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IDENTIFICATION AND ANALYSIS OF THE SERVICE QUALITY GAP IN FACILITY MANAGEMENT SERVICES: A CASE STUDY IN OIL & GAS INDUSTRY

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ABSTRACT

Facility management is a relatively new industry, which has root since 1970. Nonetheless, facility management is understood differently by academic and professional institutions; the key focus is on meeting the expectation of customers. Despite a vast number of works of literature generated on service quality in the facility management industry, the available works of literature of facility management related to oil & gas industry are not many. Though the facility management function does not have a direct impact on the core business of an organisation, it has a significant role to create a productive working environment, which subsequently will lead towards a profitable business. FM department is responsible for providing facility management services for its sister departments in ABC (Oil & Gas company), such as the provision of facility services, facility maintenance services, recreation services, and HSE & security services according to the mandate of FM department. The objective of this study is to assess the effectiveness of facility management services delivered and examine the service quality gap. Self-administered questionnaires were used to have feedback from ABC employees on the services offered by the FM department. The outcomes of this study reflect the service quality gaps of Facility Management in the Oil & Gas industry. The comments received, along with the feedback, were analysed and revealed five key factors influencing the facility management service quality. A model is uncovered to illustrate the factors influencing Service Quality in Facility Management. Hence, the Facility Management Operators working Oil & Gas industry in particular and other industry, in general, can benefit from the outcomes of this study.

Keywords: Customer satisfaction, Service quality, Facility management, Oil and gas industry.

1.0 INTRODUCTION

The roots of Facility Management could be drawn back to an era of scientific management in the early 1900s. According to Wiggins (2010), the energy crisis in the 1970s caused a situation to re-assess the way of management of various facilities and premises which support the business. As the consequence of this trend along with the development of technologies, the discipline of Facility Management emerged and expanded in the more recent decades.

1.1 Facility Management

Traditionally, Facility Management is recognised as General Services such as cleaning, repair and maintenance (Atkin & Brooks, 2006; Lavy & Shohet, 2010). However, Facility Management has been understood as an integral part of the core business which has an impact on the overall revenues and productivity (Cotts & Lee, 1992; Chotipanich, 2004; Atkin & Brooks, 2006). International Facility Management Association (IFMA) defines that "Facility Management is a profession which encompasses multiple disciplines to ensure the functionality of the built environment by integrating people, place, process and technology" (IFMA, 2020). However, the definition of Facility Management has been standardised through ISO 41001:2018 recently. Accordingly, "Facility Management integrates multiple disciplines to influence the efficiency and productivity of economies of societies, communities and organisations, as well as how individuals interact with the built environment." Hence, the overall purpose of Facility Management is to create a cohesive working environment by integrating people, process, facilities, and technology to facilitate organisations to carry out their primary operations and business.

The quality of the facilities of an institution could have a direct impact on the working environment of any organisation and indirectly influence the productivity of the business process. Amaratunga and Baldry (2002) opine that Facility Management could have positively contributed to the performance of organisations in a various way such as; strategy, culture, control of resources, service delivery, supply chain management and change management. The 'Facility maintenance' is generally seen as a necessary evil, partially because, does not give much in return, but generates costs. However, high, maintained facilities have many positive effects on business performance. (Rasila and Gelsberg, 2007). Hence, the Facility Management function has been treated as a strategic partner in recent days.

Three approaches exist in delivering Facility Management services, which are; in-house, outsource, and a hybrid of both (Kamarazaly, 2007). The in-house approach is "the services that are provided by a dedicated resource directly employed by the Facility Management organisation, where monitoring and control of performance are normally conducted under the terms of conventional employer/employee relationship" (Barret & Baldry, 2003). The structure of the in-house organisation depends on the scope of the services and the locations where the customers require services to be provided (Wiggins, 2010). A firm could internally organize such as "soft" services and "hard" services, and each of these functions should be structured based on the activities assigned.

The trend of outsourcing Facility Management services has been recently more popular compare to previous decades. The outsourcing approach is also called as Total Facilities Management (TFM); it is about outsourcing all facility services to a single service provider (Wiggins, 2010). The client will have to communicate with the Facility Management organisation, typically with the finance department, to settle the single invoice to cover all the services (Kamarazaly, 2007; Rasila & Gelsberg, 2007). since managing a contract is comparably comfortable than managing various functions and related people, cost serving could be the primary benefits outsourcing strategy (Lankford & Parsa, 1999). As far as the hybrid approach is concerned, Facility Management

department chooses to outsource part of the functions based on the specialisation of the service providers. Since there are relatively few organisations which can provide all the facility management services by themselves, companies used to outsource or subcontract specific services based on the performance and specialisation.

In both outsourcing and hybrid approaches, the Facility Management department relies on service providers to assign the people for work. Therefore, the responsibility of providing the right job by deploying the right people is up to the suppliers. Meantime, the client has the opportunity to gains access to expert services from subcontractors from different backgrounds in terms of; nationality, professional, and experiences. However, there are some disadvantages could exist in client point of view, such as; difficulties in changing any unsatisfactory portion of the contract (Lankford & Parsa, 1999; Kamarazaly, 2007; Ogungbemi, 2010).

However, it is the responsibility Facility Management department to deliver maximum value to its customers to meet their expectation (Rogers, 2005). Hence, the Facility Management department must ensure to receive maximum benefit from its service providers.

1.2 Facility Management in ABC

FM department in ABC is responsible for providing facilities management services to its sister Departments. The mandate of the FM department includes the provision of facilities services, facility maintenance services, recreation services, and HSE and security services. FM department has established policies and procedures to define its services in-line with its mandate. FM department in ABC implements a hybrid approach to provide facilities management services to ABC. Though the FM department does not fall in the list of core Departments, it is the criticality should not be undermined in the view of creating a productive working environment. Scientific research has revealed that the working environment has a negative correlation with the number of complaints and absenteeism, whereas a positive correlation with productivity (Leblebici, 2012; De Been & Beijer, 2014).

The FM department was established from the inception of ABC company to manage and maintain its multi-story building facilities in a traditional manner. Due to the recent development in the industry, the FM department was reviewed and upgraded in-line with the business requirements because the existence of the gap between the services provision and the customer expectation may cause considerable impact on the productivity of the ABC. The question of whether the services provided by the FM department meet the expectation of the employees to perform their duties effectively? Persuaded the researcher to explore the effectiveness of the FM department. Identification of presence or absence of such a gap will indicate the necessity of continual improvement of Facility Management Services as well as the enhancement of the productive working environment for all the employees of ABC. Having proper measurement about the perceptions and expectations of customers is vital to manage the facility management function effectively. Therefore, the objective of this study is to assess the service gap in facility management services at ABC.

2.0 LITERATURE REVIEW

This section reviewed various works of literature related to service quality, customer satisfaction, and service quality in facility management.

2.1 Service Quality

Quality is a dependent aspect of customer expectation. It is about meeting the explicit and implied need of the customers for the first time. Not meeting customer expectation at the first time requires 're-work' or 'correction and corrective action' which cost 30% to 40% of the operating cost of a service organisation (Ghobadian et al. 1994). Hence, minimising or eliminating the cost due to poor quality is one of the significant challenges in the service sector. Therefore, identifying and implementing the right measures to enhance quality is vital for service organisations.

Quality is a dimension which is difficult to define objectively. In the case of the manufacturing industry, specifications of the product will determine the quality aspects. However, it is not easy for the service sector, where this notion of quality is not tangible. Therefore, the quality aspects in service sectors are measured based on customer satisfaction (Ree, and McLennan, 2006). According to Sasser et al. (1997), "customer loyalty drives profitability and growth; customer satisfaction drives customer loyalty; value drives customer satisfaction; employee productivity drives value; employee loyalty drives productivity; employee satisfaction drives loyalty and internal quality drives employee satisfaction." Hence, quality is not an isolated factor, which could be controlled to achieve profitability targets. It is a critical part of the overall service profit chain.

Service quality is "an assessment of how well a delivered service conforms to the client's expectations" (Service quality, 2020). It is a crucial indicator for service providers to understand the quality of services in terms of identifying the problems in the service delivery process and solutions to enhance the business. Studies (Kasiri et al. 2017) revealed that integration of standardisation and customisation of services has a critical impact on service quality.

Academics and professionals have developed various service quality models to monitor and measure customer satisfaction. However, the application of the models is differed due to multiple factors such as type of service setting, business context & environment, and need. (Seth et al. 2005). The SERVQUAL instrument is one of the widely used tools applied in a variety of service industries, which addresses many elements of service quality divided into the dimensions of tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al. 2002). According to the SERVQUAL model, service quality can be measured by identifying the gaps between customers' expectations and their perceptions of the actual performance of service (Nadiri & Hussain, 2005). Therefore, understanding and measuring customer satisfaction is essential to know the service quality of the business.

2.2 Measuring Customer Satisfaction

Customers are the purpose of any organisational activities. If any firm fails to attract the customers and retain them, the survival of the firm will become uncertain. Because organisations are depending on customers; instead, customers rely on the organisation (Lepkova & Jefimoviene,

2012). Therefore, understanding the need of the customers is crucial for any organisations to succeed. There are two kinds of customers for processes within an organisation: external and internal. External customers are the customers in the marketplace, whereas internal customers are the customers within the corporation, the employees of the corporation (Zairi, 2000; Fečikova, 2004; Hobbs & Besner, 2016). As far as the internal customers are concerned, proper understanding about the customers such as; gender, age, profession, nationality, and prior working environment. also important. Accurate information about the customers enables the organisations to provide the services with greater satisfaction.

Measuring customer satisfaction has become one of the commonest prescriptions to managers and organisations, since it is a key issue in-market performance, and used by management in decision making (Piercy, 1996). From the inception of the "customer service revolution" more than two decades, various researchers have focused on customer satisfaction and customer-focused organisations (Cengiz, 2010). According to Beard (2014), customer satisfaction is a term that measures how products or services delivered by an organisation satisfy the expectations of customers. It is a leading indicator to measure customer loyalty, unhappy customers, and eventually increase the business revenue.

The expectancy disconfirmation theory is one of the widely recognised conceptualisation theories, developed by Oliver (1980). He proposed that satisfaction level is a result of the difference between expected and perceived performance. Parasuraman et al. (1981) have defined the concept of customer satisfaction as "An evaluation of the surprise inherent in product acquisition or consumption experience." In essence, it is about the psychological status resulting from the consumption experience. Cadotte et al. (1987) support with a similar definition that it is about the feeling or impression developed from the experience. Halstead et al. (1994) define as, "A transaction-specific affective response resulting from the customer's comparison of product performance to some pre-purchase standard." However, Oliver's (2014) definition focuses on product or services during the consumption period. Accordingly, the conceptual meaning is "the customers' fulfilment response, is a judgment that a product or service feature or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfilment, including levels of under- or over fulfilment" (Oliver, 2014). Hence, customer satisfaction is an immaterial phenomenon, influenced by the psychological status and the pre-purchased standards of the customers.

2.3 Service Quality in Facility Management

According to Shohet (2006), the global trends such as, increased construction costs, recognition of space, increased performance requirements and criticality of maintenance at high rice buildings, primarily leads to the development of Facility Management discipline. Smith and Pitt (2007) argue that the FM as a profession should be used strategically to provide quality-working environments, which are fit for the purpose for which they have been designed. The quality working environment can lead to productivity gains in the workforce, improve workplace satisfaction, retaining talented members of staff, thereby increasing profits. Facility Management also considered as a management discipline, which combines technical and managerial skills to manage the resources

and consequently, it should relate to strategic management such a way to make a productive organisation to attain the overall goal of the business (Yusoff & Ismail, 2008). For Alexander (2013), "Facility Management is a total quality approach to sustaining an operational environment and providing support services to meet the strategic needs of an organisation" (Alexander, 2013). Hamilton (2004) and Kamarazaly (2007) explain four key concepts in the application of Facility Management practices: cost-effectiveness; proactive; integrative; and strategic.

From an administrative point of view, Facility Management is classified into three groups (Akhlaghi, 1990): strategic; tactical; and operational (Table – 1).

Table 1: Classification of Facility Management tasks (source: Then & Akhlaghi, 1990)

APPROACHES	EXECUTIVE RESPONSIBILITIES	MANAGEMENT ROLES	PROJECT TASKS
Strategic	• Mission statement • Business Plan	• Investment appraisal • Real estate decisions • Premises strategy • Facility master planning IT strategy	• Strategic studies • Estate utilisation • Corporate standards • FM operational • Structure corporate brief
Tactical	• Corporate structure • Procurement policy	• Setting standards • Planning change • Resource • Management • Budget management database control	• Guide-line documents • Project program • FM job description • Prototypical budgets • Database structure
Operational	• Service delivery • Quality control	• Managing shared facilities • Building operations • Audits • Emergencies	• Maintenance • Procurement • Refurbishment • Inventories • Post-occupancy audits

Facility Management aims to balance the demand for supporting services with supply of an optimised mix between needs, service levels and capabilities, constraints, and costs, which is illustrated by the figure - 1 below.

There are various business units or other departments request to deliver services to operate their business productively, within the conditions stipulated by the Service Level Agreement. Accordingly, the Facility Management department will provide the services to support them. All kinds and various levels of interaction from clients, consumers, and customers in the demand side of Facility Management could create many challenges; primarily conflicts between their perception and expectation of the services delivered.

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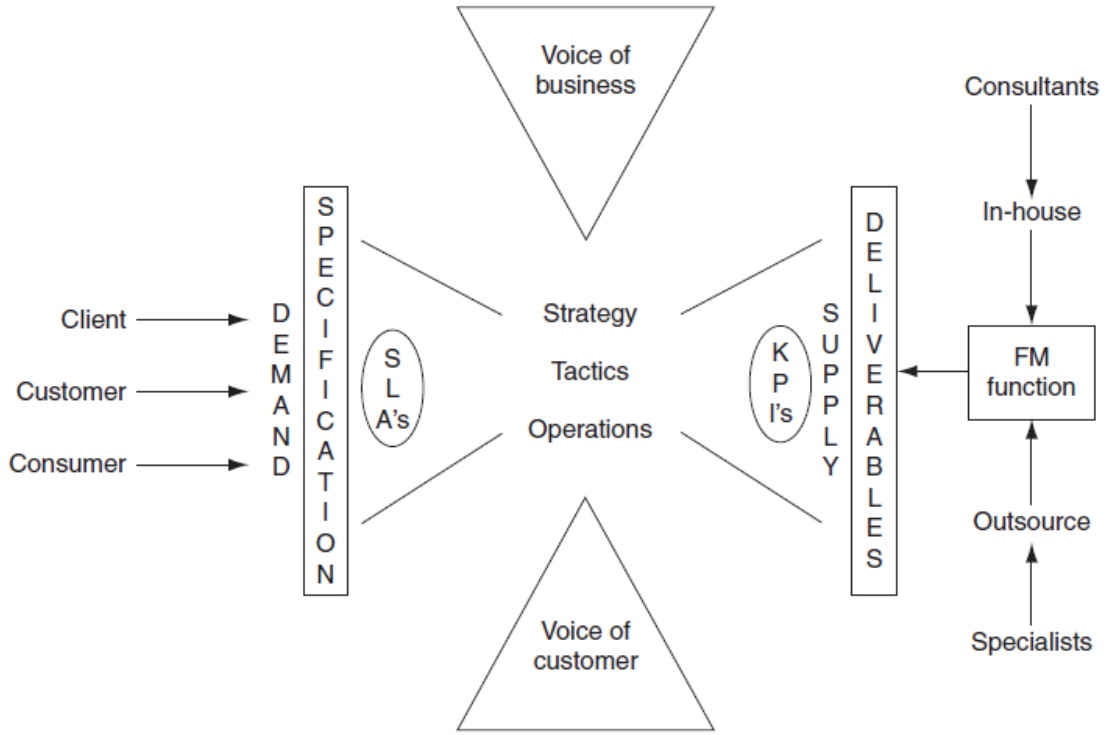

Figure 1: Demand supply model of Facility Management (Wigging, 2010)

In a study on customer satisfaction with Facility Management services, Lepkova and Jefimoviene (2012) determined that focusing on customers is a correct action and can be a necessary action. Researches have revealed that the perception of end-users may be more significant to facilities management than reality (Fleming, 2004). Achieving high customer satisfaction is an important issue and challenge facing the contemporary service industry (Hung et al. 2003), including Facility Management Industry. Fečikova (2004) suggests that for a company to achieve customer satisfaction, they must measure it because "you cannot manage what you cannot measure." Measuring customer satisfaction is one of the better mechanisms to understand the viewpoints of their customers (Rondeau et al. 2006).

As far as Facility Management is concerned, the end-user of the facilities are the customers of a Facility Management department (Ree & McLennan, 2006). Therefore, 'customer focus' should be one of the strategic priorities of the Facility Management department. Hinks and McNay (1999) found that the perception of the end-users compare to the FM team towards the performance and importance of Facility Management services is dissimilar. Therefore, with an adequately established feedback system to capture the perception of customers, meeting the requirement of customers could be assured. However, the Facility Management teams have an opinion that the Facility Management department is looked upon in a negative light by its customers (Smith & Pitt, 2007). In this respect, the Facility Management profession could learn the extraordinary

mechanisms used in the hospitality industry in terms of customer service. Yusoff and Ismail (2008) have proposed a model; FM-SERVQAL, to measure the service quality in the Facility Management industry, based on the definition by IFMA. FM-SERVQUAL is a new version of SERVQUAL which has been developed based on the original version of SERVQUAL model which was created by Parasuraman et al. (2002). Despite an enormous number of works of literature generated on service quality in the facility management industry, the available works of literature in facility Management related to oil & gas industry are not many (Ree & McLennan, 2006).

As far as the Facility Management industry is concerned, facility management makes a positive impact on their organisation's productivity and financial bottom-line. Facility management function has been recently recognised as encompassing other support services such as catering, security, car fleet services, mail service, and reception (Omirin et al. 2012). Facility Management as a service-oriented department which could negatively contribute in many ways. For instance, drop in motivation and productivity of employees of the parent organisation, damaging the reputation of the organisation, and increase of the product unit cost are some of the critical negative consequences could be argued. Therefore, facility management services need to be standardised as well as customised, to provide a satisfactory working environment for employees, especially working in the oil & gas industry.

As far as FM department in ABC is concerned, it is a department within a large corporation and significant portion of the facility services are designed by the FM department to meet the budget and to satisfy the senior management's expectations. Consequently, Facility Management services are mainly designed without having inputs from the end-users. This scenario always generates considerable service quality gap between the perception and the expectation of the customers.

3.0 METHODS OF THE STUDY

The FM department in ABC is responsible for providing facility management services to its sister departments, occupied in number multi-story building facilities. The mandate of the FM department includes the provision of Facilities services, Facility maintenance services, Recreation services, HSE and Security services. FM department has established policies and procedures to define its services in-line with its mandate to provide services to employees of multi-national background working in ABC. The main objective of this research is to identify and analyse the customer satisfaction gap of the FM department and identify the factors affecting customer satisfaction.

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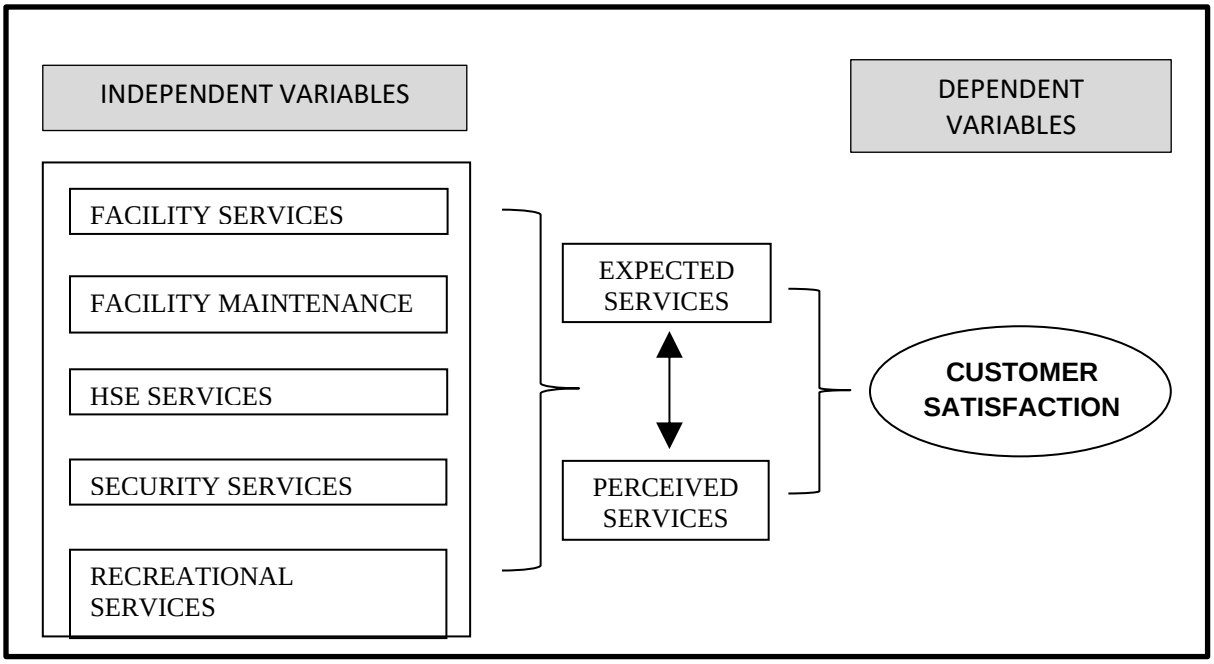

Figure 2: Conceptual Framework

Since the objective of this research is to study the gap between expectations and perception of the customers, the qualitative approach facilitated through a questionnaire survey was used. The questionnaire was designed to collect data from individual customers. The time frame was designed to collect the data such a way to gather only once within the given time frame (Cohen et al. 2001). The researcher depended on the primary data. Therefore, the data collection was conducted by a structured self-administered questionnaire. The questionnaire was developed based on information collected from the literature review. The survey was set-up in on-line, as Form and the link was sent individually by Lotus note email system, such a way to maintain the confidentiality and to allow for minimum biases during data collection (Tull & Hawkins, 1984). Since all the ABC employees are given a personal computer with personal email ID, this method was found simple and cost-effective (Zikmund et al. 2013). The population of this survey was all the employees working at ABC.

Stratified sampling technique was used to collect the data through a self-administered structured survey. The stratified random sampling assumes the division of the target population into a number of strata, and those strata must not overlap, and together they must cover the whole population (Johnson & Bhattacharyya, 2019). One of the key advantages of the stratified sampling method is, this technique improves precision by reducing the variance. In this study, each directorate of ABC was considered as a stratum. Each directorate has been located various facilities, and one out of them was selected as the sample for that particular stratum. The questionnaire of this research was designed based on the measurements selected for the key constructs. Accordingly, the

questionnaire comprises of five sections; A, B, C, D, and E, excluding the basic questions to collect standard information and demographic characteristics of respondents (Table – 2).

Table 2: Questionnaire structure

SECTION	CONSTRUCT MEASURED	AREA OF INVESTIGATION
A	Facilities Services	• Offices/Office Furniture. • Office Equipment. • Services of Office Waiter. • Office Cleaning Services. • Services of building Foreman.
B	Maintenance services	• Civil maintenance works. • Electrical maintenance works. • A/C maintenance works. • Services of the Foreman
C	HSE services	• Effectiveness & efficiency for emergency response at 24 x 7. • Emergency Drill exercise. • Adequacy of information related to HSE • Response to HSE Incidents.
D	Security services	• Online Security Incident report. • Response to Security Incidents.
E	Recreation services	• Courtesy/ helpfulness/ cleanliness of the Club staff. • Quality of services in clubs. • Quality of Food /Beverages. • Activities provided by Club. • Clubs Facilities.

The simple analysis was done by using MS Excel. The objective of choosing this tool to show the graphical presentation of the analysis. All the required ethical procedures have adhered from inception to completion of the survey. Respondents were addressed in the email along with the questionnaire that explained the objectives of the survey and a statement of assurance to maintain the confidentiality of their responses (Rock, 2001). In addition to that, the comments received from the respondents were analysed through qualitative content analysis methodology to understand the key factors that influence the effectiveness of service delivery.

4.0 DATA PRESENTATION AND ANALYSIS

The section explains the analyses and presentation of data gathered from the survey by using MS Excel to present the existence of the gap in services quality of the FM department.

4.1 Survey Overview

This section discusses the survey feedback in various perspectives. The participation (22%) in the survey found overall satisfactory across all three employees' spectrums (managerial, senior staff, and junior staff). Each category employees have participated in proportion to their numbers.

Similarly, each category of service period also has participated in the survey proportion to their numbers. This is an interesting phenomenon noticed in this survey. Each variable or construct measures were analysed separately to identify the customer satisfaction gap.

4.1.1 Response Overview

The survey questionnaires were circulated among all the ABC employees occupied in five facilities (N=2,276). Out of 2,276 questionnaires, 511 were responded, which is 22%. All the questionnaires received were duly filled and used for analysis.

4.1.2 Sample Characteristics

The sample consisted of employees across ABC, and they did not possess the same characteristics, such as; age, gender, nationality, employment grades, and services period. The figures 3, 4, & 5 illustrate characteristics of the sample in terms of employment grades, and employment period in ABC. According to figure - 3 survey feedback received shows some kinds of consistency; managerial level staff (20%), senior-level staff (24%), and junior level staff (20%). The overall response is 22%.

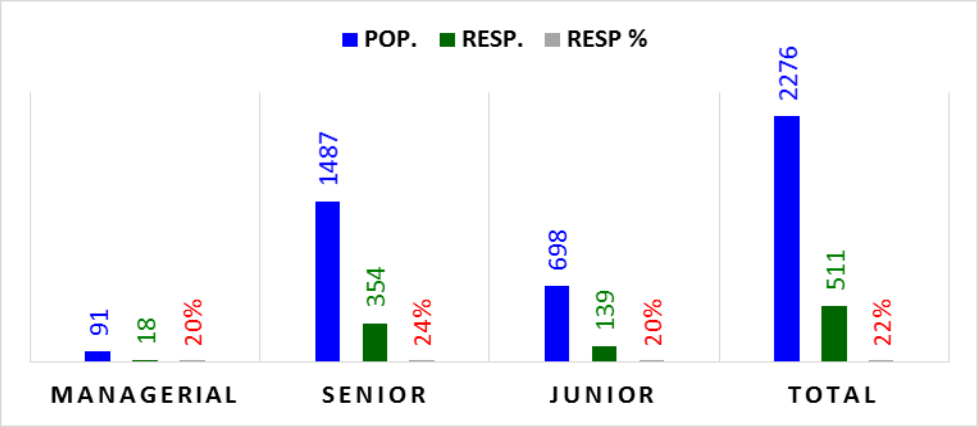

Figure - 3: Survey feedback

The sample profile illustrated in figure 4 and 5 the employees, classified into three grades; managerial level staff, senior-level staff, and junior level staff. The majority of the sample consisted of senior staff, indicating 65% as compared to junior staff (31%). As far as the rate of response is concerned, senior staff have shown more enthusiasm to respond to the survey, indicating 69% out of total feedback received.

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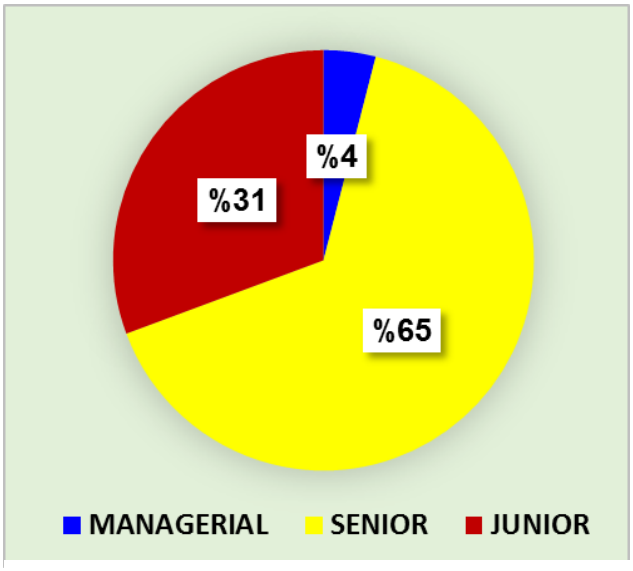

Figure 4: Survey population, as classified according to employee grade

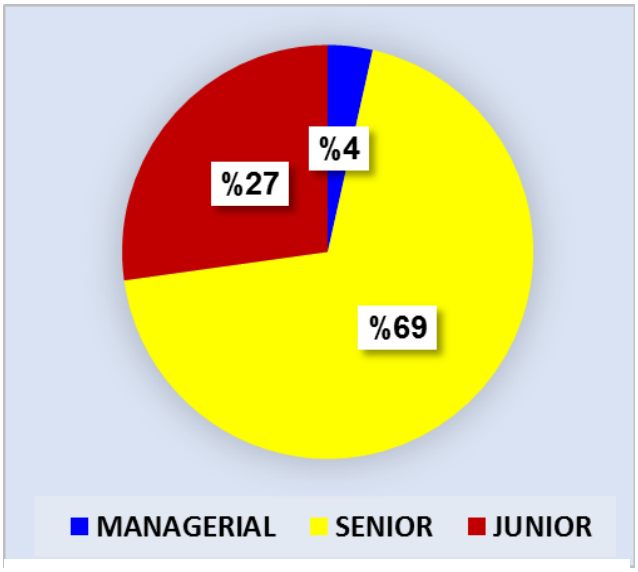

Figure 5: Survey feedback, as classified according to employee grade

With regard to the period of employment in ABC, below figure 6, 7, and 8 illustrates an interesting analysis. The overall response rate is 22%.

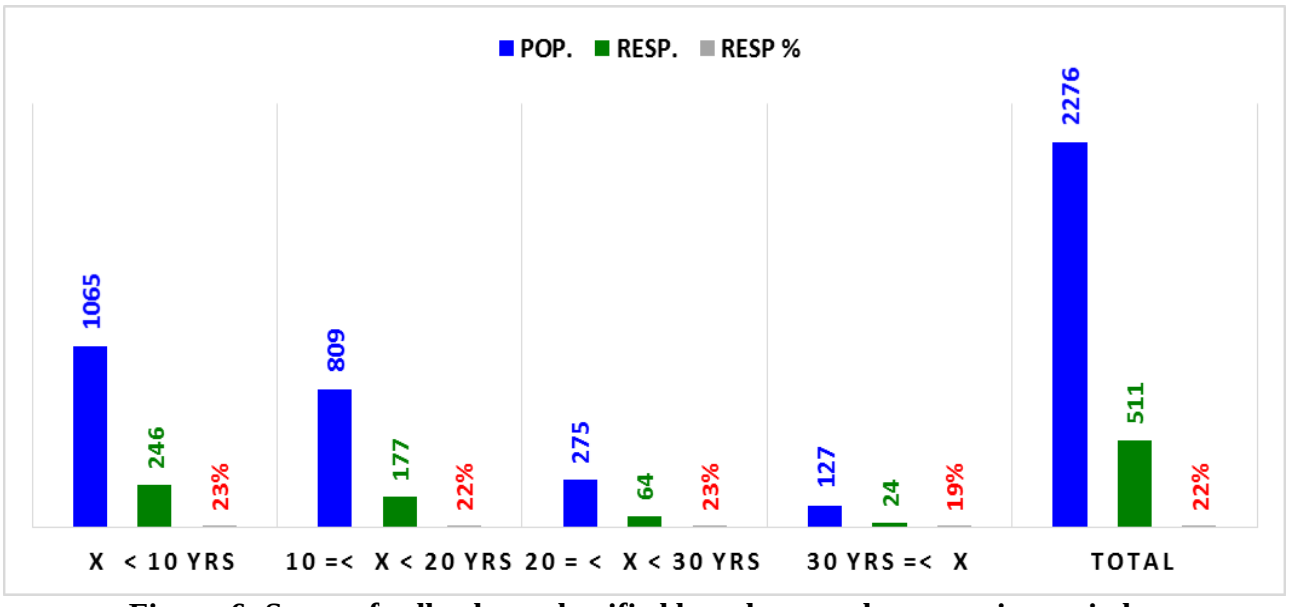

Figure-6: Survey feedback, as classified based on employee service period

According to figure –7 & 8, the majority of the employees in ABC are working less than ten years, indicating (47%). The figure-7 demonstrates the percentages of the respondent in each category and looks they are proportional to the percentage of their categories. Old-timers, who are working in ABC for more than 20 years are less than 20 % of the total number of employees.

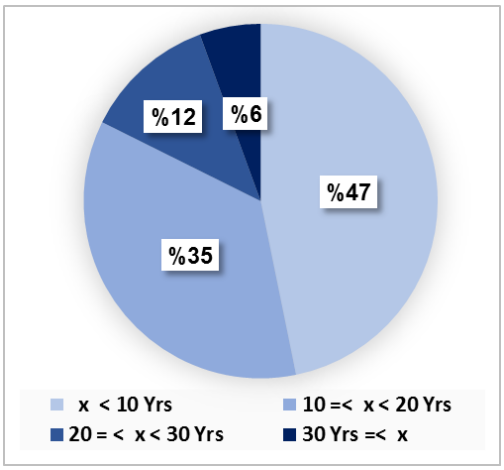

Figure - 7: Survey population (employee service period)

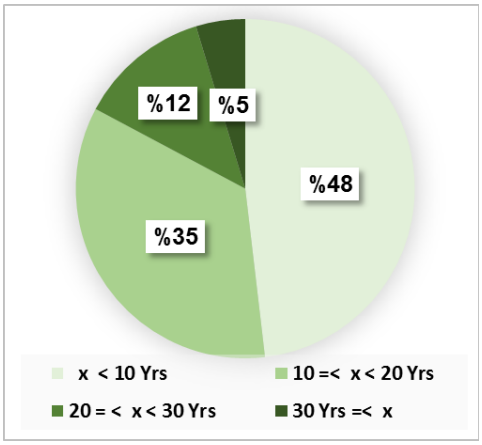

Figure - 8: Survey feedback, (employee service period)

Those employees have spent a significant portion of their career in ABC and should have experience about the organisational culture, management style, and capacity & capability of FM department. The employees working in ABC for less than ten years (47%), and the portion of the employees working between 10 and 20 years should have prior experience about the facilities management services in their previous employment. These employees occupy more than 80% of the total population.

4.1.3 Response Analysis

The overall feedback received related to all 20 survey questions (Table – 2) are tabulated as below (Figure-9)

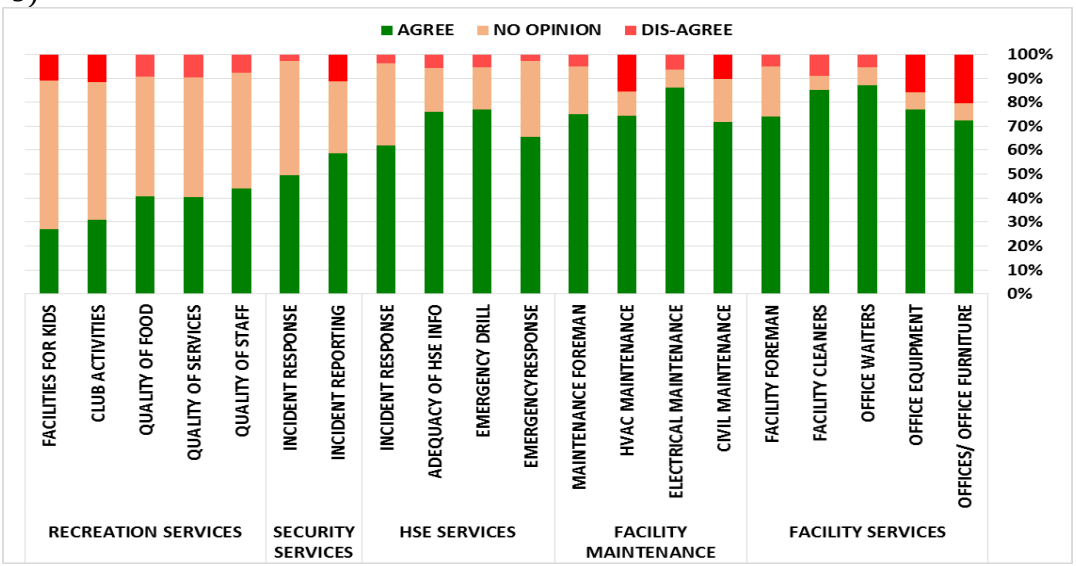

Figure – 9: Overall feedback on facility management

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The figure - 9 illustrates the information about the various services delivered by FM department. The red portion of each bar reflects the 'disagreed' perception of the customers. Accordingly, provision of offices/ Office furniture, Office equipment and HVAC maintenance services are rated with the comparably highest percentage of dis-satisfaction (around 20%). Moreover, there are relatively a smaller number of customers have rated as for these services with 'no opinion.' Whereas, the majority of the customers have rated the recreational services with 'no opinion.'

4.2 Analysis and discussion

4.2.1 Provision o Facility Services

According to figure – 10, 72% (agreed; 58% + totally agreed; 14%) of the ABC employees have agreed that the offices and the office furniture are meeting their expectation. However, the majority of the respondents (87%) are happy about the services provided by the office waiters in terms of their courtesy and hygiene.

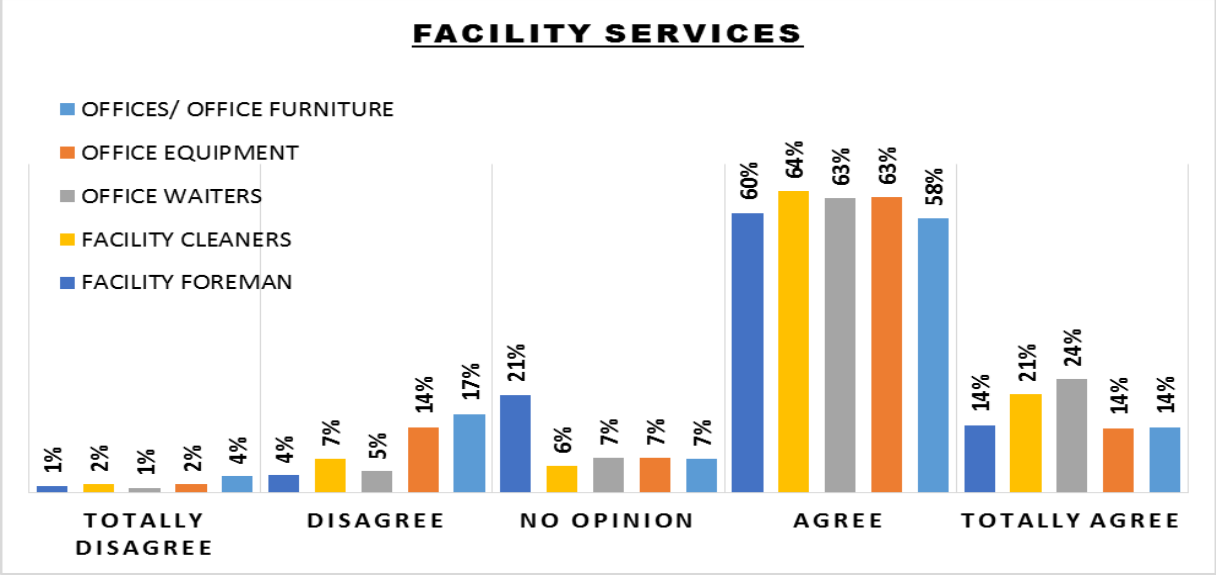

Figure – 10: Overall feedback received about facility services

Similarly, 85% of the respondents have given a good rating for the services provided by the facility cleaners. It is noted that both of these services are being outsourced, and the rating reflects the effectiveness of the training provided by the service provider as well as quality supervision of the FM department. Furthermore, the policies and procedure related to facility services define requirements and demarcations. The customer satisfaction score can be further enhanced by customising them by focusing on the common issues across ABC.

It is evident by the rating given for the service provided by the Facility Foreman, indicating 74%. FM department has assigned dedicated Foreman for each facility to coordinate with the customer departments, supervise the performance of the suppliers, and regularly monitor the status of the

facilities in terms of adequacy, usability, and reliability. Hence, the right training and motivation of those front-line staff may further enhance the customer satisfaction ratings.

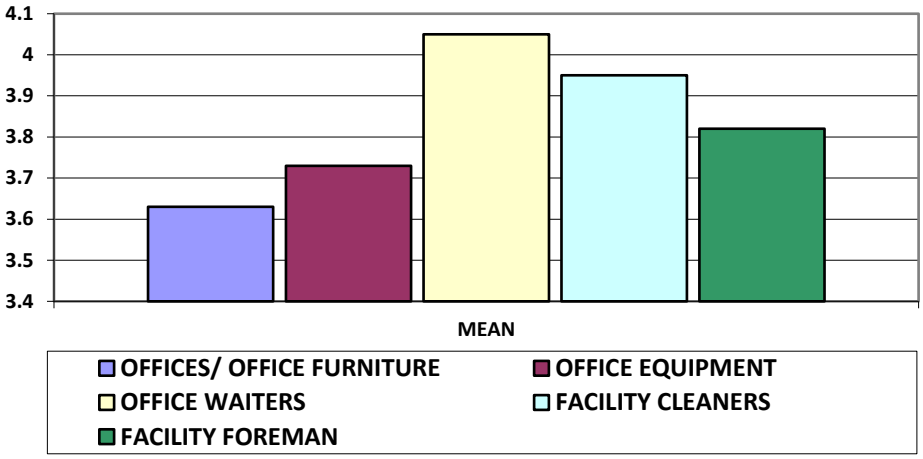

Figure – 11: The mean value analysis of Facility Services

The results evidence all aspects related to Facility services are high score (above 3.63), and the perception about the services of office waiters (m = 4.05) is comparably high.

4.2.2 Provision of Facility Maintenance Services

According to figure – 12, 86% (agreed; 70% + totally agreed; 16%) of the respondents have agreed that the electrical maintenance services are satisfactory. Furthermore, the performance of the maintenance foremen also has been appreciated by the respondents by providing better rating; 75%.

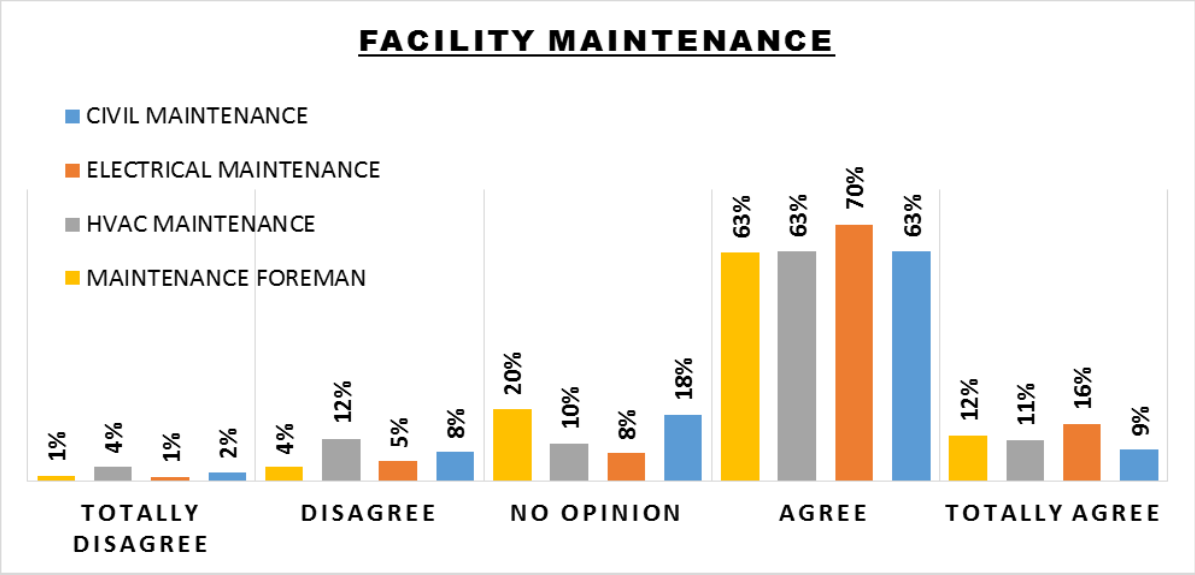

Figure – 12: Overall feedback received about facility maintenance services

Maintenance services represent corrective as well as preventive maintenance works to ensure business continuity and uninterrupted operation (Noor & Pitt, 2009). Civil maintenance services include partitioning office facilities, refurbishment of offices and other facilities, carpeting, and painting. Whereas, electrical maintenance works are related to lighting systems, regular maintenance of elevators & fire alarm systems. HVAC maintenance service includes troubleshooting and regular maintenance of Air-Conditioning equipment in terms of breakdowns, cooling efficiency, and cleaning.

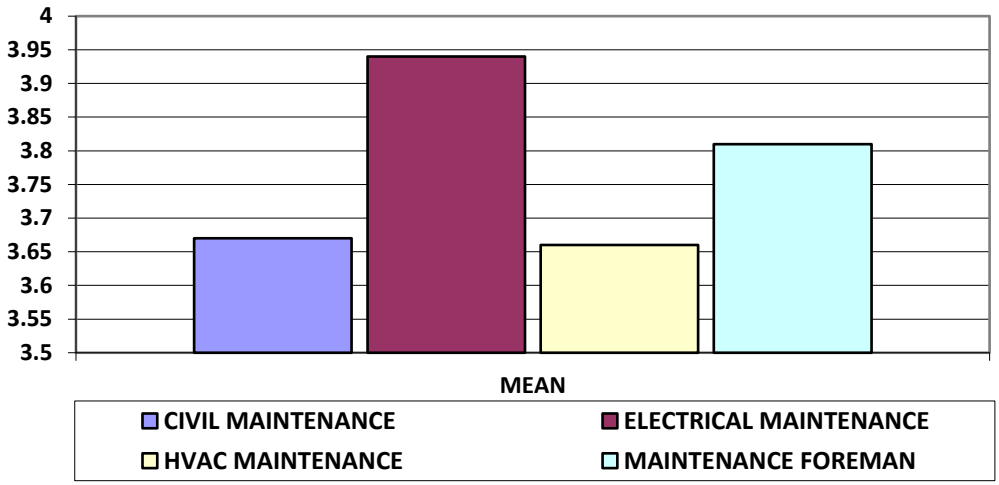

Figure – 13: The mean value analysis of facility maintenance services

The results show that all aspects related to Facility services are high score (above 3.66), and the customer perception about the electrical maintenance seems (m = 3.94) is comparably high. The fact is that these three specialised maintenance services have been outsourced different service providers, and the performance of electrical maintenance contactor has been scored by the respondents as high. Meantime, the rating obtained for maintenance foreman (m = 3.81) shows better, reflects the quality service of the FM department. Hence, technical and non-technical training for Foreman could further enhance the customer satisfaction rating. Furthermore, the policies and procedures of maintenance should be reviewed as per the latest development of the facilities and updated. E – Facilities Maintenance Request (EFMR) process need to be reviewed and updated to optimise the cycle time.

4.2.3 Provision of HSE Services

According to figure – 14, 77% (agreed; 65% + totally agreed; 12%) of the respondents rated their agreement about the quality performance of emergency drill. Furthermore, all the listed HSE service have been gained more than 50% appreciation and a considerable percentage of 'no opinions.' So that the disagreement is less than 10%, in fact, all the facilities included in this survey are towers, and the coordination between all the floors through floor Marshall is a tremendous task. Hence, this appreciation should also be granted to all the volunteer floor marshal of customer departments as well as the HSE team of FM department for the quality training provided to them.

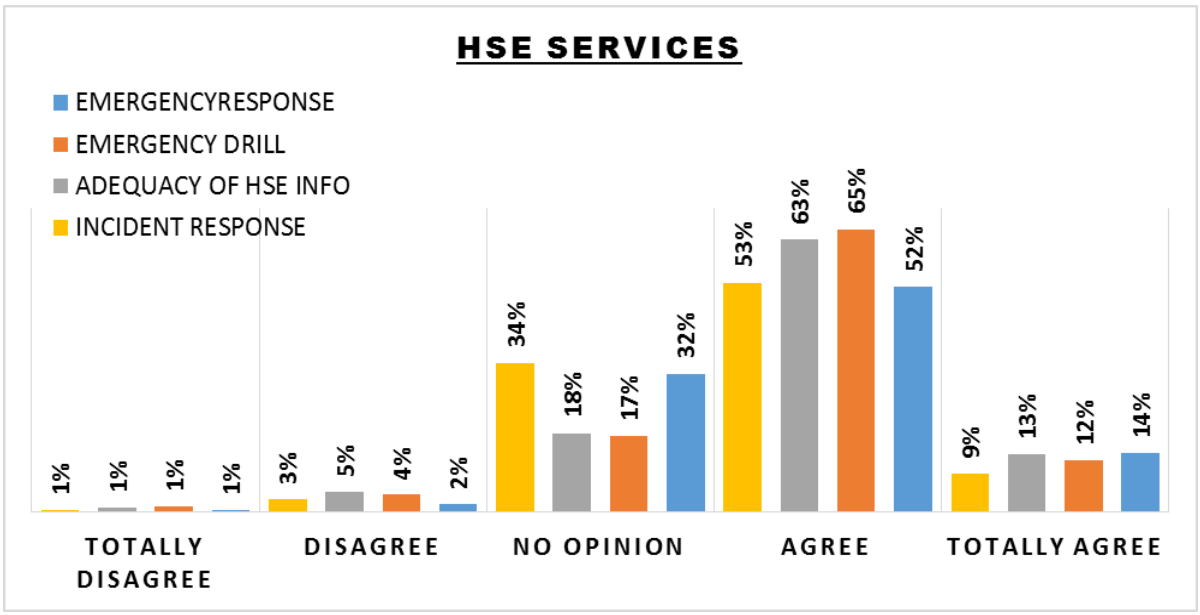

Figure – 14: Overall feedback received about HSE Services

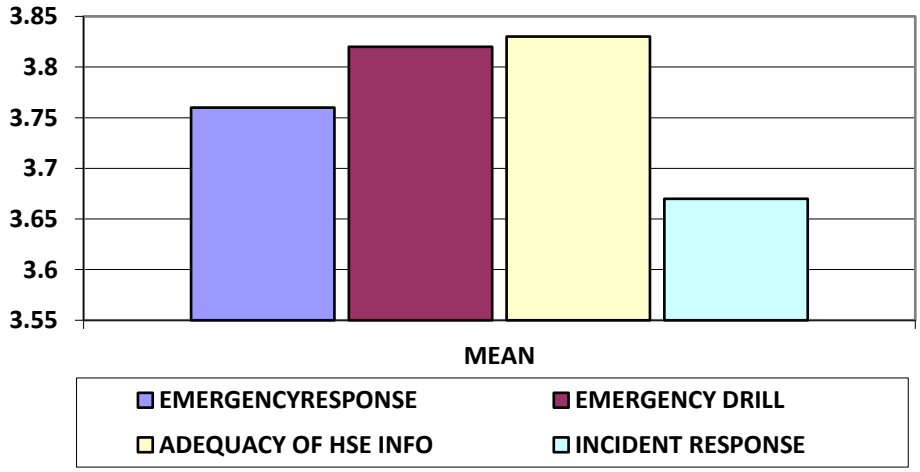

Figure – 15: The mean analysis of HSE Services

The results demonstrate that the perception about the HSE services overall better, indicating mean above 3.67.

4.2.4 Provision of Security Services

According to the results in the figure - 16, as shown below, more than 50% (agreed + totally agreed) of the customers have identified the security service provided by the XYZ department is satisfactory.

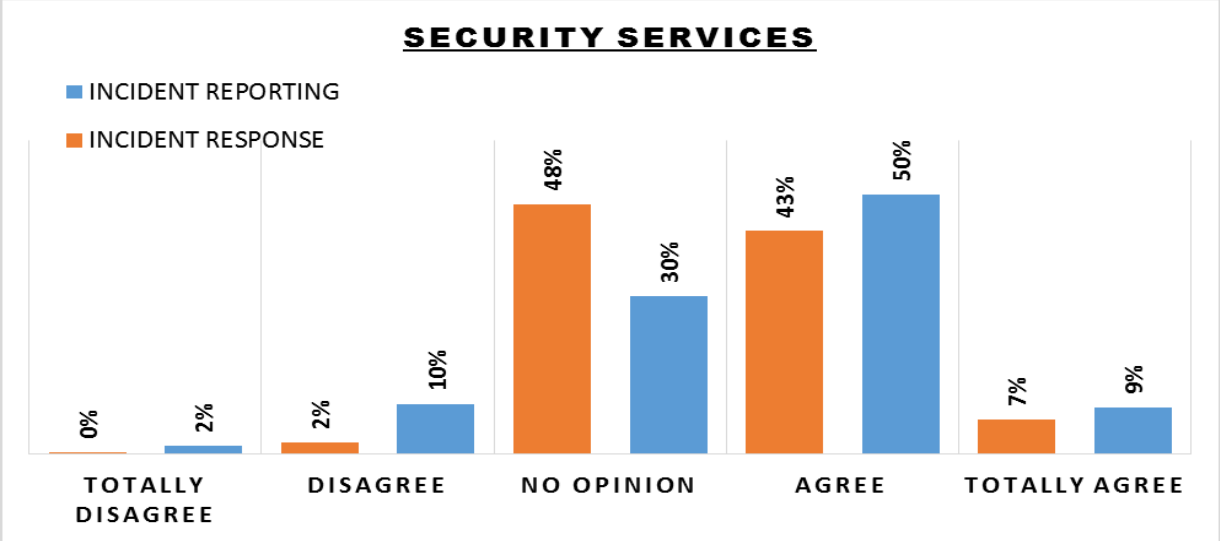

Figure – 16: Overall feedback received about security services

However, 48% have not given their opinion about the security services related to incident response, such as Investigation, recommendation & Follow-up process. Mean values of security services look comparably low with respect to the other services, which are listed in the questionnaires. Hence, the FM department needs to review and advise the responsibilities of security staff, and their performance has to be monitored by having KPI. Moreover, the security incident management system has to be upgraded such a way to make it user friendly.

4.2.5 Provision of Recreational Services

According to figure – 17, none of the services listed in the survey received customer satisfaction rating more than 50% (agreed + totally agreed). Furthermore, the majority of the customers have expressed 'no opinions' about these services. FM department has outsourced its recreational club to deliver all of the listed services. The results reflect the poor performance of the supplier as well as the supervision of the FM department.

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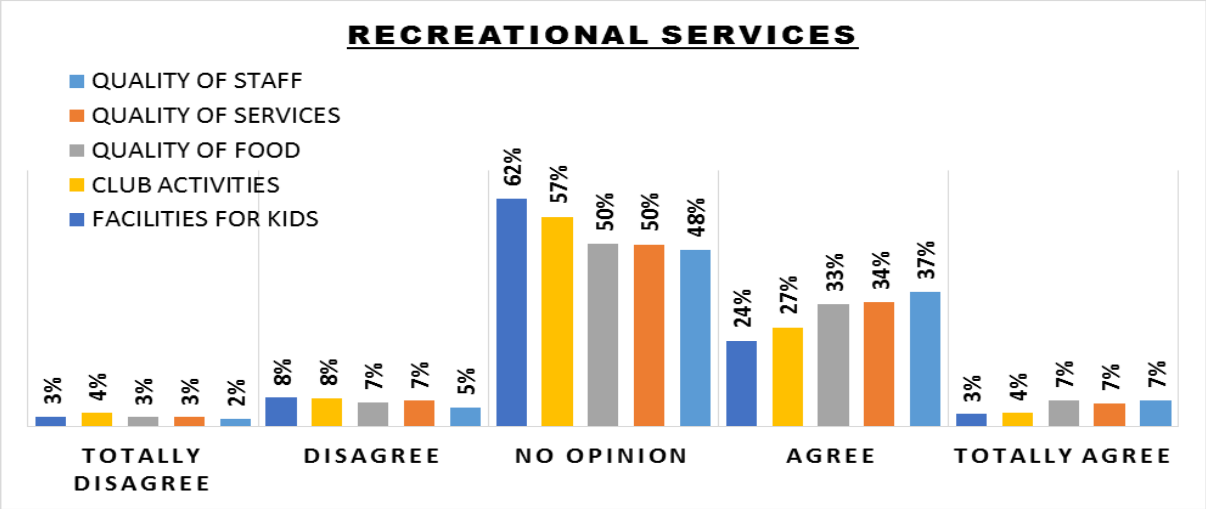

Figure – 17: Overall feedback received about recreational services

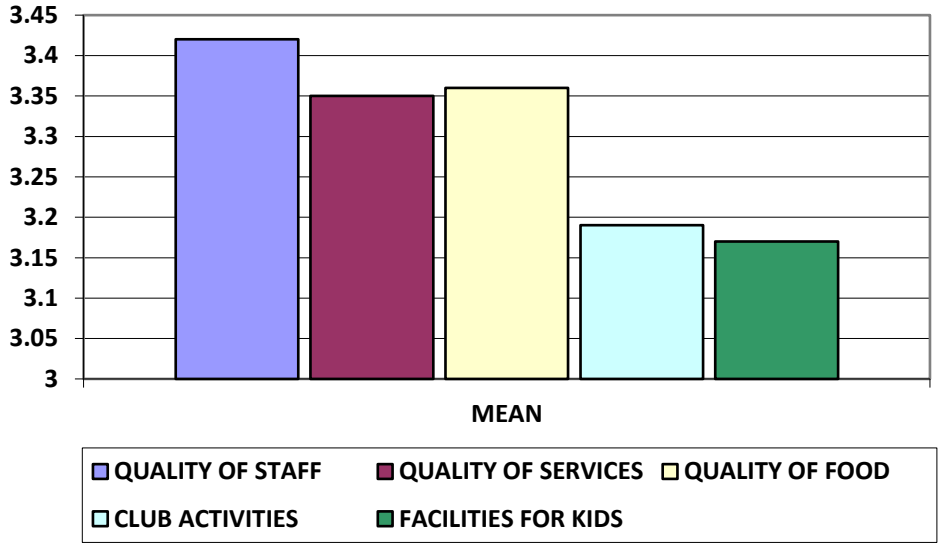

Figure – 18: The mean analysis of Recreational Services

The results show that all aspects related to Recreational services have been rated comparably low with respect to other listed services in this study. The results imply the management to revise the recreational facilities in ABC such a way to attract more employees. The expectations pf the ABC employees holding working experience in IOC's should be catered to upgrade the recreational facilities. On-line booking system needs to be introduced to avoid duplicate bookings, which causes dissatisfaction among the end-users.

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4.2.6 Overall Customer Perception

According to the overall feedback obtained from the survey, figure – 19 illustrates the mean values of respective facility services.

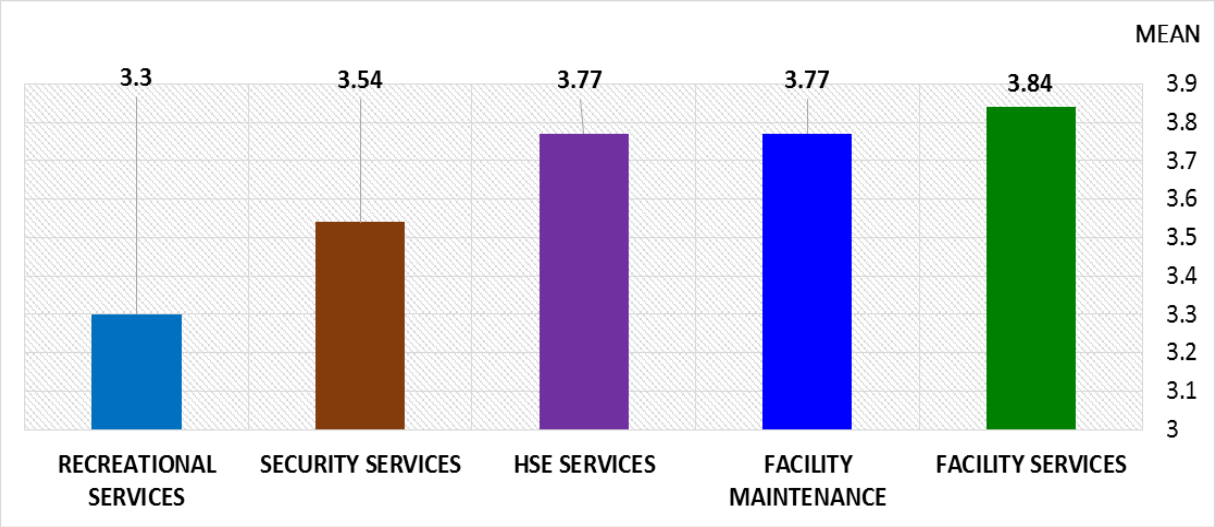

Figure – 19: The mean analysis of FM services in ABC

According to figure – 19, Facility services have been rated with the highest satisfaction level (m = 3.84). Facility maintenance and HSE services have been rate with the second-highest score (m = 3.77).

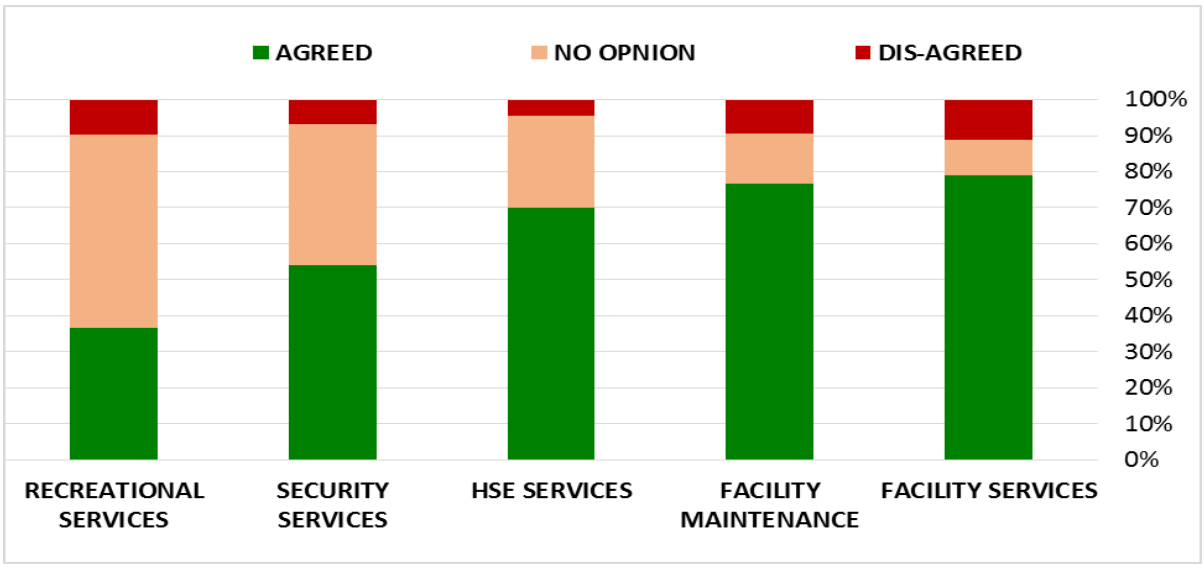

Figure – 20: Overall perception of the FM services in ABC

According to figure - 20, respondents have shown more interest to rate the provision of services related to facility services function and facility maintenance function. Comparably handful of

customers have given "no opinion" and rated dis-satisfaction. Whereas, provision of recreational services has been rated with a mostly negative perception, including 'no-opinion and dis-agreement.'

4.3 Results of content analysis

The respondents were requested to state the comments about their rating about each service. The comments were analysed, and five key factors influence the service deliveries are identified: i) Management decision, ii) Policies and procedures, iii) Effectiveness of Foreman, iv) Prior exposure of ABC employees, and v) effectiveness of E-applications. Eventually, a model is uncovered to reflect the influence of the factors influencing quality FM services in ABC. According to Kasiri et al. (2017), standardisation of service offerings has a higher impact on service quality in contrast to the customisation of the services. Therefore, a balanced approach needs to have adhered among the influencing factors.

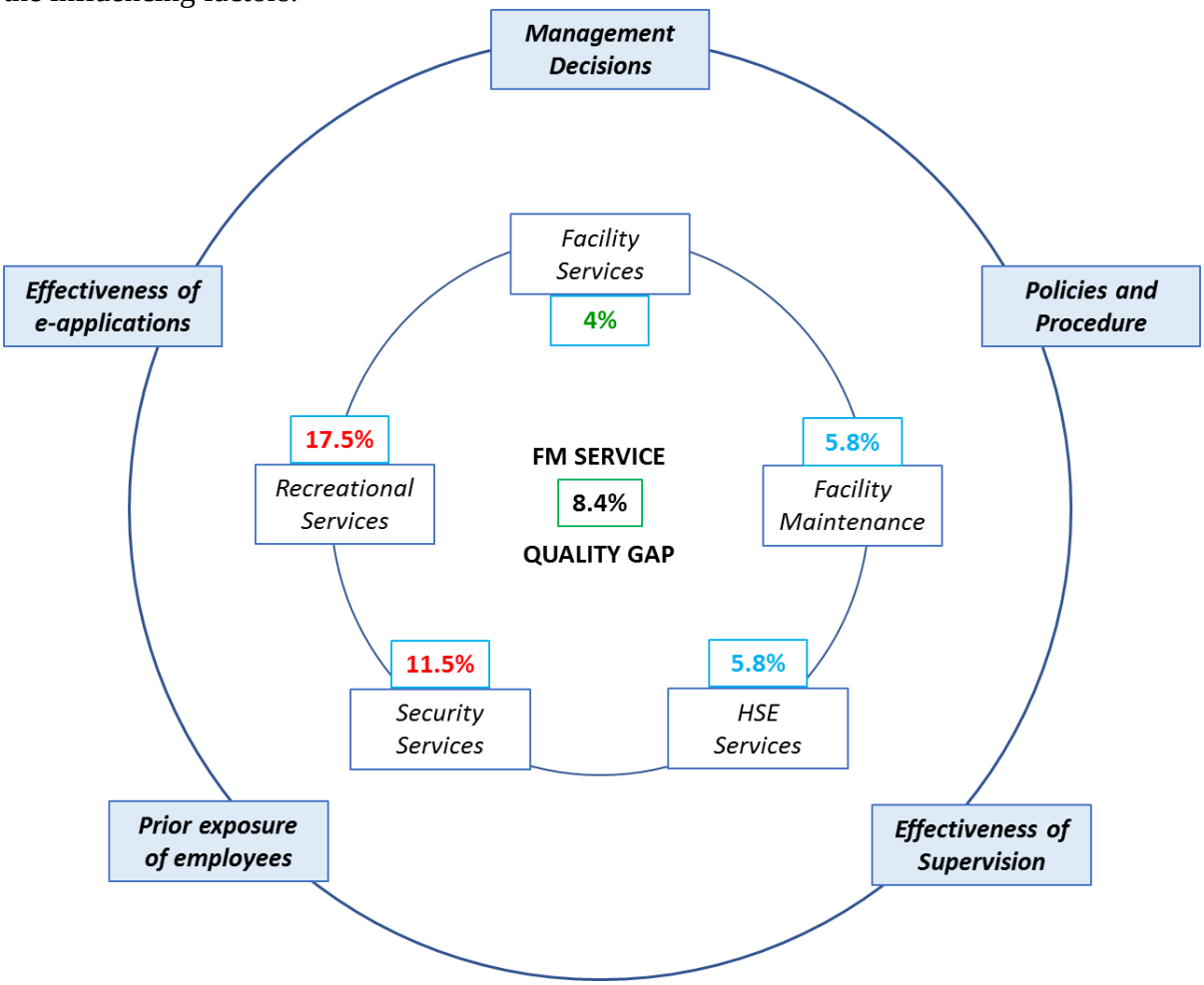

Figure – 21: FM model: factors influencing Service Quality gap in Facility Management

According to Figure – 21, significant service quality gap (>10%) noted in security and recreational services. Accordingly, the overall service quality gap is 8.4%. Based on the content analysis, each factor has caused the service gaps in FM service delivery.

5.0 CONCLUSION AND RECOMMENDATIONS

The researcher has analysed the perception of the respondents on various services rendered by the FM department through a self-administered questionnaire and found considerable gaps in certain services. The study was conducted among the employees of ABC. The overall feedback rate was 22%. Among the respondents, 35% are employed between 10 to 19 years; and 47% of them have less than ten years of working experience.

Findings of the analysis revealed that none of the services which were studies was not meeting the full expectation of the customers. According to the trend of the feedback, respondents have shown comparably more interest to comment on Offices, Office furniture, Office equipment, and HVAC/AC maintenance services. There are a smaller number of customers have rated as 'no opinion' related to these services, which implies that relatively majority of the respondents have a serious concern about them. In fact, these are the three services, each and every employee has interaction in their day to day business. Hence, their feelings have been rightly reflected and captured in this study. Therefore, FM operators should provide more attention to understand the need of the employees and maintain the quality of services in these categories.

Moreover, the findings revealed that less than 6% of the respondents had declared their dissatisfaction about the foremen of facility services and facility maintenance functions. The researcher has noticed this result as a remarkable appreciation for their diligent and effective contribution in the FM team. These results indicate the significance of the right persons for the right job. FM department has assigned the foremen those who are capable of delivering the services as well as willing to satisfy the stated and implied need of the employees of ABC.

Regarding the provision of HSE services, customers have rated their agreement about the quality performance of emergency drill, indicating 77%. Less than 5% of the customers have rated their dissatisfaction. However, around 17% of the customers declared 'no opinion.' In fact, most of the ABC facilities are multi-story buildings and coordination among the floors during a fire drill is always challenging. Hence, this appreciation from respondents should be due to the adequate training and coordination of the HSE team and tremendous commitments of all the volunteer floor marshals of ABC departments.

Though the security system in ABC is very much crucial and effective, the feedback related to the incident reporting and incident responding services has not been much appreciated, indicating 59% and 50% respectively. More than 45% of respondents rated with 'no opinion' shows that quite a number of employees might not have come across any kinds of security incidents during their service period.

The recreational services of the FM department have received 37% positive feedback, and 53% have indicated that they do not have positive or negative opinions. Hence, the majority of the customers have rated the recreational services with 'no opinion,' also gives two different messages; 1) majority of the employees might not have positive or negative comments on them, or 2) majority of the employees might not have experienced with those services.

The analysis of research findings has revealed that some critical areas could be improved to enhance the Facility management function of ABC. The following passages highlight some of the key recommendations briefly.

1. Recreational Services: The services rendered by recreational clubs have been rated poorly. It is recommended to establish KPI and frequently review the performance of the service provider to identify the areas need attention. Accordingly, the FM department should take the necessary steps to attract more employees to benefits from the recreational facilities. FM department has to investigate the reasons for underutilisation and customise facilities and services as per the demand of the employees. Otherwise, the FM department may close this recreational facility, and draw an alternative strategy to fulfil the need of the employees those who presently utilise the recreational facilities.
2. Based on the content analysis, the service delivery is directly influenced by five factors: i) Management decision, ii) Policies and procedures, iii) Effectiveness of Foreman, iv) Prior exposure of ABC employees, and v) effectiveness of E-applications. However, the contribution of those factors related to specific FM services is not revealed.
3. As far as the FM procedures are concerned, they are drafted, reviewed, and approved within the FM department, which causes not to incorporate the experiences of ABC employees in terms of their prior exposure they bring from previous employment. Moreover, Senior management is not fully aware of the provisions and limitations. Therefore, it is recommended to involve all the ABC departments during the review process of FM procedures. Furthermore, the operating procedures could be reviewed by involving all the stakeholder and benchmarking could be done with international best practices. It is recommended to hold the authority of approving the procedures with ABC senior management, instead of keeping within the FM department.

The researcher beliefs that this study would add value to the body of facility management knowledge related to the oil and gas industry. However, due to the limitations of this study and according to the recommendations discussed in this report, there are certain areas that have been proposed herewith for future research. It is recommended to conduct further studies on five factors influencing customer satisfaction revealed through the content analysis of the comments received from the respondents. This study may bring new perspectives to enhance facility management practices in the oil & gas industry.

AUTHOR BIOGRAPHY

Mr Mohamed Nismy Rafiudeen completed his B.Sc. in Civil Engineering and M.Sc. in Construction Quality Management at the University of Peradeniya (Sri Lanka) and the University of Moratuwa (Sri Lanka) respectively. He completed an MBA at the University of Wolverhampton (UK). He holds a Higher Diploma in Islamic Studies and reading MA in Islamic Studies at International Open University (IOU). His interesting areas are Strategic Management and human resource development. He can be reached: nismyrdeen@gmail.com.

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