman, 1978; Saunders et al, 2000; Silverman 2000; Ticehurst and Veal, 2000).

The questions need to be clear and unambiguous, endeavouring to give the most precise answer possible. For this research, a combination of closed ended and open-ended questions were used. Closed ones, because they are deemed beneficial for the researcher to code and open-ended ones to offer some depth of discussion. Such as asking the respondents what they liked about the smart cities and what they disliked.

It was recognised during the first phase of the literature review that for businesses to operate successfully, there needs to be some form of strategic orientation to help the organisation perform and build social capital. Hence, to identify the primary nature of the facility manager experience and address these potentially essential sociological elements and their effect on the organisation process and performance.

The questionnaire consisted of the following parts:

Part A: Demographics - Following an international review of the FM organisation conducted by EU (2002), the demographic items are used to address tenant structure, organisation's age, industry, owner's age, for how much time the owner had been affiliated with the FM organisation, the owner's gender and number of staff. These items will be pre-tested on three tenants to determine whether the items are appropriate and whether there is the need to include any more items. The pre-test generated minor "language" modifications however the item content remained unchanged.

Part B: The FM organisation experience (Hackett & Dilts, (2004). This part focuses on exploring attitudes towards the impact of the FM on the success of the tenant business and questionnaire items are directly related to FM managers.

Part C: Management styles in the FM organisation. During the first stage of the research cycle, questions on management style were incorporated and later recognised as comprising the main components of real estate orientation, and innovativeness; in the form of smart services and innovation practices in the workplace.

Part D: Risk-taking (Frese & Pluddemann, 1993; Lumpkin & Dess, 1997). This area explored a focus on risk management, uncertainty and change. Questions related to the willingness to take risks, the minimisation of risks and the acceptance of the change.

In this research study, a questionnaire-survey design will be used to study facility management practitioners' views on the added value from FM services in alignment between FM and strategy of the core business into the organisation. The web-based questionnaire made for the survey had not only open-ended questions but close ended questions as well. This is because this is superior to other methods in many aspects. But there were also some methodological challenges. In short, this methodology can be cheap, easy to use, not take loss of time and can be delivered to an individual's address while providing chances for easy follow-ups but, errors in research design can happen in the areas of respondent selection, survey questions and administration (Neuman 2011).

Thus, serious and undivided focus must be paid throughout the survey. The Web-based questionnaire survey (WBS) was made through www.surveymonkey.com (refer to appendix 4) and the WBS questionnaire was beta-tested with academic and research staff members in selected areas for response on clarity and readability. So, the wording of ten questions is changed of the WBS to comprehend about the added value from FM services in alignment between FM and primary business strategy.

Once changes are made, the survey link was emailed to the common email address of the chosen Facility Management companies along with a demand to further send the email to their authorised departments (facility management, strategic, and operational). In total 80 questionnaires were distributed to the target population. Besides, the questionnaire return was demanded inside the time period of three weeks, and a follow up was send after two weeks to remind. Four emails bounced back with a failure in delivery. Only 60 responses were received by the deadline date, out of which 30 were found usable, and the response rate was 38%.

It is explained by Miller & Smith (1983) that respondents who are late are usually like non-respondents. In order to address this generalisation, the respondents will be classified into three groups: respondents who are early, respondents who are late and non-respondents. The people who reply after the follow-ups are late respondents.

5.8.4 Secondary Data Collection

To explore the available knowledge on Facility Management, a literature review was carried out. The literature review leads to the identification of the gaps in the literature, the discovery of the main research problem and the development of several research questions.

The objectives of the literature review were (Mason,2002):

- To perceive the current status of knowledge in a research area.
- What is known/generally accepted?
- What research questions are unanswered in this area of study?
- To synthesise and summarise the previous research work.
- To provide an analytical and critical evaluation of the previous research.

For the literature review, the researcher has explored journals through a random process introducing context without a specific question (Robinson & Lowe, 2015). During the early phase of the literature review, the researcher identified that the

papers' authors have different academic and theoretical backgrounds. The researchers' backgrounds did vary, including architectural and engineering domains and others from marketing. These different backgrounds are positive because they can provide various insights and frameworks in reaching the same conclusion of the research topic.

5.9 Validity and reliability in this research

In order to evaluate the research quality two major components are validity and reliability (rigour). Neuman (2011) states that the ideas that aid to form the credibility of findings are reliability and validity. Validity checks the truthfulness of the findings whereas reliability focus on the sustainability or reproduction of research findings in similar conditions. The former can be shown in three ways: the validity of selected measures or "construct validity", "internal validity" and "external validity". Most often, validity is linked with the "operationalisation" of concepts, which is normally used in quantitative research (Mason 2002). Reliability and validity are not treated separately in qualitative studies, but these terms are treated individually in quantitative research. Instead, words that take into account both, such as credibility, transferability, trustworthiness or dependability, and confirmability are used (Hoepfl, 1997; Riege, 2005). For casual relationships internal validity is used, whereas, external validity looks at the generalisation of findings (Neuman, 2011). Generalisability focusses towards making common claims or conclusions formed on the research findings. Instead of them specific to the research context. However, chance, bias and confounding are the three main threats to validity.

Essential questions about internal and external validity that is essential to be enquired in the domains of reliability were identified by Miles & Huberman (1994). Two kinds of generalisations are elaborated by Yin (2003) and that are statistical generalisations and analytic generalisations. He further distinguishes that the statistical generalisation is formed by an inference formed about a population on the base of empirical data gathered about a sample and that the analytic generalisation is employed as a framework with which to combine the empirical results of the case study. This study will exploit analytical generalisation in the

case studies and statistical generalisation in the web-based surveys. However, generalisability is a concern for a single case study design (Saunders et al. 2007).

Attention was given to explain the reliability validity issues specific to case study research, because three main cases will basically support this investigation. Apart from external validity, the other three case study design examine (construct validity, internal validity and reliability) were undertaken to confirm the confirmability, credibility and dependability/trustworthiness of the findings. Based on Yin's (2018) method, the construct validity condition was adhered to when explaining the research and research terms and most certainly during data collection was attested to by the credentials of this researcher and the various sources of evidence utilised in the analysis. Table.5 describes the techniques for gauging validity and reliability in case study research.

Table 5: Case Study Tactics for Four Design Tests (Source: Yin (2018), p.43)

Tests	Case study tactic	Phase of research in which tactic is addressed
Construct validity	<ul style="list-style-type: none"> • use of multiple sources of evidence • have key informants review draft case study report 	<ul style="list-style-type: none"> • data collection • composition
Internal validity	<ul style="list-style-type: none"> • do pattern matching • do explanation buildings • address rival explanations • use logic models 	<ul style="list-style-type: none"> • data analysis • data analysis • data analysis • data analysis
External validity	<ul style="list-style-type: none"> • use theory in single-case studies • use replication logic in multiple cases studies 	<ul style="list-style-type: none"> • research design • research design
Reliability	<ul style="list-style-type: none"> • use case study protocol • develop case study database • maintain a chain of evidence 	<ul style="list-style-type: none"> • data collection • data collection • data collection

Yin's (2018), proposed that three conditions should be adhered to. Firstly, the construct validity condition was adhered to by the multi-method approach using questionnaires and interviews at multiple locations and from numerous tenants and managers. Secondly, the internal validity condition is challenging to demonstrate, as the research is new with no clear counter views or rival explanations. Thirdly, the external validity condition is easily established given the extent to which this project exceeds the usual number of cases. This assists also in generalisation, since the evidence is replicated and triangulated from a wide range of information's.

For the questionnaire survey the primary kinds of validity namely, face validity, content validity, construct validity, criterion validity and reliability (Field, 2005). Figure 25 shows the subtypes of various forms of validity tests exploring and describing in this research.

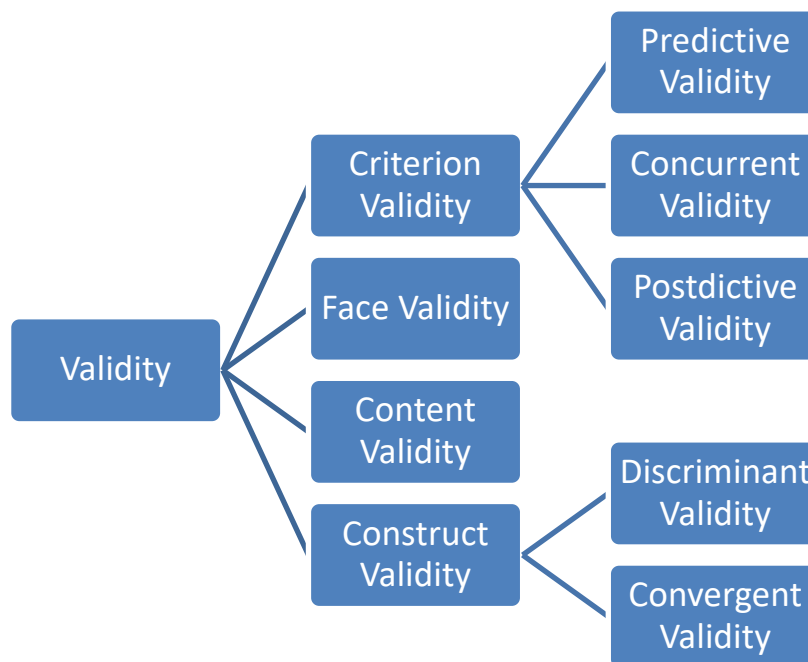


Figure 25: Subsystems of various forms of validity tests (Source: Taherdoost, 2016)

Face validity is a subjective judgment on the operationalization of a construct. Face validity is the level to which a measure is linked to a particular construct, in the judgment of non-experts such as test takers and representatives of the legal system (Taherdoost, 2016). The appearance of the questionnaire is judged in

terms of feasibility, readability, consistency of style and formatting, and the clarity of the language used (Oluwatayo, 2012).

Content validity is describing as “the degree to which items in an instrument reflect the content universe to which the instrument will be generalized” (Straub, Boudreau et al. 2004). Generally, content validity talks about assessing a new survey tool to be certain that that it includes all the items that are important and ends undesirable items to a construct domain (Lewis et al., 1995, Boudreau et al., 2001). The judgemental approach to establish content validity involves literature reviews and then follow-ups with the evaluation by expert judges or panels. The procedure of judgemental approach of content validity requires researchers to be present with experts in order to facilitate validation.

Discriminant validity is the extent to which unused variable a defined as “a latent variable is able to account for more variance in the observed variable associated with it than a) measurement error or similar external, unmeasured influences; or b) other constructs within the conceptual framework. If this is not the case, then the validity of the individual’s indicators and of the construct is questionable” (Fornell & Larcker, 1981).

Convergent validity, means the level two measures of constructs that hypothetically need to be linked, are linked. The aim of confirming the validity of the construct, an examination of factor might be carried out using the (PCA) principal component analysis with the varimax rotation method (Koh & Nam, 2005, Wee & Quazi, 2005).

Criterion validity talks about or refers to the degree a measure is linked to a result. It calculates how much better single measure forecasts a result for a second measure. Messick (1989) says that “even for purposes of applied decision making, reliance on criterion validity or content coverage is not enough. The meaning of the measure, and hence its construct validity, must always be pursued – not only to support test interpretation but also to justify test use”. There exist three kinds of criterion validity and that are, concurrent, predictive and postdictive validity (Engellant et al. (2016)).

The survey is foretelling correct if the test correctly estimates what it needs to estimate. It may also talk about scores from the forecasting measure are taken before the collection of the criterion data. We can also label it as the skill of one assessment instrument to forecast further performance in some field or on some other test of the same construct. Performing validity study that is for a long period is the most appropriate way to directly build predictive validity. Predictive validity studies require a substantial amount of time complete and need big sample sizes so meaningful aggregate data can be acquired (Viswanathan, 2005).

A kind of proof that can be collected to protect the use of a test for forecasting separate results is concurrent validity. It talks about the extent to which the outcomes of an examination, or measurement, communicate with former established measurement for the similar construct (Oluwatayo, 2012).

The criterion is in the past for the postdictive validity. The criterion (e.g., another test) was managed before. It is a type of criterion-referenced validity that is decided by the level the marks test is linked another test results, previously prepared test or criterion managed some time back.

In qualitative research, the terms the credibility and rigour of the term are often used instead of the quantitative research terms reliability and validity (Winter, 2000) and maybe more applicable. The thing to notice further is that the grounded theory refers to data gathering process that is formal and organized. Incorrect and deceptive conclusions are guarded against by different means like comparative analysis, investigation of different slices of data, and integration of theoretical concepts (Glaser & Strauss, 1967; Douglas, 2003).

Pedhazur & Schmelkin (1991) make two useful remarks in this regard. Firstly, they believe that the degree of validity of inferences rests on the reason of the study, on the answerer themselves, and on the circumstances under which they are made. And secondly, they believe that in order to minimise ambiguity, it is essential to specify, at the very least, for what or for whom and under what circumstances the inferences from the scores are being made. In this study, both remarks will be considered by clearly identifying the research areas from the

existing literature and by stating the purpose and objectives of the questions. Thus, becoming a predominantly qualitative study.

However, the reliability was primarily attained by elaborating keenly which qualitative processes are to be utilized; using a case study style database for a specific purpose and utilising all primary data from interviews as told by Yin (2018). Reliability in qualitative studies needs to show that study's operations, like the accumulation of data and coding process can be sustained with similar output (Glaser & Strauss, 1967). This was achieved through SPSS a software package.

Reliability talks about the level a calculation of a phenomenon gives steady and consistent outcome (Carmines & Zeller, 1979). Reliability is often related to continuity. Like, an assessment is considered dependable if repeat measurement in unchanging situations will give the same result (Moser & Kalton, 1989).

Examining for reliability is essential because it is related to stability across the parts of a calculating tool (Huck, 2007). A scale has a high sustainable reliability if the tools of a scale "hang together" and calculate the same construct (Huck, 2007, Robinson, 2009). The widely utilized internal consistency measure is the chi-square test of independence between independent and dependent variables. It is a non-parametric test which is carried out to find if two variables are dependent or independent. The term independence rises while utilizing this chi-square test because the null hypothesis says the variables are either dependent on each other or not. This test is used for the correlation of the criteria in this research.

Particularly, various methods were used by this research to double check the inside validity of the outcome. At the starting, the interviews that were conducted and the case study approach was utilized for an in-depth analysis. Apart from that, web-based questionnaire surveys were carried out to clear the issues on style boundaries and considerations of the corporations for the added value from FM services in the alignment of the FM with the strategic stage of the company.

5.10 Summary

This section has highlighted the method for the study that is used to achieve good answers into this investigation.

Applied research formed the basis of the research and it used as a methodology to solve problems that is practical and applicable and that strives to solve the study goal. This study goal is to point out the added value from the Facility Management services in line with the broader context of organisation strategy.

The primary reason for conducting this study is explorative. Thus, investigation based on the empirical evidence has been accepted. The research style that was chosen was a mixed-method approach, it was labeled correct in terms of purpose, kind of investigation and temporal aspects. The purpose of developing
A mixed-method approach was for this research study with different primary and secondary methods such as case studies, literature review, interviews and web-based questionnaire surveys which were adopted to accumulate the data for the not only the research development stages but also validation stages.

This research quantitative and qualitative both data were gathered, analyzed them individually, then compared with the outcomes to see if the findings confirm or disconfirm each other. The approach of case study was recognised as best suited to find and explain the application of the VAAM model to value added in FM. The inductive approach was selected to collect, to analyses the qualitative data, to form multiple cases and then makes comparison among the cases.

Internal validity was utilized by using various source of data and multiple case studies, which further strengthens the dependency and authenticity of this study. The thesis moved away from the usual use of numerous case studies to back up some methodologies in various companies by adopting this method to construct on information in this field. For the questionnaire the criterion validity is selected for the correlation between independent and dependent variables using a non-parametric chi-square test.

In general, after completion, the entire research was provided new perception to the FM society luxuriating in the knowledge area of strategic management within contemporary management frameworks.

Chapter 6 Case Studies

6.1 Introduction

The previous chapter discussed the research methodology, and this chapter was described three case studies in the context of facility management. For this research, a multiple case study approach is adopted, as described in chapter 5. Qualitative data was collected through an intensive examination of the current practices of the FM organisations selected. These were selected from the operational criteria whereby organisations have been qualified to serve as cases.

The case studies utilised in this research were selected based upon:

- Screening the candidate organisations.
- The main business of the selected organisations related with the facility management.
- The accessibility and willingness of employees within organisations to co-operate and share their experience with the researcher.

Qualitative data collection involved semi-structured interviews. In order to do this, ethical approval was taken from the research ethics board at the University of Salford.

Two participants were selected by each organisation using purposive sampling. This was to ensure the inclusion of individuals who were actively involved in the implementation of FM as a support function in the strategic plan of each organisation. Participants are presented in Table 6 and included:

- Strategy directors from executive management
- Facility Management directors from FM units.

Table 6: Case Studies Participants

FM Organisation	Customer	Interviewer code	Job Title
Case study A (1000+ employees)	Real estate developer	PA1	VP of strategy
		PA2	Head of FM
Case study B (20000+ employees)	Government organisations	PB1	Strategy director
		PB2	FM director
Case study C (500+ employees)	Telecommunication Operator	PC1	Managing director of FM services
		PC2	Operations director

Case study A is a private facility services provider for a primary real estate developer in the Middle East. Case study B is a public multinational facility management company which provides soft and hard FM services for government institutions in the Middle East, and case study C is a private telecom organisation using in-house FM organisation. This research focused on three organisations – two private and one public- for the case study design. The main reason for the selection was to analyse the information gathered through the interviewer's and the lessons learnt from the different case studies. The results were reflected in the development of the value adding alignment model (VAAM), as described later in chapter 8.

The interview questions were circulated amongst all participants in every of the case studies before the interview of the six semi-structured interviews taken. Four were conducted in person, and two were conducted online using Skype. The questions of the interview were mainly constructed to grasp the participants' views of the following aspects:

- The benefits of FM that allowed their organisation to effectively add value and achieve the strategic goals and objectives.

- The technical problems and managerial cultural linked with the alignment between FM and strategy of the organisation.

In the next sections the outcome of the case studies was presented.

6.2 Case study A

Case study A is a facility services provider for a major real estate developer in the Middle East. It has extended its contract with the real estate from strategic to the operational stage, providing FM services across all the real estate assets including buildings, infrastructure, data centre, water and electricity utilities.

For this case study, the organisation model utilised by the real estate developer is a FM outsourcing model in which the FM provider was engaged to deliver FM services efficiently and operational KPIs. FM provider responsibilities include:

- Energy management
- Building maintenance
- Mechanical electrical and pumping (MEP) maintenance
- Assets procurement and
- Operational KPIs

This section discusses the findings of the two interviews conducted between the FM and the organisation and how FM added value for the strategic goals and objectives. There was a confirmation that the concept of alignment between FM and organisation is not performed in this case study. One of the interviewees associated this, with the fact that facility management is a profession only for operational activities and not for tactical or strategic activities. For example, this is shown in the response of PA2 to the question *“Do you think that FM has a role inside the organisation in the strategic level?”*

“In my opinion, the FM is a supportive function for operational or tactical levels in which delivering FM services in efficient way. Never we considered FM as part of the strategic plan of our organisation.” – PA2

Another response of PA1 and PA2 to the question *“In your view, what do you consider as FM main or supportive role during the different stages of an FM in the Middle East?”*

“For our organisation, we use an FM service provider as an outsourcing company. The selection of an FM company is following the procurement procedures of our organisation. So, for our corporate strategy, FM is only for the operational level, and we hired an independent external consultant to understand how FM added value in our organisation”- PA1

“I will say that during the operational phase, we identify critical assets, and we define predictive and scheduled proactive maintenance. Also, we organise workshops with the different stakeholders of the organisation”- PA2

Another response of PA1 to the question *“What do you think are the barriers to the FM role in achieving an alignment into the organisation”*.

“I think the main barriers are culture and education of employee regarding FM context area. Many people believe that FM is only for soft or hard services and nothing else. So as executive manager we need to educate all the level of our organisation explaining the contribution and the benefits that will have in case of FM become part of the executive committee board” - PA1

6.3 Case study B

Case study B is a multinational facility management company providing a vast variety of hard FM services for government institutions in the Middle East. The government institutions use FM outsourcing models for hard services and in-house model for soft services. The selection of an FM company has a very high expectation and due to complexity; many government institutions request to adopt proactive remote monitoring platforms instead of planned preventative maintenance (PPM) approach. The collection of data will be achieved using

sensor technology. Furthermore, the case study B company has a centralized centre of operation monitoring all the critical assets and infrastructure.

This section discusses the findings of the two interviews conducted to the FM and the organisation and how FM added value for the strategic goals and objectives. There was an observation that the concept of alignment between FM and organisation is not performed in this case study. One interviewee connected that facility management is a profession only for operational activities and not for tactical or strategic activities. An example of this is shown in the response of PB1 to the question *“Do you think that FM has a role inside the organisation in the strategic level?”*

“In my opinion FM, is not part of the strategic level in the organisation. FM is selected as an outsourcing company providing only hard services, while we use an internal FM company for soft services.”- PB1

Another response of PB1 to the question: *“Who do you think has a pivotal role in deciding for the FM involvement into the organisation”-PB1*

“I think the procurement department is responsible for the selection of an FM company. The procurement department is run tenders with high standards according to the government policies. The final decision is adopted during the executive bidding committee. Also, due to the complex organisation structure is very difficult to include FM in our organisation chart.”- PB1

Another response of PB2 to the question: *“What do you think are the barriers to the FM role in achieving an alignment into the organisation”.*

“I think the main barriers are the complexity of the organisation, people and different multicultural of the employee. It is tough to integrate and align FM inside the organisation, the only point that we can to improve, including operational KPIs from each FM contract into the overall organizational KPIs.”- PB2

6.4 Case study C

Case study C is an inhouse FM service provider for a national telecommunication organisation in the Middle East. Case study C offers a complete variety of hard and soft FM services and is a part of the entire organisation chart. Depending on the complexity of hard FM services, it is possible that the company outsources some hard services but under their supervision.

This section discusses the findings of the two interviews conducted for the FM and the organisation and how FM added value, for the strategic goals and objectives. In this case the concept of alignment is realized between FM and organisation. One participant linked with the fact that facility management is a business unit under the same executive management.

An example of this is shown in the response of PC1 to the question: *“Do you think that FM has a role inside the organisation in the strategic level?”*

“Yes, I think in my organisation the FM business unit is a part of the whole organisation, and the contribution is positive in this case.”- PC1

Another response of PC2 to the question: *“In your view, what do you consider as FM main or supportive role during the different stages of an FM in the Middle East?”*

“For my organisation, we use FM as an in-house company. I believe that FM has a strong supportive role inside the organisation and provide important insights into the asset life and enhanced the analysis and reporting relating to asset maintenance and operations.”- PC2

6.5 Case Analysis

The cases are identified through application of different version of procurements initiated by the demand side. The following table presents a comparison of some important characteristics of the three case studies.

Table 7: Comparison Case Studies

	Case Study A	Case Study B	Case Study C
Client	Real Estate (Private)	Government (Public)	Telecommunication (Private)
Provider	FM company	FM company	FM company
FM delivery model	Outsourcing	Hard FM: Outsourcing Soft FM: In-house	In-house
Procurement Type	Operational	Operational and Function based	Function based
Alignment FM with the organisation	NO	NO	YES

From the analysis of the cases, a change of authority is presented between in-house FM and providers (case study C). The providers are provided with the flexibility to organise their activities. This is so they can optimise their capacity's usage and improve their labour productivity. The improvement of labour productivity and flexibility can be a major component in the possibility for FM to create added value.

The context of collaboration represents challenges to organisations not only the demand side but also the supply side. Especially for public organisations (case study B) it is important to restrict the number of bureaucratic requirements and control. This is because it requires a culture change for many public organisations to ensure a collaboration with FM companies based on belief. However, for provider companies - and specifically private companies (case studies A, C) – it needs an amendment in culture to be customer and service oriented and to empower their staff to connect directly with users.

The cases also have revealed several dilemmas. There is a dilemma of the FM role as a support function for the alignment in the organisation of what it really means and how value is added. There is also a dilemma or a need to balance the long-term strategic plans with the FM. Thus, from the case analysis, the

alignment approach is applicable to organisations with only FM function-based procurement (case study C).

6.6. Summary

In this chapter, significant statements were extracted from semi-structured interviews. Results from the qualitative analysis (multiple case studies) and literature review were used as the basis to support the research development. The drivers, implementation strategies, difficulties and processes that forward-looking FM organisations are putting in place to align and find new potential business models was captured by research. By adopting a multiple case study approach, the research supplied rich contextual data that was suitable for examining technological implementations within FM organisations and supported for cross-analysis and making comparison among the three organisations to establish key challenges and elements of good practices. The selection of FM delivery and the procurement are very important in the implementation of the alignment FM with the organisation as illustrated by the three case studies.

In case study A, there was an outsourcing model for the implementation and the procurement of the FM company. It allowed the researcher to get deep knowledge about the processes, input and output of the research. If we discuss about the output of the case study, it recognised that the main issues revolved around the communication and transparency of processes and contract management. The most common issues were that of contract management. These were manifested mostly in the management and tendering processes. The organisation was felt to be a hiring an external consultant to perceive how FM added value in their organisation.

In the case study B, the selected organisation had a hybrid FM delivery model; outsourcing for hard FM services and In-house for soft FM services. The procurement department was responsible for the selection of an FM company using contract management policies. Due to the complexity of the organisation and multicultural people resulted in the candidate FM that not comprehending the criteria for the performance measurement. Performance measurement issues

were raised concerning key performance indicators (KPIs). FM companies raised the need for elastic KPIs indicators and collaboration. To make matters even more difficult each FM company had distinct measurement system. There was a proposal for a requirement to review the performance measurement system and develop common performance indicators. On the other hand, the procurement department did not see this as an issue as KPIs were already included in the overall organisational KPIs indicators and the FM company shall be complied on that. In addition, the study identified that FM operation may be excellent, but poor knowledge of the alignment between FM and organisation. There was an understanding that the FM is an occupation only for operational activities and not for tactical or strategic activities.

The case study C had the senior management commitment for the alignment of FM with the organisation with important resources made available to support the strategic teams. The study used In-house FM delivery model. The study also identified that belief and appreciation were a major problem for the collaboration between public organisations and FM companies. This was not however discussed in detail at the interviews as the interviewers in some cases had a reluctance to take this issue forward openly as all agreed it was more related to culture issues.

The case studies support the fact that FM companies are upgrading from traditional operational support to tactical and strategic levels. At an organisational level, it is of utmost importance that management could change the organisation by having a clear strategy. The most successful FM organisations have a development of an alignment model based on:

- An organisational structure that is defined well.
- A systematic implementation plan (aligning managers across the organisation).
- Support of strong leadership

The interviewers discuss that Facility Management companies are adopting a multi-faceted approach to an organisational structure providing workshops and

training with main stakeholders to strengthen behaviour and make sure it spread in the whole organisation. Strong relationships were then disclosed by the analysis of findings with the proposed VAAM alignment model, making sure that the model provided a recommendation for organisations in the FM area.

Chapter 7 Data presentation and analysis

7.1 Overview

In this chapter, data collected from the questionnaire was presented and analysed. The subsections of chapters also contained a survey for strategic roles. Apart from that, criteria supporting value-added facilities management service, the suitability of the uses of the alignment between organisation and FM added value are presented. The chapter will highlight and discuss the most important questions related to the FM added value and organisation alignment. The demographic data helps to categorise the responses as well as to test and examine the respondents to make sure compliance with the criteria of the data admissibility set for the answers.

7.2 Questionnaire for Strategic Roles

7.2.1 Methodology

A questionnaire research instrument was used to conduct the empirical study in a quantitative way (see Appendix 4). For the quantitative analysis, a web-based questionnaire was distributed amongst professionals in the areas of facility management to identify the relationship and the essence of FM at a strategic organisational level. In addition, for the development of the questionnaire, a series of workshops with facilities managers were held in Dubai, UAE and Riyadh, KSA.

The questionnaire's primary topics were:

- General information related to the respondents and their organisation.
- The current role of facilities management in the organisation.
- How this role may change and develop over the following years.
- How facilities management is viewed by the organisation.
- How facilities management contribute to strategy organisation at corporate level and department units.
- Measure the facilities management value into the organisation.

The respondents were given full confidence that all the data provided by them would be classified by the university and anonymous data would be used in related reports. Participants were no forced to answer any identifying details unless they wanted to participate further in the research.

The questionnaire as a form was designed through a surveymonkey.com software tool that allows forms to be completed electronically via web and the results are then elaborated into SPSS database for analysis. The questionnaire can be completed online and instantaneously returned via the submit button. But, if any of the respondents preferred a hard copy version, they got the questionnaire link through the email.

To analyse and test the data from the questionnaire survey multi-attribute methods were used. The multi-attribute technique was initially adopted to analyse the respondent's ratings with a view to establishing a representative or mean rating point for each group of respondents. The analysis used the Multi-Attribute Utility approach of Chang & Iye (2002) and used the computations of the Mean Rating (MR) and the Relative Importance Index (RII) for each attribute under a subset.

Mean Rating (MR): The MR indicates the mean or average rating point of the participants for the degree of importance of an attribute within a subset of attributes. In each computation, the total number of respondents (TR) rating every

single attribute was utilised to measure the percentages of respondents linking a particular rating point to each attribute as shown in Equation 1.

$$MR_j = \sum_{k=1}^5 (R_{pjk} * \%R_{jk}) \quad (1)$$

(Where: MR_j = Mean Rating for attribute (j); R_{pjk} =Rating point (k ranging from 1-5); $\%R_{jk}$ =Percentage response to rating point k for attribute j).

Relative Importance Index (RII): This index was utilised to compare the mean rating values of the variables in each subset. It was calculated as a unit of the sum of MR's in a subset of variables, as shown in Equation 2.

$$RII_j = \frac{M_i}{\sum_{i=1}^N M_i} \quad (2)$$

7.3 Questionnaire Survey

7.3.1 Survey responses

The number of questionnaires that were circulated to the target population of facility managers and property managers amounted to 80. The size of sample is measured scientifically and is more than the required sample with a population of 250 employees. (Raosoft, 2004). The number of responses received till the deadline was merely 60 responses out of them 30 valid. This showed a productive response rate of 38%. Because the result of the survey is not normally distributed among the questions. It would not be possible to carry out the analysis by parametrical tests. The answers that were rejected were from participants who unable to fulfil the necessary quality and consistency checks utilised in the screening process.

7.3.2 Education profiles of respondents

The respondents were asked about their education and qualification. The majority (37%) held a qualification in the Facilities Management area. Around (3%) had no formal education at all. In addition, (35%) have graduate qualifications (Master/PhD) in several areas. The rest of the respondents (14%) fitted within a spectrum of education related in FM one way or the other. These included MBA

and LLM educations. Qualification profiles of the respondents are summarised in Figure 26.

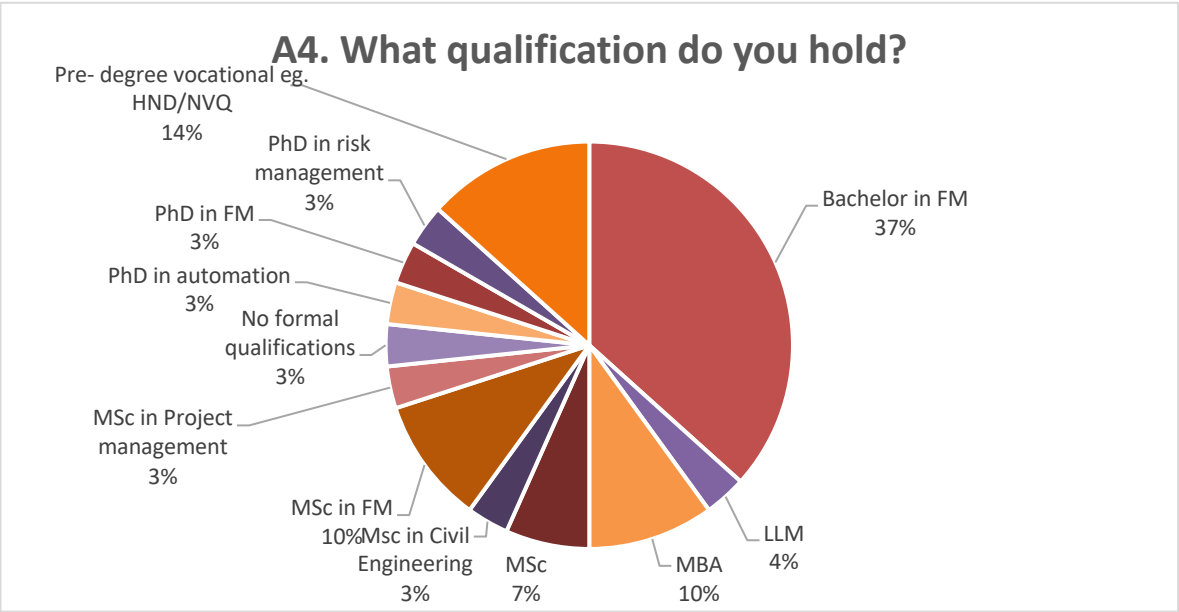


Figure 26: Professional affiliations of respondents

7.3.3 Professional experience of the respondents

The professional experience of the respondents in a managerial role is summarised in Figure 27.

Figure 27 shows that 20% of respondents were working in a management position for more than two years with 21% of the respondents having at least ten years of working experience in a managerial role in facilities management related fields.

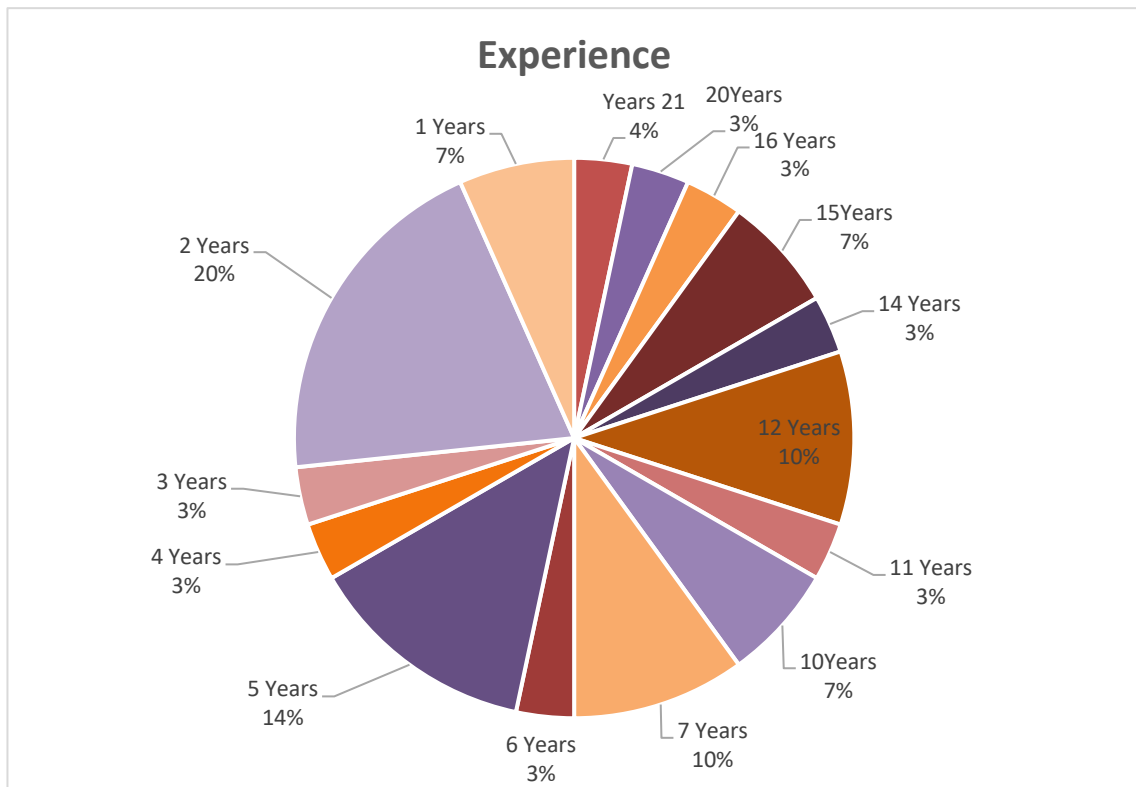


Figure 27: Professional experience of respondents

This profile means that the respondents' extensive experience plays a vital role in the quality of the answers, and to the reliability and validity of the answers given by the research findings.

7.3.4 Professional Membership

Figure 28 shows the professional memberships of the respondents. 57% of the respondents did not hold any professional membership related to the facilities management area. Regarding the remaining percentage, most of the respondents were members of the IWFM (7%) and 7% were members of IFMA.

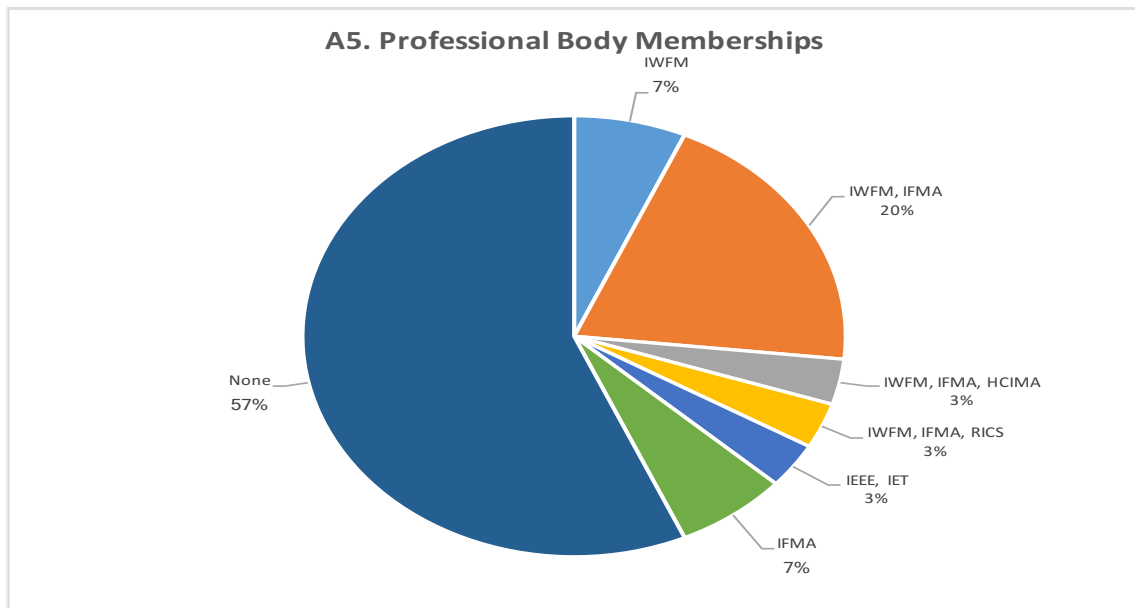


Figure 28: Professional Membership Respondents

However, some of the respondents held multiple memberships with 20% belonging to IWFM and IFMA. This profile means that the respondents with professional memberships are able to build their career with education and knowledge in the FM discipline.

7.3.5 Facility Management as a career

When the respondents were asked to reply about their future plans, 67% saw their long-term career path continues to be in the FM area. Only (13%) did not seem to continue in the facility management area and (20%) of respondents did not know. In the following Figure 29, the respondent's answers are depicted.

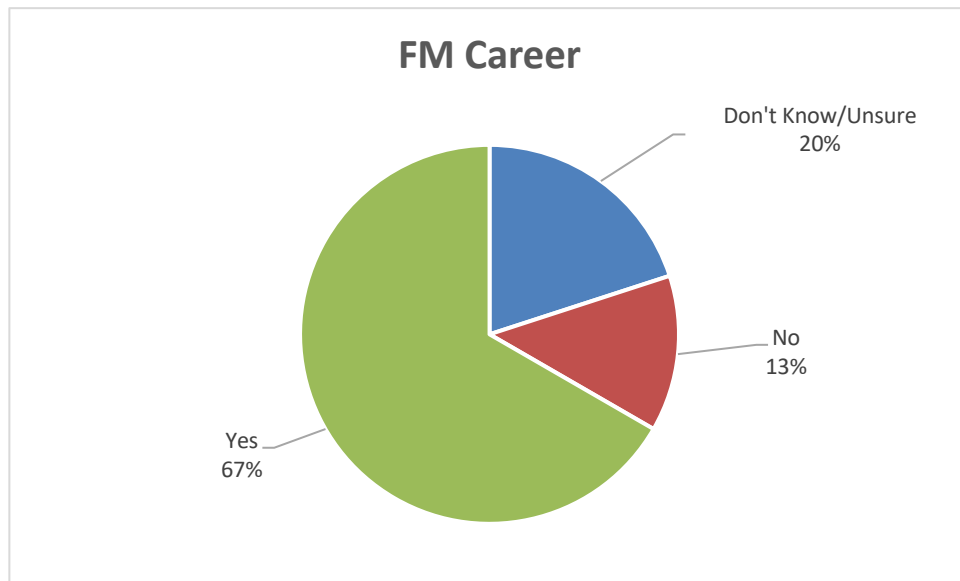


Figure 29: Facility management career

This profile means that the respondents would like to continue their career in the FM area because the FM as a profession has been recognised in the organisation.

7.3.6 Questionnaire results-The organisation

For this questionnaire, the term organisation was used to describe the organisation for which the facility management provides services, irrespective if they work as an in-house member of staff or a contractor.

7.3.6.1 Size of the organisation

Less than (23%) of participants supplied services for an organisation or the main client that was an SME organisation (below 250 employees), against (47%) providing services for medium enterprises below 10,000 employees and (10%) for substantial organisations with more than 10,000 employees. Figure 30 illustrates the answers to the size of the organisation.

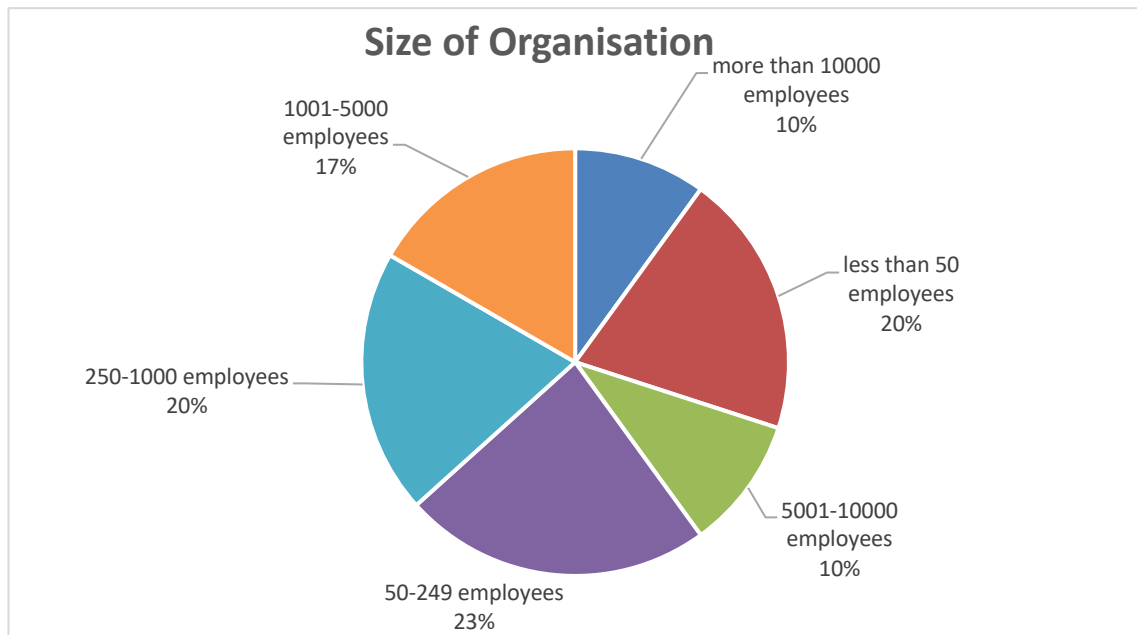


Figure 30: Size of the organisation

7.3.6.2 Types of premises occupied

The two types of premises occupied by the highest numbers of organisations were:

- Office (private sector): 73%
- Office (public sector): 17%

The three least frequently chosen premises types were:

- Hotel (4%)
- Manufacturing (4%)
- Media (4%)

In the following Figure 31, the answers are shown:

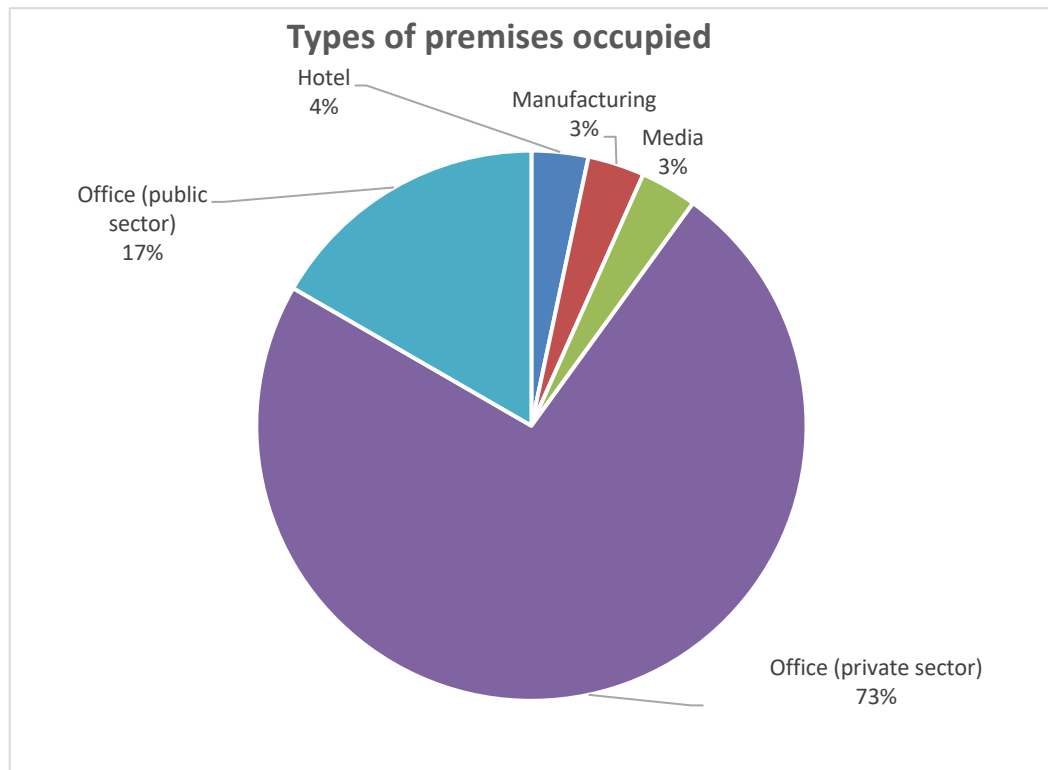


Figure 31: Types of premises occupied

7.3.6.3 Size of the facility management team

34% of respondents worked in a facility management team with more than 25 members, in contrast to only (35%) who worked in a small team below five members. However, (13%) of respondents did not work in a facility management team (see Figure 32).

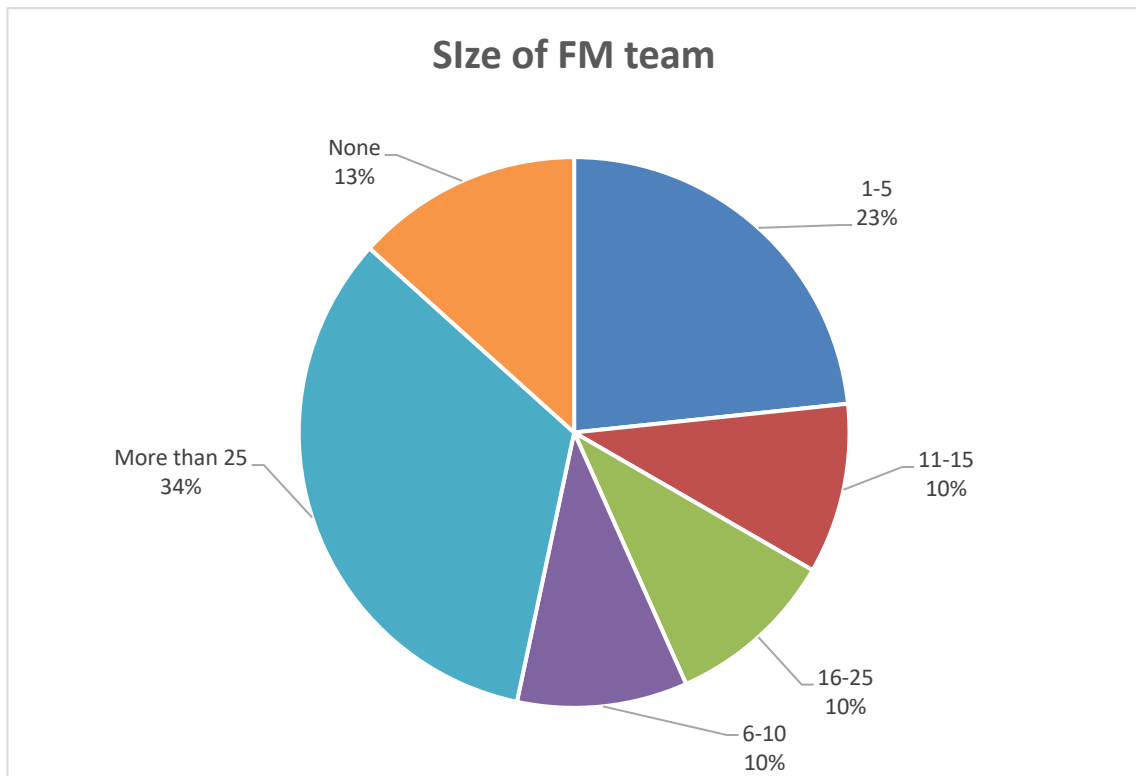


Figure 32: Size of the facilities management team

7.3.6.4 Employment status of the facility management team

Most of the respondents (46%) have a full-time employment agreement. A further (27%) have a full-time contractor agreement. Only (17%) had a contractor agreement. The rest of the respondents fell into the other groups such as part-time or full-time contractor (See below, Figure. 33). This profile of respondents means that the organisation prefers to have outsourcing FM contractors instead of full-time FM employees. The outsourcing FM delivery model means more demand from organisations in terms of cost reduction.

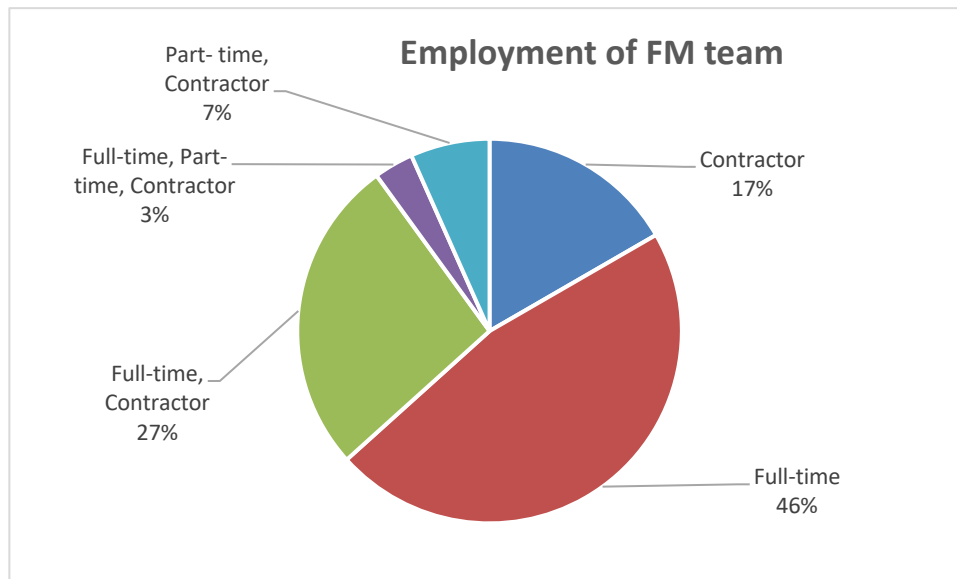


Figure 33: Employment status of facilities management team

7.3.7 Questionnaire Results-Facility management policies

This questionnaire, the term organisation was used to describe the organisation for whom the facility management provides services; whether employed as an in-house member of staff or a contractor.

7.3.7.1 In-house/ outsourced provision

Most organisation's policy (47%) currently use an outsourcing facility management team. Further (27%) use an in-house facilities management team. Only (13%) used a management agent and (13%) had a mixed provision using partially in-house/ outsourcing policy. Figure 34 will now illustrate the respondent's answers.

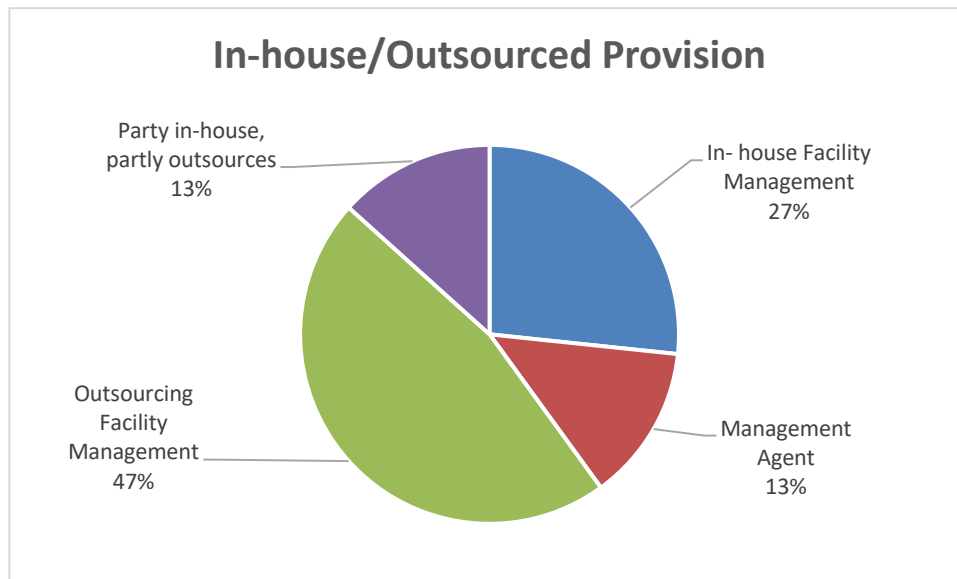


Figure 34: In house/ Outsourced provision

7.3.7.2 Lines of reporting

When asked who their reporting manager within their organisation is, (73%) of the respondents reported to the CEO, and 27% reported directly to department directors (see Figure.35). This profile means that a high percentage of respondents report directly to the CEO, meaning that the FM organisations are a small size of employees.

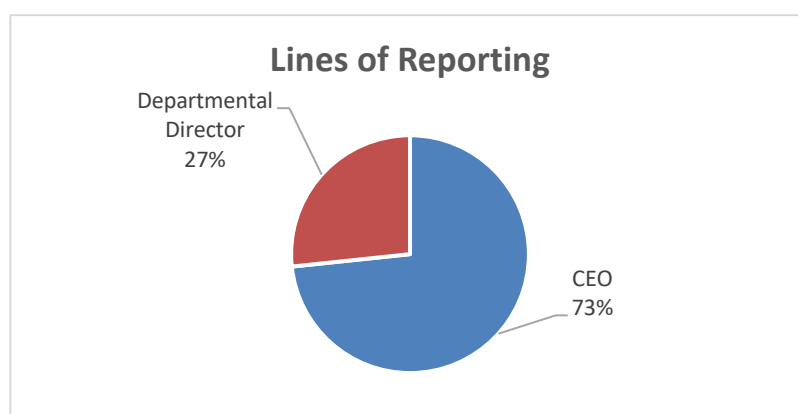


Figure 35: Lines of reporting

7.4 Questionnaire Results- Facility management strategy into the organisation

For this questionnaire, the term strategy was used to describe how the Facility Management strategy contributes to the core business of the organisation.

7.4.1 Development of facility management strategy

Most respondents (70%) replied that they have or develop a facility management strategy into their organisation, and the other (30%) did not have a facility management strategy. In Figure 36, the respondents' answers are shown.

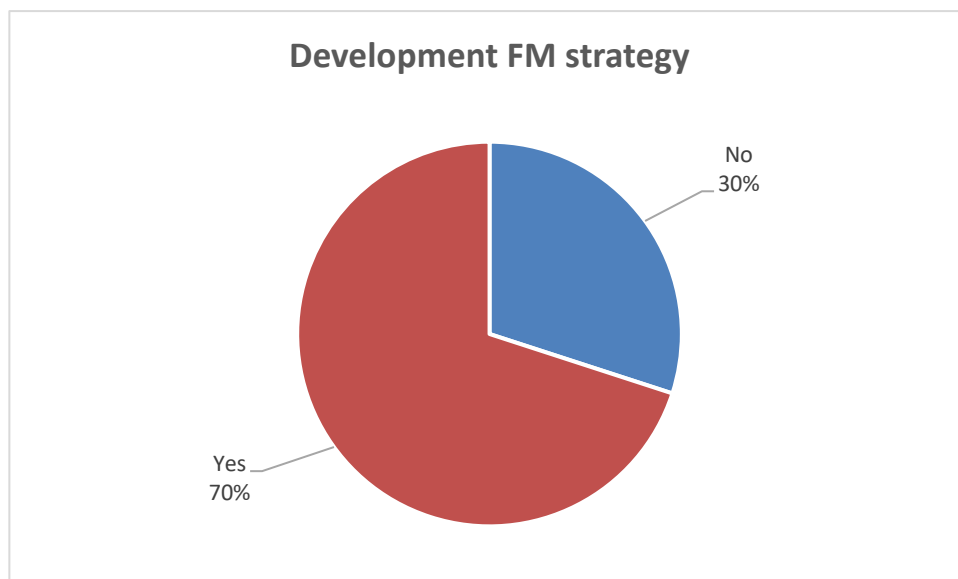


Figure 36: Development of FM strategy

The profile of respondents means that the FM discipline is part of the organisation and supports the development of the organisation strategy.

7.4.2 Contribution to the core business of the organisation

Most respondents (50%) responded that facility management has a significant contribution to the organisation, and they are considered as part of the core business. The other (40%) believe in some contribution of facility management into the organisation (see Figure 37).

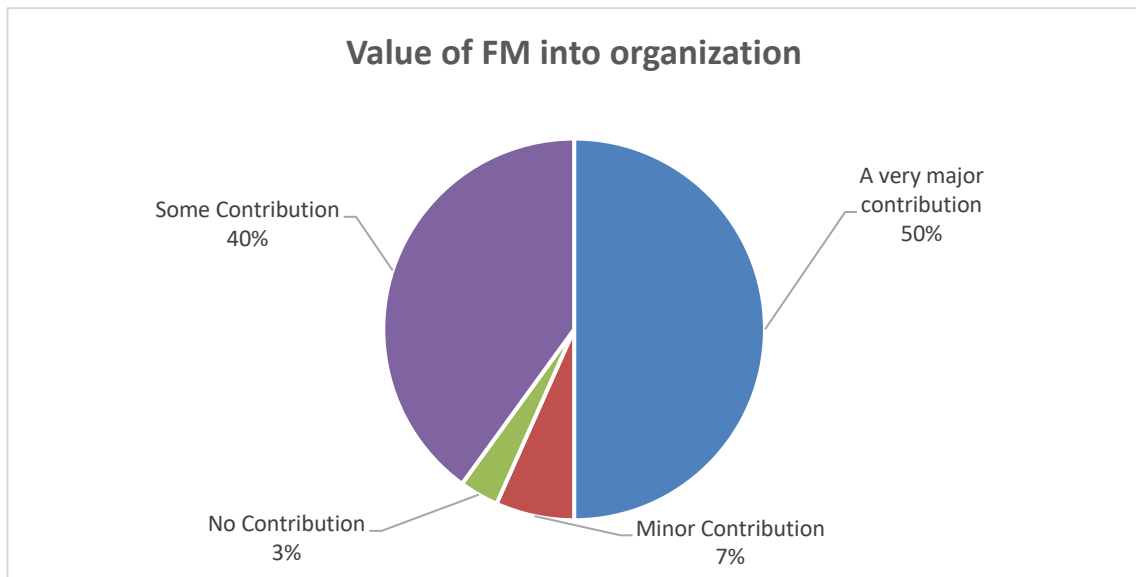


Figure 37: Contribution value of FM into the organisation

7.4.3 Future of the facility management profession

Most respondents (60%) felt that over the next year facility management became more essential while around (33%) would consider facility management importance as remaining the same. Less than (7%) felt that facility management would become less important (see Figure 38).

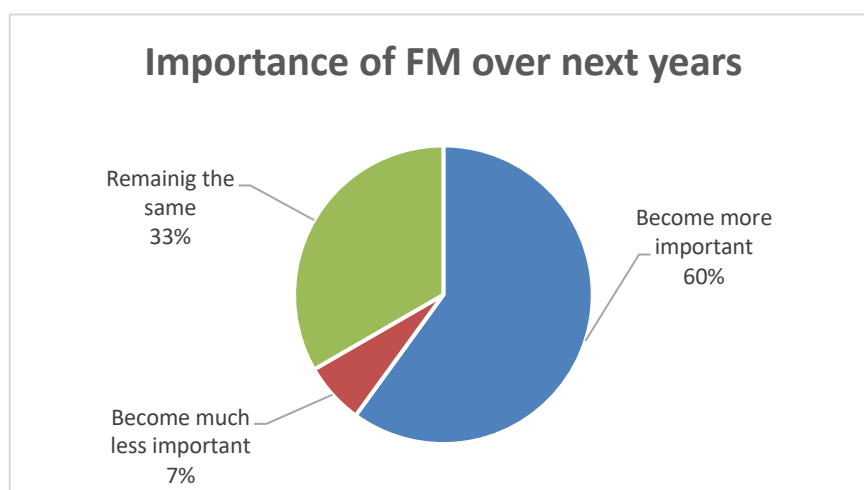


Figure 38: Importance of the facility management

7.4.4 Status of the FM Alignment and Overall Strategy

Most respondents (57%) understood the magnitude of the alignment between Facility Management (FM) and the overall strategy for their organisation, while

around (20%) have already implemented it. Similarly, around (23%) said they would implement it now into their organisation. From these results, it is evident that respondents would consider an important parameter; the alignment of FM with the overall strategy. Figure 39 shows the respondents' answers.

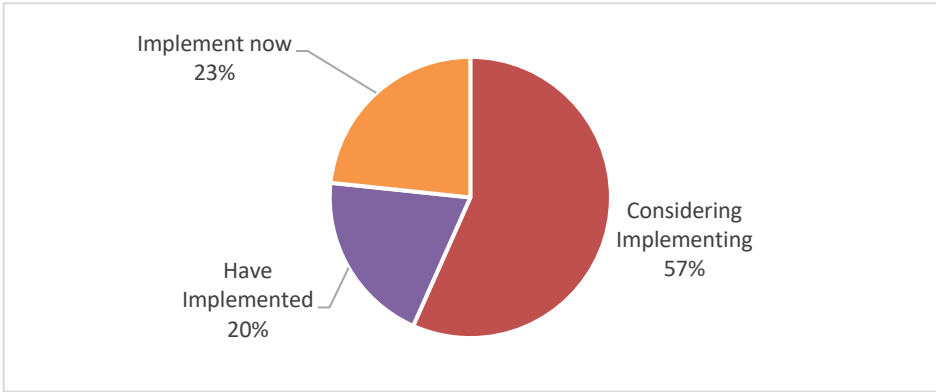


Figure 39: Alignment FM strategy vs Overall Strategy

7.4.5 FM strategy engagement into the Organisation

Most respondents (53%) answered that the FM strategy is defined into the Strategic Business Units (SBUs) and the rest of the 47% answered that the FM strategy is defined into the functional units, that means in tactical and operational levels only (see Figure 40).

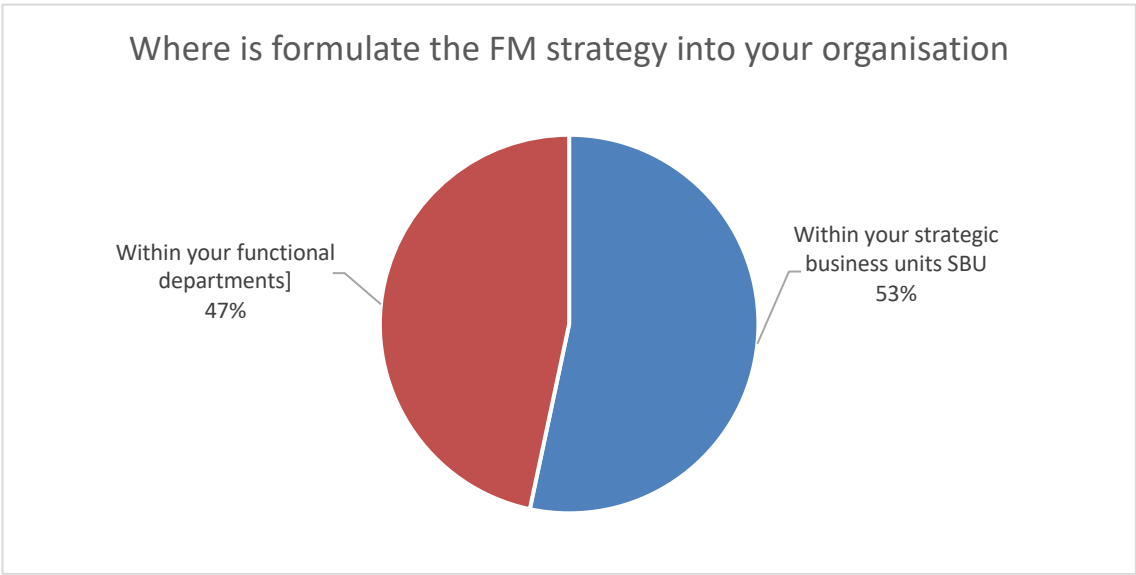


Figure 40: FM strategy into the Organisation levels

7.5 Criteria underpinning value-adding facility management services

The first scope of the research is to establish the criteria supporting the value-added FM services. The concept of value added is defined as the product's value diminished by the value of the resources used during the process.

From the questionnaire in section D, different categories were revealed, as shown in the following Figure 41:

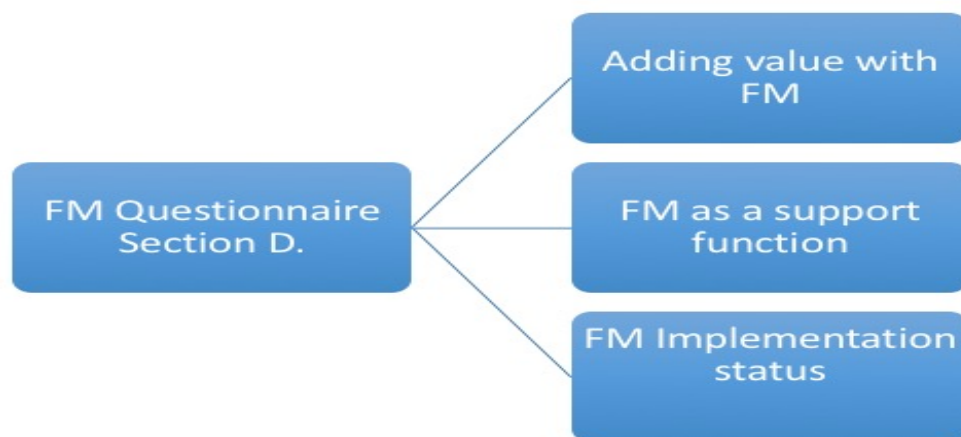


Figure 41: FM criteria

7.5.1 Adding Value with Facility Management (FM)

Respondents' feedback on the criteria underpinning of each category of the questionnaire in section D and question D1 are presented and analysed in Appendix 5. The criteria for question D1 were cost reduction, labour productivity, risk control, flexibility, financial possibilities, sustainability, and supporting value. These criteria were selected from the original "adding value" list of De Vries (2007) and customised by Den Heijer (2011).

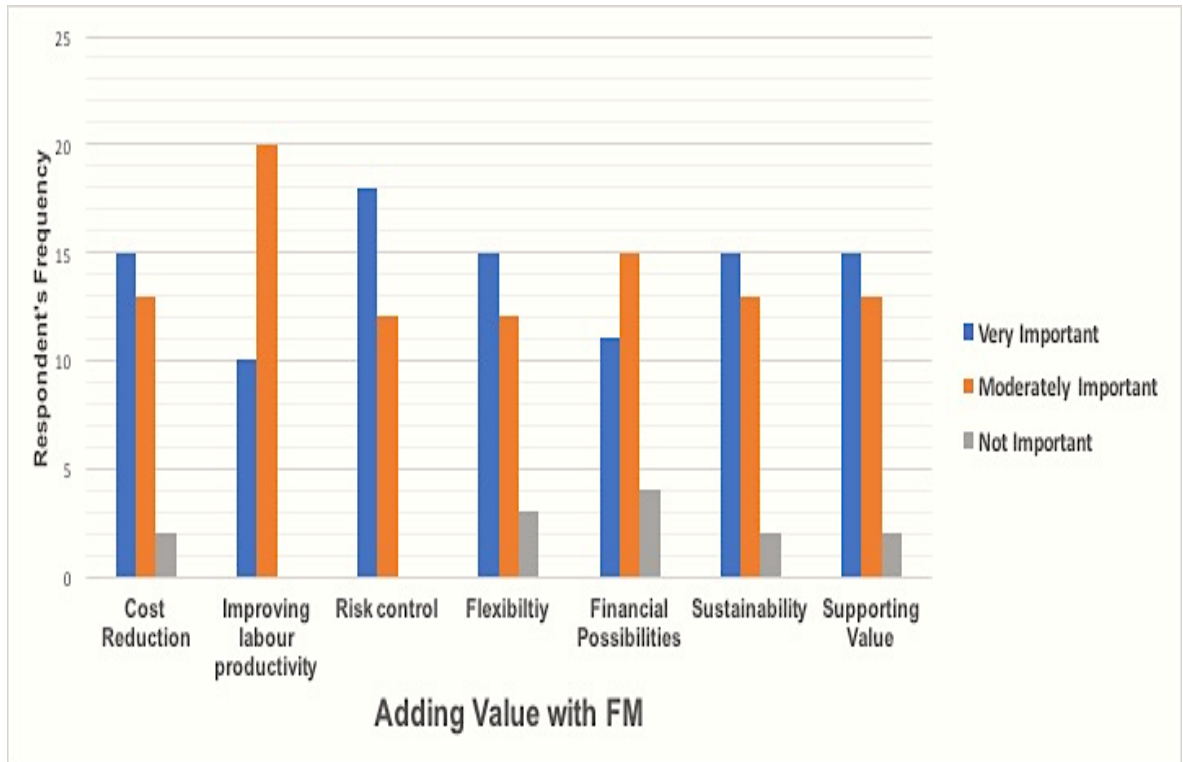


Table 8: Adding value with FM

From the questionnaire section D and question D1 there are nine criteria or ways of adding value of FM with the following meanings:

- Risk Control/Financial possibilities: This can mean controlling financial risks, for instance by being able to easily adjust the size and characteristics of the FM portfolio services following changes in the organisation. It could even mean to control the technological and functional risks by observing the technical conditions to ensure main processes are not blocked. In the end, controlling technical and functional risks is also about controlling financial risks by lowering the chance of production loss.
- Cost Reduction: These costs do not necessarily refer to Facility Management costs but could relate to overall costs or personnel expenses. Reducing the cost can be done through a variety of FM interventions for example when new concept adds to a higher production or a lower percentage of absence. But perhaps the most obvious strategy is reducing FM services using outsourcing models.
- Flexibility: This is about controlling risks whether they are about financial flexibility or flexible use of facilities by various types of users. It allows an

organisation to solve a problem in the FM services portfolio without blocking the initial procedures and cope with changing demand. This includes FM interventions that implement more standardized processes without individual territory or exclusive use for specific groups.

- Supporting value: This is closely related to “supporting image” but merely related to the internal employees in the organisation. For instance, before or after a reorganisation process. This also relates to matching the use of the FM portfolio services with the new organisational or corporate culture.
- Improving satisfaction/labour production: Some FM interventions are specially for the purpose of increasing employee/user satisfaction- adding quality in FM services, fast response to their changing demands or selecting areas that are suitable to the users’ which is extra essential in labour productivity.
- Innovation/Sustainability: The term “innovation” in primary procedures can be accomplished by stimulating planned and unplanned meetings between users-combining “flexibility” supporting “culture” and interventions that create the value for FM.

7.5.2 Criteria Ranking for Adding Value in FM

The data collected by respondents were examined using the relative importance index (RII) as defined in section 7.2.1. It was used to rank criteria for adding value in facility management. Table 9 shows the criteria of adding value by underpinning FM adding value. The results show the ranking of the criteria and these are: risk control (1st), cost reduction (2nd), flexibility (3rd), supporting culture (4th), improvement labour production (5th), financial possibilities (6th), sustainability (7th), innovation (8th), and improving satisfaction (9th).

Table 9: Criteria Ranking for adding value in FM

	Very Important (VI)	Important (I)	Moderately Important (MI)	Not very important (NVI)	Not at all Important (NI)				
	5	4	3	2	1				
Criteria	%	%	%	%	%	TR*	MR*	RII*	Rank
Risk Control	0.57	0.00	0.40	0.03	0.00	30	4.10	0.13	1
Cost Reduction	0.50	0.00	0.43	0.07	0.00	30	3.93	0.13	2
Flexibility	0.50	0.00	0.40	0.10	0.00	30	3.90	0.13	3
Supporting Culture	0.40	0.00	0.53	0.07	0.00	30	3.73	0.12	4
Improvement Labour Production	0.33	0.00	0.67	0.00	0.00	30	3.67	0.12	5
Financial Possibilities	0.37	0.00	0.50	0.13	0.00	30	3.60	0.12	6
Sustainability	0.33	0.00	0.53	0.13	0.00	30	3.53	0.12	7
Innovation	0.00	0.00	0.00	1.00	0.00	30	2.00	0.07	8
Improving Satisfaction	0.00	0.00	0.00	1.00	0.00	30	2.00	0.07	9

Note (*): TR=Total number of respondents, MR= Mean Rating, RII=Relative importance index

7.5.3 Facility Management (FM) as a support function in the organisation

Respondent's feedback on the criteria underpinning each category of the questionnaire. Section D, Question D2, are presented and analysed in the following figure:

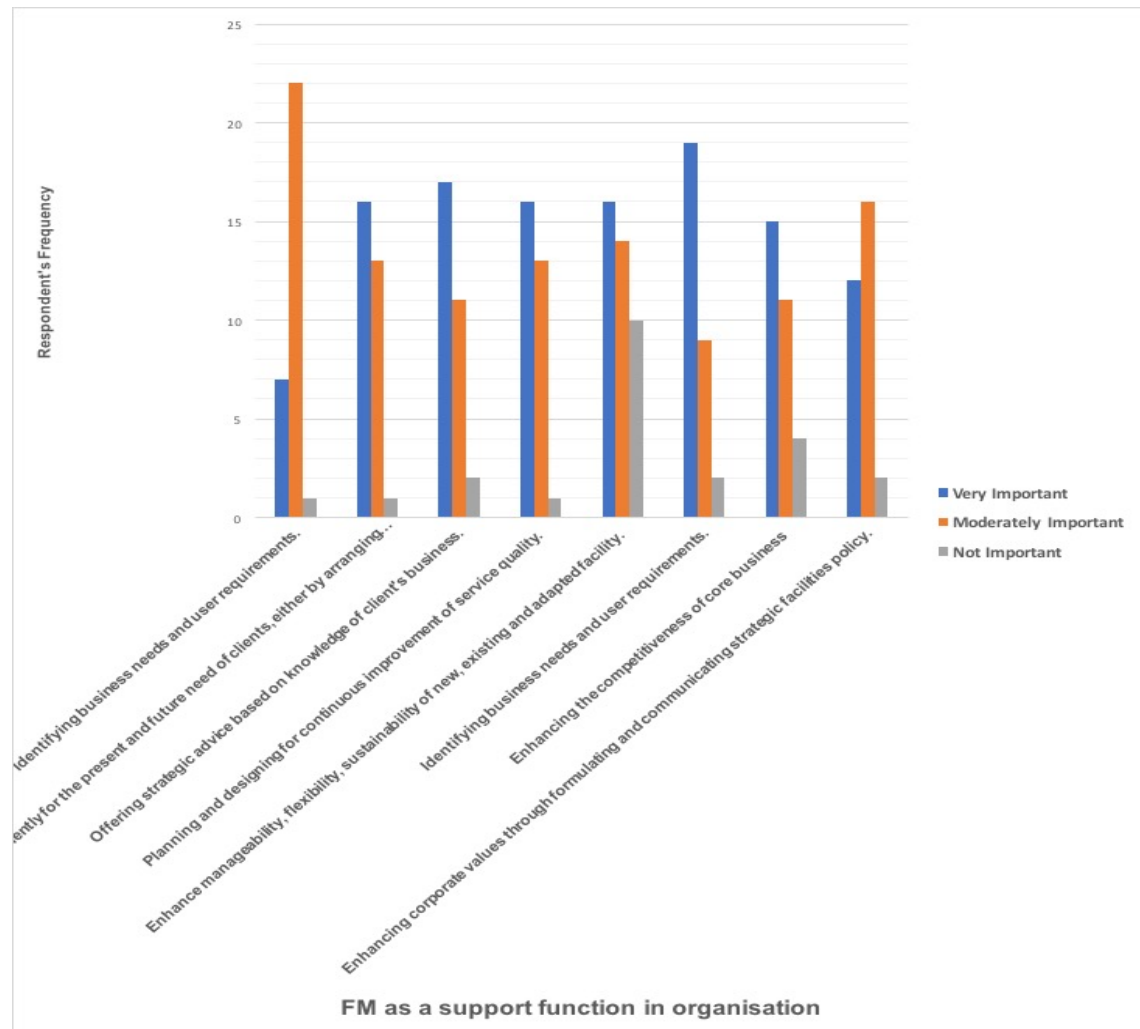


Figure 42: FM as a support function in the organisation

7.5.4 Criteria for FM as a support function

The data collected by respondents were examined using the relative importance index (RII) as defined in section 7.2.1. It was used to rank criteria for adding value in facility management. Table 10 presents the FM as a support function criterion into the organisation. In total, nine criteria values are identified in this category.

Table 10: Criteria for FM as a support function in organisation

Criteria for support the strategy of the organisation	Rating importance index (RII) for FM as support function								
	VI(5) %	I(4) %	MI(3) %	NVI(2) %	NI(1) %	TR	MR	RII	RANK
Identifying business needs and user requirements.	0.63	0.00	0.30	0.67	0.00	30	5.41	0.13	1
Offering strategic advice based on knowledge of client's business.	0.57	0.00	0.37	0.67	0.00	30	5.28	0.12	2
Enhancing corporate values through formulating and communicating strategic facilities policy.	0.40	0.00	0.53	0.67	0.00	30	4.94	0.12	3
Provide economically and efficiently for the present and future need of clients, either by arranging for reallocation of space within existing estate or by building, purchasing or leasing additional property.	0.53	0.00	0.43	0.33	0.00	30	4.62	0.11	4
Planning and designing for continuous improvement of service quality.	0.53	0.00	0.43	0.33	0.00	30	4.62	0.11	5
Enhance manageability, flexibility, sustainability of new, existing and adapted facility.	0.53	0.00	0.43	0.33	0.00	30	4.62	0.11	6
Developing facilities to meet business objectives and ensure business continuity	0.23	0.00	0.93	0.33	0.00	30	4.62	0.11	7
Ensure that a coherent view of property is fed into the overall strategy of the organization.	0.37	0.00	0.60	0.33	0.00	30	4.30	0.10	8
Enhancing the competitiveness of core business	0.50	0.00	0.37	0.13	0.00	30	3.87	0.09	9

Note:

VI	Very important
I	Important
MI	Moderately important
NVI	Not very important
NI	Not at all important
TR	Total number of respondents
MR	Mean rating
RII	Relative importance index

7.5.5 Facility Management Implementation Status

Table 11 presents the FM implementation status criteria into organisation. In total three criteria values are identified in this category.

Table 11: Criteria for implementation status

Rating importance criterion in implementation status					
Criteria for Implementation Status	Have implemented	Implemented now	Considering implementation	Not considering implementation	Total
Alignment between FM and overall strategy	20%	23.3%	56.7%	0%	100%
FM value delivering	6.7%	26.7%	63.3%	3.3%	100%
FM resource management	0%	33.3%	63.3%	3.3%	100%

7.6 Correlation between independent variables and parameters

In this section, the results from the correlation between the independent variables and the parameters in adding value and FM implementation were examined into the organisation. Figure 43 shows the variables (see in sections 7.3.7.1 and 7.4.1) and the criteria/parameters from the questionnaire, which will be taken into consideration during the analysis:

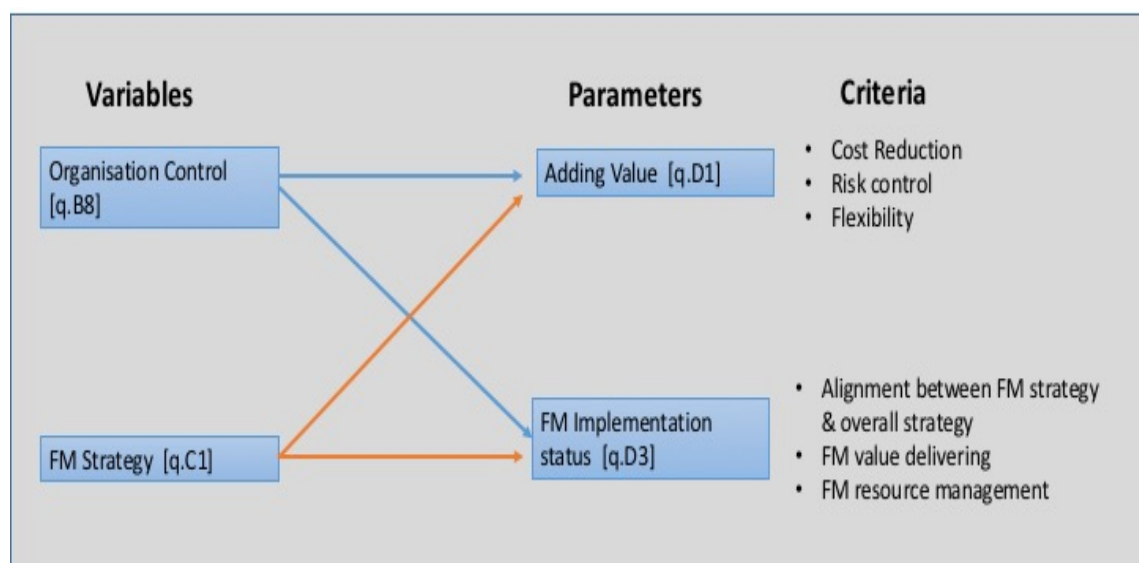


Figure 43: Correlation variables and parameters in FM

The degree in adding value has been measured with the criteria/parameters with the highest rank, as presented in Table 9 in section 7.5.2. For the correlation analysis, the first three ranking answers, which are “Risk Control”, “Cost Reduction”, and “Flexibility” are selected. Each independent variable has been analysed individually and will respect the degree in adding value.

The FM implementation status has measured the criteria with the highest rank and presented in Table 11 in section 7.5.5. For the correlation analysis, the first three ranking answers are “Alignment between FM strategy and overall strategy”, “FM value delivering” and “FM resource management” are considered. Each independent variable has been analysed individually with respect to the degree in FM implementation status. A null hypothesis for each independent variable is defined as follows:

- Hypothesis 1: There is no relationship between the organisation control for the cost reduction, risk control and flexibility.
- Hypothesis 2: There is no relationship between the organisation control for the alignment between FM strategy & overall strategy, FM value delivering and FM resource management
- Hypothesis 3: There is no relationship between the FM strategy for the cost reduction, risk control and flexibility
- Hypothesis 4: There is no relationship between the FM strategy for the alignment between FM strategy & overall strategy, FM value delivering and FM resource management

7.6.1 Correlation between organisation control [B8] and adding value [D1]

The variable organisation emphasises on the organisational control of the FM services in an organisation. Organisational control is calculated by the degree of different FM services such as in-house, outsourcing, management agent and partly in-house/outsourcing (appendix 4, question B8). From the data set, received as answers; 14 out of 30 organisations (47%) used the Facility management In-house services. So that they can examine, whether the degree of FM services has an impact on value added services, it is compared with the three aforementioned criteria.

The results are presented in a crosstab as depicted in the following sections. The tables' rows are categorised as per the Facility Management organisation

percentage. The columns are classified according to the degree of criteria and the sum of each row is calculated in the final column "Total". Each respondent could select "Cost Reduction", "Risk Control", "Flexibility" within this question (see appendix 4, question D1).

All possible answers are combined to check whether a correlation is present or not. The first row of each FM organisation class services represents the total perceived "Cost Reduction" of the total participants, alongside all possibilities of answers together. The second row shows participants related to the total count in the first row. The third row shows the proportion of the distribution between the classes of advantages and savings inside every outsourcing-class separately, as per the total count. The percentages are measured over the total count and the reason for doing this because this encompasses the total degree of value added in every class and not only the participants. Furthermore, the percentages of the two questions combined are represented by the sixth column. The total is calculated from the chosen possible answers and not on the respondents.

To see if the degree in different FM service models (in-house, outsourcing, management agent and partly in-house/outsourcing) has impact the value added of an organisation and to what degree FM service models are compared to the three parameters of added value in the study (see Figure.43).

In the following table, the first parameter of added value 'cost reduction' is compared to the different FM service models. The degree of cost reduction should be a very important criterion using the outsourcing FM model. The results of the two questions are examined with a crosstab and are showed in Table 12. Furthermore, the respondents indicated a high percentage of In-house is adding value (47%). In this case, this is very important for the cost reduction in the organisation.

Table 12: Organisation correlated with “Cost Reduction” criteria					
		D1. Please assess the importance of the following added values with Facility Management in your organization [Cost Reduction]			Total
		Very Important	Moderately Important	Not Important	
B8. How does your organisation manage Facility Management?	In house	4	10	0	14
		28.6%	71.4%	0.0%	100.0%
	Outsourcing	6	2	0	8
		75.0%	25.0%	0.0%	100.0%
	Management agent	2	0	2	4
		50.0%	0.0%	50.0%	100.0%
	Partly in-house/outsourced	3	1	0	4
		75.0%	25.0%	0.0%	100.0%
Total		15	13	2	30
		50.0%	43.3%	6.7%	100.0%

There are two testing ways for the questionnaire data results. This is either in a parametric or nonparametric way. For this research, the nonparametric test Chi-square test of independence has been selected because the used data are expressed in frequencies. The term independence means that when using this chi-square test, the null hypothesis states that the variables are independent (not related).

Table 13: Organisation correlated with “Cost Reduction” criteria - Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	21.000	6	.002
Likelihood Ratio	17.576	6	.007
Fisher's Exact Test	13.695		
Linear-by-Linear Association	.619	1	.431
N of Valid Cases	30		

From the above table, the Pearson Chi-Square row and the column Asymp. Sig (2-sided) are evaluated. The value shown of .002 (<.05) provides the information that not maintains the null hypothesis. The null hypothesis was stated as follows: “Responses from the organisation FM services are independent of Cost Reduction criteria”. So, a close relationship between the level of FM services models and the degree of cost reduction at the 5% significance. Thus, selecting an outsourcing FM model might translate to cost reduction for the organisation.

The second parameter of adding value “Risk Control” (see appendix 4, question D1) is structured similar to the parameter “Cost Reduction”. The outcomes of the two questions are examined via a crosstab and are illustrated in Table 14.

Table 14: Organisation correlated with “Risk Control” criteria

		D1. Please assess the importance of the following added values with Facility Management in your organization [Risk control]		Total
		Very Important	Moderately Important	
B8. How does your organisation manage Facility Management?	In house	7	7	14
		50.0%	50.0%	100.0%
	Outsourcing	5	3	8
		62.5%	37.5%	100.0%
	Management agent	3	1	4
		75.0%	25.0%	100.0%
	Partly in-house/outsourced	3	1	4
		75.0%	25.0%	100.0%
Total		18	12	30
		60.0%	40.0%	100.0%

The respondents indicated the degree of the high percentage of In-house (47%) is adding value, in this case this is very important for the risk control in the organisation.

Table 15: Organisation correlated with “Risk Control” criteria
Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	1.354	3	.716
Likelihood Ratio	1.390	3	.708
Fisher's Exact Test	1.351		
Linear-by-Linear Association	1.218	1	.270
N of Valid Cases	30		

From the above table, the Pearson Chi-Square row and the column Asymp. Sig (2-sided) are evaluated. The value shown of .716 ($>.05$) provides the information that maintains the null hypothesis. The null hypothesis was stated as follows: “Responses from the organisation FM services are independent of Risk Control criteria”. So, no close relationship between the level of FM services models and degree of risk control at the 5% significance. Thus, selecting an In-house FM model might not translate to risk control for the organisation. As a result, the FM services models can be separated from the risk control. In an FM context, the risk control is not included in the FM service models and this may prove the absence of relationship.

The third parameter of adding value “Flexibility” (see appendix 4, question D1) is organised similar to the parameter “Cost Reduction”. The outcomes of both questions are examined via a crosstab method and are depicted in the following table.

Table 16: Organisation correlated with “Flexibility” criteria					
		D1. Please assess the importance of the following added values with Facility Management in your organization [Flexibility]			Total
		Very Important	Moderately Important	Not Important	
B8. How does your organisation manage Facility Management?	In house	8	6	0	14
		57.1%	42.9%	0.0%	100.0%
	Outsourcing	4	3	1	8
		50.0%	37.5%	12.5%	100.0%
	Management agent	1	1	2	4
		25.0%	25.0%	50.0%	100.0%
	Partly in house/outourced	2	2	0	4
		50.0%	50.0%	0.0%	100.0%
Total		15	12	3	30
		50.0%	40.0%	10.0%	100.0%

Table 17: Organisation correlated with “Flexibility” criteria
Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.259	6	.160
Likelihood Ratio	8.027	6	.236
Fisher's Exact Test	6.651		
Linear-by-Linear Association	1.144	1	.285
N of Valid Cases	30		

From the above table, the Pearson Chi-Square row and the column Asymp. Sig (2-sided) are evaluated. The value shown of .160(>.05) provides the information that maintains the null hypothesis. The null hypothesis was stated as follows: “Responses from the organisation FM services are independent of Flexibility criteria”. So, no close relationship between level of FM services models and degree of flexibility at the 5% significance. Thus, selecting an in-house FM model might not translate to flexibility for the organisation. What this implies is that the in-house FM model can be separated from the flexibility. In an FM context, the

flexibility is not related with any FM service models and this might provide explanation for the lack of a relationship.

7.6.2 Correlation between organisation [B8] and Implementation status [D3]

The variable organisation concentrates on the organisational control of the FM services in an organisation. Organisational control is calculated by the level of different FM services such as in-house, outsourcing, management agent and partly in-house/outsourcing (appendix 4, question B8). To see what degree of facilities management services an effect on the implementation status has as compared to the three criteria (appendix 4, question D3).

In the following tables, the correlation between organisation and the three criteria from implementation status is presented. The first criteria are alignment between FM strategy and overall strategy as shown in the Table 18.

Table 18: Organisation correlated with “Alignment between FM strategy and overall strategy” criteria					
		D3. Which is the status of Facility Management [Alignment between FM strategy and overall strategy]			Total
		Have Implemented	Implement now	Considering implement	
B8. How does your organisation manage Facility Management?	In house	3	4	7	14
		21.4%	28.6%	50.0%	100.0%
	Outsourcing	0	3	5	8
		0.0%	37.5%	62.5%	100.0%
	Management agent	1	0	3	4
		25.0%	0.0%	75.0%	100.0%
	Partly in-house/outsourced	2	0	2	4
		50.0%	0.0%	50.0%	100.0%
Total		6	7	17	30
		20.0%	23.3%	56.7%	100.0%

Table 19: Organisation correlated with “Alignment between FM strategy and overall strategy” criteria- Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	6.610 ^a	6	.358
Likelihood Ratio	9.401	6	.152
Fisher's Exact Test	5.989		
Linear-by-Linear Association	.072	1	.788
N of Valid Cases	30		

From the above table, the Pearson Chi-Square row and the column Asymp. Sig (2-sided) are evaluated. The value shown of .358 ($>.05$) provides the information that maintains the null hypothesis. The null hypothesis was stated as follows: “Responses from the organisation FM services are independent of Alignment between a FM strategy and overall strategy criteria”. So, no close relationship between the level of FM services models and degree of the alignment between FM and an overall strategy at the 5% significance. Thus, selecting any FM service model might not translate to the alignment for the organisation. As a result, the FM services models can be separated from the FM alignment and this may explain the lack of relationship.

The second parameter of implementation status “FM Value implementation” (see appendix 4, question D3) is arranged same as the first parameter. The results of both questions are studied via a crosstab method and are presented in Table 20.

Table 20: Organisation correlated with “FM value implementation” criteria						
		D3. What is the status of Facility Management? [FM Value Implementation]				Total
		Have Implemented	Implement now	Considering implementing	Not considering implement	
B8. How does your organisation manage Facility Management?	In house	1	5	7	1	14
		7.1%	35.7%	50.0%	7.1%	100.0%
	Outsourcing	0	2	6	0	8
		0.0%	25.0%	75.0%	0.0%	100.0%
	Management agent	1	0	3	0	4
		25.0%	0.0%	75.0%	0.0%	100.0%
	Partly in-house/outsourced	0	1	3	0	4
		0.0%	25.0%	75.0%	0.0%	100.0%
Total		2	8	19	1	30
		6.7%	26.7%	63.3%	3.3%	100.0%

Table 21: Organisation correlated with “FM value implementation” criteria- Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.210 ^a	9	.719
Likelihood Ratio	7.588	9	.576
Fisher's Exact Test	6.927		
Linear-by-Linear Association	.106	1	.745
N of Valid Cases	30		

From the above table, the Pearson Chi-Square row and the column Asymp. Sig (2-sided) are evaluated. The value shown of .719 (>.05) provides the information that maintains the null hypothesis. The null hypothesis was stated as follows: “Responses from the organisation FM services are independent of FM value implementation criteria”. So, no close relationship between the degree of FM services models and level of FM implementation at the 5% significance. Thus, selecting an outsourcing FM model might not translate to FM implementation for

the organisation. In an FM context, the FM implementation is not part of the selected FM service models, and this may explain the lack of a relationship.

The third parameter of implementation status “FM resource management” (see appendix 4, question D3) is organised like the first parameter. The results of the two questions are shown in Table 22. They were examined using a crosstab method.

Table 22: Organisation correlated with “FM resource management” criteria					
		D3. What is the status of Facility Management [FM Resource Management]			Total
		Implement now	Considering implementing	Not considering implement	
B8. How does your organisation manage Facility Management?	In house	4	10	0	14
		28.6%	71.4%	0.0%	100.0%
	Outsourcing	3	4	1	8
		37.5%	50.0%	12.5%	100.0%
	Management agent	1	3	0	4
		25.0%	75.0%	0.0%	100.0%
	Partly in-house/ outsourced	2	2	0	4
		50.0%	50.0%	0.0%	100.0%
Total		10	19	1	30
		33.3%	63.3%	3.3%	100.0%

Table 23: Organisation correlated with “FM resource management” criteria
Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.871 ^a	6	.694
Likelihood Ratio	3.747	6	.711
Fisher's Exact Test	4.647		
Linear-by-Linear Association	.264	1	.607
N of Valid Cases	30		

From the above table, the Pearson Chi-Square row and the column Asymp. Sig (2-sided) are evaluated. The value shown of .694 ($>.05$) provides the information that maintains the null hypothesis. The null hypothesis was stated as follows: "Responses from the organisation FM services are independent of FM resource management criteria". So, no close relationship between the level of FM services models and the degree of resource management at the 5% significance. Thus, selecting a FM service model might not translate to resource management for the organisation. In an FM context, the resource management is not included in the FM service models, and this may assess the absence of a relationship.

7.6.3 Correlation between FM strategy[C1] and adding value [D1]

The variable that adds value in an organisation is measured by the degree of different criteria such as cost reduction, risk control and flexibility (appendix 4, question D1). To see if the degree of adding value has an effect on the FM strategy is compared to the criteria (appendix 4, question C1).

In the following tables, the correlation between FM strategy and adding value organisation was calculated. The first criteria are cost reduction between FM strategy as shown in the Table 24.

Table 24: FM strategy correlated with “Cost Reduction” criteria				
		C1. Does FM support your organisational strategy?		Total
		Yes	Don't know	
D1. Please assess the importance of the following added values with Facility Management in your organization [Cost Reduction]	Very Important	14	1	15
		93.3%	6.7%	100.0%
	Moderately Important	13	0	13
		100.0%	0.0%	100.0%
	Not Important	1	1	2
		50.0%	50.0%	100.0%
Total		28	2	30
		93.3%	6.7%	100.0%

Table 25: FM strategy correlated with “Cost Reduction” criteria

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.964 ^a	2	.031
Likelihood Ratio	4.575	2	.102
Fisher’s Exact Test	4.662		
Linear-by-Linear Association	1.027	1	.311
N of Valid Cases	30		

From the above table, the Pearson Chi-Square row and the column Asymp. Sig (2-sided) are evaluated. The value shown of .031 ($<.05$) provides the information to not maintains the null hypothesis. The null hypothesis was stated as follows: “Responses from the organisation FM organisational strategy is independent of Cost Reduction criteria”. A statistical proof was provided by the analysis that there is a significant difference between the two questions. So, a close relationship between the degree of a FM support strategy and level of cost reduction at the 5% significance. Thus, implementing a FM as a support for the organisation strategy might translate to cost reduction for the organisation. As a result, the cost reduction is related to the FM strategy.

The second parameter of adding value “Risk control” (see appendix 4, question D1) is organised like the first parameter. The results of the two questions are shown in Table 26. They were examined using a crosstab method.

Table 26: FM strategy correlated with “Risk Control” criteria				
		C1. Does FM support your organisational strategy?		Total
		Yes	Don't know	
D1. Please assess the importance of the following added values with Facility Management in your organization [Risk control]	Very Important	16	2	18
		88.9%	11.1%	100.0%
	Moderately Important	12	0	12
		100.0%	0.0%	100.0%
Total		28	2	30
		93.3%	6.7%	100.0%

Table 27: FM strategy correlated with “Risk Control” criteria
Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.429 ^a	1	.232
Continuity Correction	.201	1	.654
Likelihood Ratio	2.138	1	.144
Linear-by-Linear Association	1.381	1	.240
N of Valid Cases	30		

From the above table, the Pearson Chi-Square row and the column Asymp. Sig (2-sided) are evaluated. The value shown of .232 ($>.05$) provides the information that maintains the null hypothesis. The null hypothesis was stated as follows: “Responses from the organisation FM strategy are independent of Risk control criteria”. There is thus, no close relationship between the degree of an FM support strategy and level of risk control at the 5% significance. Thus, implementing FM as a support for the organisation strategy might not translate to risk control for the organisation. What this implies is that the risk control is not related to the FM strategy.

The third parameter of adding value “Flexibility” (see appendix 4, question D1) is organised like the first parameter. The results of the two questions are shown in Table 28. They were examined using a crosstab method.

Table 28: FM strategy correlated with “Flexibility” criteria				
		C1. Does FM support your organisational strategy?		Total
		Yes	Don't know	
D1. Please assess the importance of the following added values with Facility Management in your organization [Flexibility]	Very Important	15	0	15
		100.0%	0.0%	100.0%
	Moderately Important	11	1	12
		91.7%	8.3%	100.0%
	Not Important	2	1	3
		66.7%	33.3%	100.0%
Total		28	2	30
		93.3%	6.7%	100.0%

Table 29: FM strategy correlated with “Flexibility” criteria
Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.554 ^a	2	.103
Likelihood Ratio	3.993	2	.136
Fisher's Exact Test	3.972		
Linear-by-Linear Association	3.813	1	.051
N of Valid Cases	30		

From the above table, the Pearson Chi-Square row and the column Asymp. Sig (2-sided) are evaluated. The value shown of .103 ($>.05$) provides the information that maintains the null hypothesis. The null hypothesis was stated as follows: “Responses from the organisation’s FM strategy are independent of Flexibility criteria”. A statistical proof was provided by the analysis that there is no statistically significant difference between the two questions. So, no close relationship between the degree of an FM support strategy and level of flexibility at the 5% significance. Thus, implementing FM as a support for the organisation strategy might not translate to flexibility for the organisation. What this implies is that the flexibility is not related to the FM strategy.

7.6.4 Correlation between FM support strategy [C1] and Implementation status [D3]

The variable FM support strategy focuses on facility management and supports the overall organisation strategy (appendix 4, question C1). To see whether the degree of the FM services influences the implementation status is compared to the three criteria (appendix 4, question D3).

In the following tables, the correlation between FM support strategy and three criteria from implementation status is evaluated. The first criteria are alignment between the FM strategy and alignment between the FM strategy and overall strategy as shown in Table 30.

Table 30 FM strategy correlated with “Alignment between FM strategy and overall strategy” criteria				
		C1. Does FM support organisational strategy?		Total
		Yes	Don't know	
D3. Which is the status of Facility Management [Alignment between FM strategy and overall strategy]	Have Implemented	6	0	6
		100.0%	0.0%	100.0%
	Implement now	7	0	7
		100.0%	0.0%	100.0%
	Considering implement	15	2	17
		88.2%	11.8%	100.0%
Total		28	2	30
		93.3%	6.7%	100.0%

Table 31: FM strategy correlated with “Alignment between FM strategy and overall strategy” criteria Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.639 ^a	2	.441
Likelihood Ratio	2.381	2	.304
Fisher's Exact Test	1.034		
Linear-by-Linear Association	1.314	1	.252
N of Valid Cases	30		

From the above table, the Pearson Chi-Square row and the column Asymp. Sig (2-sided) are evaluated. The value shown of .441 ($>.05$) provides the information that maintains the null hypothesis. The null hypothesis was stated as follows: “Responses from the FM strategy are independent of the alignment between FM strategy and overall strategy criteria”. So, no close relationship between the level of a FM support strategy and degree of FM alignment at the 5% significance. Thus, implementing FM as a support for the organisation strategy might not translate to FM alignment for the organisation. What this implies is that the FM implementation is not related to the FM strategy.

The second parameter of implementation status “FM Value implementation” (see appendix 4, question D3) is organised similar to the first parameter. The results of the two questions are shown in Table 32. They were examined using a crosstab method.

Table 32: FM strategy correlated with “FM value implementation” criteria				
		C1. Does FM support organisational strategy?		Total
		Yes	Don't know	
D3. Which is the status of Facility Management [FM Value Implementation]	Have Implemented	2	0	2
		100.0%	0.0%	100.0%
	Implement now	8	0	8
		100.0%	0.0%	100.0%
	Considering implementing	17	2	19
		89.5%	10.5%	100.0%
	Not considering implement	1	0	1
		100.0%	0.0%	100.0%
Total		28	2	30
		93.3%	6.7%	100.0%

Table 33: FM strategy correlated with “FM value implementation” criteria- Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	1.241 ^a	3	.743
Likelihood Ratio	1.909	3	.592
Fisher's Exact Test	2.369		
Linear-by-Linear Association	.644	1	.422
N of Valid Cases	30		

From the above table, the Pearson Chi-Square row and the column Asymp. Sig (2-sided) are evaluated. The value shown of .743 ($>.05$) provides the information that maintains the null hypothesis. The null hypothesis was stated as follows: “Responses from the FM strategy are independent of FM value implementation criteria”. So, no close relationship between the level of FM strategy and degree of FM implementation at the 5% significance. Thus, implementing an FM as a support for the organisation strategy might not translate to a FM implementation for the organisation. What this implies is that the FM implementation is not related to the FM strategy.

The third parameter of implementation status “FM resource management” (see appendix 4, question D3) is organised as the first parameter. The outcomes of the two questions are examined via a crosstab method and are shown in Table 34.

Table 34: FM strategy correlated with “FM resource management” criteria				
		C1. Does FM support organisational strategy?		Total
		Yes	Don't know	
D3. Which is the status of Facility Management [FM Resource Management]	Implement now	10	0	10
		100.0%	0.0%	100.0%
	Considering implementing	17	2	19
		89.5%	10.5%	100.0%
	Not considering implement	1	0	1
		100.0%	0.0%	100.0%
Total		28	2	30
		93.3%	6.7%	100.0%

Table 35: FM strategy correlated with “FM resource management” criteria - Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.241 ^a	2	.538
Likelihood Ratio	1.909	2	.385
Fisher's Exact Test	1.900		
Linear-by-Linear Association	.674	1	.412
N of Valid Cases	30		

From the above table, the Pearson Chi-Square row and the column Asymp. Sig (2-sided) are evaluated. The value shown of .538 ($>.05$) provides the information that maintains the null hypothesis. The null hypothesis was stated as follows: “Responses from the FM strategy are independent of FM resource management criteria”. So, no close relationship between the level of FM support strategy and degree of FM resource management at the 5% significance. Thus, implementing FM as a support for the organisation strategy might not translate to FM resource management for the organisation. What this implies to is that the FM resource management is not related to the FM strategy.

7.7 Summary

In this chapter, the results from the questionnaire regarding the FM into the organisation were thoroughly discussed. The questionnaire survey was delivered via email to a sample of professionals involved in the disciplines of FM. The questionnaire had 30 respondents, with 27% of those had been working in FM position up to two years, and (33%) working between two to ten years, and (40%) working more than ten years. From the respondents' the comprehensive knowledge helps to the quality of the response received, and to the validity and reliability of the outcomes for the research findings. The questionnaire can be found in Appendix 4 of this research and it was broken down into four sections.

The questions A1 to A8 of the questionnaire was developed to collect data information about the participants. The questions B1 to B9 of the questionnaire was designed to obtain a general picture of the organisations structure and personnel. The questions C1 to C8 of the questionnaire was designed to collect data about the FM strategy in the organisation. The questions were about perceived the relationship between FM strategy and the organisation. The fourth sections (questions D1 to D5) of the questionnaire consists of questions in order to collect various opinions of the FM implementation in their organisations. Also, it was assessed the importance of the nine selected criteria for adding value with FM.

From the sections (C) and (D) of the questionnaire were identified the independent variables (organisation control, FM strategy) and the parameters (adding value, FM implementation) with the first three ranking criteria. Then, the researcher was examined the relationship between independent variables and parameters using four null hypotheses.

The independent variable "organisation control" was measured with the degree of different FM service delivery models based on the researches' outcomes. It demonstrated that the degree in organisation control (in-house/outsourcing/managing agent/ partly in-house/outsource) were not

influenced by the parameters of adding value except by the parameter “Cost Reduction”. The independent variable FM strategy was measured into two parameters, the presence of adding value and a FM implementation status into the organisation. The results of the two parameters showed that these were not consistent. The FM strategy topic did correlate with the “Cost Reduction” parameter. However, all the other parameters did not correlate with each other.

Chapter 8 Value Adding Alignment Model (VAAM) for FM

In this chapter, the value adding alignment model (VAAM) was developed from what was discovered from the literature review, questionnaire survey and the cases studies undertaken with FM practitioners. The researcher identified the gap during the analysis of findings as to the missing alignment between Facility Management and the organisation levels and the applicability of the VAAM model in FM. In addition, the validation of the VAAM model was undertaken through interviews with three FM practitioners.

8.1 Literature Review Findings

In the previous chapters we have already presented the findings from the literature review. An analysis of existing FM organisation models was undertaken to gain a knowledge of FM. These organisational models included the FM functions, processes, resources and relationship between organisation objectives and strategy performance.

Facility management is usually considered as driven by value instead of driven by cost, and it is normally the primary business unit of the organisation where the costs can be applied. Furthermore, facility management (FM) also plays a responsive, rather than a proactive role in the organisation.

During the literature review, the researcher identified that FM should be used and placed as a support strategic function of a company. Numerous researchers have been studied about the essence of the Facility Management role to the core

business of the company. These researchers include Atkin & Brooks (2000), Then (2003), Varcoe (2000), Alexander (1994) and Barrett (1994). An FM department needs to develop its own operational and tactical plans that must be in line with its corporate strategy to handle not only strategic but also operational challenges of the facilities (Atkin & Brooks, 2000). For this reason, the FM role is essential to support the organisation not only the short plan but also in the long plan. However, as discovered from the literature review in the areas of Facility Management strategy, it has been examined less frequent. In comparison with other areas of Facility Management practices such as, corporate management strategy as described in chapter 4. Furthermore, most of the literature available linked to Facility Management strategy is based on concepts and theoretical ideas rather than an actual study from the practice. This directs to a significant gap in recognising the characteristics of Facility Management in practice and further emphasises the current shortage of knowledge in this field.

The findings of the literature review for the selection of the FM model and how to deliver the FM services inside the organisation is significant. The decision to retain in-house facilities management services should depend on two things. Firstly, it should depend on the experience and skill level of the relevant teams and secondly it should depend on an examination of an objective business case for doing so. However, it needs to be kept in mind every company has its unique way of what FM services to offer and what need to be delivered.

The process for setting up the in-house FM service needs to be the same as the outsourcing FM service in terms of timing, quality, and performance measurement. The internal customers should expect to receive a service which compares with an external provider but should not receive additional or special treatment, just because this is an in-house service. A price/cost for the services will be agreed upon and it will be expected from the in-house team to control this within the budget. However, as the case for an external FM provider this budget should also be established for a contractual basis. The set-up should combine the agreement of the contract for an external provider so that performance can be measured on a like-for-like basis.

While it is true that the in-house team know and understand the organisation's internal operational strategies and various units of the business operating imperatives but, an external FM provider can contribute with new innovation ideas and efficiencies that are outside of the capabilities of the in-house team. The in-house team will also understand better the procedures such as the customer relationship management (CRM), management of IT systems, help desk and the handling of change requests.

In-house employees need to be allocated a budget exclusively for the training to improve skills like account management, help desk and work-scheduling. In case of the selection of outsourced service then the in-house team has been evaluated related to key performance metrics and operational targets.

Two criteria decide whether to select an outsourcing FM service provider or In-house team. Firstly, the degree of expertise available on in-house team, and secondly, on whether the external FM service provider is available or not. There is no reliable specialist external service provider in some countries. Under these circumstances the in-house selection is the only option for the service providers and organisations. In such conditions, it is essential to provide the definitions of performance expectations, service and budgets so, the in-house FM team know their operational targets to be achieved and the expected customer perception. Irrespective, of the situation, in-house service will continue delivery only if it is able to satisfy customers and provide appropriate value of business to the organisation.

According to an i-FM survey (Nelson, 2008) provides some insights relates to the service provision. Twenty-six of the respondents used for all FM services In-house teams. One fourth (22%) were utilising individual external providers for each FM service, and 26% were utilising integrated services approach. Four per cent of respondents reported a single property and FM solution services and 6% of participants stated they had a TFM solution.

A process is needed to manage the service contract no matter how the services are being delivered. To manage the service contract two managers are required.

One manager will be the in-house facilities manager who will be performing role of an informed client, or when a qualified FM professional is not available. The second manager who represent the external client role might be selected where FM services were delivered via in-house team in order make sure the objectivity.

It is advisable to make a review board that consist of all corporate central services support managers, operational/ services supply managers, internal customer and accommodation representatives. All of them need to know of the primary initial goals set when forming the review board and contract should impartially look over the performance measures on a continuous basis suggesting amendments as important task from the client and supplier side.

In any case, the management process will follow the steps as per the supply contract development using common best practices such as negotiation, contract administration, budget cost, payments terms and conditions and change control procedures. Then, the supply contract is signed and for any additional changes required a mutual agreement between the two parties.

Where a performance related payment system is a part of the signed contract the performance monitoring becomes an important component. In this situation, the already defined Key Performance Indicators (KPIs) will be observed, and if the performance targets are exceeded then an extra payment will be given to the supplier. However, the maintenance of service continuity is a critical contract condition and metric and the extra payments should be given to any service failures.

In many cases an overall conceptual analysis needs to be done to see if the initial selection on facilities management delivery is still acceptable and there is an alignment with present facility strategy. Further analysis will compare actual costs incurred to market, performance measures and possible modifications to improve the delivery service in efficient way, and consequent modifications to service level agreements (SLAs).

Facility Management services contract is customised to the client, hence, there is no common procedures for the negotiation, resources, management and

review contract. One principle is important to note that KPIs are the only meaningful and useful performance metrics that added value to the business.

This study recommends that the concept of alignment for Facility Management resources and processes in order to support the corporate business strategy entails a critical evaluation of several alignment variables. As per presented in the previous chapter the alignment variables were supply and demand; FM Service; FM Resources; and Organisational.

Thus, further analysis of the relationships between the organisational models and the alignment variables (Table 36) identified that most organisational models utilise the variable supply and demand alignment.

Table 36: Relationships between organisation model and alignment variables

Organisation Model	Type model	Alignment Variable
FM Total in house FM	A, B, C	FM Resource alignment
Management by agent strategy	D	Organisational alignment
Direct outsourcing strategy	E, F	Supply & Demand alignment
Management contract strategy	G	Supply & Demand alignment
Total FM strategy	H, I	Supply & Demand alignment

Specifically, for the management by agent strategy which utilised the organisational alignment and for the FM In-house which utilised the variable FM resource alignment.

This research included three case studies from the Middle East using six semi-structured interviews. At first stage interviews were taken to assess the view of facility management inside the organisation and the facility manager's engagement in supporting the strategic plans and objectives. The findings of the interview produced valuable results. The interviewers confirmed that facility

management (FM) companies are willing to have more engagement in tactical and strategic activities. Another reason to take interviews was to recognise barriers to an FM role in achieving an alignment inside the organisation. The main barriers identified from the interviewers and the researcher experience were the complexity of the organisation, lack of acceptance of FM roles at a strategic level, lack of awareness among people and lack of government financial support for the application of the Facility Management role in the Middle East.

A possible reason for a lower acceptance of the Facility Management role at the strategic level might be the recognition of the Facility Management role in strategic levels by concerned top management of the organisation. All the above barriers can be overcome with the introduction of the alignment model into the organisation. The drivers to the Facility Management role in gaining strong engagement are the recognition of the facility manager's role in the organisation in top management, an important level of competency by the facility manager and more involvement in the strategic plan and objectives.

8.2 Findings from case studies

This research included three case studies from the Middle East using six semi-structured interviews. The first step involved interviews conducted to determine the view of facility management inside the organisation and the facility manager's role in supporting the strategic goals and objectives. The findings of the interview produced valuable results. The interviewers confirmed that facility management (FM) companies are willing to have more engagement in tactical and strategic activities. The interviews were also conducted to identify barriers to an FM role in achieving an alignment inside the organisation. The main barriers identified from the interviewers and the researcher experience were the complexity of the organisation, absence of acceptance of facility management roles at a strategic level, absence of awareness among people and absence of government finance to support the implementation of the FM role in the Middle East.

A possible reason for the absence of acceptance of the facility management role at the strategic level might be the recognition of the FM role in strategic levels by

concerned top management of the organisation. All the above barriers can be overcome with the introduction of the alignment model into the organisation. The drivers to the FM role in achieving strong engagement are the awareness of the facility manager's role in the organisation among top management, a high level of competency by the facility manager and an increase in involvement in the strategic plan and objectives.

8.3 Findings from the Questionnaire

The questionnaire explored the facility management in the organisation in words that the participants could understand the questions. The outcomes were examined not only in number of responses to the itemised scale but also the content analysis of the responses on the questionnaire. A short summary of the outcomes are as follows:

1. Most participants have at least ten years' experience and were used for their contribution to the quality of the responses (Appendix 5, question A3)
2. Half of the respondents hold a qualification in facilities management (Appendix 5, question A4)
3. The majority of respondents felt that they wanted to continue in FM as a long-term career. (Appendix 5, question A8)
4. The majority of organisations occupied office premises in the private sector. (Appendix 5, question B3)
5. The majority of the FM team is more than 25 people in each organisation (Appendix 5, question B2)
6. The majority of the organisation preferred FM Outsourcing service (Appendix 5 question B8)
7. The majority of the respondents agreed that FM support the overall organisation strategy (Appendix 5, question C1)
8. Half of all respondents agreed that FM as a significant contribution to their organisation (Appendix 5, question C2)
9. The majority of respondents felt that FM would become more important over the next years (Appendix 5, question C3).
10. The majority of the respondents agreed that they would use a developed facility strategy into their organisation (Appendix 5, question C5)

During the statistical analysis, the researcher discovers that there is no correlation between the organisation models and the FM services such as outsourcing, in-house and managing agent. Therefore, the researcher developed a relationship between an organisation model and alignment variables.

8.4 Analysis of Findings

The main issues to come out of the findings were missing the alignment between different levels in the organisation. It was shown by both, the discussions and questionnaire revealed lack of transparency and thus, low trust between the parties involved. Trust was a crucial issue for the organisation's in the Middle East. All the participants have described their models separately without any combination. During the analysis, the researcher identified a misalignment between the facility management models presented in the previous sections and the researcher is proposing an alignment model between FM and business organisation.

The results received from the interviews and questionnaire survey were utilised to further improve the proposed alignment model presented in the next section 8.5. The alignment was identified as a significant missing part in FM into the organisation. The facility manager role acts as a single point of interface between the business and FM management without clear roles and responsibilities. Moreover, highlighting that facility management occurs at different levels with the organisation.

In the next sections, the researcher has described the combination of the alignment between the characteristics of facility management (FM) as a support function of the organisation strategy and this work is the contribution into the knowledge presented in this thesis.

8.5 Value adding alignment model (VAAM)

The VAAM model was developed from the outcome's findings of the questionnaire survey, case studies, and the literature review undertaken with facility management professionals. The main source of data collection for the case studies were documentary search and semi-structured interviews. The second source of data from the literature review was the synthesis of the organisation model and alignment models. The practical application of the proposed model in Facility Management is the focus of this thesis. The purpose of the VAAM model is to map, measure and develop the strategies for FM and its value adding elements. The right position of FM organisation and good alignment with the FM models was a joint effort to make the productivity of the procurement, resources, and performance in the organisation better. The model is a combination of the alignment between the strategy of FM organisation models and business organisation's presented in Figure 44:

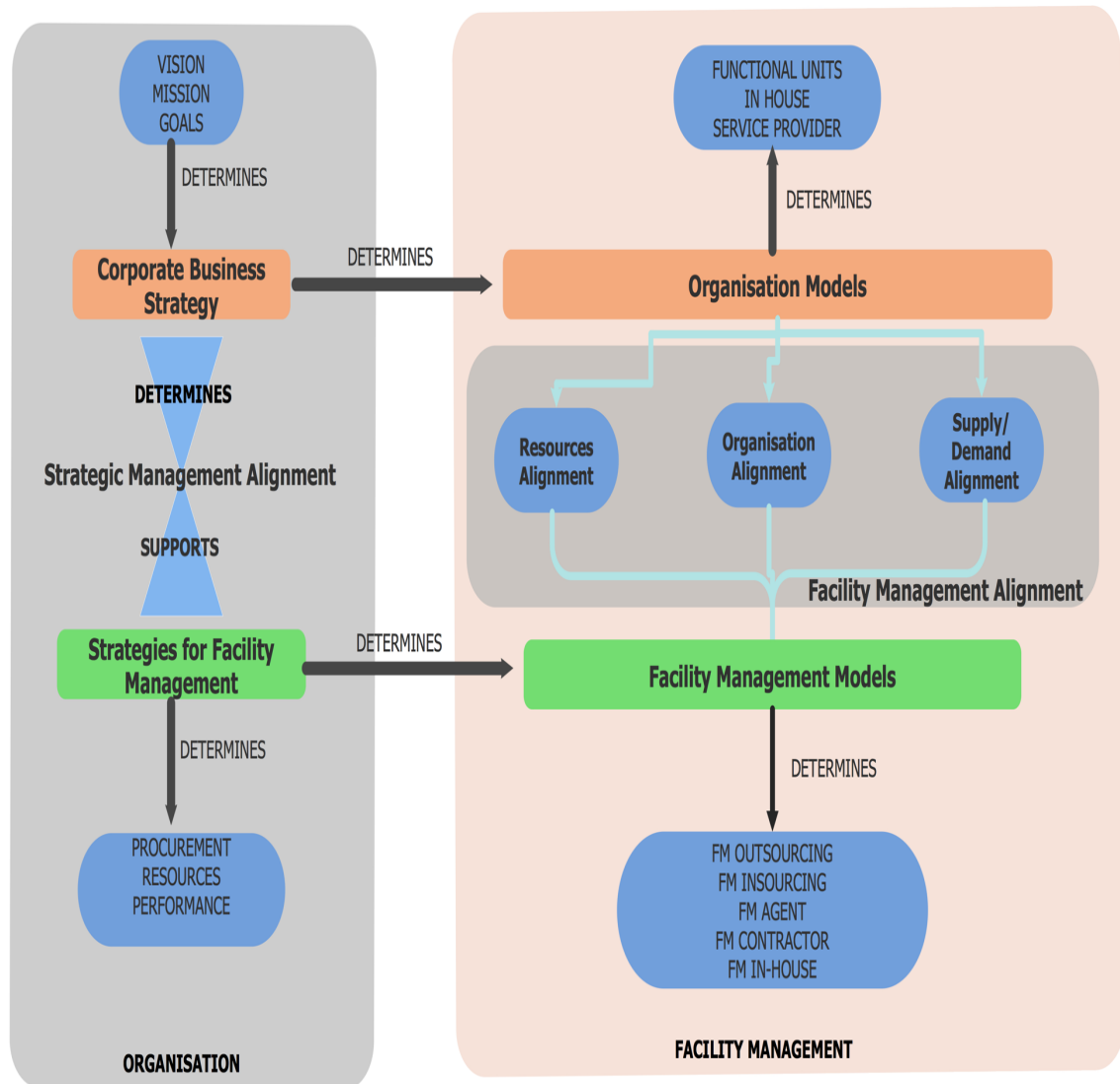


Figure 44: Value adding alignment model (VAAM)

In the following paragraphs, details of the VAAM model are discussed. The VAAM model (Figure 44) illustrates the interplay among different players in the FM and strategy alignment.

To the left, the strategic management alignment based on corporate business strategy and strategy for FM is shown. Strategy management alignment is the agreed link in the company business strategy and strategies for FM. The strategy for Facility Management is required to grow to allow it to deliver procurement, performance, physical resources and support of Facility Management models to a specific organisation. Facility management refers to align physical resources and assisting services to improve the core business of organisations and to

decide about a suitable methodology of providing facility and service support to the company. In addition, the facility management needs to develop based on the company's strategic plan and present not only the business goals of the organisation but also its needs and policies. In return, the strategy for Facility Management must clearly explain all important issues like business processes, sourcing strategies, operations and maintenance, human resources, facility services, procurement, customer service and contract management.

Facility management can be defined as a set of ideas/approaches/methods that are utilised to accomplish the aim of Facility Management practices that support the goals of the business. Hence, its contents should elaborate how a Facility Management unit acts as a support unit for the company's business objectives and operations. So, the strategy content for Facility Management can be analysed via its strategic aspiration, value objectives, strategic intent, emphasised issues of practice, operational initiatives and performance KPI indicators.

The business strategy is formulated by the mission, goals and vision, mission of the organisation. The vision for a company tells about its strategic direction and what values are driving that journey. It discusses the organisation's purpose by directing attention to the future and what the organization aims to accomplish. Moreover, the strategy for facility management (FM) will be the input for the selection of FM models presented in each organisation.

To the right, the FM alignment based on organisation and FM models is shown. The FM alignment block is related to three different variables: resources, organisation and supply-demand. These variables were recognised during the literature review in chapters 3 and 4 using the synthesis between the organisational models and the alignment model proposed by Ten and Tan (2006). The output of these variables with the strategy for FM determines the FM models for the organisation.

In the proposed alignment model regarding facilities management, the business strategy is of a vital role as it signifies the means by which it is set to achieve the desired objectives.

Business strategy is related to significant resources categorisation and also with decisions at different levels. More specifically, strategies are concerned with the scope of the actual product. Nevertheless, it is profound that the organisations' top management often decides the business strategy formulation and implementation on behalf of the key stakeholders. Facility Management planning is a multidimensional process which aims to lead to better overall services proactively.

The offered services are of a great focus since added customer value and management of the supporting services is significant. As described in the earlier sections of this thesis, facilities management is of great strategic importance as it can contribute significantly to associated corporate success; merely delivering competitive advantage. It is not rating the fact that this competitive advantage is often depicted in the corporate vision and mission statement.

More specifically, the vision statement should not be changed or revisited frequently; this is because it is the cornerstone of the companies' identity. This is justified by the fact that the core values of an organisation have to remain stable, regardless of changes as it signifies the company expectations and culture.

In brief, the vision statement summarises what the organisation aspires to be, whereas the mission defines the organisations the fundamental purpose of existence and what the associated strategy is to achieve its vision. The main challenge for the vision statement is to be short and to the point.

Certainly, the business strategy is formulated considering a range of factors like location, competition, the political and economic situation on a per case basis. However, both the vision and mission statements are the foundations which signal the message for growth.

The alignment is not only on a business strategy level, but also incorporates the facility management strategy. Thus far, the literature review of existing models indicated various factors like resources, procurement and performance. More specifically, resources are of great importance since they are integrated inside an organisation to maintain and support services or activities. Resources can be allocated based on the organisations' need to accomplish specific FM targets like for example: security, maintenance testing, inspections, health and hazard safety.

The key point for resources is that they should be allocated when and where needed. For example: a facilities manager does not wish to allocate more resources than required as this will mean a waste of time and money. On the other hand, lack of proper resources allocation might lead to delays or even low-level support and in effect low stakeholders' satisfaction.

In the industry, there are several tools which exist for resources management, as associated estimation is a key element in project human resource management. Large organisations usually, employee dedicated corporate resources managers which align strategy with performance and in effect with the expected result.

The most common tools for resources management is resource levelling and resource smoothing, which are heavily used for managing projects. In brief, in resource levelling, the goal is to balance the demand with the available supply. Start and finish dates are adjusted based on resource constraints. A constraint might be, for example, limited or no funding, lack of training, shortage of physical infrastructure, and strict timing dependencies. Specifically, when a time constraint is of vital importance, resource smoothing is deployed. The key objective is to complete work by the required date avoiding peaks of demand.

Based on the proposed alignment model, another key factor is procurement. Up to now, it is clear that FM is complex and multidimensional as there are many stakeholders engaged and a lot of services integrated. The main role of effective and efficient procurement in an organisation is to strategically balance the roles of the buyer and the seller, for the benefit of the organisation. For example: what

the pricing strategy is to be followed? Are the services outsourced? What about merger and acquisitions which might lead to competitive advantages? To this frame, the strategic role of the procurement has to do with balancing price and value. The rules of the industry dictate that excellent and cheap services cannot be fast. Fast and excellent services cannot be cheap and cheap and fast services will not be good.

The procurement department has also seen a plethora of duties like for example contracts' management and bids release. Essentially, it is the procurement's department responsibility to make sure that all procurements meet the specific needs of the organisation. In simple words, it involves people and processes to consider, how, what, when and from whom to acquire. The selection and the criteria based on sellers' proposals is not a simple process as it might lead to conflict and bias. Usually the bid process aims to set the rules and award contracts.

The other important factor regarding the proposed alignment model is performance. The measurement of performance was based on Key Performance Indicators (KPIs) for each organisation. The key idea behind KPIs and performance is related to control as merely; if you cannot measure it, you cannot control it. Consequently, taking measures to control organisational performance and more specifically FM performance is of strategic importance.

One of the challenges is to select a minimum number of KPIs which can be monitored and controlled effectively. The performance strategy is formulated considering various factors as inputs. Many organisations bypass the role and significance of performance indicators, but it is not just numbers. KPIs can give the signal if something goes wrong before it actually goes wrong. For example, it is an instrument to check the compliance of the strategic objectives with the associated FM services.

The application of the VAAM model in Facility Management is the core part of my thesis and the contribution of three FM experts is to validate the proposed model in the FM sector presented in the next chapter.

8.6 VAAM alignment model validation

The validation of the proposed alignment model for this research was carried out by three Facility Management professionals who were using open-ended questions that showed all the dimensions of the study. The validation procedure began by choosing capable respondents who were viewed as ample to aid in validating the alignment model. Their experience years, professional background, the type of organization and the role and responsibilities in the organization were taken into consideration by the study. These criteria descriptions were presented as follows:

- **Professional background:** A professional background provides a qualification in a specific domain of expertise. The chosen candidates are Facility Management specialists with a background in professional strategy.
- **Years of experience:** This qualifies for competence, expertise and adequate knowledge in a particular field of study. Thus, the knowledge share by the respondents is reliable. Indicatively, the respondent with the lowest experience is Participant 3 with 12 years' experience, followed by Participant 2 with 20 years' experience, while Participant 1 has over 25 years' experience.
- **Positions held:** Their positions show that they are decision makers and a high level of credibility exists with respect to any data offered by them. As illustrated in Table 37 all the respondents hold executive and senior roles in the organization.
- **Type of company:** The participants are employed in two multinational and one local Facility Management company. The participants companies are complicated and the alignment between Facility Management and the organisation is essential.

In the following Table 37 presents a summary of the participants background:

Table 37: Background of the Participants

Participants	Years of experience	Professional background	Positions	Type of company
A1	25	Strategy, Business, FM	Managing Director	International
A2	20	Strategy FM	Strategy Director	Local
A3	12	FM Operations	Head of FM services	International

Regarding the VAAM alignment model, questions were sent out to the three FM experts. This was done through electronic email after receiving their consent to participate in the procedure of validation of the VAAM model. The three candidates were selected in the course of the interviews and include one Facility Management expert who has employed by a respectable local Facility Management company in the Middle East, and two FM professionals who currently work with a reputable international FM company having subsidiaries in the Middle East.

The following aspects were covered by the open-ended questions:

- Complete nature of the crucial concepts shown in the alignment model.
- Supply data in every component of the alignment model
- The applicability of the alignment model in the Facility Management context.
- Areas contemplated for improvement or not important.

The questions are as below:

- Question 1: Has the alignment model covers the relationship between FM and organisation?
- Question 2: Has the alignment model covered the FM role inside the organisation?
- Question 3: In your opinion, can the alignment model be understood in terms of concepts, simplicity of contents or logic of construction?

- Question 4: To what extent do you think a model of this nature would help the FM profession to be part of the strategic level of the organisation
- Question 5: Do you find the alignment model useful for the strategy of the organisation.
- Question 6: Do you have any suggestions towards to improvement of the alignment model.
- Question 7: Do you know of any other similar alignment models that have been implemented for the organisation.
- Question 8: Please disclose your experience, professional background, the position you had in your organisation and the type of the organization you work for, whether international FM or a local FM company.

The next section presents a discussion on the candidate's answers to the above questions.

8.7 Participants' responses on the proposed alignment FM model

The views of all the participants were positive about the VAAM alignment model and don't disagree on any part with respect to the content and the application of it. They all were positive that content is through and easily understandable. Following are some prominent answers from the responses made by respondents on the alignment model.

"The VAAM model is straightforward easy to understand and has captured all the ingredients of added value in the organisation. The alignment model has been presented in such a way that every function understands their roles and responsibilities inside the organisation. In fact, I believe the alignment model is not only useful in the Middle East but in any part of the world". (Interviewer A1)

"The VAAM model can work. I must admit that I am impressed with its broad approach between all the levels of the organisation. However, the major driver for the success of this model is that the executive management needs to

understand and accept that FM can support and add value to the organisation". (Interviewer A2).

"It is interesting to know that we already carry some of the functions highlighted in the alignment model. The alignment model gives a better view of all functions that a FM manager needs to carry out in order to contribute and add value in the strategic goals and objectives of the organisation". (Interviewer A3).

All the respondents believed the alignment model covers various relationships between the different levels of the organisation. They were also positive that the logic flow of the alignment model was understandable and easy, not hard to understand it.

Overall, all respondents believed the alignment model provides a substantial contribution to the organisation. They were all positive that the alignment model could help the organisation with accomplishing their strategic mission and goals. In the following Table 38 the validation responses of participants for the alignment model are presented:

Table 38: Interviewer's validation responses

Questions	Interviewer A1	Interviewer A2	Interviewer A3
Q1: Has the alignment model cover the relationship between FM and organisation?	Yes	Yes, it does	Yes
Q2: Has the alignment model covered the FM role inside the organisation?	Yes, it does	Yes	Yes
Q3: In your opinion can the alignment model can be understood in terms of concepts, simplicity of contents or logic of construction?	The concept of alignment has been simplified by the model	It easy to comprehend it	The sections are presented in a logic way, and the alignment between FM and strategic level is apparent.

Q4: To what extent do you think a model of this nature would help the FM profession to be part of the strategic level of the organisation	It will be beneficial. If well understood by FM and executive management, then FM can support and contribute to the organisation strategy.	It will help strategic managers recognise the need of FM professionals to support the strategic decisions for the organisation.	Yes
Q5: Do you find the alignment model useful for the strategy of the organisation.	Yes	Yes, I do	Absolutely
Q6: Do you have any suggestion towards to improvement of the alignment model.	No	This is a comprehensive model with practical relevance without any additional improvement	None
Q7: Are you aware of any other alignment model of this nature that has been developed for organisation.	Yes, but maybe not similar to the model.	No other similar models.	No

The above-mentioned answers were valuable and are regarded as important for validating the proposed alignment model (VAAM) and for accomplishing strategic goals and objectives in any organisation.

8.8Summary

This chapter was of cornerstone importance in regard to assisting in achieving the goals and aim of this study as mentioned in Section 1.3. The chapter discussed an alignment model for getting a support contribution and added value for the organisation through the facility manager's role. The VAAM alignment model presented the relationship in which the facility manager played a part in the fulfilment of strategic goals and mission of the organisation. Moreover, the alignment model serves as vital support for increasing the facility manager's role inside the organisation. The goal of the VAAM alignment model is to help guarantee a better strategic alignment and overall performance improvements from the strategy part.

The FM added value was demonstrated with the VAAM model. This VAAM model was a collaboration framework for FM to support organisational strategy to determine FM alignment. The VAAM model allows FM organisations to analyse its current value delivering support services to the organisation. FM organisations and their activities were shown in an organised way to enable alignment for both, the selection of FM models and the definition of procurement, resources, and performance among various types of FM models.

Chapter 9 Conclusion and Recommendations

This thesis comprised of an empirical research approach to explore the acceptableness of the suggested alignment model in Facility Management. This was the best approach because it allowed the researcher to study the model in practically via case studies, perceive the outcomes through outcomes, review the outcomes and the procedure adopted in the research.

From research and philosophical perspective, this research lies somewhere in the middle of phenomenology and positivism perceiving reality as a contextual field of data and knowledge. This approach was ample in investigating a model with an organizational management basis. The approach revolves around the investigation of the phenomenon as a set of factors whose total made up a whole. The case study was a key element of this study, because the outcomes and examination played their part in examining the practical application of the suggested alignment model.

This research, as an idea, was created from the misalignment recognized in this field, and the increasing requirement for alignment model to address strategic and Facility Management problems. It recognized that this need, driven by the organisation, was brought forward various elements including:

- Changing organisation culture and work
- Recognizing facility management as part of the whole organisation business.
- A clear alignment between FM and Strategy depts.
- If FM is applicable in the tactical and strategic organisation

- Increasing the work environment adding value

It was further observed and noticed in the thesis that the field of Facility Management has grown from a conventional building services maintenance role to a business infrastructure support role. Facility Management is expected to evolve from an overhead to a stage here it can show its strategic capability. To prove its added value to the company and be labeled as a strategic discipline. Its importance is further enhanced by separate research talked about in the thesis which shows that facilities make up a large portion of the balance sheet in terms of assets, and the profit/ loss account in terms of costs next to the human expenditure.

This study highlighted nine different organisation models based on the procurement of FM services. The FM services were selected: In-house, outsourcing, agent management, total FM, and management contract service. Selecting the right Facility Management service contributed the delivery of good results and thus optimized the creation of value. Moreover, this study identified that the alignment of FM and the organization required various alignment variables like supply and demand, Facility Management service and resources, and Facility Management organizational. Results of literature review was the synthesis between the organizational models, and the alignment variables revealed that most of the organizational models utilized the supply and demand variable, the management agent utilized the organizational variable, and for the FM in-house utilized the FM resource variable.

This study achieved its objective exploring the alignment between FM and organisation using the case study approach and the questionnaire survey. The research looked into different methods by which the model could be used and identified that it may be utilised in FM links at strategic, tactical and operational levels of the company. The case study method was the most suitable approach for this research. The approach allowed the researcher to look into the circumstance as well as the research methods used in real business environment.

Results of the questionnaire respondents were analysed as per their ability to add value. The researcher identified the independent variables (organisation control, FM strategy) and the parameters (adding value, FM implementation) with the first three ranking criteria using non-parametric test. Then, the researcher was examined the relationship between independent variables and parameters using four null hypotheses.

Results from the literature review, the case study outcome and questionnaire survey were developed the value adding alignment model (VAAM) for identifying the value added from FM services into the organization. The VAAM model was provided strategic guidance for FM alignment in the organization. In addition, the VAAM model was formed, which aids to evaluate, the comparative degree to which the utilization of Facility Management as a helping function delivered and added value for the company.

Moreover, use of the applied research method for the development of the thesis gave the researchers an opportunity to gain knowledge from the outcomes and the procedures of the study and apply it in future researches.

In last, the research recognized that the facility management (FM) area is necessary for the prosperity of the organisation and the VAAM alignment model can be used for future applications.

9.1 Achievement of Aim and Objectives

This thesis focused to develop an alignment model in order to examine how value is added by FM services and how they can enable organisational effectiveness through perceiving business needs.

The following objectives were sought by the research:

1. Examine the context of FM in relation to alignment as a contributor to the organisations' aim and objectives.
2. Assess the role and position of FM and explore some of challenges and dilemmas which occur within the organisation environment.
3. Explore and analyse the complexities of FM processes and assets in various types of organisations.

4. Develop and validate a model for evaluating the value added through the organisational alignment between FM and the organisation.

The aim and objectives were accomplished through a three-phase approach mentioned below:

- The first phase referred to analytical review of literature on FM and presented the relationship of FM inside the organisation. It was stated in the thesis that FM developed from having a traditional building service maintenance role to having more of a business infrastructure support role. FM is needed to upgrade from the old perceptions of being an overhead to a position where it can show how much capable it is when it comes to strategy. This needs to be done to prove its added value to the organization and be known as a strategic discipline. The literature review also helped in constructing a background of different alignment models between FM and business strategies. The first phase addressed objectives 1 and 2 of the research.
- The second phase included two steps comprising of three case studies and a questionnaire survey of 30 FM practitioners. At first semi-structured interviews were taken to understand the role of FM into different levels of the organisation. In the second step participant's point of view on the extends of FM practice as added value in the strategic organizational level were determined. The second phase addressed objective 3 of the research.
- The third phase included the development of the Value Adding Alignment Model (VAAM). The outcomes of the cases studies and questionnaire with the accomplishment of the first, second and third objectives helped in making the VAAM model for identifying the value added from FM services into the organisation. The VAAM model was validated by three Facility Management professional who validates the model answering open-ended questions as found in section 6.5. The third phase addressed objective 4 of the research. Moreover, this stage aided in accomplishing the general goal of this research study.

In addition to that, the thesis used an exploratory approach to case study research to explore a) if the alignment model that was suggested model could be applied, and b) what are the factors that restrict or block its practical application.

9.2 Is the proposed alignment model applicable in the FM industry?

The proposed alignment model represents different stages at which business and facility management relationships take place. The case study showed that the alignment model can not only be applied in public sector but also in private sector in the Facility Management industry. It does not represent prescriptive model which tells about what steps to take rather it represents some instructions or principles to be followed in Facility Management.

The case studies evaluated the applicability of the model, and strategical, tactical and operational levels were also discussed. At the strategic level, the explored problems were related to the development of strategical goals and policies, the formation of Facility Management and the organizational structure important to accomplish alignment.

9.3 What barriers or constraints are affecting its application?

The issues of research and commitment of senior management were perhaps the most important constraint which came on surface due to the research across sectors. It was found that in the semi government sector, financial, political, and regulatory factors were responsible for limitations not only on the model's application the model, but also on FM overall.

One more problem for its application was the shortage of a specific set of instruments for the study to allow the continuity and dependability of evaluation studies.

9.4 Limitations to the Study

The first constraint of this study for both facility management (FM) and organization strategy is the spread of subjects. The FM sector is covered by a plethora of subjects and specialisms. In order to accommodate this issue effectively, it was rather imperative that while addressing the issues raised holistically, the actual focus for the research remained intact. It is, hence of great importance to state the constraints of the study based on the identified scope of the study as told in Chapter 1.

The recognised constraints of this study are:

- The necessity for exploration regarding the alignment model in public and private institutions and their relationship to Facility Management. Although it is very vital to Facility Management has been analyzed in the context of the city, including various vertical suppliers and contractors.
- Even though there was a relation between supply and demand in FM it has not been exhaustively examined in this thesis, since it is not the primary purposes of this research. Instead, the focus was given on the respective supply and demand in total alignment with the scope of the research.
- The sample size of the participants' involved in both case studies interviews and the effectiveness of the suggested alignment model were limited in the region of the Middle East.
- The response rate of the questionnaire survey was low (38%) as only 30 out of 60 participants respond to the survey. This might have been due to candidates not possessing much experience regarding Facility Management value added in the company.

- It is necessary that the alignment model is examined on a real-life project from the strategic definition stage to the in-use stage. This to make its real-life utilization effective. The model can, however, be used as a guide by different departments for the accomplishment of strategic goals and objectives of the organisation.

9.5 Suggestions for Future Research

Many areas with potential of future studies were identified in this today. This list does not consider the current research highlighted by this research and includes:

- Assessment of the causal links between the performance of Facility Management and the organization. It recognises that not only was it necessary to calculate the severity of impact, but also to link the alignment of FM to the business performance by demonstrating the overall added value of FM.
- Advance knowledge through the research process stages. More specifically, it was identified as a need for further action to advance and disseminate emerging knowledge.

9.6 Contribution and Recommendations to Research

This thesis contributed to the research community in terms of the thorough examination of its philosophical and methodological stances. It has shown a new approach to the use of explanatory case studies in undertaking an action research thesis. The action being investigated and contributed to is that of the research process and the researcher. This is however based on the action undertaken within the case study organizations selected in this thesis. This approach was specifically helpful when conducting an explanatory case study research as it allowed every research to be conducted and examined as a single research and integrated through the applied research procedure. This matched with the philosophy of viewing the separate factors of the study and combining them.

The use of case study and questionnaire survey adapting them to the research purpose. Data collection and analysis tools were used in this research to better understand the phenomenon being examined and contribute to the reliability and validity of the study.

The thesis also used various forms of verification to make sure the validity of data (Raosoft, 2019). These included the interviews that were conducted, and the case study approach was utilized for an in-depth analysis. Apart from that, web-based questionnaire surveys were carried out to clear the issues on style boundaries and considerations of the corporations for the added value from FM services in the alignment of the FM with the strategic plan of the company. This contributed to understanding of how these various means of verification add validity to the outcomes of a research study.

9.7 Contribution and Recommendations to Knowledge

This research contributes to the existing body of knowledge on Facility Management by identifying the lack of alignment between Facility Management and organisation and the FM added value into the organisation. This thesis has contributed to an understanding of what issues organisations are concerned with the alignment of Facility Management in the organisation and the FM added value.

This research has played its part increase the information in this area by its elaboration of the background of the alignment models with respect to the organisational models. This study has contributed to exploring the lack of alignment between FM and organisation models using the case study approach and the questionnaire survey. It has also contributed to synthesis of the organisation models with the FM alignment variables. A synthesis of the organisation models and the alignment variables revealed that most organisation models utilised the variable supply and demand, the management by agent utilised the organisation variable, and the FM-in house utilized the FM resource alignment variable.

This study has been able to identify the criteria of adding value underlying each dependent variable (adding value, FM implementation) and independent variables (FM strategy, Organisational Control) for change of use FM within the organisation. The cost reduction, risk control, and flexibility are the most important criteria to add value in the organisation, which may support top management in their strategic decisions on designing FM services.

The research study has also been to develop a Value adding alignment model (VAAM) that can be used as a part of the strategic plan of the organisation. Firstly, the VAAM model provides improved knowledge and understanding of the facility managers' role in the organisation. Secondly, the VAAM model shows the alignment between organisation models and FM models in terms of alignment variables. The VAAM model can be adopted by any type of organisation in achieving added value from the support of FM.

This study has discovered novel fields of research for Facility Management and formed the chance for other researchers to undertake his PhD in the development of an extended VAAM model. This study is at present ongoing and will lead to generation of new knowledge in Facility Management added value into the organisation strategy.

Recommendations to Facility Management study include:

- Take the issue recognised in this research forward and conduct further research on it,
- Utilise the research findings for new alignment models,
- Use an applied or action research procedure to Facility Management study to get a more thorough identification of Facility Management as a field and add materiality to Facility Management research.

9.8 Contribution and Recommendations to Practice

This thesis has contributed to practice in two directions. Firstly, the research was contributed to the case study organizations that were participated in this study, and secondly the applicability of the VAAM model as a representative of good

practice in showing how Facility Management adds value to business organisation.

9.8.1 Contribution and Recommendations to Case Study Organizations

Three case studies were conducted for the purpose of applied research with the participating corporation. Problems were found in these cases which the study planned to address. The recognition of places for betterment were in the first instance the contribution of this research to these organisations. Particularly, the selection of FM delivery and the procurement were contributed to a better interpreting of the alignment FM with the organisation as demonstrated by the three case studies.

In case study A, the study played part for a better interpretation of the FM alignment with the organisation. The discussions brought forward underlying problems that are raised. Contract management problems were by far the most common issues. These were exhibited mainly in the administration and tendering procedures. The research helped the organisation to hire an external consultant to interpret how FM added value in their organisation.

In case study B, the research contributed to hybrid FM delivery model, outsourcing for hard FM services and In-house for soft FM services. The complexity of the organisation and multicultural people were the most common issues. These issues were presented in the candidate FM organisation which it's not clear picture of the criteria for the performance measurement. The research helped the organisation to understand that the FM operation is excellent but poor knowledge of the alignment between Facility Management and the company. It also highlighted the perception that the Facility Management is a profession only for operational activities and not for tactical or strategic activities. They were pointed out as restriction to the satisfactory application of FM as support function for the organisation strategy.

The case study C was a success as far as this study is related. It was satisfactory when we refer to the alignment between Facility Management and the organisation. The senior management commitment and the vital resources made available to support the strategic teams with success.

Recommendations to the case study organisations include to:

- Implement continuous improvement initiatives in FM
- Develop a structured plan of application aligning staff across the company
- Strong leadership support using top-bottom approach.

9.8.2 Contribution and Recommendations to FM Practice

The VAAM model was considered to represent good practice in demonstrating added value of Facility Management to the organisation. This model was developed to identify the alignment between the different organisation models and Facility Management services at strategic level. It has also identified how the VAAM model can be implemented to develop and make improvements in Facility Management.

The VAAM model increases the value to the Facility Management industry and organisations by providing various value adding alignment variables in the set of support parameters for strategic decisions into the organisation. These parameters were presented in the way of obtaining alignment between different types of Facility Management models in terms of procurement, resources, and performance.

Recommendations to Facility Management practice include to:

- Increase the investment in research related to Facility Management added values in business organisation
- Share information and experience in this area, to get competitive advantage against other fields invading into Facility Management functions.

REFERENCES

- Acoba, F., & Foster, S. (2003). Alignment corporate real estate with evolving corporate missions: Process-based management models. *Journal of Corporate Real Estate*, 5(3), 143-164.
- Alexander, K. (2002). *Facilities Management Theory and Practice*. New York, US: E&FN Spoon.
- Alexander, K., & Brown, M. (2006). Community-based facilities management. *Facilities*, 24(7/8), 50-268.
- Amaratunga, D., & Baldry, D. (2001). Case study methodology as a means of theory building: performance measurement in facilities management organisations. *Facilities*, 50(3), 95-104.
- Anker Jensen, P., van der Voordt, T., Coenen, C., von Felten, D., Lindholm, A., Balslev Nielsen, S., & Pfenninger, M. (2012). In search for the added value of FM: What we know and what we need to learn. *Facilities*, 30(5/6), 199-217.
- Arkesteijn, M., & Heywood, C. (2013). *Enhancing the Alignment Process between CRE and Organisational Strategy*. CoreNet Global EMEA summit.
- Aston. (1994). Appraising contracting options. In K. Alexnader, *Facilities Management*. Strathcycle, UK: Center for Facilities Management.
- Atkin, B. (2011). *Managing Agent for Highways Agency Area 6*. Retrieved from <http://www.atkinsglobal.com>.
- Atkin, B., & Brooks, A. (2005). *Total Facilities Management*. Oxford: Blackwell Science.
- Barrett, P. (1995). *Facilities Management – Towards Best Practice*. London: Blackwell Science Ltd.
- Barrett, P. S., & Owen, D. D. (1992). The Outsourcing Balance: Is There an Optimum? In *Facilities Management Research Directions*. Salford, UK: Peter Barrett University of Salford.

- Barrett, P., & Baldry, D. (2003). *Facilities Management – Towards Best Practice*. London, UK: Blackwell Science Ltd.
- Battistella, C., & De Toni, A. (2011). A methodology of technological foresight: A proposal and field study. *Technological Forecasting and Social Change*, 78(6), 1029-1048.
- Battistella, C., & Nonino, F. (2012). What drives collective innovation? Exploring the system of drivers for motivations in open innovation Web-based platforms". *Information Research*, 17(1).
- Becker, F. (1990). The Total Workplace. In: *Facilities and the Elastic Organisation*. New York: Van Nostrand Reinhold.
- Becker, F. (1999). Research and Development Needs for better implementation of the performance concept on buildings. *Automation in Construction*, 8(4), 525-532.
- Becker, F., & Joroff, M. (1995). *Reinventing the workspace*. Norcross, GA: Industrial Development, Research Foundation.
- Beckers, R., Dewulf, G., & Van der Voordt, T. (2015). Aligning Corporate Real Estate with the Corporate Strategies of Higher Education Institutions. *Facilities*, 33(13/14), 775-793.
- Best, R., Langston, C., & deValence, G. (2003). Continuous Improvement. In *Workplace Strategies and Facilities Management* (pp. 1-8). Butterworth-Heinemann.
- BIFM. (2017, 05 15). Retrieved from BIFM (2000). <http://www.bifm.org.uk/bifm/knowledge/research>
- Boudreau, M., Gefen, D., & Straub, D. (2001). Validation in IS research: A state-of-the-art assessment. *MIS Quarterly*, 25, 1-24.
- Bryman, A. (2008). *Social research methods*. New York: Oxford University Press.
- Carmines, E., & Zeller, R. (1979). *Reliability and Validity Assessment*. Newbury Park, CA: Sage.
- Carn, N., Black, R., & Rabianski, J. (1999). Operational and organizational issues facing corporate real estate executives and managers. *Journal of Real Estate Research*, 17(3), 281-299.
- Cavana, R., Delahaye, B., & Sekaran, U. (2001). *Applied Business Research: Qualitative and Quantitative Methods*. Brisbane, Australia: John Wiley & Sons.

- CEN. (2006). *Facility Management-part-1*. Brussels.: European Committee for standardization.
- Charmaz, K. C. (1990). Discovering chronic illness: Using grounded theory. *Social Science Medical*, 30(11), 1162-1172.
- Charmaz, K. C. (2006). *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis*. London, UK: Sage Publications.
- Chotipanich, S. (2002). Positioning facilities management. *Facilities* , 22(13/14), 364-372.
- Coenen, C., Daniel von Felten, & Schmid, M. (2010). Reputation and public awareness of facilities management - a quantitative survey. *ournal of Facilities Management*, 8(4), 256-268.
- Corbin, J., & Strauss, A. (2015). *Basics of Qualitative Research*. . CA: Thousand Oaks: Sage Publications.
- Corvetta, P. (2003). *Social Research: Theory Methods and Techniques*. . CA: Thousand Oaks: Sage Publications.
- Cotts, D. (1999). *The Facility Management Handbook* . NewYork,NY: AMACON – American Management Association.
- Cotts, D. G., & Lee, M. (1992). *The facility management handbook*. New York: American Management Association.
- Creswell, J. W. (2009). *Research Design Qualitative, Quantitative, and Mixed Methods Approaches (3rd ed.)*. CA: Thousand Oaks, Sage Publications.
- Crotty, M. (1998). *The foundations of social research: meaning and perspective in the research process*. London: Sage Publications.
- Davis, M. (1985). *ORBIT-2: Executive Overview, unpublished report, Harbinger Group Inc., USA*. USA: Harbinger Group Inc.
- De Jonge, H. (1996). De toegevoegde waarde van concernhuisvesting. In A. Publishers (Ed.), *NSC-Conference* , (pp. 66-70). Nieuwegein.
- De Toni, A. F., Pivetta, M., & Nonino, F. (2011). A model for assessing the coherence of companies' knowledge strategy". . *Knowledge Management Research and Practice* , 9(4), 327-341.
- De Valance, G. (2004). The FM industry and adding value to clients", in Brocher, J and Haugen, T, I (Eds), *Proceeding of the Third European Research Symposium in Facilities Management*, Copenhagen, 12-24 May 2004. In J. Brocher, & T. I. Haugen (Ed.), *De Valance, G., (2004). "The FM industry*

- and adding value to clients”, in Brocher, J and Haugen, T, I (Eds), Proceeding of the Third European Research Symposium in Facilities Management, Copenhagen, 12-24 May 2004. Copenhagen.*
- De Vaus, D. (2002). *Surveys in Social Research*. London: UCL Press.
- Denscombe, M. (1998). *The Good Research Guide. For small-scale social research projects*. Open University Press.
- Denzin, N. (1978). *The Research Act*. New York, USA. : McGraw-Hill.
- Denzin, N., & Lincoln, Y. (2000). *Handbook of Qualitative Research*, . Thousands Oaks CA: Sage Publications.
- Dewulf, G., Krumm, P., & De Jonge, H. (2000). *Successful Corporate Real Estate Strategies*. Nieuwegein, the Netherlands.: Arko.
- Dictionary, C. (1985). *Collins English Dictionary: Australian Edition*. (W. C. GA Wilkes (Eds), Ed.) Sydney, Australia: Collins Publishers.
- Dictionary, C. (2018, 07 15). Retrieved from <http://dictionary.cambridge.org>
- Dillman, D. (1978). *Mail and Telephone Surveys-the Total Design Method*. New York: Wiley.
- Douglas, D. (2003). Grounded Theories of Management: A Methodological Review. *Management Review News*, 26(5), 44-52.
- Duffy, F. (2000). Design and facilities management in a time of change. *Facilities*, 18(11/12/13), 371-375.
- Easterby-Smith, M., Thorpe, R., & Lowe, A. (2002). *Management research: An introduction*. London: Sage Publications.
- Eisenhardt, K. (1989). Building Theories from Case Study Research. *Academy of Management Review* , 14(4), 532-550.
- Engellant, K., Holland, D., & Piper, R. (2016). Assessing Convergent and Discriminant Validity of the Motivation Construct for the Technology integration Education (TIE) Model. *Journal of Higher Education Theory and Practice*, 16, 37-50.
- Fellows, R., & Liu, A. (2008). *Research Methods for Construction* . Oxford: Wiley-Blackwell. .
- Field, A. P. (2005). *Discovering Statistics using SPSS* . Sage Publications Inc.
- Flick, U. (2006). *An Introduction to Qualitative Research*. London, UK.: Sage Publications.

- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18, 39-50.
- Frese, M., & Pluddemann, K. (1993). Umstellungsbereitschaft im Osten und Westen Deutschlands. *Readiness to Change in East and West Germany*, 24(3), 198-210.
- Galbraith, J. (2002). *Designing Organizations: An Executive Guide to Strategy, Structure, and Process*. San Francisco: Jossey-Bass.
- Gibler, K., & Lindholm, A. (2012). A test of corporate real estate strategies and operating decisions in support of core business strategies. *Journal of Property Research*, 29, 25-48.
- Gibler, K., Black, R., & Moon, K. (2001). Time, Place, Technology and corporate Real Estate Strategy. *1st World Congress International Real Estate Society*. Girdwood, AK.
- Gillham, B. (2000). *Case Study Research Methods*. London.: Continuum.
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: strategies for qualitative research*. Chicago, USA.: Aldine Publishing Co.
- Guba, E., & Lincoln, Y. (1994). Competing paradigms in qualitative research - . In *Handbook of Qualitative Research* (pp. 105-117). Sage Publications Thousand Oaks.
- Gummesson, E. (2002). Total Relationship in Marketing Strategy: Moving Strategy from the 4Ps—Product, Price, Promotion, Place – of Traditional Marketing Management to the 30Rs . In *The Thirty Relationships of a New Marketing Paradigm*. Butterworth-Heinemann.
- Hackett, S., & Dilts, D. (2004). A Systematic Review of Business Incubation Research. *Journal of Technology Transfer*, 29(1), 55-82.
- Hakim, C. (1987). Research Design Strategies and Choices in the Design of Social Research. In *Contemporary Social Research Series 13*. London: Alien and Unwin.
- Hammer, J. (1998). *Facility Management Systems*. New York, N.Y.: Van Nostrand Reinhold.
- Hassard, J. (1993). *Sociology and organisation theory: positivism, paradigms, and post modernity*. Cambridge: Cambridge University Press.
- Hinks, J. (2000). Business strategy- is FM a core concern. *Facilities*, 10(10).

- Hoepfl, M. C. (1997). Choosing qualitative research: A primer for technology education researchers. *Journal of Technology Education*, 9(1).
- Hopf, C. (2002). Qualitative Interviews: An Overview. Stuggart, Germany: U Flick, E v. Kardorff and I Steinke (Eds) Qualitative Research.
- Huck, S. (2007). *Reading Statistics and Research* . United States of America: Allyn & Bacon.
- Hussey, J., & Hussey, R. (1997). *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*. London.: Macmillan.
- IFMA. (2017, 5 23). Retrieved from <http://www.ifma.org/about-ifma/what-is-facilitymanagement>
- Johnson, G. (2000). Social Enterprise Literature Review. In *Canadian Centre for Social Entrepreneurship*. Edmonton, Alberta, Canada.
- Johnson, G., & Scholes, K. (2002). Exploring Corporate Strategy. London: FT/Prentice-Hall. .
- Johnson, L. (2006). Successful business process outsourcing. *MIT Sloan Management Review*, 47(2), 5-6.
- Joroff, M., Louargand, S., Lambert, & Becker, F. (1993). *Strategic management of the fifth resource: corporate real estate*. International Development Research Council. Atlanta,GA: Corporate Real Estate Series Report, No. 49.
- Kaplan, R., & Norton, D. (2006). Alignment: using the Balanced Scorecard to create corporate synergies. *Harvard Business School Press*.
- Kaya, S., & Keith, A. (2005). Classifying FM organisations using pattern recognition. *Facilities* , 23(12/14), 570-584.
- Kaya, S., Heywood, C. A., Arge, K., Brawn, G., & Alexander, K. (2004). Raising facilities management's profile in organisations: Developing a world-class framework. *Journal of Facilities Management*, 3(1), 65-82.
- Kincaid, D. (1994). Measuring Performance in Facility Management. *Facilities*, 12(6), 17-20.
- Koh, C., & Nam, K. (2005). Business use of the Internet: a longitudinal study from a value chain perspective. *Industrial Management & Data Systems*, 105, 85-95.

- Kok, H. B., Mobach, M. P., & Omta, O. S. (2011). The added value of facility management in the educational environment. *Journal of Facilities Management*, 9(4), 249-265.
- Krum, J., Dewuff, G., & de Jonge, H. (1999). The impact of evolving structures on managing corporate real estate. *Journal of Corporate Real Estate*, 2(1), 61-72.
- Krumm, P., & De Vries, J. (2003). Value creation through the management of corporate real estate. *Journal of Property Investment and Finance*, 21(1), 61-72.
- Lambert, S., Poteete, J., & Waltch, L. (1995). *Generating High Performance Corporate Real Estate Service*. IDRC.
- Lankshear, C., & Knobel, M. (2004). *A Handbook for Teacher Research: from design to implementation*. UK.: Open University Press.
- Lewis, B., Snyder, C. A., & Rainer, K. (1995). An empirical assessment of the Information Resources Management construct. *Journal of Management Information Systems*, 12, 199-223.
- Lindholm, A., Gibler, K., & Levainen, K. (2006). Modeling the Value-Adding Attributes of Real Estate to the Wealth Maximization of the Firm. *Journal of Real Estate Research*, 28(4), 445-474.
- Low, C. S., & Cowton, C. (2004). Beyond stakeholder engagement: the challenges of stakeholder participation in corporate governance. *International Journal of business governance and ethics*, 1(1), 45-55.
- Lumpkin, G., & Dess, G. (1997). Proactiveness versus competitive aggressiveness: Teasing apart key dimensions of an entrepreneurial orientation. In *Frontiers of Entrepreneurship Research*. Babson Park, MA: Basbon College.
- Mâkelâ, M. M., & Turcan, R. (2007). Building grounded theory in entrepreneurship research. In H. Neergaard, & J. (Eds.), *Handbook of Qualitative Research Methods in Entrepreneurship* (pp. 122-143). Edward Elgan Publishing.
- Management, C. o. (1992). *FM Course notes*. UK: CEM.
- Martin, P., & Turner, B. (1986). Grouped theory and organisational research. *The Journal of Applied Behavioral Science*, 22(2), 141-157.

- Martinez-Olvera, C. (2010). Impact of the alignment between the strategic and operational levels of a manufacturing enterprise. *International Journal of Production Research*, 48(4), 1195-1215.
- Mason, J. (2002). *Qualitative Researching*. (2nd Eds.). CA: Sage Publications.
- Maxwell, J. (1996). *Qualitative Research: An Interactive Approach*. Thousand Oaks, CA: Sage Publications.
- Mendelow, A. (1991). Stakeholder mapping. *Proceedings of the 2nd International Conference on Information Systems*. Cambridge, MA.
- Messick, D., & Tenbrunsel, A. (1996). *Codes of conduct: Behavioral Research into Business Ethics*. NY, USA: Russell Sage Foundation.
- Messick, S. (1989). *Validity*. (R. LINN, Ed.) New York: Macmillan.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*. Thousand Oaks, CA: Sage Publications.
- Mintzberg, H., Ahlstrand, B., & Lampel, J. (1998). *Strategy Safari: A guided tour through the wildsoft strategic management*. New York: Simon & Schuster, Inc.
- Morson. (2011). *Global Human Resourcing Solutions - Managing Agent*. Retrieved from <http://www.morson.com>
- Moser, C., & Kalton, G. (1989). *Survey methods in social investigation*. Aldershot: Gower.
- Neergaard, H., & Ulhøi, J. (2007). *Handbook of Qualitative Research Methods in Entrepreneurship*. UK: Edward Elgar.
- Nelson, M. (2008). *FM in Regeneration: helping to build sustainable communities or a bridge too far*. Essential FM Reports.
- Nelson, M. (2010). Integration of Core Business and Facility Management. In E. Publications. (Ed.), *Proceedings of the 9th EuroFM Research Symposium*. Madrid, Spain: Nelson, M. (2010). "Integration of Core Business and Facility Management". In: *Proceedings of the 9th EuroFM Research Symposium: Integration of Core Business and Facility Management*, Madrid, Spain. June 1-2. Naarden: EuroFM Publications.
- Neuman, W. (2011). *Social Research Methods Qualitative and Quantitative Approaches*. 7th eds. Boston, US.: Pearson.
- Nourse, H., & Roulac, S. (1993). Linking Real Estate Decisions to Corporate Strategy. *The Journal of Real Estate Research*, 8(4), 475-494.

- Nutt, B. (1999). Linking FM practice and research. *Facilities*, 17(1/2), 11-17.
- Nutt, B. (2000). Four competing futures for facility management. *Facilities*, 18(3/4), 133-137.
- Nutt, B. (2002). Event 1.7: Positioning FM. *Lecture Note Module 1: Introduction to Facility Management*. London: University College London.
- Nutt, B. (2002). Event 8 In Decision Methods and Techniques. *Lecture Note Module 8_Decision Aids and System for FM*. London: University College London.
- Nutt, B. (2002). The Essence and Value of Facility Management. *Facility Management Thailand* (pp. 11-18). Chulalongkom University.
- Nutt, B. (2004). Infrastructure and Facilities: forging alignments between supply and demand. *Facilities*, 22(13/14), 335-343.
- Oluwatayo, J. (2012). Validity and reliability issues in education research. *Journal of Educational and Social Research*, 2, 391-400.
- Osgood, R. (2004). Translating organisational strategy into real estate action: the strategy alignment model. *Journal of Corporate Real Estate*, 6(2), 106-117.
- Park, A. (1994). *Facilities Management: An explanation*. London,: The Macmillan Press Ltd.
- Partington, D. (2000). Building Grounded Theory of Management Action. *British Journal of Management*, 11(2), 91-102.
- Patton, M. (2001). *Qualitative research and evaluation methods (3rd Eds)*. Newbury Park, CA: SAGE Publications, Inc.
- Pedhazur, E. J., & Schmelkin, L. P. (1991). *Measurement, Design, and Analysis: An Integrated Approach*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Pedrali, R. (2007). *Alcatel Italia, outsourcing scelta vincente (in Italian)*. Retrieved from http://kopieermachine.ocenederland.nl/it/pressroom/case_study/case_alcatel.html
- Perry, C., Riege, A., & Brown, L. (1999). Realism's role among scientific paradigms in marketing research. *Irish Marketing Review*, 12(2), 16-32.
- Pittman, R., & Parker, J. (1989). A Survey of Corporate Real Estate Executives on Factors Influencing Corporate Real Estate Performance. *Journal of Real Estate Research*, 4(3), 107-119.

- Porter, M. (1996). "What is strategy? *Harvard business Review*, 74(6), pp. 61-78.
- Price, I. (2002). Can FM evolve? if not, what future? *Journal of Facilities Management*, 1(1), 56-69.
- Price, I. (2004). Business Critical FM. *Facilities*, 22(13/14), 353-358.
- Qi, Z., Nelson, M., & Keith, A. (2008). An FM performance measurement case study. *CIB conference*.
- Raosoft. (2019, 12 5). *Raosoft*. Retrieved from www.raosoft.com
- Rea, L., & Parker, R. (2005). *Designing and Conducting Survey Research: A Comprehensive Guide*. San Francisco: Jossey-Bass.
- Regterschot, J. (1988). *Facility management: het professioneel besturen van Kantoorhuisvesting*. Deventer: Kluwer .
- Riege, A. (2005). Three-dozen knowledge-sharing barriers managers must consider. *Journal of Knowledge Management*, 9(3), 18-35.
- Robinson, J. (2009). *Triandis theory of interpersonal behaviour in understanding software privace behaviour in the South African context*. Master Thesis, Univeristy of the Witwatersrand, South Africa.
- Robinson, P., & Lowe, J. (2015, April). Literature reviews vs systematic reviews. *Australian and New Zealand Journal of public health*, 39(2), 103-103.
- Robson, C. (1993). *Real World Research: a resource for social scientists and practioners-researchers*. Oxford: Blackwell.
- Robson, C. (2002). *Real World Research* . Oxford : Blackwell.
- Roulac, S. (2001). Corporate Property Strategy is Integral to Corporate Business Strategy. *The Journal of Real Estate Research*, 22(1/2), 129-152.
- Runeson, P., & Host, M. (2009). Guidelines for conducting and reporting case study research in software engineering. *Empir Software Engineering*, 14, 131-164.
- Ryan, A. (1970). *The philosophy of the social sciences* . Macmillan Edition. .
- Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research Methods for Business Students*. Harlow, Pearson Education Limited.
- Scheffer, J., Singer, P., & Van Meerwijk, C. (2006). Enhancing the contribution of corporate real estate to corporate strategy. *Journal of Corporate Real Estate*, 8(4), 188-197.
- Shiem-Shin Then, D. (1999). An integrated resource management view of facilities management. *Facilities*, 17(12/13), 462-469.

- Silverman, D. (2005). *Doing Qualitative Research*. London: Sage Publications.
- Singer, B., Bossink, B., & Von de Putte, H. (2007). Corporate real estate and competitive strategy. *Journal of Real Estate*, 9(1), 25-38.
- SmartSheet. (2019). Retrieved from Smartasheet: <https://www.smartsheet.com/complete-guide>
- Smartsheet. (2019, 12 10). *Smartsheet*. Retrieved from Smartsheet: <https://www.smartsheet.com/complete-guide>
- Smith, J. (1995). Semi-structured Interview and Qualitative Analysis. In S. R. Harre, & L. v.Langenhove, *Rethinking Methods in Psychology*. London, UK: Sage Publications.
- Smith, J., & Heshusius, L. (1986). Closing down the conversion: The end of the quantitative-qualitative debate among educational enquiries. *Educational Researcher*, 15, 4-12.
- Sobh, R., & Perry, C. (2006). Research design and data analysis in realism research. *European Journal of Marketing*, 40(11/12), 1194-1209.
- Spedding, A. (1999). Facilities Management and the Business Organization. *The Quantity Surveyor*, 29(1), 2-8.
- Stebbins, A. R. (2001). *Exploratory Research in the Social Sciences*. CA, USA: Vol 48, Sage Publications, Thousand Oaks.
- Strake, R. (1995). *The art of Case Study Research*. CA, USA: Sage Publications.
- Straub, D., Boudreau, M., & Cefen, D. (2004). Validation guidelines for IS positivist research. *Communications of the Association for Information Systems*, 13, 380-427.
- Strauss, A., & Corbin, J. (1998). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. CA, USA: Sage Publications.
- Swayne, L., Duncan, W., & Ginter, P. (2006). *Strategic management of health care organizations*. Oxford, UK: Blackwell Publishing.
- Taherdoost, H. (2016). Validity and Reliability of the Research Instrument; How to Test the Validation of a Questionnaire/Survey in a Research. *International Journal of Academic Research in Management*, 5(3), 28-36.
- Tan, K. C., Lyman, S. B., & Wisner, J. D. (2002). Supply chain management: a strategic perspective. *International Journal of Operations & Production Management*, 22(6), 614-631.

- Tashakkori, A., & Teddlie, C. (1998). *Mixed Methodology Combining Qualitative and Quantitative Approaches* (Vol. 46). CA : Thousand Oaks, Sage Publications.
- Tay, L., & Ooi, J. (2001). Facilities Management: A Jack of all trades? *Facilities*, 19(10), 357-363.
- Teoh, W. (1993). Corporate real estate asset management: The New Zealand evidence. *Journal of Real Estate Research*, 8(4), 607-623.
- The New Encyclopaedia Britannica*. (2007). London, Uk: Britannica, 15th Eds.
- Then, D. D. (1999). An integrated resource management view of facilities management. *Facilities* , 17(12/13), 462-469.
- Then, D. D., & Akhlaghi. (1992). A Framework for Defining Facilities Management Education. In P. (. Barrett, *Facilities Management-Research Directions*. London,UK: Surveyors Holdings Limited.
- Then, D., & Tan, T. (2006). Aligning facilities management performance to business needs – an exploratory model linking FM performance to business performance. *CIBW070 International Symposium* (pp. 340-349). Teondheim, Norway: Then, D.S.S. and Tan, T.H. (2006). “Aligning facilities management performance to business needs – an exploratory model linking FM performance to business performance”, In: Proceedings of Trondheim CIBW070 International Symposium – Changing users demands.
- Then, D., & Tan, T. (2013). *Facilities management and the business of managing assets*. Abingdon:Routledge.
- Then, D., Tan, T., Fonseca Santovito, R., & Jensen, P. (2014). Attributes of alignment of real estate and facilities management to business needs. *Journal of Corporate Real Estate*, 16, 80-96.
- Thomson, T. (1990). The essence of facilities management. *Facilities*, 8(8), 8-12.
- Ticehurst, G., & Veal, A. (2000). *Business Research Methods: A Managerial Approach*. Australia.: Pearson Education Pty Ltd.
- Tranfield, D., & Akhlaghi, F. (1995). Performance measures: relating facilities to business indicators. *Facilities*, 13(3), 6-14.
- Travers, M. (2001). *Qualitative Research through cases studies*. Introducing Qualitative Method Series.

- Tregoe, B., & Zimmerman, J. (1980). *Top management strategy. What it is and how to make it work*. London: John Martin Publishing LTD.
- Vagadia, B. (2012). From Tactical to Strategic Outsourcing. In B. Vagadia, *Strategic Outsourcing Management for Professionals*. . Berlin, Germany: Springer-Verlag.
- Van der Voordt, D., & Jensen, P. (2014). Adding Value by FM: Exploration of management practice in the Netherlands and Denmark. In K. Alexander, *Promoting Innovation in FM*. International Journal of Facilities Management, EuroFM Journal .
- Van der Voordt, T. (2014). *Adding Value by Corporate and Public Real Estate*. Delft University of Technology, Faculty of Architecture.
- Varcoe, B. (2000). Implications for facility management of the changing business climate. *Facilities* , 18(10), 383-391.
- Veale, P. (1985). Managing Corporate Real Estate Assets: Current Executive Attitudes and Prospects for an Emergent Discipline. *Journal of Real Estate Research*, 4(3), 1-22.
- Ventovuori, T., Lehtonen, T., Salonen, A., & Nenonen, S. (2007). A review and classification of academic research in facilities management. *Facilities*, 25(5/6), 227-237.
- Viswanathan, M. (2005). *Measurement error and research design*. Thousand Oaks, CA: SAGE.
- Vogt, W. (2005). *Dictionary of Statistics and Methodology*, 3rd eds. . Thousand Oaks, CA : Sage Publications. .
- Walsham, G. (1995). Interpretive Case Studies in IS Research: Nature and Method. *European Journal of Information Systems*, 4, 74-81.
- Wee, Y., & Quazi, H. (2005). Development and validation of critical factors of environmental management. *Industrial Management & Data Systems*, 105, 96-114.
- Williams, B. (1996). Cost-effective facilities management: a practical approach. *Facilities*, 14(5), 26-38.
- Williamson, O. (1985). *The economic institutions of capitalism Firms markets relational contracting*. New York: Free Press edition.
- Winter, G. (2000). A comparative discussion of the notion of validity in qualitative and quantitative research. 4(3/4).

- World, I. (2013). *ISS 2020 Vision: New Ways of Working - the workplace of the future*.
- Yin, R. (1994). *Case study Research*. Applied Social Research Method Series. Vol.5, Thousand Oaks, Sage Publications.
- Yin, R. (2018). *Case Study research and applications: design and methods (6th ed.)*. Beverly Hills, CA: Sage Publishing.
- Yiu, C. Y. (2008). A conceptual link among facilities management, strategic management and project management. *Facilities*, 26(13/14), 501-511.

Appendices

Appendix 1: List of publications by Ioannis Karamitsos

The following is a list of publications arise from the work in this thesis at the time of submission in chronological order, including journal papers and conference papers.

Karamitsos, I. and Margaret-Mary Nelson (2015). "*The impact of organisational models for non-core business services in the FM industry*". In 8th International Facility Management Congress, Vienna, Austria 19-20 November 2015

Appendix 2: Ethical approval



Research, Innovation and Academic
Engagement Ethical Approval Panel

Doctoral & Research Support
Research and Knowledge Exchange,
Room 827, Maxwell Building
University of Salford
Manchester
M5 4WT

T +44(0)161 295 5278

www.salford.ac.uk/

14 January 2019

Mr Ioannis Karamitsos

Dear Ioannis,

**RE: ETHICS APPLICATION STR1819-28 – EXAMINATION OF THE RELATIONSHIP
BETWEEN THE ORGANISATIONAL CORE BUSINESS AND FACILITY
MANAGEMENT STRATEGY: A CASE OF VALUE ADDED.**

Professor Angela Lee has advised that you have transferred your doctoral studies from the University of Bolton, with a view to writing up your research under Professor Lee's supervision.

Clause 3.3.2 of the Academic Ethics Policy (28th June 2017) strictly forbids the retrospective approval of ethics applications covering completed data collection. However, given your data was collected during your period of registration at the University of Bolton, your data remains ethically valid and covered through your University of Bolton ethical approval.

Unless you intend to undertake further primary data collection as part of your doctoral studies, no further ethical approval from the University of Salford is required.

I would strongly recommend you include this letter and a copy of your university of Bolton ethical approval in the appendix of all formal submissions you make as part of your doctoral studies.

If there are any changes to the project and/or its methodology, please inform the Panel as soon as possible by contacting S&T-ResearchEthics@salford.ac.uk

Yours sincerely,

A handwritten signature in black ink, appearing to read 'A Higham'.

Dr Anthony Higham

Chair of the Science & Technology Research Ethics Panel

RESEARCH ETHICS CHECKLIST

Form RE1

This checklist should be completed for every research project which involves human participants. It is used to identify whether a full application for ethics approval needs to be submitted.

Before completing this form, please refer to the University Code of Practice on Ethical Standards for Research Involving Human Participants. The principal investigator and, where the principal investigator is a student, the supervisor, is responsible for exercising appropriate professional judgment in this review.

This checklist must be completed before potential participants are approached to take part in any research.

Section I: Applicant Details

1.Name of Researcher (applicant):	IOANNIS KARAMITSOS
2.Status (please click to select):	PhD part time postgraduate student
3.Email Address:	ik5mpo@bolton.ac.uk
4a.Contact Address:	66 Apollonos Athens Greece
4b.Telephone Number:	00306957200593

Section II: Project Details

5. Project Title:	Examination of the relationship between the organizational core business and facilities management strategy.
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Section III: For Students Only:

6. Course title and module name and number where appropriate	
School/Centre:	AES
7. Supervisor's or module leader's name:	Dr Margaret Nelson
8. Email address:	M.Nelson@bolton.ac.uk
9. Telephone extension:	3431

Declaration by Researcher (Please tick the appropriate boxes)

x	I have read the University's Code of Practice
x	The topic merits further research
x	I have the skills to carry out the research
x	The participant information sheet, if needed, is appropriate
x	The procedures for recruitment and obtaining informed consent, if needed, are appropriate
x	The research is exempt from further ethics review according to current University guidelines

Comments from Researcher, and/or from Supervisor if Researcher is Undergraduate or Taught Postgraduate student:

Section IV: Research Checklist

Please answer each question by ticking the appropriate box:

	YES	NO
1. Will the study involve participants who are particularly vulnerable or who may be unable to give informed consent (e.g. children, people with learning disabilities, emotional difficulties, problems with understanding and/or communication, your own students)?	<input type="checkbox"/>	x
2. Will the study require the co-operation of a gatekeeper for initial access to the groups or individuals to be recruited (e.g. students at school, members of self-help group, residents of nursing home)?	<input type="checkbox"/>	x
3. Will deception be necessary, i.e. will participants take part without knowing the true purpose of the study or without their knowledge/consent at the time (e.g. covert observation of people in non-public places)?	<input type="checkbox"/>	x
4. Will the study involve discussion of topics which the participants may find sensitive (e.g. sexual activity, own drug use)?	<input type="checkbox"/>	x
5. Will drugs, placebos or other substances (e.g. food substances, alcohol, nicotine, vitamins) be administered to or ingested by participants or will the study involve invasive, intrusive or potentially harmful procedures of any kind?	<input type="checkbox"/>	x
6. Will blood or tissues samples be obtained from participants?	<input type="checkbox"/>	x
7. Will pain or more than mild discomfort be likely to result from the study?	<input type="checkbox"/>	x
8. Could the study induce psychological stress or anxiety or cause harm or negative consequences beyond the risks encountered in normal life?	<input type="checkbox"/>	x
9. Will the study involve prolonged or repetitive testing?	<input type="checkbox"/>	x

10.	Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?	<input type="checkbox"/>	x
11.	Will participants' right to withdraw from the study at any time be withheld or not made explicit?	<input type="checkbox"/>	x
12.	Will participants' anonymity be compromised or their right to anonymity be withheld or information they give be identifiable as theirs?	<input type="checkbox"/>	x
13.	Might permission for the study need to be sought from the researcher's or from participants' employer?	<input type="checkbox"/>	x
14.	Will the study involve recruitment of patients or staff through the NHS?	<input type="checkbox"/>	x

If ALL items in the Declaration are ticked AND if you have answered NO to ALL questions in Section IV, send the completed and signed Form RE1 to your School/Centre Research Ethics Officer for information. You may proceed with the research but should follow any subsequent guidance or requests from the School/Centre Research Ethics Officer or your supervisor/module leader where appropriate. Undergraduate and taught postgraduate students should retain a copy of this form and submit it with their research report or dissertation (bound in at the beginning). MPhil/PhD students should submit a copy to the Board of Studies for Research Degrees with their application for Registration (R1). **Work which is submitted without the appropriate ethics form will be returned unassessed.**

If ANY of the items in the Declaration are not ticked AND / OR if you have answered YES to ANY of the questions in Section IV, you will need to describe more fully in Section V of the form below how you plan to deal with the ethical issues raised by your research. This does not mean that you cannot do the research, only that your proposal will need to be approved by the School/Centre Research Ethics Officer or School/Centre Research Ethics Committee or Sub-committee. When submitting the form as described in the above paragraph you should substitute the original Section V with the version authorized by the School/Centre Research Ethics officer.

If you answered YES to **question 14**, you will also have to submit an application to the appropriate external health authority ethics committee, after you have received approval from the School/Centre Research Ethics Officer/Committee and, where appropriate, the University Research Ethics Committee.

Section V: Addressing Ethical Problems

If you have answered YES to any of questions 1-12 please complete below and submit the form to your School/Centre Research Ethics Officer.

Project Title


Principal Investigator/Researcher/Student

Supervisor

Summary of issues and action to be taken to address the ethics problem(s)

Please note that it is your responsibility to follow the University's Code of Practice on Ethical Standards and any relevant academic or professional guidelines in the conduct of your study. **This includes providing appropriate information sheets and consent forms, and ensuring confidentiality in the storage and use of data.** Any significant change to the design or conduct of the research should be notified to the School/Centre Research Ethics Officer and may require a new application for ethics approval.

Signed:  Principal Investigator/Researcher

Approved:  Supervisor or module leader (where appropriate)

Date: 22/3/2012

For use by School/Centre Research Ethics Officer:

- No ethical problems are raised by this proposed study-Retain this form on record

- Appropriate action taken to maintain ethical standards

- The research protocol should be revised to eliminate the ethical concerns or reduce them to an acceptable level, using the attached suggestions

- Please submit School/Centre Application for Ethics Approval (Form RE2(D))

- Please submit University Application for Ethics Approval (Form RE2(U))

Retain this form on record and return a copy of section V to Researcher

Signed: _

Date: _

L:\AQAS\Common\Research\Research Ethics\Research Ethics Checklist Form RE1.doc

Appendix 3: Interview Questionnaire used in this research

Research Title: *EXAMINATION OF THE RELATIONSHIP BETWEEN ORGANISATIONAL AND FACILITY MANAGEMENT STRATEGY AND VALUE ADDED.*

Aim of the Research study: This research aims to develop an alignment model that will embed facility management as a supportive function into the strategic plan of the organisation.

The interview will be addressing strategic and facility management senior employees. The aim of interviews is to address objective 3 and objective 4 of the research studies and is as stated below:

- **Objective 3 of the research:** Explore and analyse the complexities of FM processes and assets in various types of organisations.
- **Objective 4 of the research:** develop and validate a model for evaluating the value added through the alignment between FM and the organisation.

Interview questions addressing objective 3 and objective 4.

SECTION ONE:

This section attempts to obtain the general information about the participant and some background information about the organisation.

1. What position do you hold in your organisation?
2. What years of experience in FM do you have?
3. What qualifications do you have?
4. What is your job description?
5. What type of organisation do you work for?
6. What main sector(s) do you operate?

SECTION 2

This section attempts to obtain the general information from the participant about his/her perception of FM role inside the organisation and the questions are as below:

1. What do you consider FM role involves in Middle East?
2. In your view, what do you consider as FM main role or supportive role during the different phases of a FM in Middle East?
3. Do you think that FM has any role to play outside of the operational phase? If so, what do you consider it to involve?
4. Is FM widely practised in Middle East? If yes what is the general perception of the FM profession? Is it recognised by the government? If no why do you think that's the case?
5. Do you think that FM has a role inside the organisation in the strategic level?
6. Do you think FM has a role to play in achieving alignment with different levels of organisation? Yes or No
 - 6.1 If YES what is that role in organisation
 - 6.2 If NO please state why.
7. What extent is FM currently contributing towards to the organisation?
8. Who do you think has a pivotal role in making decision for the FM involvement into the organisation.
9. What do you think are the barriers to FM role in achieving an alignment into the organisation?
10. What do you think are the drivers to FM role in achieving an alignment into the organisation?
11. In your view, what are the solution that can overcome the aforementioned barriers in question 9 for FM to help achieving an alignment into the organisation.

12. Please state any other issues /comments with regard F concept in Middle East.

Note: The results to be obtained through the interviews will only be used for the purpose of this research study and will not be used for any other purpose. All responses remain completely confidential.

Please supply your email address if you would like to receive a summary of the interviews.

Conducted by:.....

Date:.....

Thank you

Appendix 4: Questionnaire for Strategic Role



Facility Management
Questionnaire
for
Strategic Roles

Version 3.0

Date: Jan 2015

Consent statement for a questionnaire

I am a PhD student at Bolton University. My name is John Karamitsos and I can be contacted at ik5mpo@bolton.ac.uk

For my research thesis I am working on a Facility Management area whereby I need to collect information on how different roles in an organisation's structure are aligned with Facility Management. I am therefore asking if you would agree to participate in my research by answering a questionnaire.

The questionnaire has (20) questions and should take about (10) minutes to complete.

You do not have to participate at all, and even if you agree now, you can terminate your participation at any time without prejudice. Your name will not be attached to the questionnaire and your participation will remain confidential. (This consent form will be kept separate from the questionnaire for all participants.)

The information provided by you in this questionnaire will be used for research purposes. It will not be used in a manner which would allow identification of your individual responses.

If you have any questions or concerns, please feel free to contact me at ik5mpo@bolton.ac.uk or my professor, Dr. Margaret Nelson at m.nelson@bolton.ac.uk (Note that, if you do participate, you will receive a separate sheet of paper with our contact information to take away with you.)

I give consent to the use / anonymous use of my responses for research purposes

Participant signature Date

Researcher Signature Date

OPTIONAL: Would you like to help with further research?

We will be holding a number of follow-up workshops to discuss the results raised in this questionnaire and to formulate action plans for the Facility Management profession. If you are interested in receiving the results and/or participating further in the research, please give your contact details below.

Name:

Job Title:

Organisation:

Daytime telephone:

E-mail:

SECTION A: PERSONAL INFORMATION

Could you give us some information about yourself? Your responses will be treated with confidence and all times data will presented in such a way that your identity cannot be connected with specific published data.

A1. Gender

☐ Male

☐ Female

A2. Age (please tick ☒ only one.)

☐ 18-35

☐ 36-45

☐ 46-55

☐ Over 56

A3. How long have you worked in Facility Management field (i.e. your current and any previous Facilities Management jobs)

☐ Less than 1 year

☐ 11-15 years

☐ 1-5 years

☐ More than 15 years

☐ 6-10 years

A4. What qualifications do you hold? (please tick ☒ all that apply)

☐ No formal qualifications

☐ MSc in FM

☐ School qualifications (eg GCSE/A level)

☐ MBA

☐ Pre-degree / Vocational eg. HND/NVQ

☐ Ph.D

☐ BA/BSc in FM

☐ Other, please specify

A5. Are you a member of any of the following professional bodies?
(please mark all apply)

☐ BIFM

☐ MCIBS

☐ IFMA

☐ HCIMA

☐ RICS

☐ CIOB

☐ RIBA

☐ Other professional or trade body,
please specify

A6. Do you hold a qualification in the following areas? (Please tick ☒ all that apply.)

☐ Facility Management

☐ Interior Design

☐ Architectural Engineering

☐ Others, please specify:

A7. How long have you been in a management role?

--

A8. Do you see your long-term career path continuing to be in Facilities Management or an FM related activity?

☐ Yes

☐ No

☐ Don't know/ Unsure

A9. Do you believe that Facilities Management needs to develop further as a professional discipline?

☐ Yes

☐ No

☐ Don't know

A10. Do you believe that Facilities Management needs to be focused in which areas?

☐ Business

☐ Technical

☐ Both

☐ Don't know

SECTION B: ORGANISATION

This section is intended to help us obtain a general picture of your organisation's ownership, structure, and staff personnel.

B1. What is your organisation's core activity?

B2. How many people does your organisation employ?

- | | |
|---------------------------------------|---|
| <input type="checkbox"/> Less than 50 | <input type="checkbox"/> 1001- 5000 |
| <input type="checkbox"/> 50-249 | <input type="checkbox"/> 5001-10000 |
| <input type="checkbox"/> 250-1000 | <input type="checkbox"/> Over than 10,000 |

B3. Please indicate the type of premises occupied by your organisation? (Please tick all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Office (public sector) | <input type="checkbox"/> Retail |
| <input type="checkbox"/> Office (private sector) | <input type="checkbox"/> Manufacturing |
| <input type="checkbox"/> Healthcare | <input type="checkbox"/> Warehousing/ Storage |
| <input type="checkbox"/> Hotel and catering | <input type="checkbox"/> Educational |
| <input type="checkbox"/> Sports and Leisure | <input type="checkbox"/> Media |
| <input type="checkbox"/> Other (please specify): | |

B4. What is the total gross area occupied by your organisation? (Please tick ☒ only one)

- | | |
|--|---|
| <input type="checkbox"/> Less than 1,000 sq. m | <input type="checkbox"/> 10,001 – 50,000 sq. m |
| <input type="checkbox"/> 1,001 - 5000 sq. m | <input type="checkbox"/> More than 50,000 sq. m |

☐ 5,001 – 10,000 sq. m

☐ Don't know / unsure

B5. Which percentage does your organisation currently lease or own in property Assets?

Leasing (%)	
Owned (%)	
Others	

B6. How many people work in the Facilities Management department in your organisation?

☐ 1

☐ 11-15

☐ 2-15

☐ 16-25

☐ 6-10

☐ More than 25

B7. Which type of employment contract agreement is used by your organisation for the Facilities Management staff?

☐ Full time contracts

☐ Part time contracts

☐ Contractor contracts

B8. How your organisation manages Facility management?

(Please tick ☒ only one.)

☐ In house Facility Management

☐ Outsourcing Facility Management

- ☐ Management Agent
- ☐ Partly in-house, partly outsourced
- ☐ Other (please specify)

B9. Were you involved with the formulation of the team designated to coordinate any Facility Management activities? (Please tick ☒ only one.)

- ☐ Yes
- ☐ No

SECTION C: FACILITIES MANAGEMENT

C1. Does FM support organisational strategy?

☐ Yes ☐ No ☐ Don't know

C2. What value does your organisation place on Facilities Management in terms of the contribution it makes to operation?

No Contribution	A minor contribution	Some contribution	An important contribution	A very major contribution
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C3. How far do you think their view of the importance of Facilities Management to core business will change over the next five years?

Become much less important	Becoming less important	Remaining the same	Become more important	Become much more important
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C4. In your organisation what is the Facilities Management budget for this year?

<input type="checkbox"/> Under \$100,000	<input type="checkbox"/> 5million \$- 10 million \$
<input type="checkbox"/> 100,000\$- 499,000\$	<input type="checkbox"/> Over 10 million \$
<input type="checkbox"/> 500,000\$-1million \$	<input type="checkbox"/> Don't know/ unsure

☐ Over 1 million\$ but under 5 million\$

C5. Do you develop the facility management strategy in your organisation?

☐ Yes ☐ No ☐ Don't know

C6. How does report to Business Corporate Management?

CEO	CFO	CTO	CMO	Director	Manager	FM Manager
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C7. Can you briefly describe how your organisation is organised for the formulation of FM strategy?

	YES	NO
At an overall corporate level	<input type="checkbox"/>	<input type="checkbox"/>
Within your strategic business units (SBUs)	<input type="checkbox"/>	<input type="checkbox"/>
Within your functional depts	<input type="checkbox"/>	<input type="checkbox"/>
Or some other way (if yes please write more details below)	<input type="checkbox"/>	<input type="checkbox"/>

C8. How far do you think their view of the importance of Facilities Management to core business will change over the next years?

Become
much less
important

☐

Becoming
less
important

☐

Remaining
the same

☐

Become
more
important

☐

Become
much more
important

☐

SECTION D: ADDING VALUE WITH FACILITY MANAGEMENT

D1. Please assess the importance of the following added values with Facility Management in your organisation. *(Please tick one box for each row.)*

	Very Important (5)	Moderately Important (3)	Not Important (1)
Cost Reduction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improving satisfaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improving labour productivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Risk Control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flexibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial possibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sustainability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Innovations & creativity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supporting culture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D2. Please assess the following criteria for strategic FM function. *(Please tick one box for each row.)*

	Not important (5)	Moderately Important (3)	Very Important (1)
Developing facilities to meet business objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

and ensure business continuity

Ensure that a coherent view of property is fed into the overall strategy of the organization.

☐
☐
☐

Provide economically and efficiently for the present and future need of clients, either by arranging for reallocation of space within existing estate or by building, purchasing or leasing additional property.

☐
☐
☐

Offering strategic advice based on knowledge of client's business.

☐
☐
☐

Planning and designing for continuous improvement of service quality.

☐
☐
☐

Enhance manageability, flexibility, sustainability of new, existing and adapted facility.

☐
☐
☐

Identifying business needs and user requirements.

☐
☐
☐

Enhancing the competitiveness of core business.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	--------------------------

Enhancing corporate values through formulating and communicating strategic facilities policy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	--------------------------

D3. Which is the status of Facility Management Implementation? (Please tick each row)

	Have implemented	Implement now	Considering Implementing	Not consider Implementing
Alignment between FM Strategy and overall strategy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FM value delivering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FM resource management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D4. And which of these methods are your using to measure the value of your FM investments?

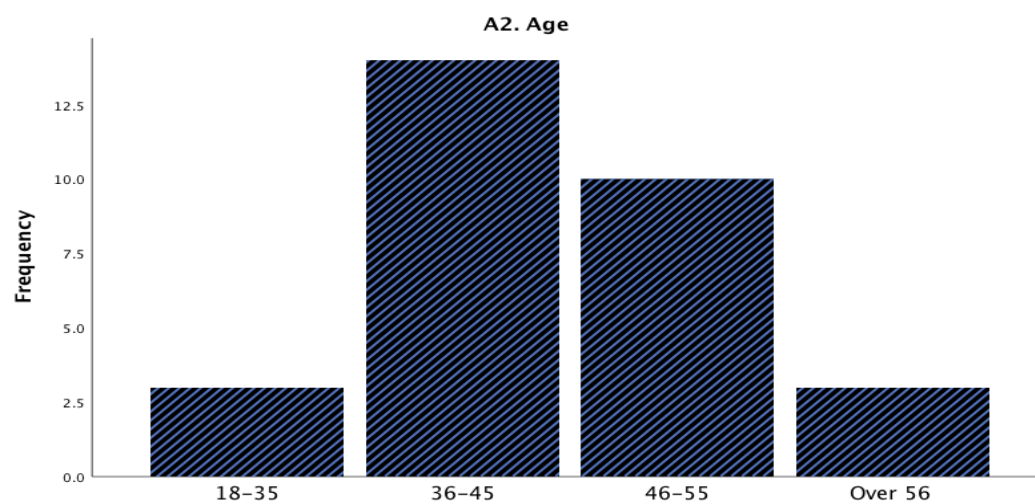
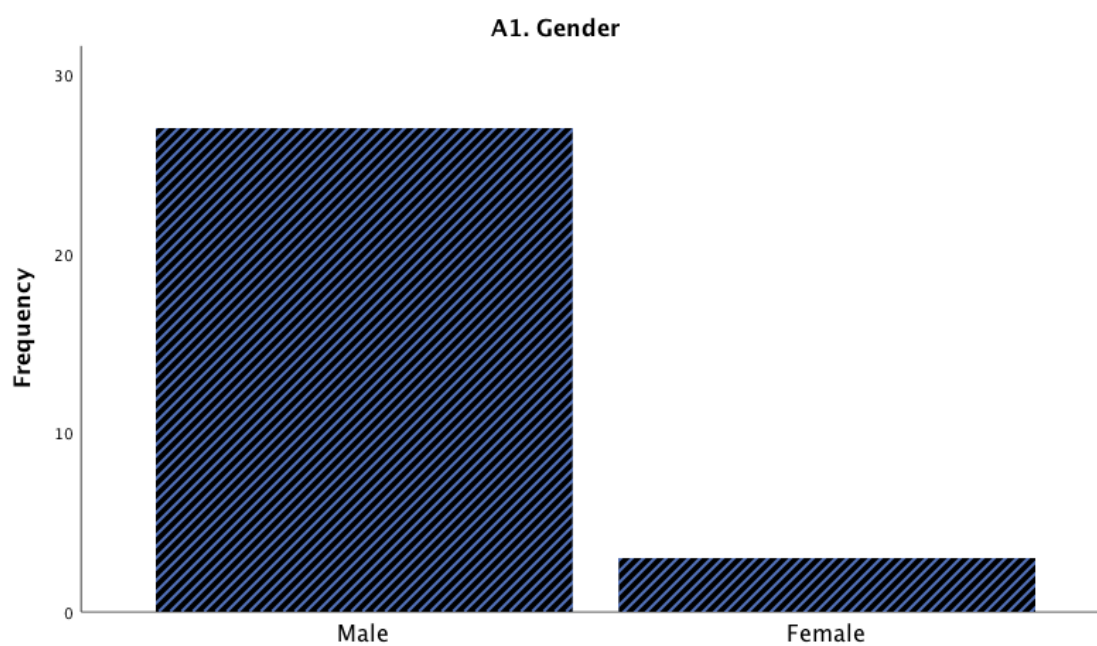
	Yes	No
The Return of Investment	<input type="checkbox"/>	<input type="checkbox"/>
The payback period	<input type="checkbox"/>	<input type="checkbox"/>
Net Present Value (NPV)	<input type="checkbox"/>	<input type="checkbox"/>
Your own method developed in house	<input type="checkbox"/>	<input type="checkbox"/>

D5. In your view, how effective is each of these methods of measuring the value of FM investments.

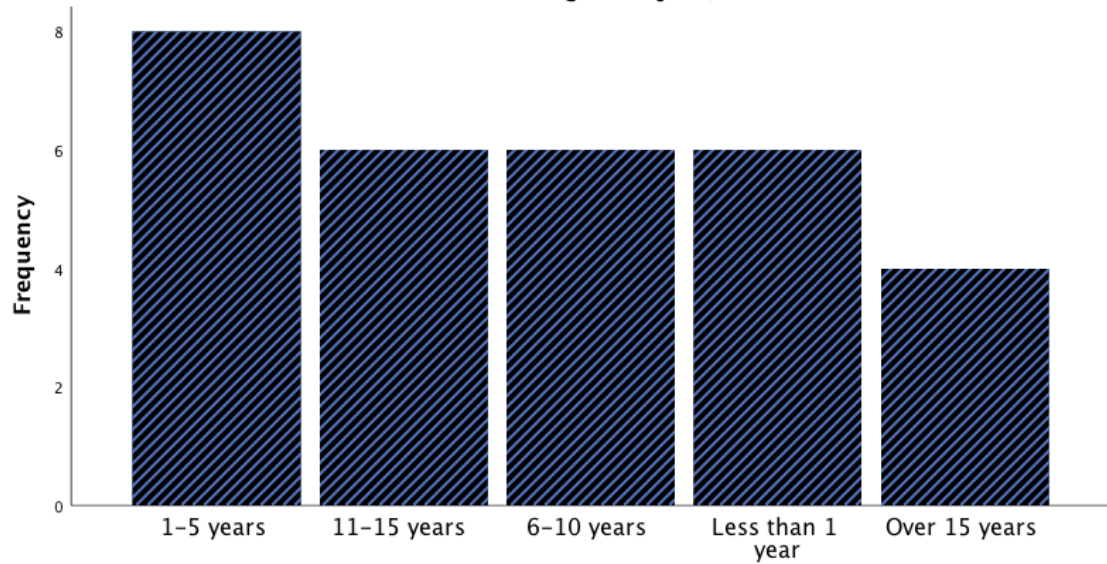
	Very Effective	Fairly Effective	N/A	Not very effective	Not all effective
The Return of Investment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The payback period	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Net Present Value (NPV)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your own method developed in house	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank you for the participation

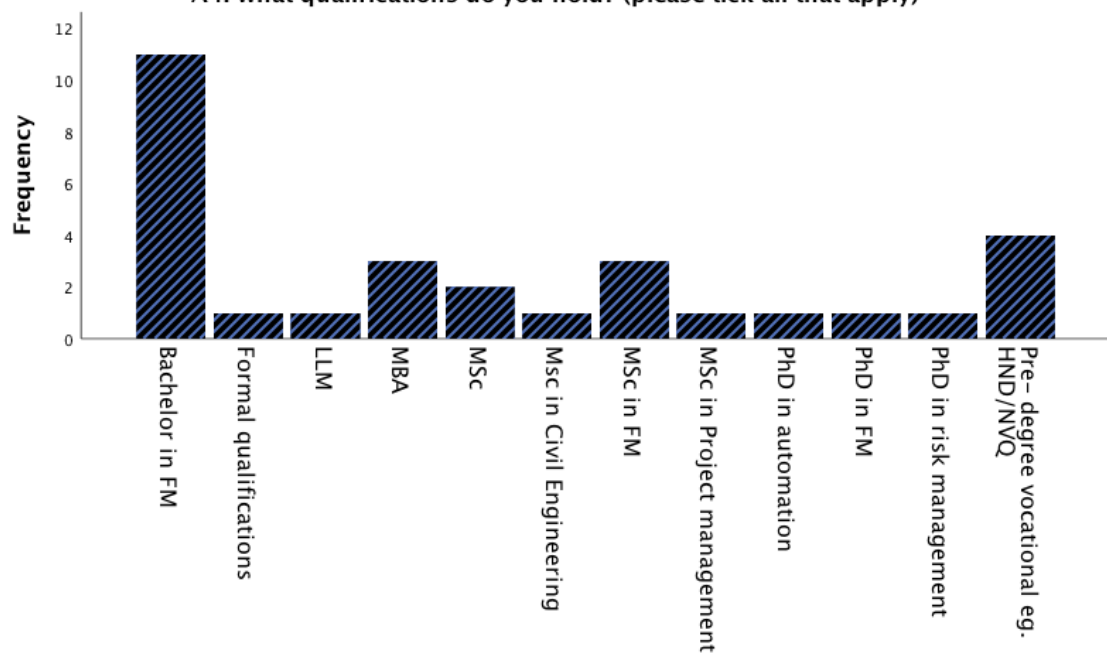
Appendix 5: Responses to the Questionnaire for Strategic Roles

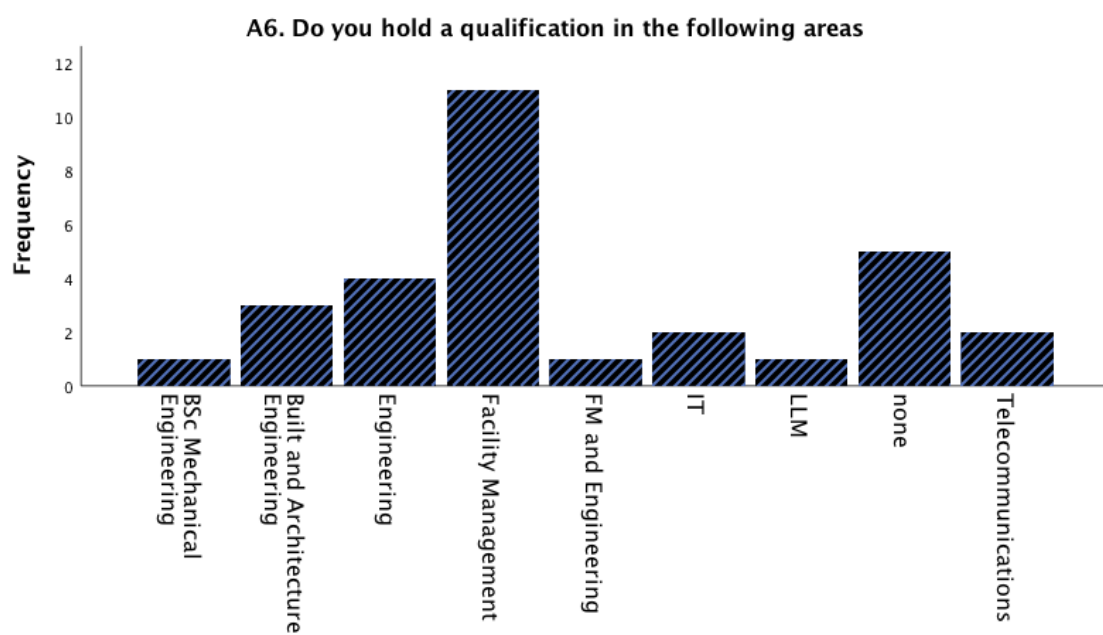


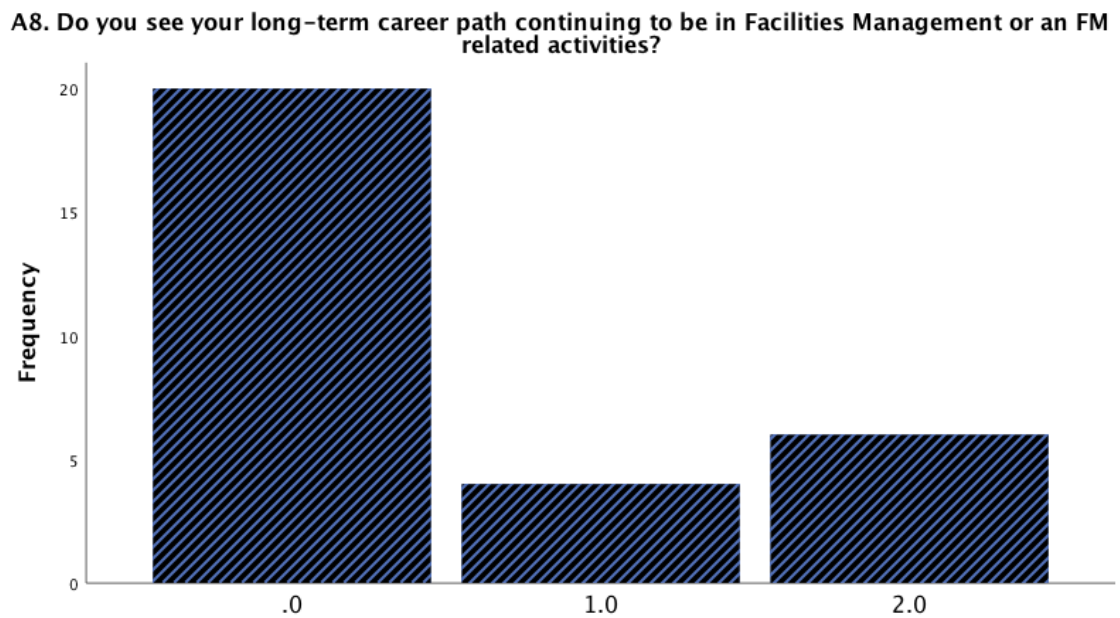
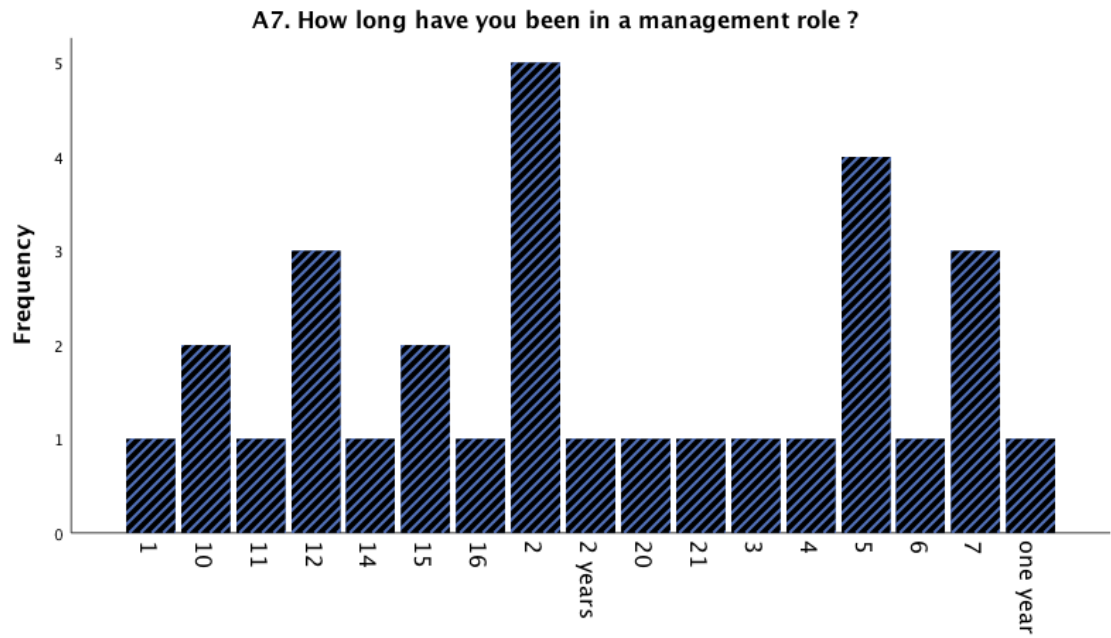
A3. How long have you worked in the Facility Management field (i.e current and any previous Facilities Management jobs)



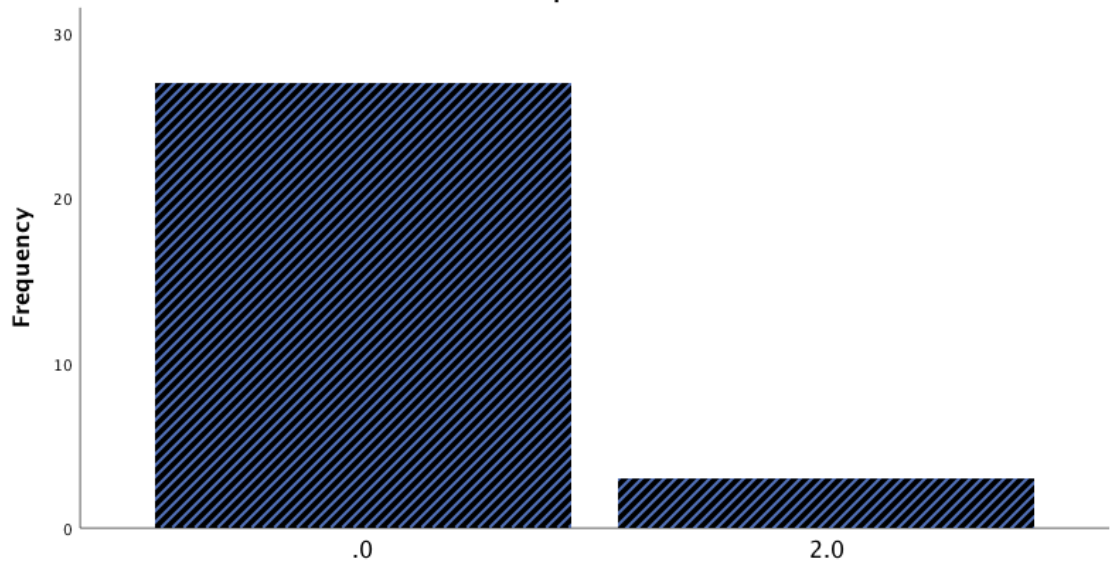
A4. What qualifications do you hold? (please tick all that apply)



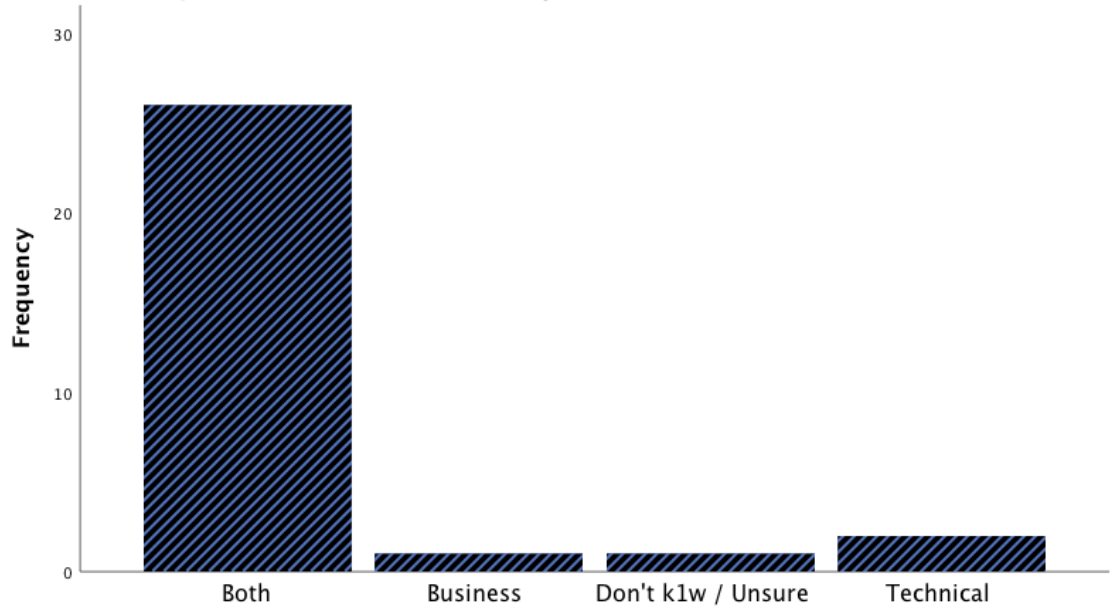




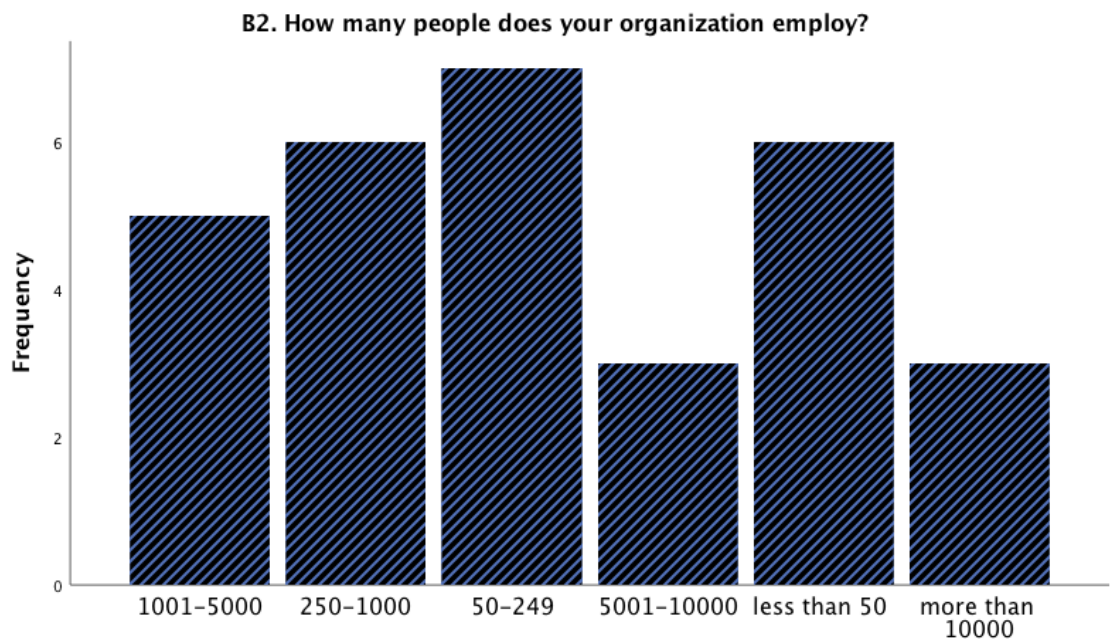
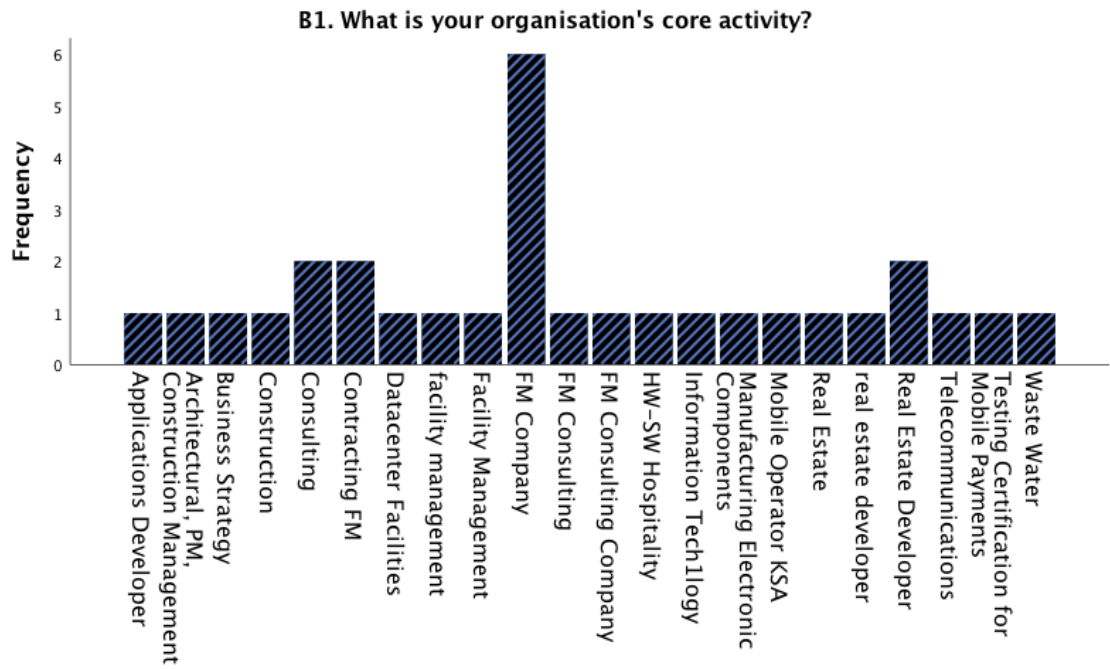
A9. Do you believe that Facilities Management needs to develop further as a professional discipline

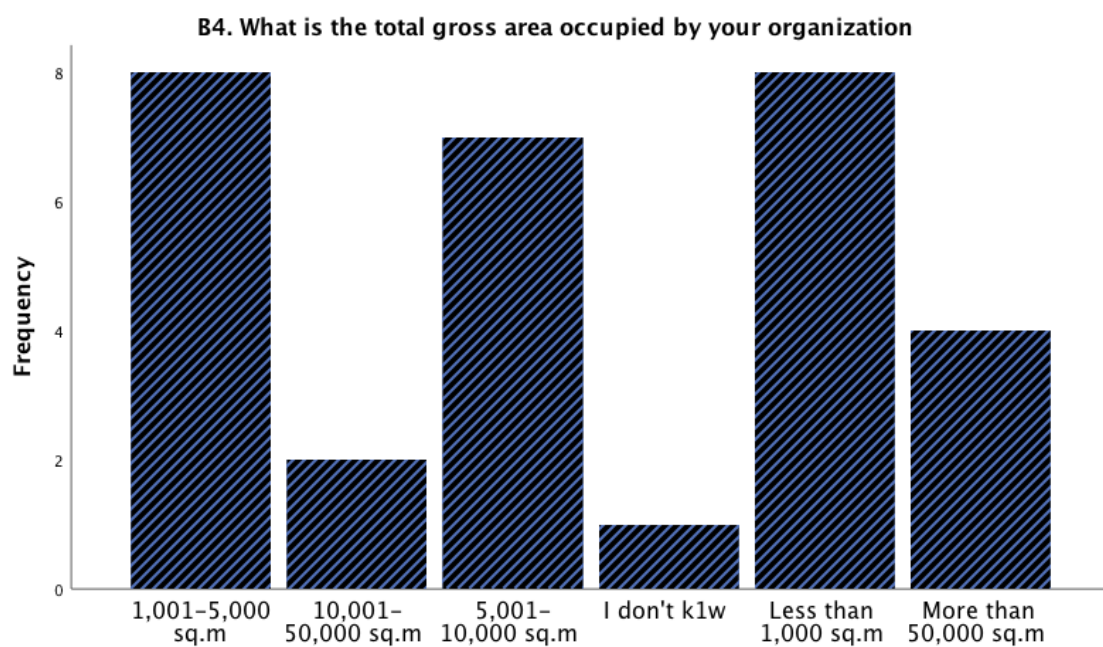
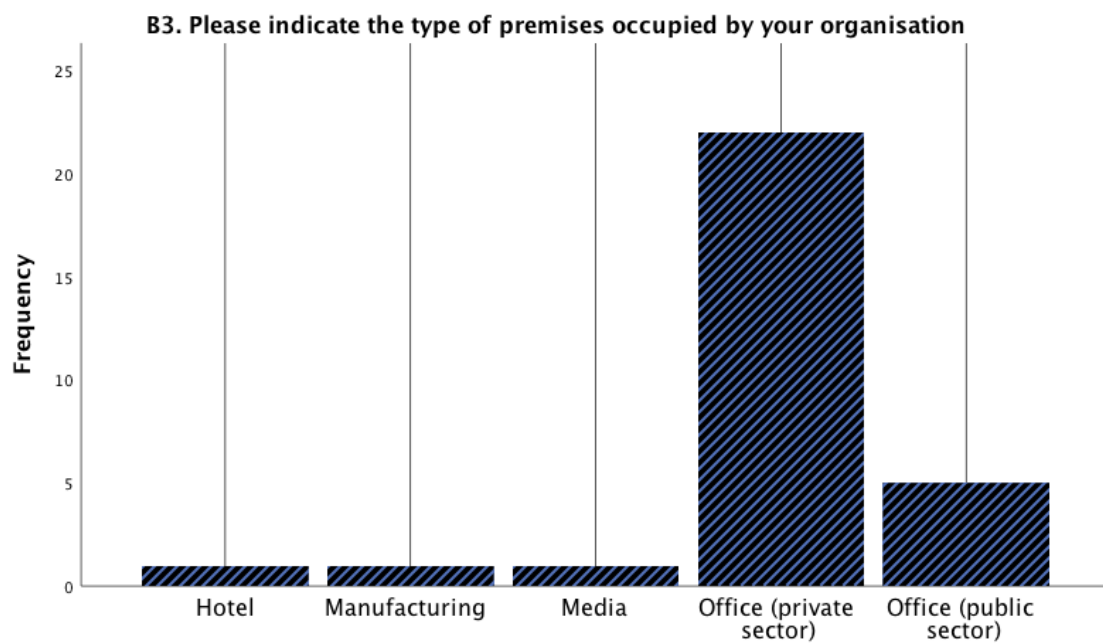


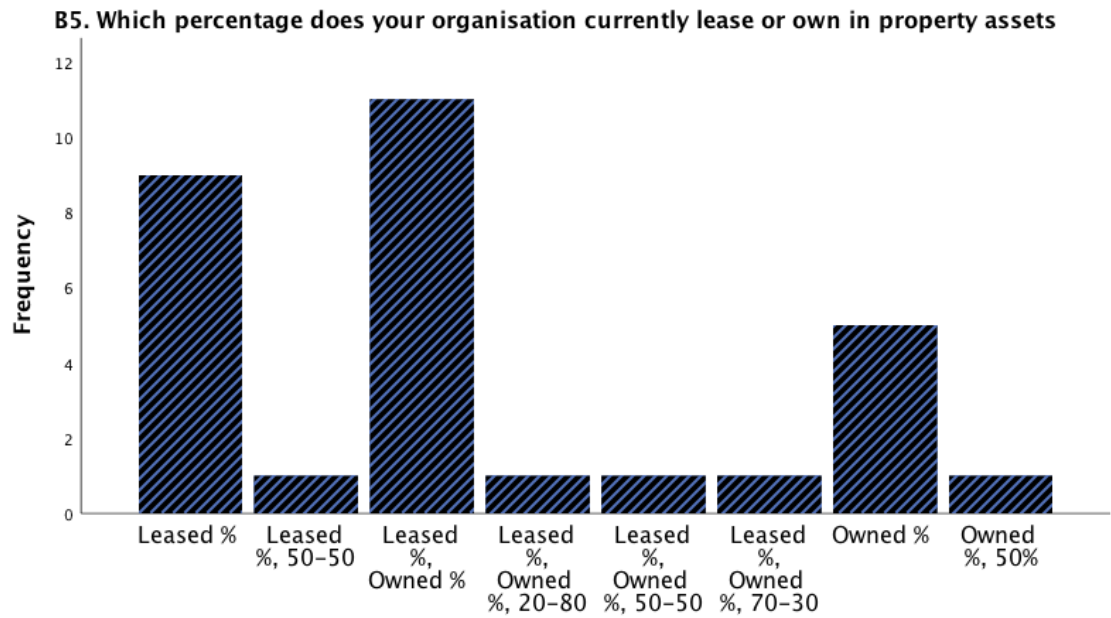
A10. Do you believe that Facilities Management needs to be focused in which area



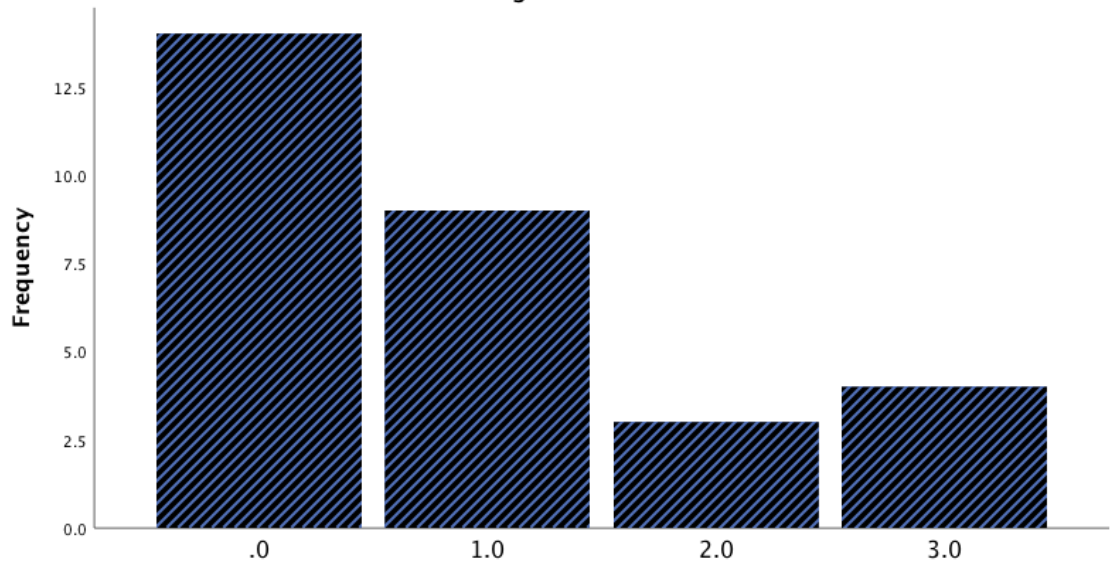
A10. Do you believe that Facilities Management needs to be focused in which area



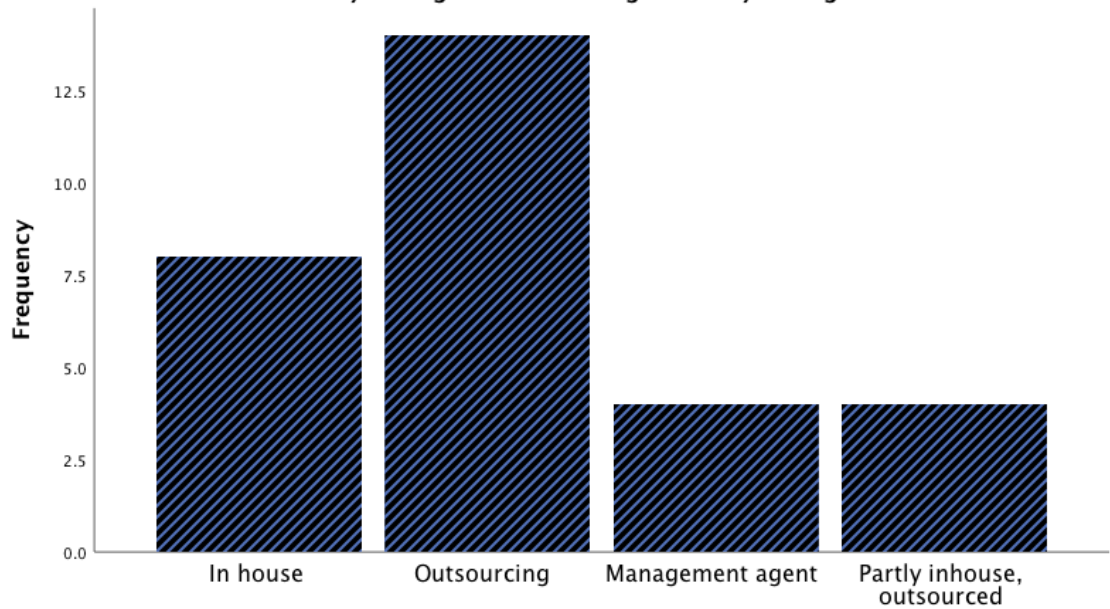




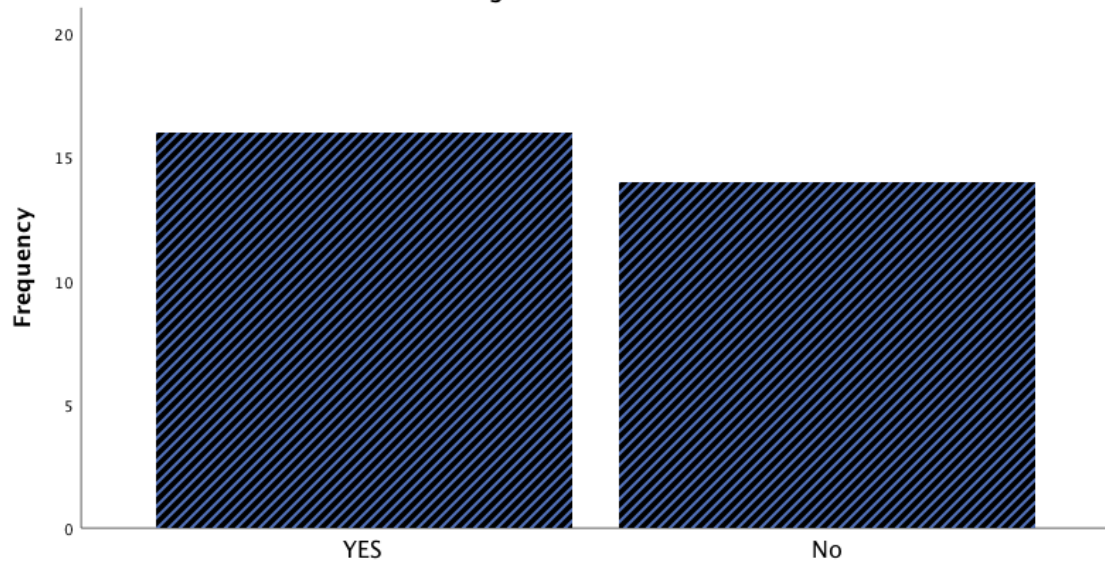
B7. Which type of employment contract agreement is used by your organisation for the Facilities Management staff



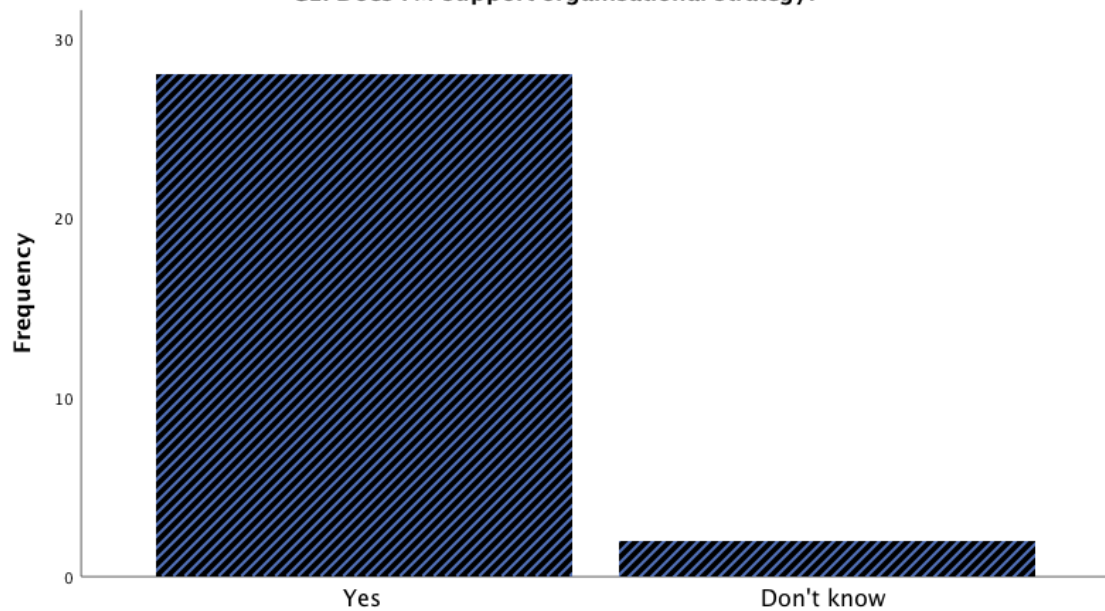
B8. How does your organisation manages Facility Management?



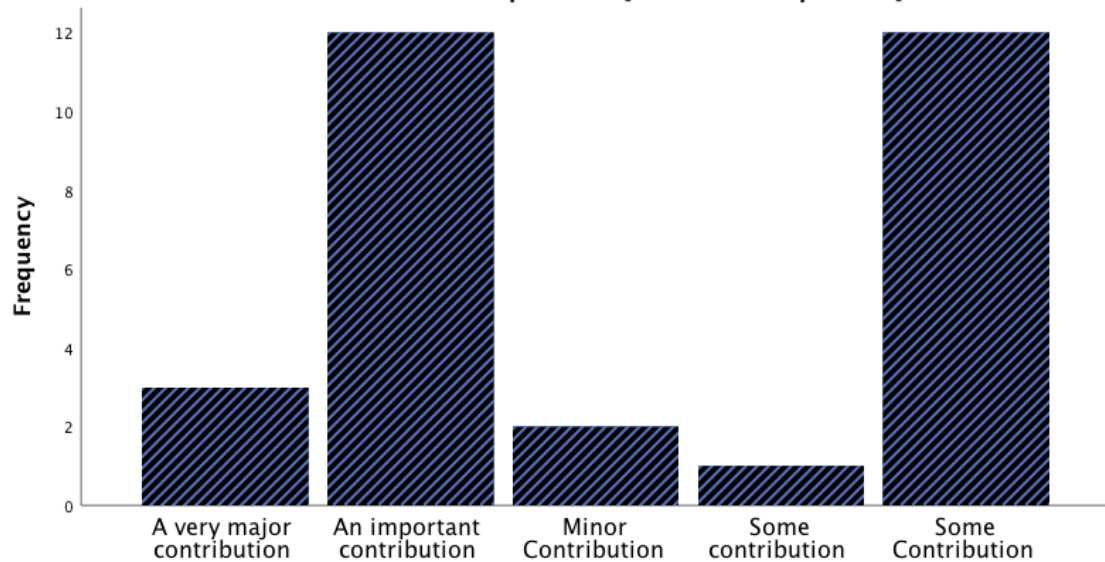
B9. Were you involved with the formulation of the team designated to coordinate any Facility Management activities



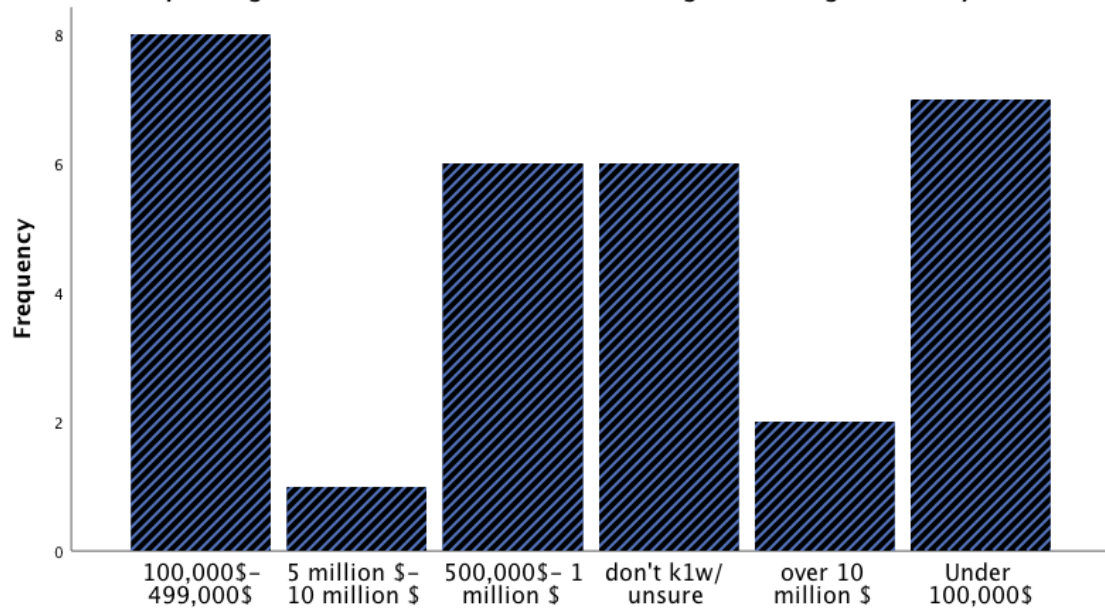
C1. Does FM support organisational strategy?

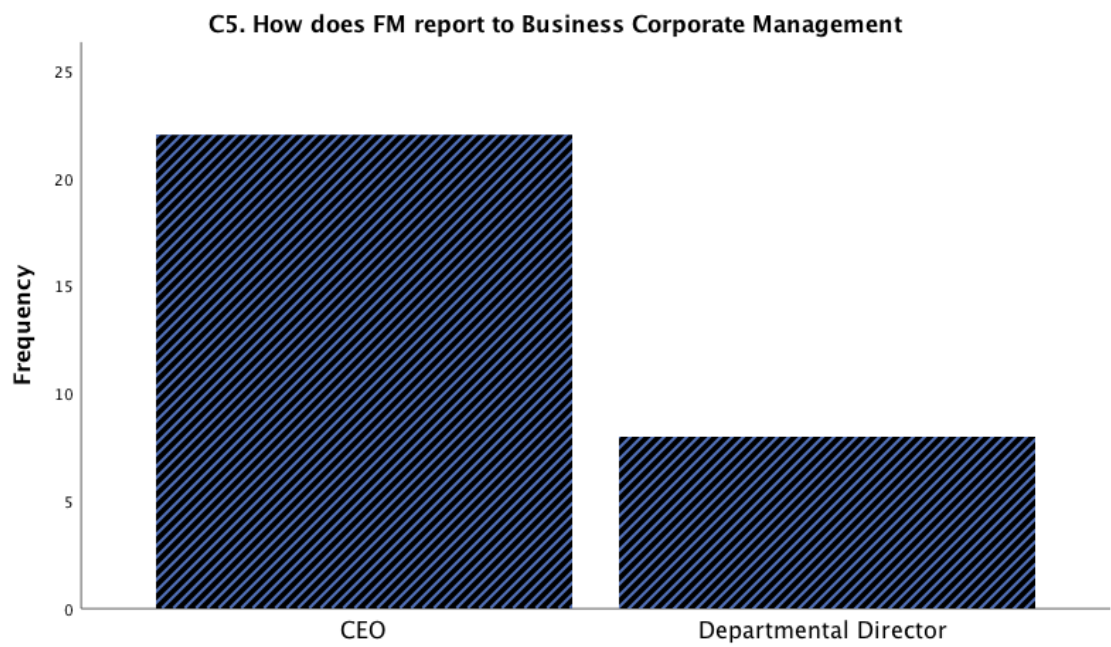


C2. What value does your organisation place on Facilities Management in terms of the contribution it makes to operation? [Value for FM operation]

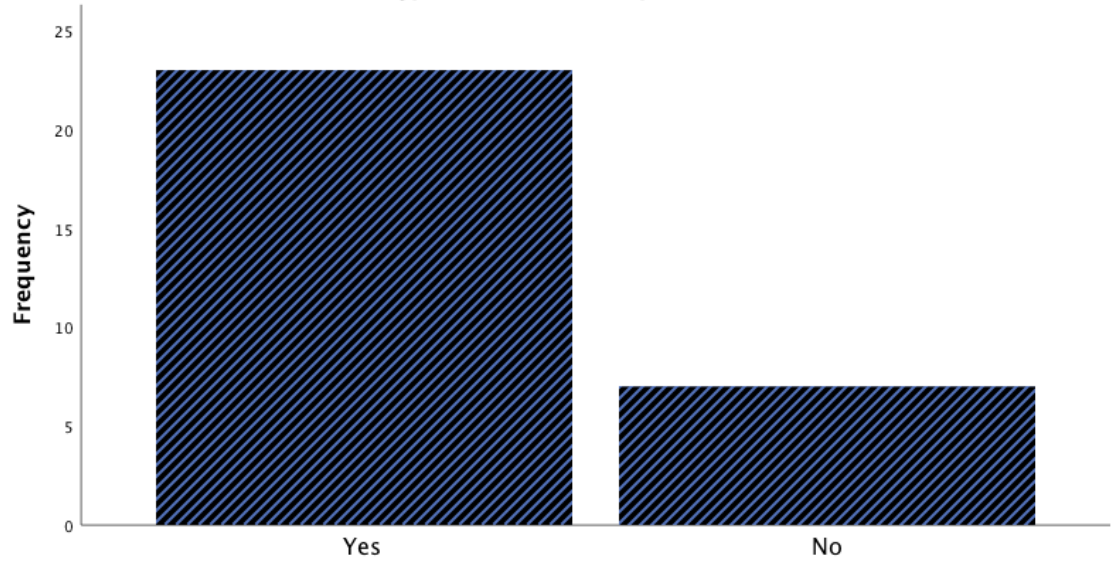


C3. In your organisation what is the Facilities management budget for this year?

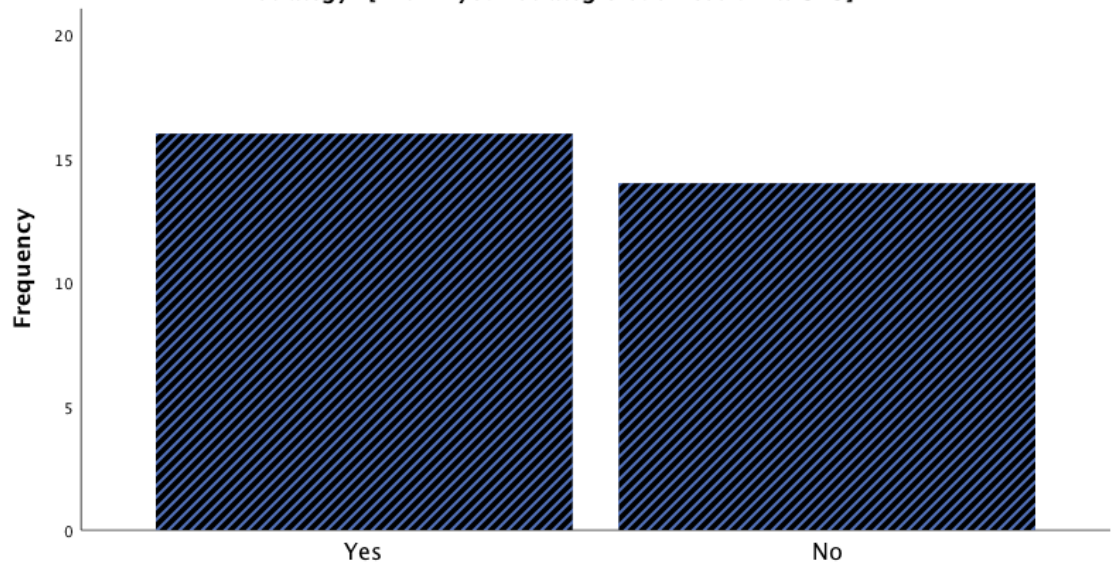




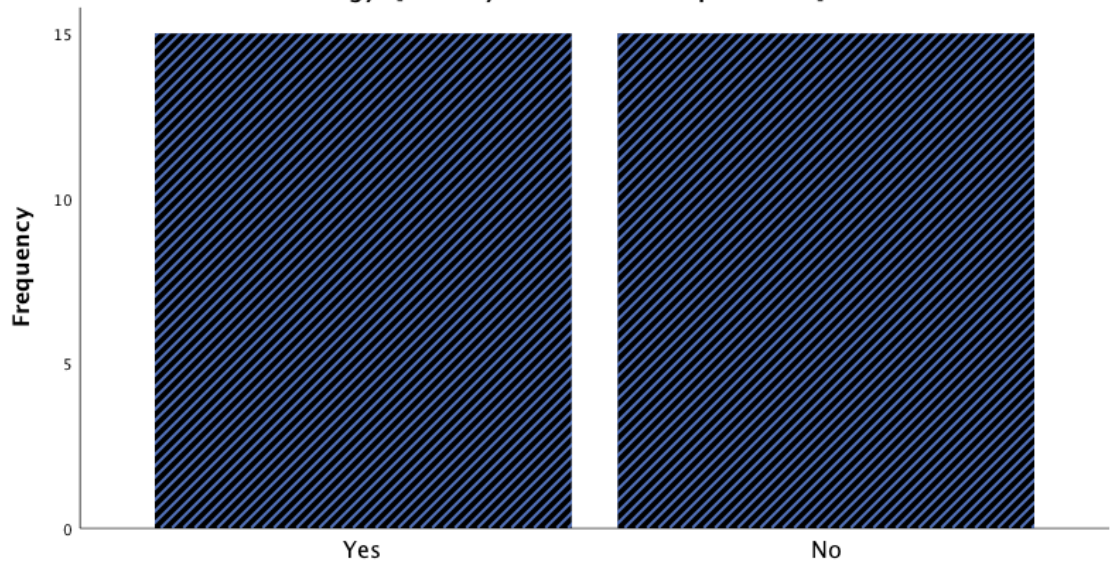
C6. Can you briefly describe how your organisation is organised for the formulation of FM strategy? [At an overall corporate level]



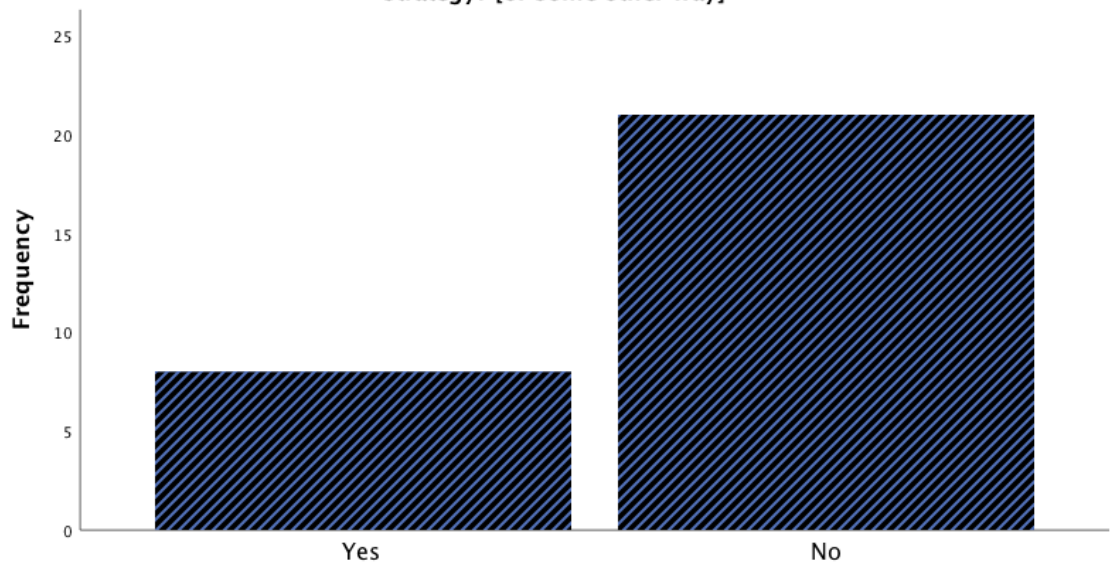
C6. Can you briefly describe how your organisation is organised for the formulation of FM strategy? [Within your strategic business units SBU]



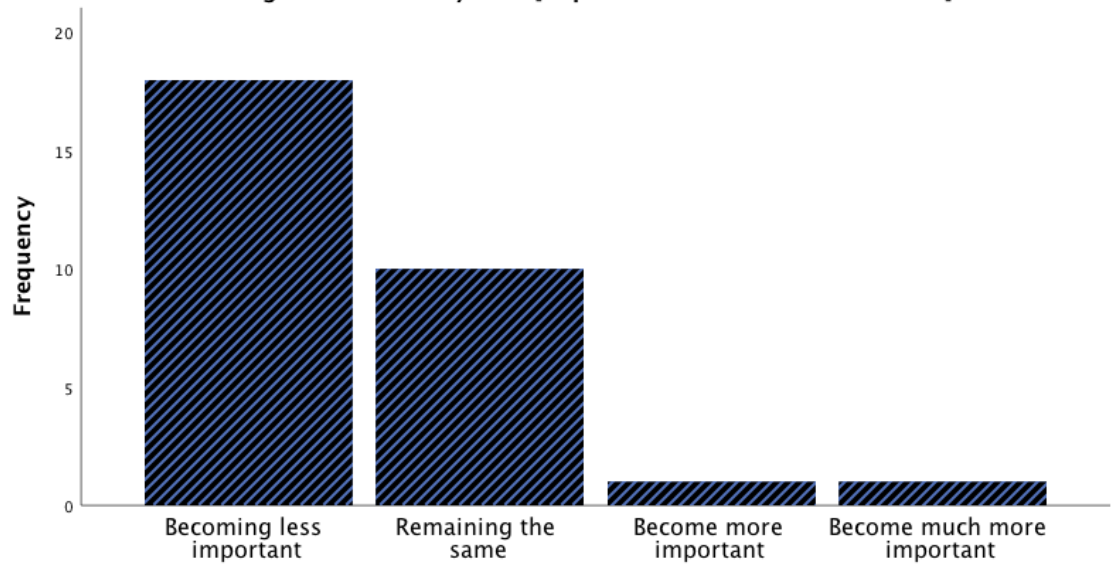
C6. Can you briefly describe how your organisation is organised for the formulation of FM strategy? [Within your functional departments]



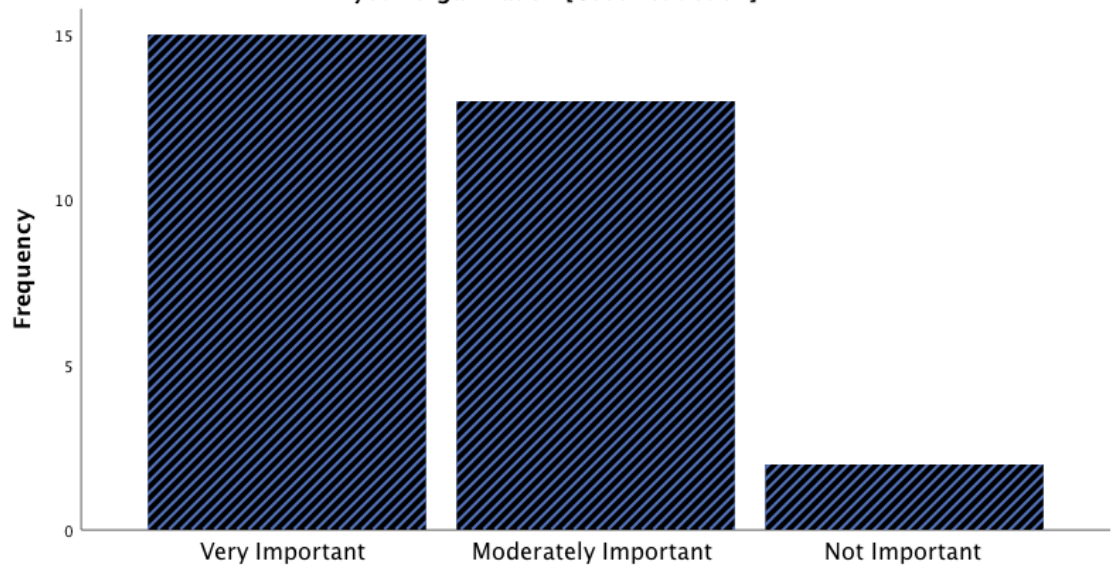
C6. Can you briefly describe how your organisation is organised for the formulation of FM strategy? [or some other way]



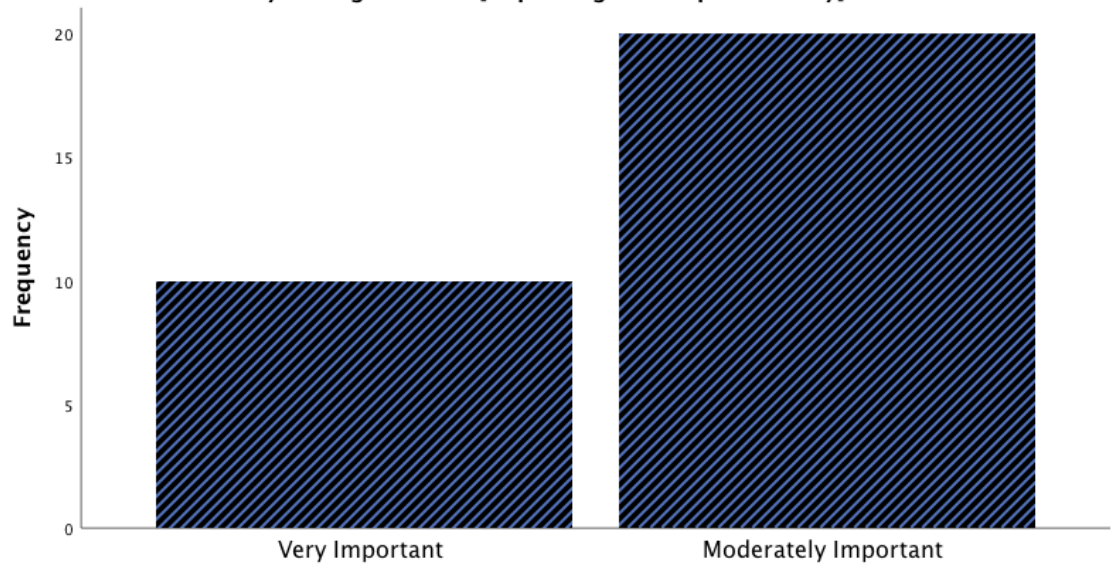
C8. How far do you think their view of the importance of Facilities management to core business will change over the next years? [Importance of FM in core business]



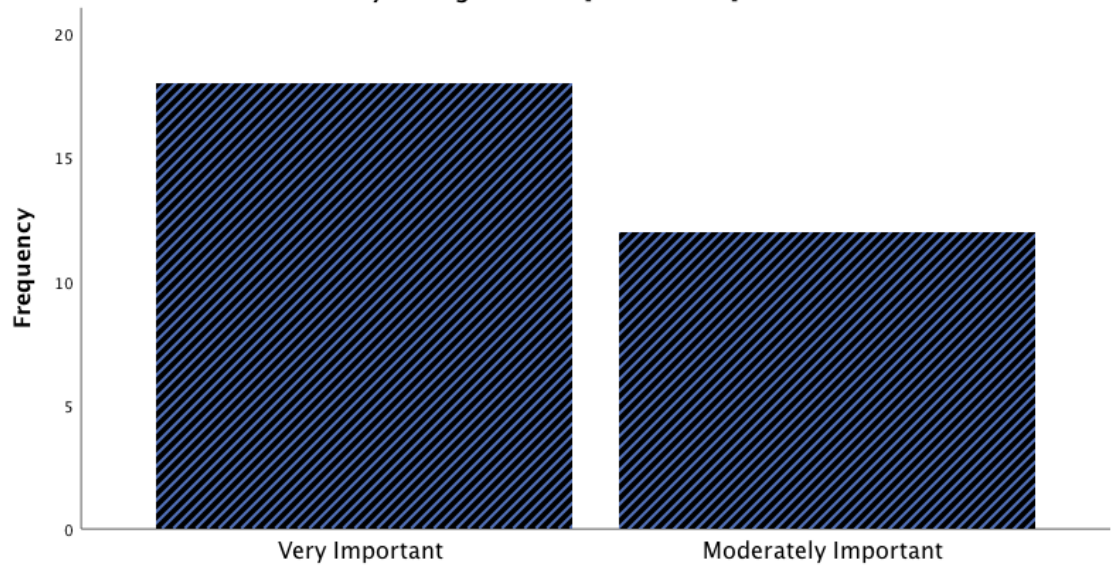
D1. Please assess the importance of the following added values with Facility Management in your organization [Cost Reduction]



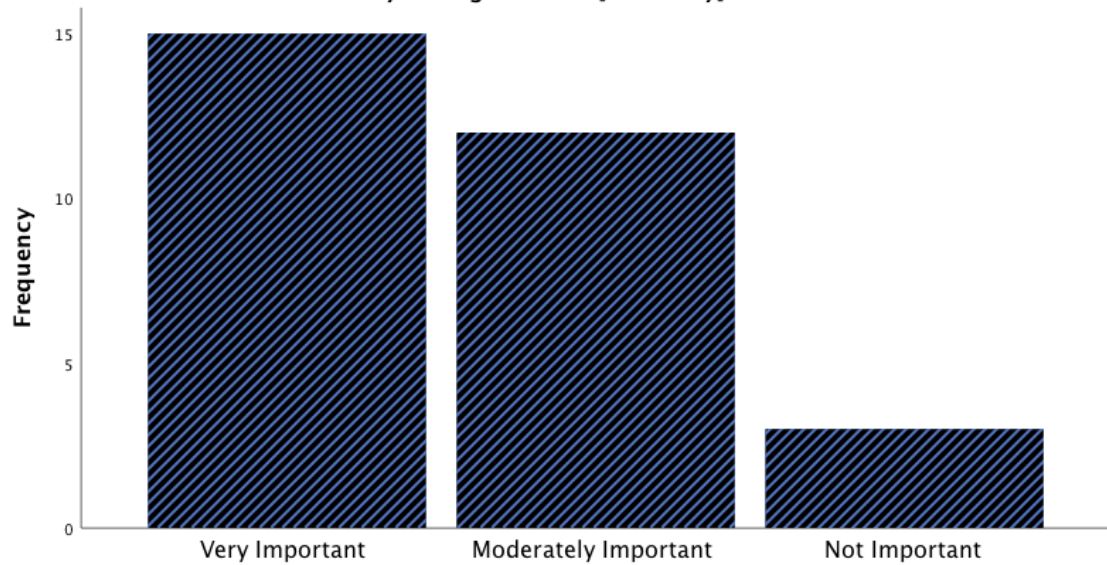
D1. Please assess the importance of the following added values with Facility Management in your organization [Improving labour productivity]



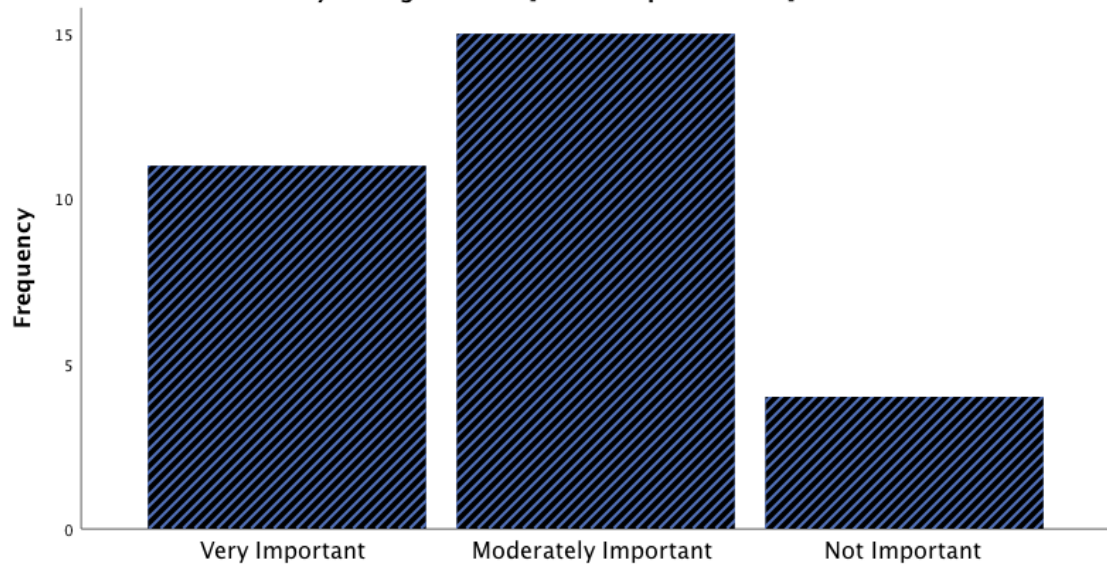
D1. Please assess the importance of the following added values with Facility Management in your organization [Risk control]



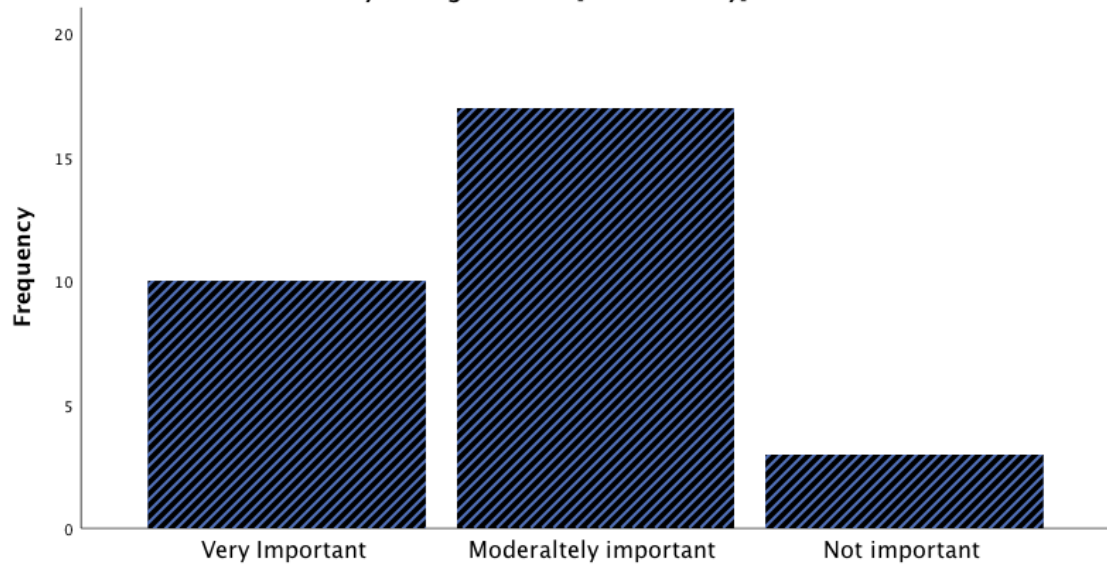
D1. Please assess the importance of the following added values with Facility Management in your organization [Flexibility]



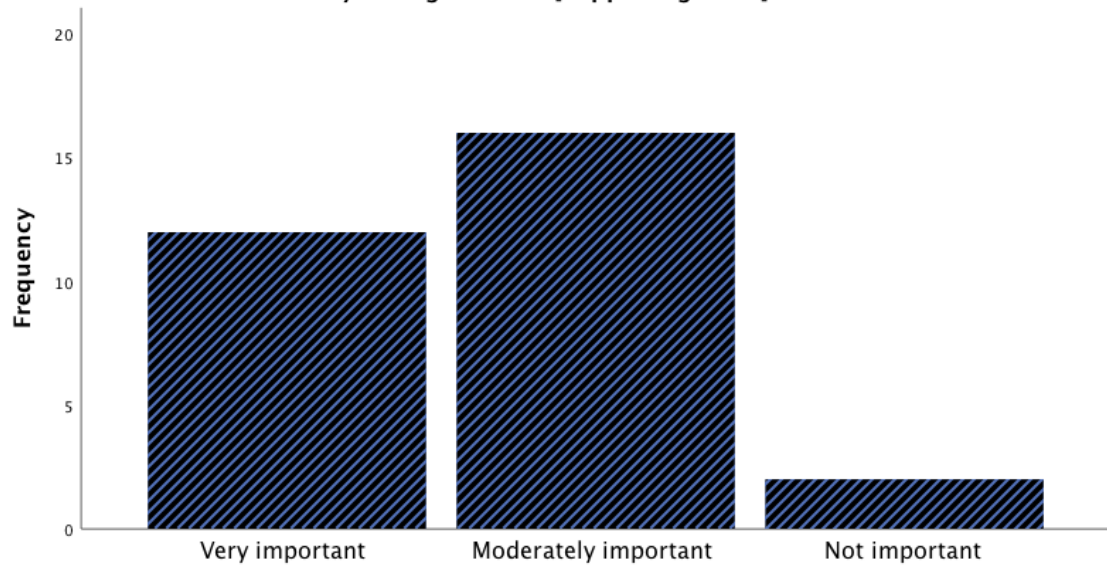
D1. Please assess the importance of the following added values with Facility Management in your organization [Financial possibilities]



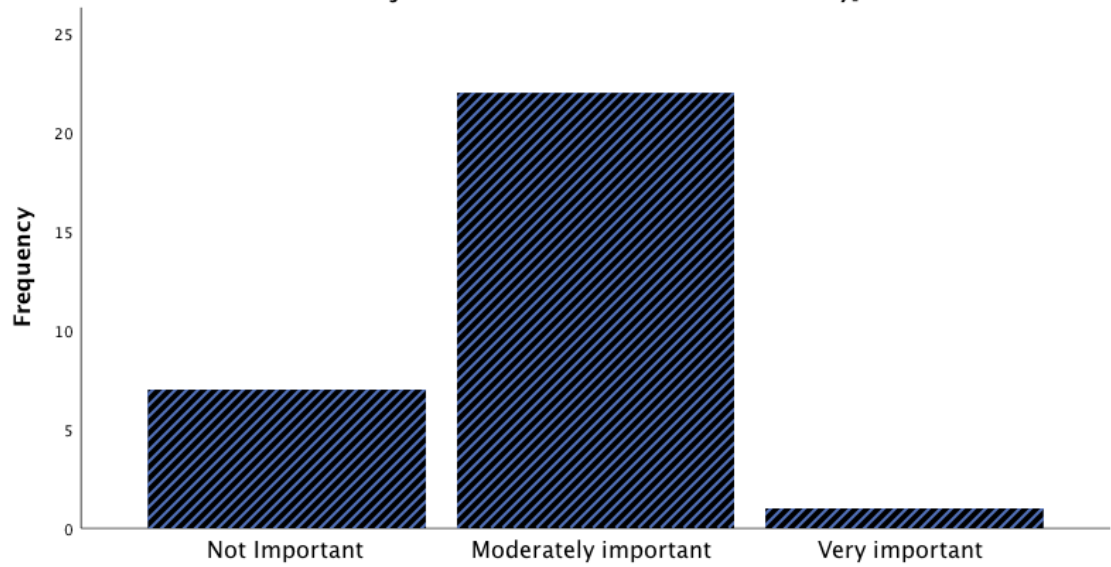
D1. Please assess the importance of the following added values with Facility Management in your organization [Sustainability]



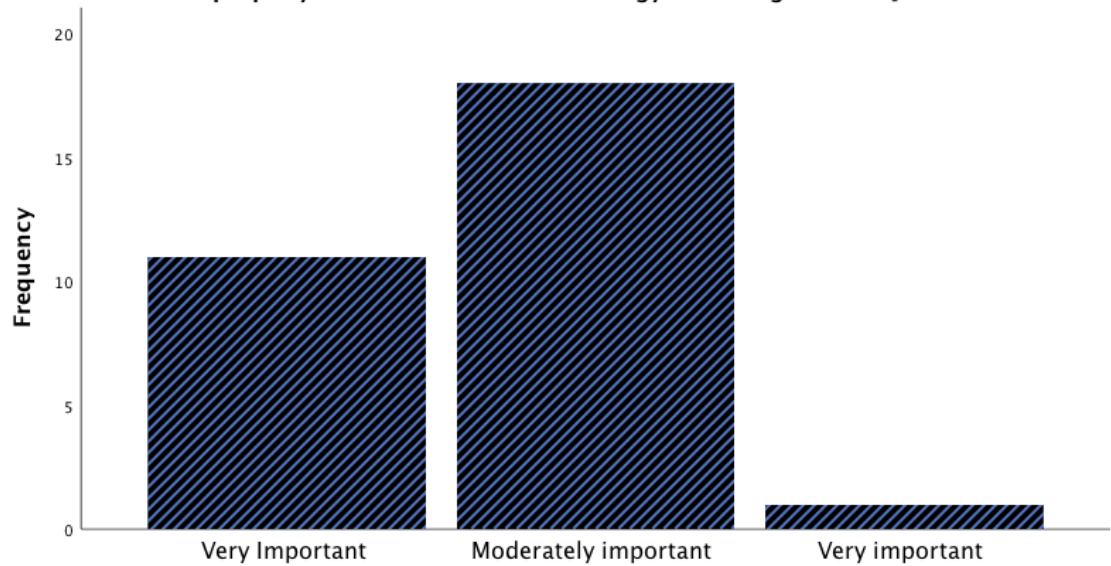
D1. Please assess the importance of the following added values with Facility Management in your organization [Supporting value]



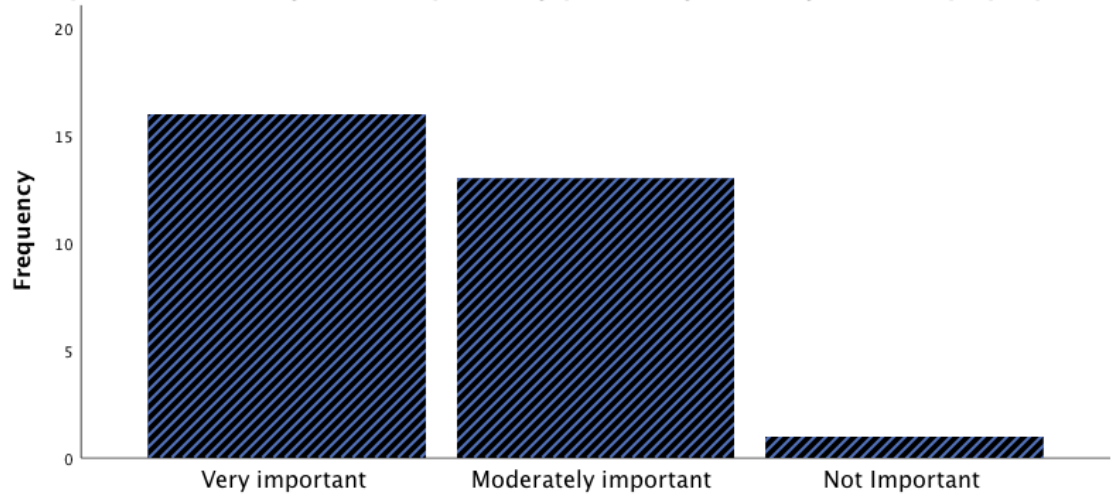
D2. Please assess the following criteria for strategic FM function [Developing facilities to meet business objectives and ensure business continuity]



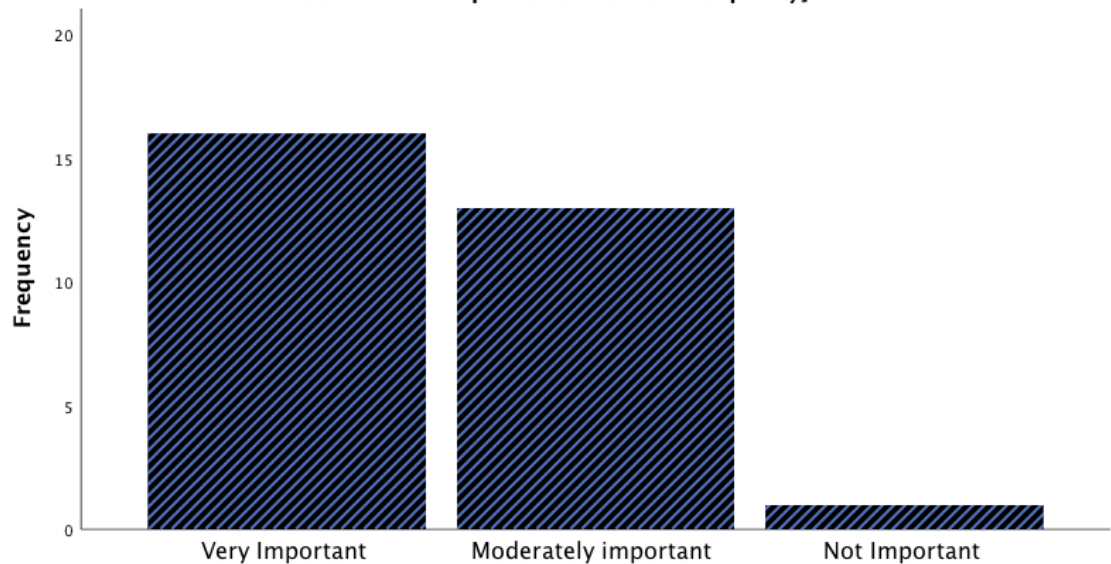
D2. Please assess the following criteria for strategic FM function [Ensure that a coherent view of property is fed into the overall strategy of the organization]



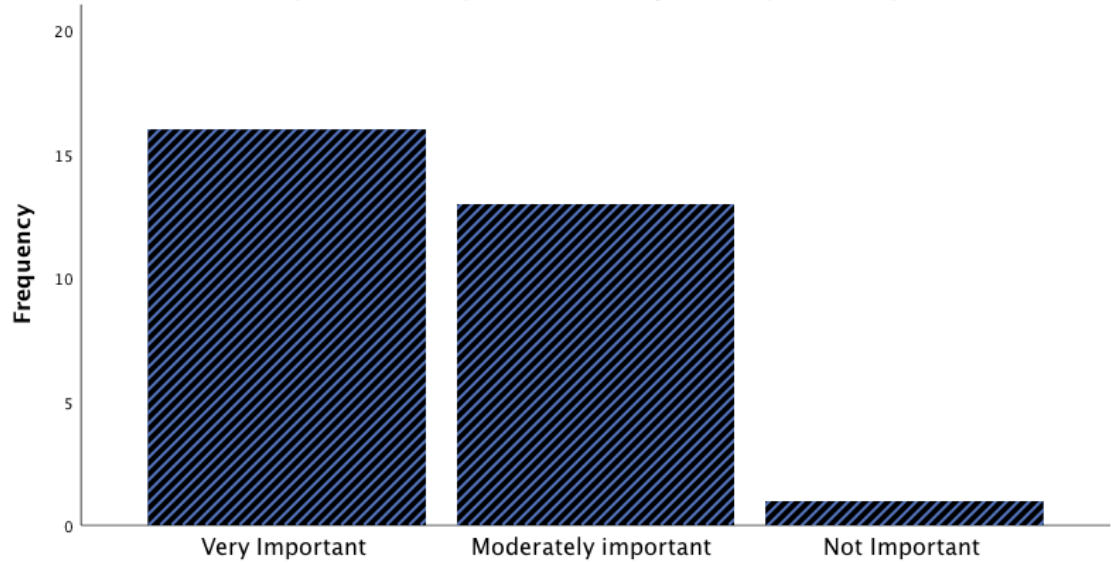
D2. Please assess the following criteria for strategic FM function [Provide economically and efficiently for the present and future needs of clients either by arranging for reallocation of space within existing estate or by building, purchasing or leasing additional property]



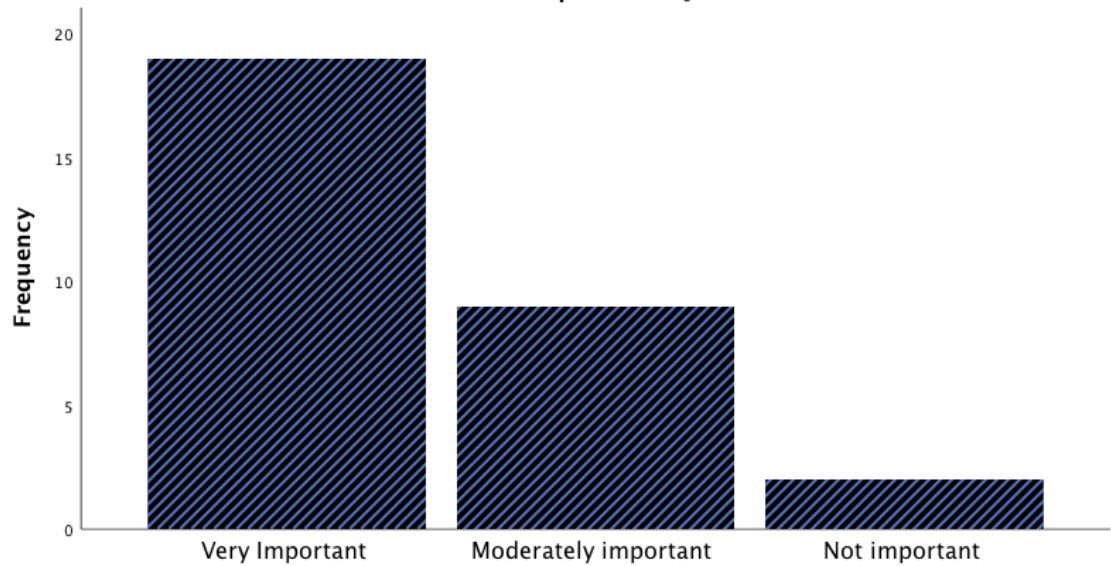
D2. Please assess the following criteria for strategic FM function [Planning and designing for continuous improvement of service quality]



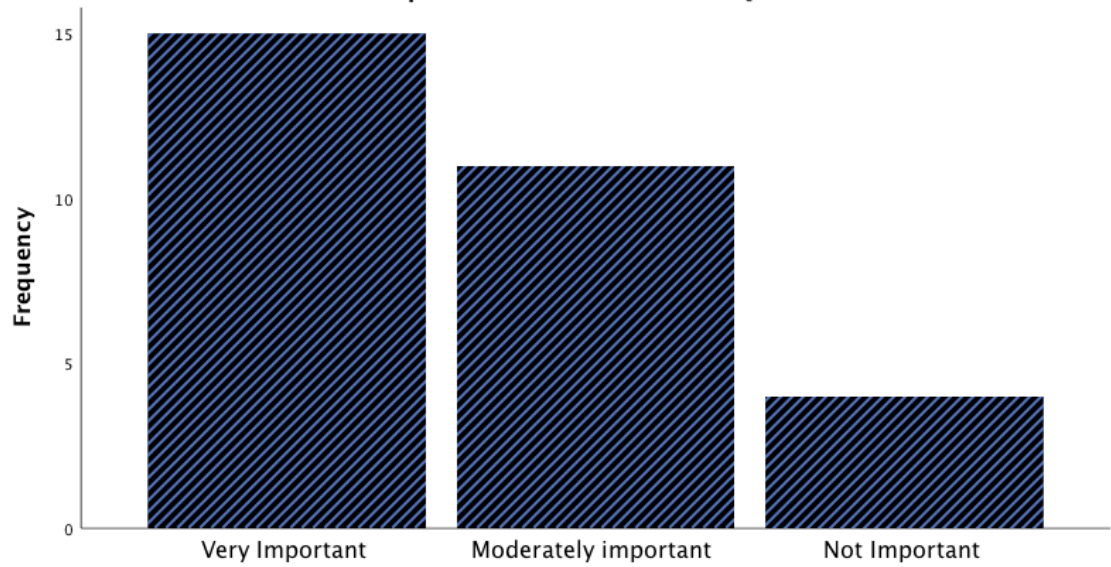
D2. Please assess the following criteria for strategic FM function [Enhance manageability, flexibility, sustainability of new, existing and adapted facility]



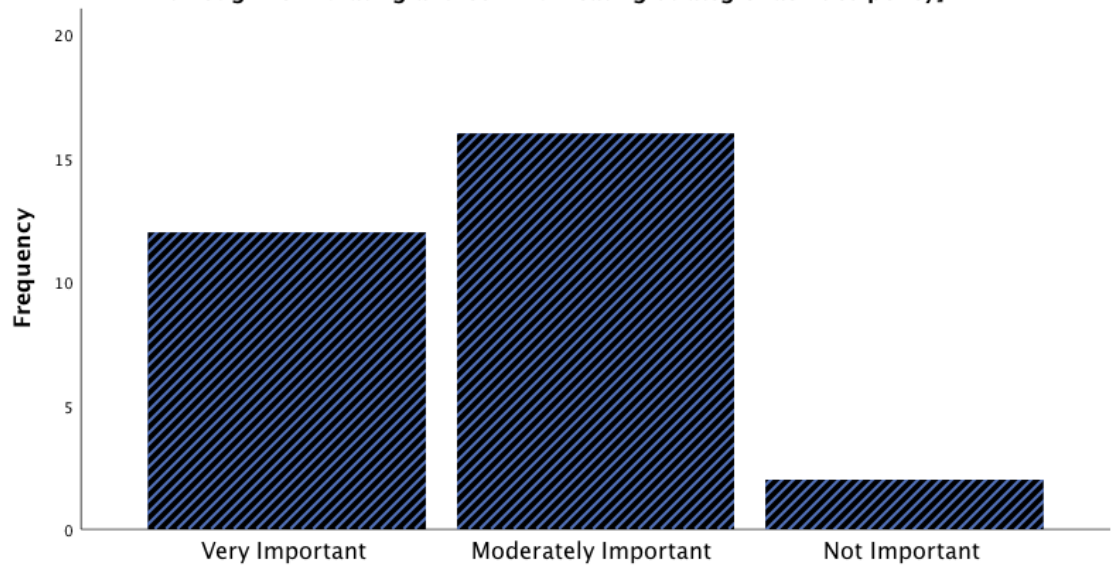
D2. Please assess the following criteria for strategic FM function [Identifying business needs and user requirements]



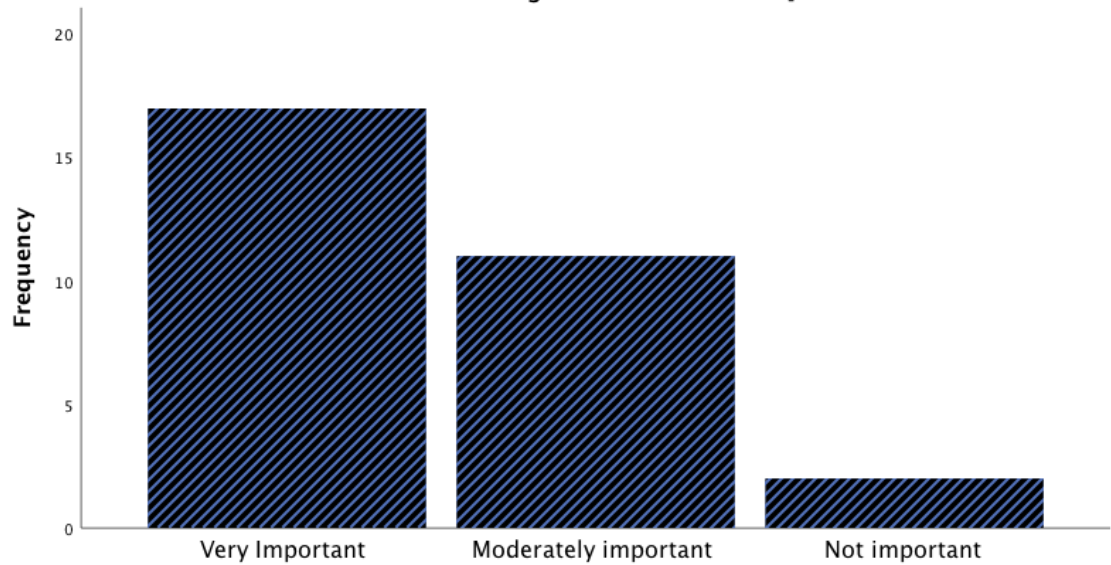
D2. Please assess the following criteria for strategic FM function [Enhancing the competitiveness of core business]



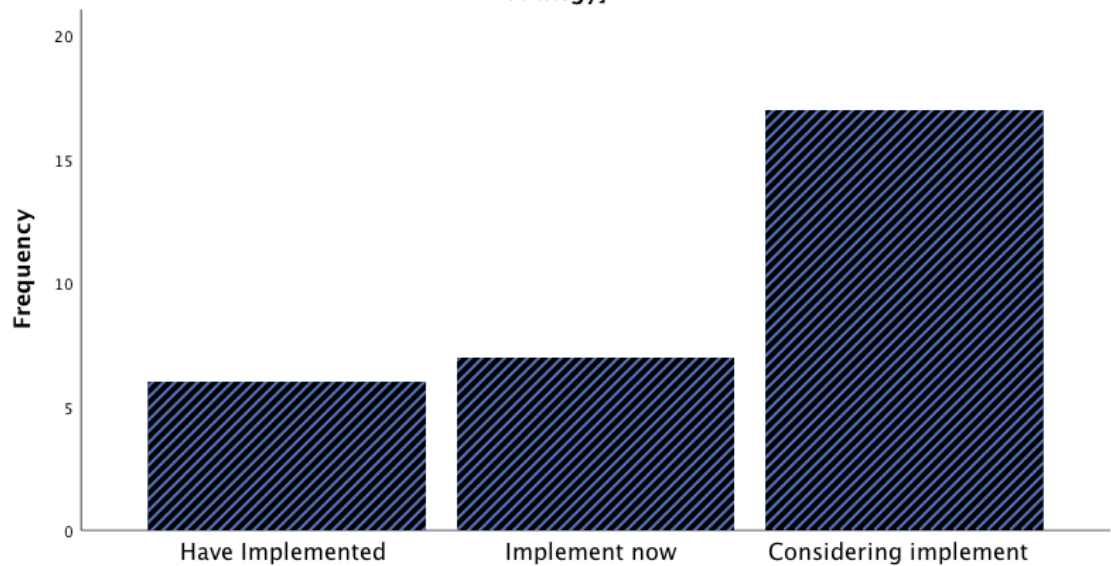
D2. Please assess the following criteria for strategic FM function [Enhancing corporate values through formulating and communicating strategic facilities policy]

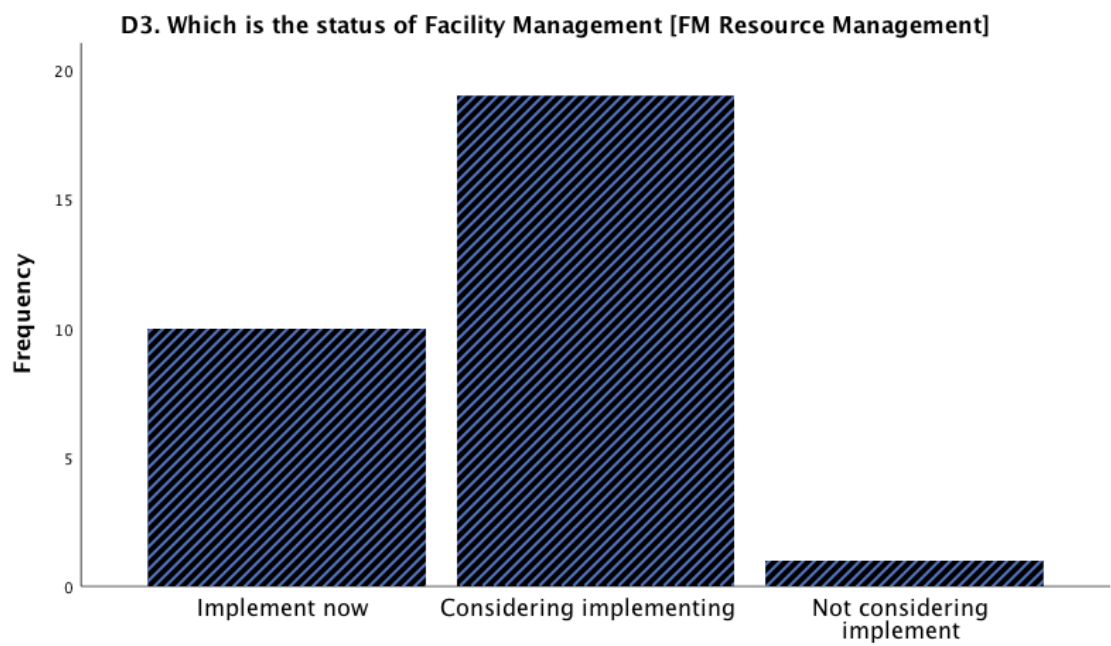
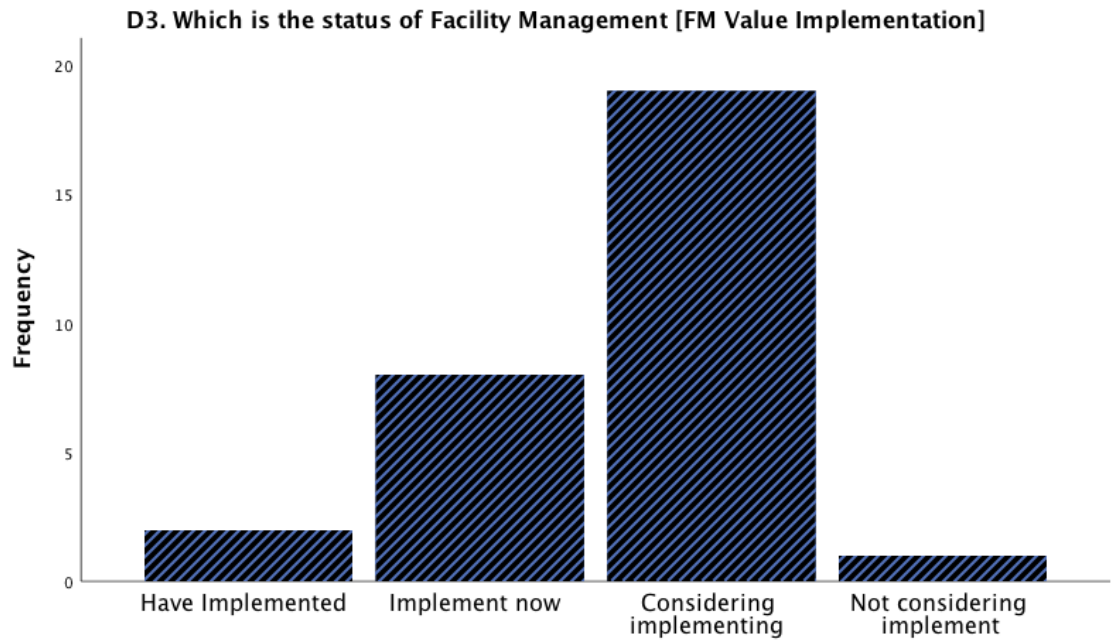


D2. Please assess the following criteria for strategic FM function [Offering strategic advice based on knowledge of client's business]

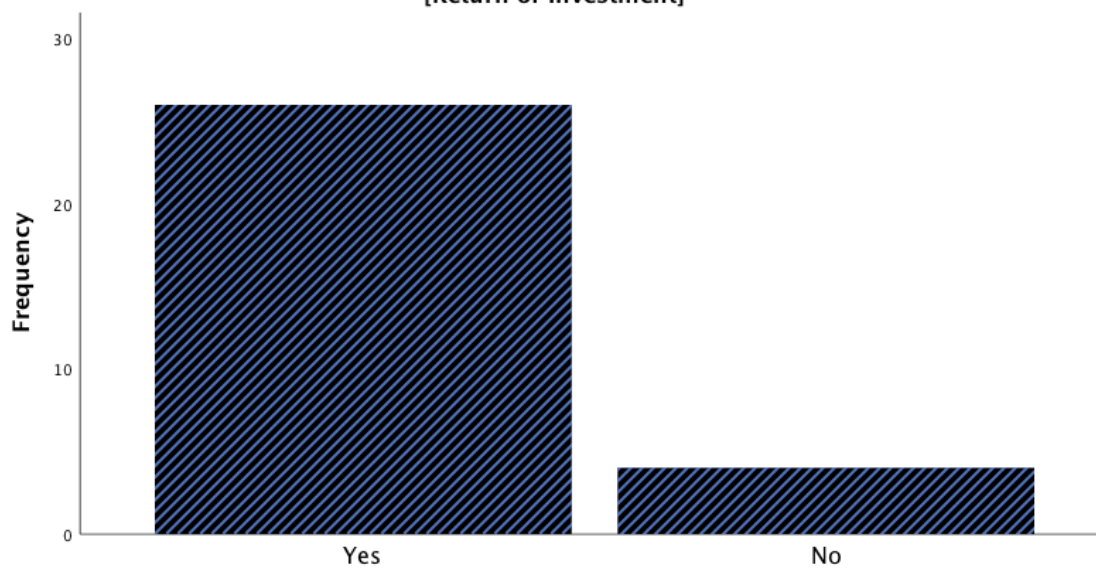


D3. Which is the status of Facility Management [Alignment between FM strategy and overall strategy]

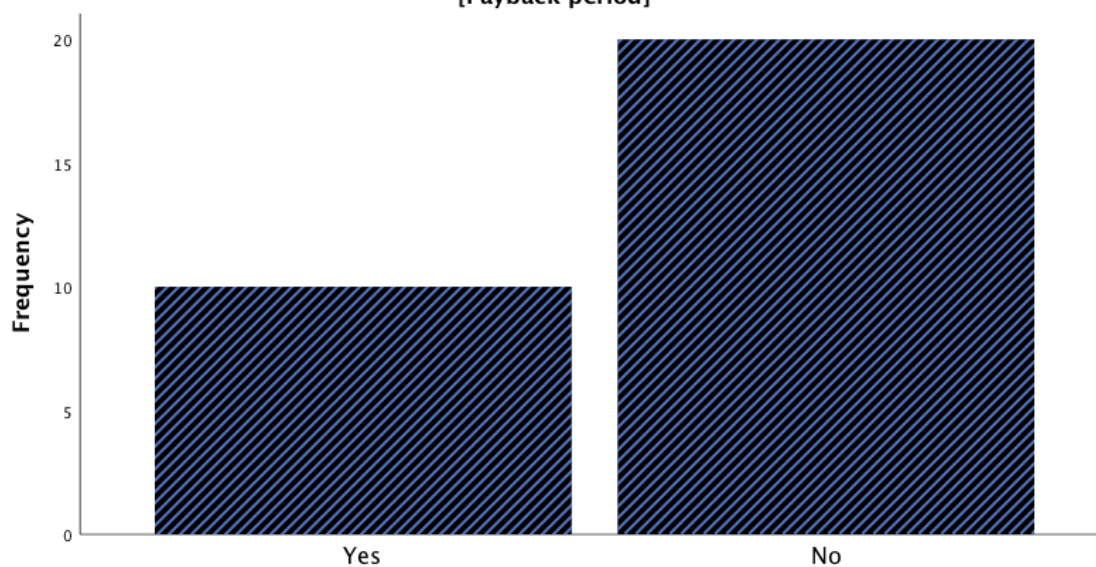




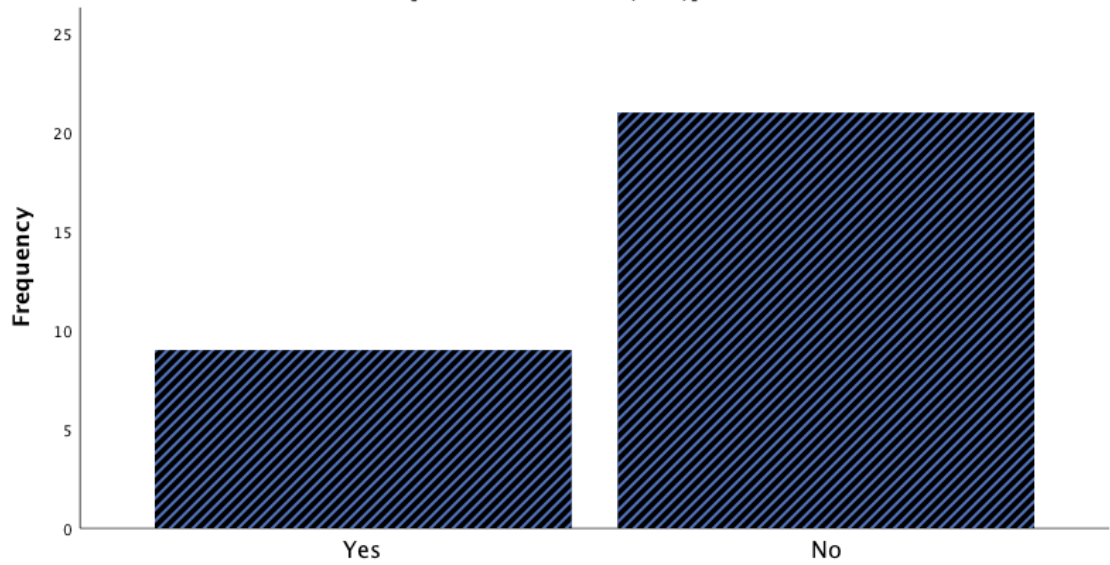
D4. And which of these methods are you using to measure the value of your FM investments?
[Return of Investment]



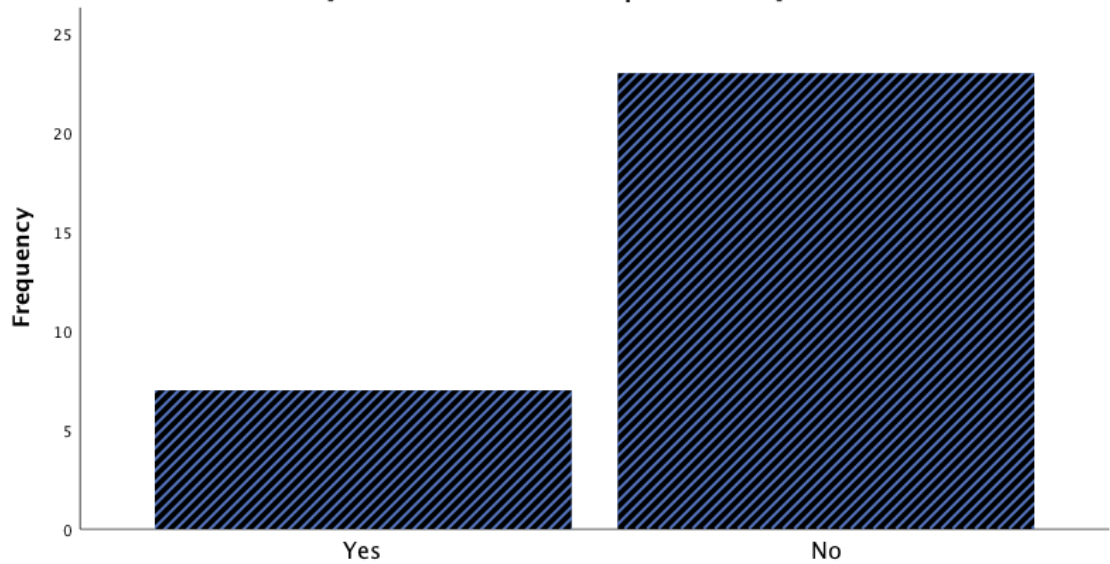
D4. And which of these methods are you using to measure the value of your FM investments?
[Payback period]



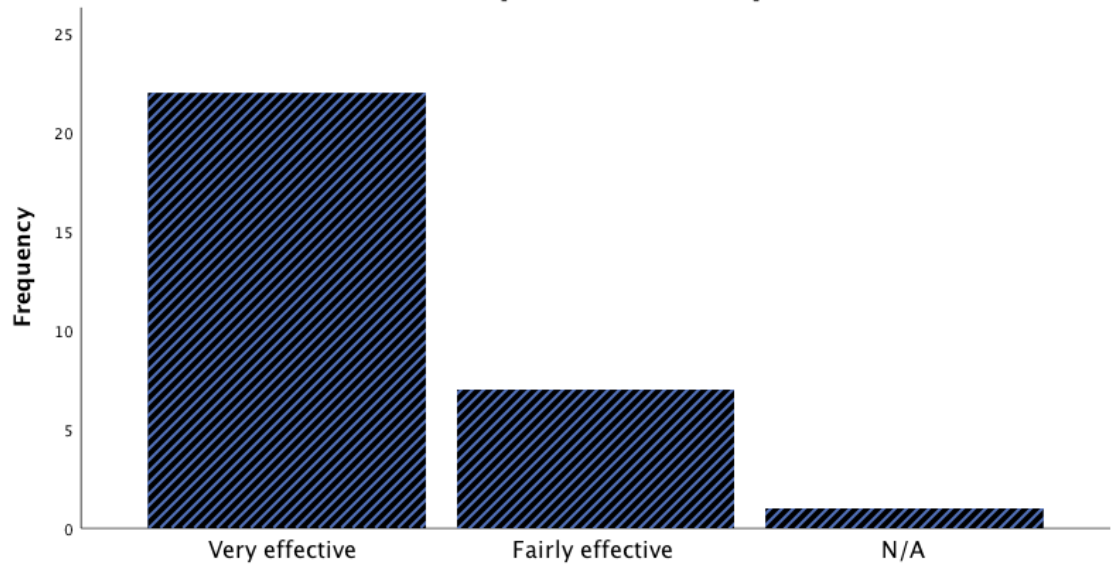
D4. And which of these methods are you using to measure the value of your FM investments?
[Net Present Value (NPV)]



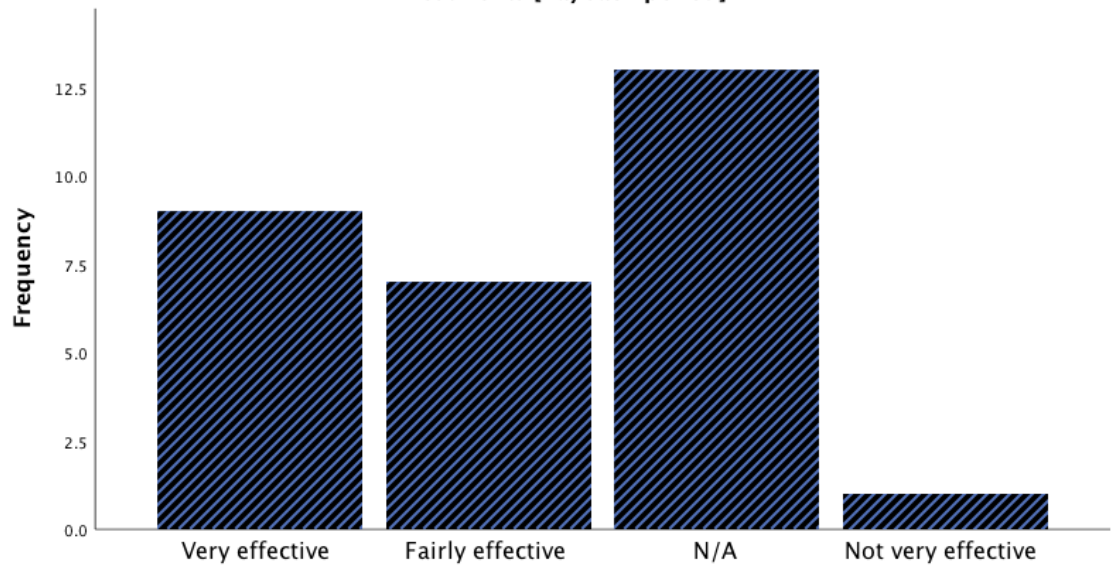
D4. And which of these methods are you using to measure the value of your FM investments?
[Your own method developed in house]



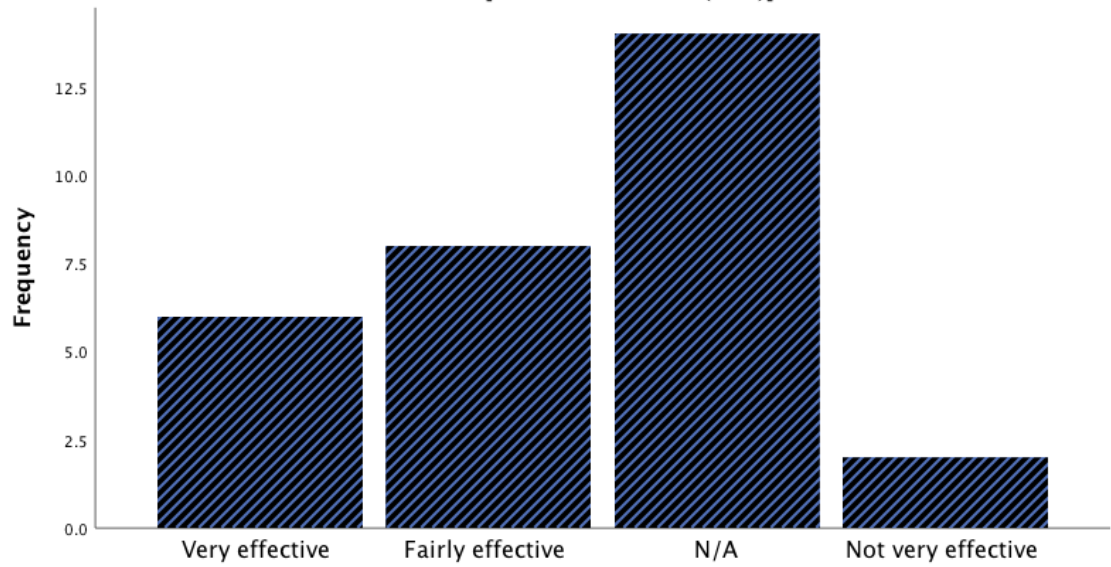
D5. In your view how effective is each of these methods in measuring the value of FM investments [Return of Investment]



D5. In your view how effective is each of these methods in measuring the value of FM investments [Payback period]



D5. In your view how effective is each of these methods in measuring the value of FM investments [Net Present Value (NPV)]



D5. In your view how effective is each of these methods in measuring the value of FM investments [Your own method developed in house]

