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Users' Performance Evaluation of Facilities Management Practice in Federal Secretariat Complex, Akure, Ondo State

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Abstract

The effectiveness of Facilities Management (FM) service delivery to its end users is highly depending on FM performance itself. This study therefore aimed at examining the users' performance evaluation of facilities management practice in federal secretariat complex, Akure. Three hundred and twenty five (325) occupants was taken as the sample size for the study. 81 structured questionnaires was administered to respondent of maintenance unit which comprises of professionals in the built environment using purposive sampling while 224 structured questionnaire administered to respondents of other users' of the building were randomly selected. A total of 268 (82%) questionnaires was returned and found valid for analysis. Data collected were rated on a five-point Likert scale and analyzed using factor analysis by principal component while a balanced scorecard was developed based on those factors. The result of factor analysis reduced the variables necessary for optimum performance of facilities management practice service delivery into four factors: namely User satisfaction and cost avoidance, Effective service delivery, Commitment, feedback and learning, and Communication and team work (factor). The four factors produced a cumulative loading of 80.688%. Therefore, the study recommend that maintenance unit should pay attention to those factors that contribute to the performance of facilities management practice of the complex. However, facilities manager should also develop an appropriate Balanced Scorecards based on those factors to measure performance relating to service delivery to its end users.

Keywords

Facilities Management, Performance Evaluation, Balanced Scorecard and Federal Secretariat Complex

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1. Background of Study

1.1. Introduction

Facilities Management (FM) has established itself as a key service sector, with ac diverse and highly competitive market of FM contractors, in-house FM teams, FM vendors, FM consultants and professional FM institutions [25, 29]. The elements of FM range from corporate level in which it contributes to the delivery of strategic and operational objectives on day-to-day basis [20]. FM was traditionally viewed as the poor relation between real estate and construction professions, which often-conjuring images of maintenance plants, care-taking and cleaning [6]. Many still view FM in collective terms that lump together all building facilities and services within the organisation. When viewed in strategic terms, it becomes a non-core department, supporting services and more importantly the innovation that can be brought about by improving the management of services. [11]

Over the last 10-15 years, FM in both the private and public sectors has been evolving from a discipline historically

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focused on individual buildings to one focused on the total performance of a portfolio of buildings in support of an organisation's overall mission. [7] It is also seen as a management of cost-efficiency rather than a method to achieve multi-dimensional enhancement of business competitiveness. However, FM is not just about delivering services in the most effective ways, it is also about providing them within an ever-evolving world and industry [20]. High profile events such as the British Institute of Facilities Management (BIFM) Annual Awards for Innovation reflect a growing recognition of innovation in the FM sector. [8]

FM deals with the management of built assets and incorporates controlling services necessary for successful business operations of an organization [17]. It is concerned with the delivery of the enabling workplace environment, the optimum functional space that supports the business processes and human resources and not mainly covers the physical equipment of the building [30]. More often than not, the FM remit is interpreted as maintenance management, space management and accommodation standards; project management for new-build and alterations' the general premises management of the building stock and the administration of associated support services.

Accordingly, [24] the aim of FM should not be limited to simply reducing the operating expenses of a built facility, but it should focus on enhancing efficiency of the facility as well. However, [26] the effective FM encompasses multiple activities under various disciplines, combining resources and is vital to the success of any organisation. In order for FM to be effective, both the "hard" issues, such as financial regulation and the "soft" issues, such as managing people, have to be considered. Both issues have to be efficiently managed to ensure that FM can harmonise and provide a safe and efficient working environment.

It is based on the above that this study is set to examine the users' performance evaluation of facilities management service delivery in federal secretariat complex, Akure with the view to propose appropriate Balanced Scorecards within the facilities management unit to measure performance relating to service delivery to its end users.

1.2. The Study Area

Ondo State was carved out of the former Western State in 1976 with Akure as the capital. With a landmass of 105,000 square kilometers, the population was, as at 2006 given as 3,441,024 by National Population Commission. It is bounded in the North by Ekiti State, in the West by Osun and Ogun States and in the East by Edo State. Ondo State is blessed with plenty natural resources including petroleum, natural asphalt, timber and cocoa. In Akure, all federal workers offices are located at the Federal Secretariat Complex, situated along Egbatoro Road, Akure. The secretariat was built in 1990 by the military administration of General Ibrahim Babangida, about 28 years ago. The facility accommodates over 80 per cent of workers of federal establishments in Ondo State. The secretariat houses many of the federal ministries, departments and agencies in the state. However, it has become an eyesore as a result of lack of adequate maintenance since it was constructed in 1990. There is an absence of elevator at the secretariat, noting that the situation had made movement from floor to floor very difficult for staff and users of the complex. [10]

2. Literature Review

2.1. Facilities Management

Facilities Management (FM) offers an integrated approach to maintaining, improving and adapting buildings and other infrastructures of an organisation in order to create an environment that strongly supports the primary objectives of the organization [26]. FM is essentially a key function in managing facility resources, support services and working environment to support the core business of the organisation in both long term and short-term [8]. FM can be outlined as creating an environment that is conducive to carrying out the organisation's primary operations, taking an integrated view of the services infrastructure and using this to deliver user satisfaction and best value through support and enhancement of the core business/organization [6]. However, the above perspectives show that the definitions and scope of facilities management practice and services could be wide-ranging. It is in the light of this that [12] concluded that, "FM could mean different things to different parties, and the scope of services may vary between organisations or departments'. However, [6] argue that a holistic definition of FM should emphasize on the importance of integrative, interdependent disciplines whose overall purpose is to sustain an organisation in the pursuit of its objectives. This means that the FM service should aim to accomplish; supporting people in their work and other activities, enhance individual well being, enable the organisation to deliver effective and responsive services, the physical assets to make them highly cost effective, allow for the future change in the use of space, provide the competitive advantage to the organisation's core business and enhance the organisation's culture and images.

2.2. Performance Evaluation in FM Practice

The importance of Performance Measurement (PM) cannot be overemphasised, with many authors stressing its role in today's information-driven decision-making environment. [1] affirms that building services assessment & condition

monitoring needs to be carried out as to determine the status of services provided to the users. [31] state that measurement is a key management activity that provides decision makers with info necessary for decision making, monitoring performance and effective allocation of resources. This is proved when companies using an integrated balanced performance measurement system perform better than those that do not measure their performance [16, 23, 18, 25] further added that there is a strong correlation between performance and satisfaction. Therefore, PM aims to bridge the gap and establish the relationship between the internal measures that are the causes and the external measure like the effects [12]. The efficiency and effectiveness of the maintenance systems play a pivotal role in the organisations' success and survivability. The performance measurement needs to be aligned to both organisational and FM strategies [13, 9, 22, 27]. The important aspects in designing the framework of a performance measurement system are the goals, design and management. [33]

However, [4] an effective PMS presents a balanced view of the system and should be able to recognise different performance hierarchies and multiple dimensions of performance measures, relate the measures to the relevant goals and link them to strategy, address cross-functional issues and also involve subjective measures as well as objective ones. According to [24], PMS was developed focusing on the maintenance aspect of FM service delivery which was identified completely with three performance indicators (Functional, Technical and internal and external image of the buildings).

Furthermore, the study of FM literature indicates that performance measurement in FM can be perceived in two ways. First, as a "critical success factor" in the strategic development process and, second, as a learning process within the FM organization. The latter refers to a process whereby the FM organization aligns itself with its environment by obtaining information, either from the marketplace or through the generation of scientific knowledge, and the subsequent applications of this in organizational development processes. [4]

2.3. The Use of Balanced Scorecard Approach to Performance Evaluation in Facilities Management

According to [4] the concept of the balanced scorecard (BSC) emerged as a reaction against the increasing focus on purely financial measures for planning and managing the business. However, its aim is to present management with a concise summary of the key success factors of a business, and to facilitate the alignment of business operations with the overall strategy. [14, 15] claim that the BSC provides managers with the instrumentation they need to navigate to future competitive success.

The BSC paradigm is that the financial results are obtained by successful implementation of strategic initiatives in the key business perspectives as opposed to being their driving force [4]. The balanced scorecard is adopted to link short-term operational control to the long-term vision and strategy of the business. However, the perspectives represent the major drivers of business (shareholders, customers/users, and employees), thereby ensuring that a holistic view of the organisation is used for strategic reflection and implementation. [21, 4]

The balanced scorecard translates an organisation's mission and strategy into a comprehensive set of performance measures that provides the framework for a strategic measurement and management system. Balanced scorecard provides [2]:

a) A practical framework for implementing corporate strategy;

b) A management tool for linking business, team and individual objectives and rewards to strategic goals;

c) An effective mechanism for implementing change management;

d) A good fit with the organisation's move away from a command and control culture to one of empowerment and coaching.

e) The ability to understand the drivers of business success;

f) The story of the strategy will set the foundation for a management system that is capable of driving dramatic improvements in performance;

g) Easy identification of "cause-and-effect" relationships across operations;

h) Both quantitative and qualitative information; and

i) Dynamic communication and feedback.

An organization is viewed through balanced scorecard measures built around the following four perspectives [4]:

i. Financial perspective

This perspective shows the results of the strategic choices made in the other perspectives, while at the same time establishing several of the long-term goals and thus a large part of the general ground rules and premises for the other perspectives. The measures chosen will represent the relevant stage in the product/service life cycle.

ii. User perspective

This perspective describes the ways in which value is to be created for users, and how user is to be satisfied. Therefore,

the internal processes and the development efforts of the organisation should be guided by this perspective. This part of the process is the heart of the scorecard because, if the organisation fails to deliver the right products and services for cost-effectively satisfying user needs in both the short and the long term, revenue will not be generated, and the organisation will fail.

iii. Internal business processes perspective

The processes that generate the right forms of value for users and achieve the fulfilment of shareholder expectations should emerge from this perspective. This involves describing organisation processes from the analysis of user needs through delivery of the service and identification of the resources and capabilities which the organisation needs to upgrade itself.

iv. Learning and growth perspective

The learning and growth perspective enables the organisation to ensure its capacity for long-term renewal, a prerequisite for survival in the long run. In this perspective, the organisation should not be limited to maintenance and development of technical knowhow required for understanding user needs, but should also consider factors that help to sustain the necessary efficiency and productivity of the processes. However, the organisational learning and growth come from three sources: people, systems, and organisational procedures.

3. Research Methodology

3.1. Introduction

This section outlines the methodology used to achieve the aim and the objectives of this study. This includes the brief description of research design, target population, sampling frame, sampling techniques, sample size, data collection technique, presentation of questionnaire, method of data presentation and analysis.

3.2. Research Design

A research design encompasses the methodology and procedures employed to conduct scientific research. It represents the methodological approach to the investigation of research problem. It is imperative that an appropriate research design is adopted in order to achieve the desired aim in a research work. Research design is categorized into quantitative and qualitative; research design to be adopted is solely dependent on the nature of research itself.

3.3. Target Population and Data Requirement

The target population for the study are the occupants of the complex which includes the maintenance unit and the end users of the complex.

3.4. Sampling Frame

A sample frame of one thousand, seven hundred and twenty one (1,721) occupants was obtained from the directory in administrative department in the complex.

3.5. Sample Size

The sample size used for this project work was taken from the sample frame which represents considerably the total population.

The sample size was derived using this formula:

$$n = N / [1 + N (e)^2] \quad (1)$$

Where: n: is the sample size for a finite population

N: size of population which is the number of all users/occupant of the complex.

e: margin of error considered is 5% for this study.

A 95% confidence level and P =.5 are assumed for this Equation.

$$n = \frac{1{,}721}{(1 + 1{,}721(0.05)^2)} = 325$$

Therefore, a total number of Three Hundred and Twenty-Five (325) occupants was taken as the sample size for the study. Two hundred and Forty-four (244) Structured questionnaire was administered to end-users while Eight One (81) structured questionnaires was administered to maintenance unit has indicated in Table 1.

Table 1. Result of the sample size determination.

Occupants	Number of respondents	Percentage
End-User	244	75.1
Maintenance Unit	81	24.9
Total	325	100

Source: Author's own construct 2017

3.6. Sampling Techniques

Simple random sampling technique and purposive sampling technique were used. Purposive sampling technique was used for maintenance unit. The simple random sampling was used in selecting end-users from the various ministries and government parastatals interviewed in the complex. The simple random sampling gave all end-users in each ministries and government parastatals surveyed an equal chance to be selected.

3.7. Sources of Data Collection

For the purpose of this study, the data sources include both

primary and secondary sources.

3.7.1. Primary Source of Data Collection

Primary research was used in form of a questionnaire schedule coupled with personal interviews which addresses specific questions. The questionnaires were administered to all occupants of the complex.

3.7.2. Secondary Sources of Data Collection

Secondary research employed in this research includes data retrieved from the ministry of land, housing and works division on staff's population in all the ministries and government parastatals. Furthermore, data on ministries and government parastatals establishment was retrieved from the maintenance unit. It helps to provide a reliable source of information and it is less subjective than primary source where the investigation can be a bit biased.

3.8. Data Collection Instrument

3.8.1. Questionnaire and Its Administration

Questionnaires used for this study were self- administered on the respondents. It was designed in a way that relevant information needed for the work could be easily gathered and understood.

3.8.2. Oral Interview

Director of Ministry of Land, Housing and Works and Head of Maintenance unit was interviewed for more information about facilities management practice in the complex.

3.9. Method of Data Analysis

Data presentation involves the methods employed in treating the data using tables and other parameters to aid easy analysis. The questionnaire centres on two demographic characteristics of the respondents and 20 variables that could influence the performance of facilities management practice. Respondents were asked to give their opinion on the importance of each variable that affect the performance of facilities management service delivery on a five point Likert scale: Strongly Agree = 5, Agree = 4, Undecided = 3, Disagree = 2, Strongly Disagree = 1.

Factor analysis by principal Components was adopted in the data analysis for the purpose of partitioning the variables into factors that influence performance of facilities management practice of federal secretariat complex in Akure service delivery. The factor analysis is to summarize the interrelationship and establish levels of variance in decision variables as they affect the given phenomenon.
The factor Analysis model is given as

$$\underset{(P\times 1)}{(Xi/y,\lambda, fi\ m)} = \underset{(P\times 1)}{y} + \underset{(P\times 1)(m\times 1)}{\lambda fi} + \underset{(P\times 1)}{\varepsilon i} \quad (2)$$

Where: y is the overall populations mean Vector

λ is the factor – loading matrix,

fi is the factor score

m is the number of factors

p is the observed variables

εi is the error variance

i is the number of observation.

In factor analysis, attention is paid to the central limit theorem. Here the errors (εi) are assumed to be normally distributed with mean 0 and constant variance. Factor scores and errors are independent. Factor analysis also assumes that all variables are dependent and there are no independent variables.

3.10. Variables Used in the Analysis

The following variables, which are considered to influence the performance of facilities management practice in Federal Secretariat Complex in Akure to render effective service delivery to its end users are classified under the four perspective balanced scorecard measures below.

i. Financial perspective
   a) Reducing Operational Impacts and life cycle costs (ROI)
   b) Services sharing with other units/departments (SSU)
   c) Record Keeping (legal requirements, monitoring, etc.) (RK)
   d) Space Management (i.e. effective utilisation of space). (SM)
   e) Asset Management (mechanical services, etc.). (AM)

ii. User perspective
   f) Resident Caretaker. (RC)
   g) Building Code and Regulatory compliance management (BCR)
   h) Employee/user satisfaction index (ESI)
   i) Cleaning and General Maintenance. (CGM)
   j) Enhancing Comfort and Amenity for facility users. (ECA)
   k) Essential Services Provision (fire systems, etc.). (ESP)

iii. Internal process perspective
   l) Maintenance Planning (equipment, etc.) (MP)
   m) Contract and Contractor Management. (CCM)
   n) Responding to User's Complaints (RUC)
   o) Number of multi-skilled staff (NMS)

p) Service quality survey (SQS)

iv. Learning and growth perspective

q) Survey of user's suggestions on improving building performance (SUI)

r) Interdependent training courses (ITC)

s) Staff development programmes (SDP)

t) Staff attitude survey (SAS)

4. Data Analysis and Discussion of Results

4.1. Performance Evaluation of Factors That Influence FM Service Delivery

Table 2. Demographic Characteristics Of Respondents.

Demographic Characteristics	Variables	Frequency	(%)
Category of respondent	Facility manager	8	2
	Technical officer	73	28
	End User	187	70
	Total	268	100
Years of living in the building	0-5	38	14
	6-10	40	15
	11-15	86	32
	16-20	58	22
	21-28	46	17
	Total	268	100
Highest academic qualification	PhD	9	3
	MSc/MTech	94	35
	B.Sc./B.Tech	85	32
	HND/PGD	80	30
	Total	268	100
Only Applicable to Maintenance Unit Numbers of projects involved in over the years	1-10	45	56
	11-20	21	26
	21-30	10	12
	31-40	5	6
	Total	81	100
Profession of respondent	Quantity surveyor	9	11
	Estate surveyor	23	28
	Architect	9	11
	Builder	3	4
	Engineer	21	26
	Others	16	20
	Total	81	100
Professional membership	NIQS	9	11
	NIESV	23	28
	NIA	9	11
	NIOB	3	4
	NSE	21	26
	Others	16	20
	Total	81	100
Professional qualification	Graduate	21	26
	Probationer	12	15
	Corporate/associate	7	9
	Fellow	5	6
	Others	36	44
	Total	81	100

Source: Author's own construct 2017

The categories of respondent surveyed were mostly facility managers, end users/occupants of the buildings and resident technicians of the buildings. Majority of the respondent in maintenance unit were professionals in the construction industry like Estate Surveyors (28 per cent), Quantity Surveyors (11 per cent), Architects (11 per cent), Engineers (26 per cent) and Builders (4 per cent), as they were in good position to give more reliable information about the FM practice in the complex. Table 1 shows the collection and analysis of the years of involvement in FM and living in the building, academic and the professional qualifications and numbers of FM projects handled by the respondents. In total, 81 respondents from maintenance unit were the sources of building information, while the rest 224 were from the users of the buildings which gives the total of 268 respondent found valid for this analysis. Fifty-Six (56) per cent of the respondents were registered member of their professional bodies which included NIQS, NIESV, NIA, NIOB and NSE.

Also, 97 per cent of the respondents were at least BSc or BTech holders with three (3) PhD holder.

4.2. Test of Sampling Adequacy

The Bartlett's test of sphericity test for the appropriateness of the sample from the population and the suitability of factor analysis.

The Bartlett's test in Table 3 shows a chi-square of 2278.887 and a significant level of 0.000, which is an indication of the adequacy of the sample. The Kaiser-Meyer-Olkin (KMO) test is another measure of sample adequacy. It is an index for comparing magnitudes of the observed correlation coefficients between all pairs of Variables. It is small when compared to the sum of the squared correlation coefficient. A KMO value of 1 represents a perfectly adequate sample. A KMO of 0 represents a perfectly inadequate sample. The KMO value in Table 3 is 0.884, which shows that the sample is reasonably adequate.

Table 3. KMO and Bartlett's Test of Sphericity.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.884**
Bartlett's Test of Sphericity	Approx. Chi-Square	2278.887
	Df	190
	Sig.	.000

Source: Author's own construct 2017

4.3. Communalities

The communalities are shown in Table 4. It shows the proportion of the variance explained by the common factors. The communalities are in the range of 0 and 1, with 0 indicating that the common factors explain all the variance in the variable. It could also be expressed as a percentage. For instance, Resident Caretaker. (RC) 0.681 which indicates that 68.1% of the variance is accounted for by the common factors while the remaining 31.9% is accounted for by unique (unexplained) factors. The initial communalities are always 1.00 before the extraction of factors because at that initial stage every variable is regarded as a factor with a mean of 0 and standard deviation of 1.

Table 4. Communalities.

Variables	**Initial**	**Extraction**
Maintenance Planning (equipment, etc.) (MP)	1.000	.735
Record Keeping (legal requirements, monitoring, etc.) (RK)	1.000	.724
Reducing Operational Impacts and life cycle costs (ROI)	1.000	.947
Responding to User's Complaints (RUC)	1.000	.723
Building Code and Regulatory compliance management (BCR)	1.000	.721
Employee/user satisfaction index (ESI)	1.000	.777
Cleaning and General Maintenance. (CGM)	1.000	.942
Resident Caretaker. (RC)	1.000	.681
Number of multi-skilled staff (NMS)	1.000	.837
Asset Management (mechanical services, etc.). (AM)	1.000	.940
Contract and Contractor Management. (CCM)	1.000	.952
Services sharing with other units/departments (SSU)	1.000	.666
Enhancing Comfort and Amenity for facility users. (ECA)	1.000	.683
Staff development programmes (SDP)	1.000	.939
Interdependent training courses (ITC)	1.000	.931
Essential Services Provision (fire systems, etc.). (ESP)	1.000	.788
Service quality survey. (SQS)	1.000	.532
Space Management (i.e. effective utilisation of space). (SM)	1.000	.949
Staff attitude survey. (SAS)	1.000	.957
Survey of user's suggestions on improving building performance (SUI)	1.000	.715

Source: Author's own construct 2017

4.4. Extraction Method: Principal Component Analysis

Twenty variables were used in this study. When subjected to factor extraction by principal component all the variables were found to be useful for this study. Factor analysis was used to assess the multivariate relationship among the factors that influence the performance of FM practice in federal government secretariat in Akure, Ondo State based on frequency of occurrence. The analysis was conducted using Principal Component Analysis (PCA) (extraction method) to determine possible cluster relationships of the factors influencing the performance of FM and Varimax with Kaiser Normalization (rotation method) to make factors easily interpretable. The number of factors to be retained was specified on the basis of social science rule which state that only the variable with a loading equal to or greater than 0.4 in absolute terms and percentage of Variance greater than 1 should be considered meaningful and extracted for factor analysis. The result presented in Table 5 and 6 below was obtained based on this rule.

Table 5. Total Variance Explained (Rotation Sums of Squared Loadings).

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.663	53.313	53.313	9.397	46.983	46.983
2	2.291	11.453	64.766	2.208	11.042	58.025
3	1.119	5.594	70.359	2.010	10.048	68.073
4	1.060	5.300	75.660	1.293	6.464	74.537
5	1.006	5.029	80.688	1.230	6.151	80.688
6	.821	4.105	84.794			
7	.630	3.148	87.942			
8	.612	3.060	91.002			
9	.452	2.259	93.260			
10	.373	1.865	95.125			
11	.304	1.518	96.643			
12	.199	.995	97.638			
13	.180	.902	98.540			
14	.085	.423	98.964			
15	.075	.376	99.339			
16	.054	.271	99.610			
17	.025	.125	99.734			
18	.022	.109	99.844			
19	.020	.099	99.943			
20	.011	.057	100.000			

Source: Author's own construct 2017

Tables 6. Rotated Component Matrix Varimax.

Variables	Factor 1	Factor 2	Factor 3	Factor 4
ROI	.741			
RK	.876			
SUI	.526			
RUC	.887			
CCM	.802			
ESP	.912			
RC	.915			
SQS	.770			
AM	.906			
SM	.904			
ESI	.919			
MP	.931			
CGM	.434	.651		
ECA	.415	.746		
ITC			.698	
SDP			.699	
BCR			.531	
SSU				.834

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

The number of factors to be retained was specified on the basis of social science rule which state that only the variable with a loading equal to or greater than 0.4 in absolute terms and percentage of Variance greater than 1 should be considered meaningful and extracted for factor analysis. The result presented in Table 6 was obtained based on this rule. A total of four factors were extracted and the following four factor groupings were obtained for Balanced Scorecard (BSC) Measurement in Table 7 below.

4.5. The Use of Balanced Scorecard (BSC)

Using BSC as a performance assessment model, an increasing number of roles have been identified for performance evaluation in FM federal secretariat complex establishments. These range from providing the critical information to be used in a strategic reflection process, to being a key part of the management system of the organization whereby feedback can be obtained on both the strategic objectives and the indicators being used to measure their attainment. The organisation becomes better at learning and more perceptive and continually develops its competence (Amaratunga and Baldry, 2000). Table 6 and 7 identified that BSC provides benefits in four primary categories in the FM in federal secretariat complex, Akure, Ondo State: User satisfaction and cost avoidance, Effective service delivery, Commitment, feedback and learning, and Communication and team work.

Table 7. Users' satisfaction issues and measures.

Factors	Goals /Categories	Strategic measures
1	User satisfaction and cost avoidance	i. Reducing Operational Impacts and life cycle costs ii. Record Keeping (legal requirements, monitoring, etc.) iii. Survey of user's suggestions on improving building performance. iv. Responding to User's Complaints v. Contract and Contractor Management vi. Essential Services Provision (fire systems, etc.) vii. Resident Caretaker viii.Service quality survey

Factors	Goals /Categories	Strategic measures
		ix. Asset Management (mechanical services, etc.) x. Space Management (i.e. effective utilisation of space) xi. Employee/user satisfaction index xii. Maintenance Planning (equipment, etc.) xiii. Cleaning and General Maintenance, and xiv. Enhancing Comfort and Amenity for facility users.
2	Effective service delivery	i. Cleaning and General Maintenance, and ii. Enhancing Comfort and Amenity for facility users.
3	Commitment, feedback and learning	i. Interdependent training courses, ii. Staff development programmes, and iii. Building Code and Regulatory compliance management.
4	Communication and team work	i. Services sharing with other units/departments.

Source: Author's own construct, 2017

From the factor loadings in Table 5, it could be observed that User satisfaction and cost avoidance factor contributes 46.983% to performance, while Effective service delivery, Commitment, feedback and learning, and Communication and team work (factors) contribute 11.042%, 10.048%, 6.464% and 6.151% respectively. The four factors contribute a total of 80.688% while the remaining 19.312% is accounted for by extraneous factors which are unique to the variable and other variables outside the control of the research.

4.6. Performance Evaluation of FSC Facilities Management

Factors can be estimated as a linear combination of the original variables. From the component score coefficient matrix as shown in Table 8, we can form such linear relationships.

This can be used to estimate the performance of facilities management service delivery in Federal Secretariat Complex in Akure based on the five factors extracted. This can be achieved by forming a linear equation of the weighted standard scores of the variable.

Table 8. Component Score Coefficient Matrix.

Variables	Component				
	1	2	3	4	5
ROI	.153	-.044	-.361	.084	.178
RC	.084	-.367	-.065	-.074	-.035
RK	.082	.105	.006	.036	-.019
CAV	.004	-.271	.054	.123	.315
SM	-.057	.055	.497	-.136	-.342
TRW	.101	.130	.023	-.093	-.145
WM	.108	-.043	.038	-.074	-.079
CCM	.071	.306	-.001	-.306	.023
BCR	.001	.319	-.003	.166	.003
MP	.079	.062	.061	-.035	-.003
CGM	.098	-.047	.033	-.029	-.026
AM	-.171	.093	.528	.151	.148
GGM	.190	-.017	-.149	-.363	-.096
ECA	.106	-.096	-.063	.112	-.020
MSP	.097	-.079	-.010	.025	.025
ESP	-.061	-.008	-.009	.742	-.148
RM	-.077	-.121	.337	-.042	.265
RCS	.100	.009	-.041	.067	-.010
IBP	.108	.007	-.044	.045	-.031
BRM	.062	-.020	-.045	.147	-.722

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

If the standard scores of the ith of management service delivery in the 20 variables under consideration are Si.1, Si.2, Si.3,---------- Si.20, then the assessment of the performance of facilities management service delivery in Federal Secretariat Complex in Akure considering the five factors, denoted by Cj, j = 1, 2, 3, 4, 5 and are defined by:

$$C1 = (0.153)\ S1.1 + (0.084)\ S1.2 + (0.082)\ S1.3\text{---------} + (0.062)\ S1.20 \quad (3)$$

$$C2 = -(0.044)\ S2.1 - (0.367)\ S2.2 + (0.105)\ S2.3\text{-------} - (0.020)\ S2.20 \quad (4)$$

$$C3 = -(0.361)\,S3.1 - (0.065)\,S3.2 + (0.006)\,S3.3\text{-------} - (0.045)\,S3.20 \quad (5)$$

$$C4 = (0.084)\,S4.1 - (0.074)\,S4.2 + (0.036)\,S4.3\text{---------} + (0.147)\,S4.20 \quad (6)$$

$$C5 = (0.178)\,S5.1 - (0.035)\,S5.2 - (0.019)\,S5.3\text{----------} - (0.722)\,S5.20 \quad (7)$$

For each of the factors, a system of equations for the sample population of the following general form is obtained.

$$\begin{bmatrix} b_{1,1}S_1 + b_{1,2}S_2 + b_{1,3}S_3 + & \cdots\cdots\cdots\cdots\cdots & b_{1,20}S_{20} \\ \vdots & \vdots & \vdots \\ b_{m,1}S_1 + b_{m,2}S_2 + b_{m,3}S_3 + & \cdots\cdots\cdots\cdots\cdots & b_{m,20}S_{20} \end{bmatrix} = \begin{pmatrix} C_1 \\ \vdots \\ C_m \end{pmatrix}$$

In an attempt to evaluate the percentage contribution of each factor to the performance of facilities management practice in federal secretariat complex in Akure, the Eigen values and percentage variance of each factor after extraction of factors are exhibited in Table 5. The social science rule earlier referred to stipulates that only factor with Eigen values of 1 and above are considered meaningful for interpretation.

5. Conclusion and Recommendations

The study examine the users' performance evaluation of facilities management practice in federal secretariat complex. However, launching a BSC initiative helps to provide a different way of thinking in order to follow more thoroughly the implementation of their generally well-elaborated strategies revealed using factor analysis. Alignment of measurements to organizational goal is an additional advantage of deploying BSCs to encourage knowledge sharing between all units and departments from a continuous improvement standpoint. For instance, measuring user satisfaction in a comparable manner may lead to superior and homogeneous services to federal secretariat complex's end users. Such an approach to improving performance in the management of facilities put the facilities manager firmly in a pivotal position with centrality in the process that must orchestrate a performance-conscious and proactive organisation. Hence, the result of this study allows for planning for the future of the building, realizing the future threat(s) to the building and enabling facility managers to have a first-hand information about the building. In view of this, the following recommendations were made.

i. Maintenance unit should pay attention to those factors that contributes to the performance of facilities management practice of the complex in order to enhance success in their service delivery to users.

ii. Balanced Scorecard should therefore be frequently used to evaluate FM practice performance in the complex. However, it also helps in keeping tabs on the needs and expectations of the complex from users' perspectives.

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