

Occupants' Perception of Quality Design and Standard in Building Services for Effective Property Management

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Abstract

Building performance evaluation techniques are hardly applied to occupied premises in property management practice in Nigeria. It undermines occupiers' satisfaction as well as occupiers' perception and action toward facilities. Tenants' decision to stay or leave a property and the reason for conflict of interest over rent increment could be adduced to poor service quality and dissatisfaction. The need to measure occupiers'/customers' satisfaction in dwelling houses also arises because it is now universally accepted that users have become more astute and their rising expectations need to be met. The specific objective of the study is assessment of occupiers' satisfaction using quality performance criteria under the SERVICE QUALITY DIMENSIONS in selected high-rise buildings. The study adopted a cross-sectional research design approach. The data were collected through the aid of questionnaire survey to investigate 54 quality service and property performance indicators and were analyzed quantitatively. 106 questionnaires were returned from the 207 tenants of the selected buildings representing 51.2% response rate. The mean item score (MIS) for satisfaction level for each indicator was calculated and expressed in percentages to arrive at importance index for the purpose of ranking in line with the highest derived satisfaction level of the respondents. The study found that tenants are highly dissatisfied with communication, and lack of interaction becomes a major reason for non-satisfaction of service quality. Out of 52 indicators, only 8 environmental indicators show no significant difference between expectation and perception. Tenants were least satisfied with communications, service management, water quality and cost. Property management service delivery in Nigeria is not customer/user driven with 44 out of 52 indicators having significant differences between tenant expectation and perception of service quality and delivery. The study recommends improvement in communication gap, definition of occupier's service standards for adequate service delivery and reduction of unsatisfactory service designs and quality.

Keyword: customer's satisfaction, high-rise building, service quality, property management

1.0 INTRODUCTION

Complaints on service quality in managed high rise apartments are becoming more critical due to lack of management's focus on the important service qualities that lead to customer's satisfaction. Firms are under increasing pressure to demonstrate that their services are customer focused and that continuous performance improvement is being delivered. An understanding of customer expectations is the key to success because any gap in service quality can be identified by referring to the customer's perspective. This will enable firms to know their performance in delivering quality service. It will also enable firms to identify optional costs of minimizing quality service gaps and prioritizing which gap to focus on. This can be done effectively through the assessment of the occupiers' (consumers') satisfaction of the performance quality of the buildings. An evaluation of customers' satisfaction of property management service and building performance from the building users (tenants)' perspective will bring the building industry close to others that rely on feedback on product performance and customer satisfaction (Fatoye, 2005). The importance of customer satisfaction assessment includes (1) increase recognition of the complexity and significance of the interrelationship between people and the built (physical) environment including the

residential towers, (2) the need to demonstrate value for money by assessing whether a building works and (3) acknowledgment of the role of built environment towards achieving organisational goal.

In under-developed and some developing countries, the built environment national assets – buildings, housing facilities and infrastructure have been allowed to deteriorate due to inadequate or outright lack of maintenance, lack of fund and wrong prioritization arising from undue preference for new but sub-standard development while neglecting the care of existing stock. Premised on the failure of adequate maintenance of buildings/housing facilities especially high rise buildings as a result of neglect and lack of fund, users' dissatisfaction arises. Furthermore, professionals or organizations in property management are too concerned with money income from the building without considering its satisfaction to the users of space. Utama (2013) however, pointed out that satisfaction of building increases value and customer retention. On this premise, this paper seeks to evaluate customer-driven service design and standard as a good measure of building maintenance and performance. Measuring tenants' satisfaction in dwelling houses will not be out of place in this era of customer driven economy as users have become more astute and their expectation keep rising. User satisfaction initially applies to industries, manufacturing and service provision (Auchterlounie & Hinks, 2001; Barlow & Gann, 1999). Identifying user requirements/standards towards value addition to increase 'satisfaction' pre-suppose that the customers (occupants/users) know what they want and their needs can be captured and translated into realizable products (Barlow & Gann, 1999). In the residential property sector, houses are delivered in a way which largely accommodates the constraints of producers/developers, rather than satisfying the needs and aspirations of occupiers. However, in a competitive property market, there is need to understand and establish what the tenants/occupiers want (real and perceived need) and only then could such expectations be met and satisfaction derived. It is the aim of this study to assess occupiers' satisfaction in residential buildings with quality service and performance of the buildings. The main goal of the study is an examination of occupiers' satisfaction level with housing services offered using the determinants of service quality cited by Zeithaml and Bitner (2003) as well as a comparative analysis of occupier's satisfaction among the selected residential high-rise buildings. These will be achieved with the following objectives.

- (1) To assess the occupants perception against their expectation of quality service in their residential towers
- (2) To find the variance between mean expectation and mean perception of quality of services provided
- (3) To determine occupants satisfaction with the building performance

2.0 LITERATURE REVIEW

Service quality is an attitude or judgment about the superiority of a service. Quality used to be more or less about how technical specifications were matched through the goods/services (Gronroos, 1990). In the late 1970's quality started emerging as the client's perception, a more service orientated approach. Parasuraman et al. (1990), define quality as "exceeding what customers expect from the service". Furthermore, service quality can be defined as gap function between customer services and their perception of service that should be delivered by the organization (Parasuraman et al., 1993) while satisfaction refers to customers' evaluation of a product or service in terms of whether that product or service has met their needs and expectation (Zeithaml & Bitner, 2003). It could also be a psychological state that reflects the evaluation of a relationship between the occupier and the services provided as well as state of happiness or acceptability of services rendered in a building. For the purpose of this study, the customer is synonymous to occupiers' of building who could evaluate their satisfaction of a building and its services through what they believe "will" happen or expect a good firm to provide (Noorsidi & Noor, 2009); most of which are carried out through Post Occupancy Evaluation (POE). In placing housing consumer in the proper position within the housing production process, Ireland (1992) started with the identification of a customer being the sole reason for designing, building and delivering a product or service. The buyer of the product or service is naturally a customer. The sponsor or financier is a second customer, who may or may not be directly involved in the project. The third customer is the user of the product or service. In agreement, Torbica and Stroh (1999) referred to the owner or client in the construction context as a "paying" customer (the "one who pays the bill"). The one who uses a product or service is a "user" customer. In the context of this study, the product or service is housing and the customer is the end user i.e., the occupant.

Quality in this sense is more than defect reduction or continuous improvement programmes or providing a technically superior product or service. Rather, quality is continuously meeting and satisfying the needs, requirements and expectations of the consumer resulting from the performance of a product. Therefore it is the consumer who defines quality and not the provider of a product or service (Ireland, 1992). This assertion was confirmed by Torbica and Stroh (1999) who viewed quality as consumer's satisfaction with a product and services received, i.e. it is occupants' satisfaction with a housing product and services which is more than an objective issue (physical standards) as it is subjective (behavioural) as well.

The relationship between expectation of service quality and satisfaction as affirmed by Oliveira and Heineck (1999) is the balance of expectations and performance. It is viewed as primarily meeting or exceeding expectations (Forsythe, 1999). Satisfaction or otherwise, is therefore determined by subtracting perceived performance from expectations. According to Berkman et al., (1996) and Forsythe (1999) if there is no difference from the subtraction of the performance and expectation then consumer satisfaction is confirmed i.e. simple confirmation. However, if perceived performance is greater than expectations then there is positive disconfirmation leading to a high level of satisfaction. If the reverse is the case where perceived performance falls short of expectations then there is negative disconfirmation, resulting in dissatisfaction.

In the view of Berkman et al., (1996) if there is a wide negative disparity between expectations and actual performance, customers tend to magnify this poor performance, the reaction known as the contrast effect. Due to the contrast effect, the level of dissatisfaction can stem out of proportion with the level of poor performance. From the foregoing, the level of satisfaction or otherwise the occupant experience depends upon how well the housing performance meets his expectation. According to Giese and Cote (2000), while the literature contains significant differences in the definition of satisfaction, all of them share some common elements: (1) consumer satisfaction is a response (emotional or cognitive). This confirms the earlier study of Forsythe (1999) that customer satisfaction is a mix of cognitive and affective responses to a specific purchase situation. (2) The response pertains to a particular focus (expectations, product, consumption experience, etc) and (3) the response occurs at a particular time (after consumption). According to them, the literature and consumers (interviewed) both viewed satisfaction as an affective emotional response and which vary in intensity depending on the situation. It is based on these views that customer satisfaction is considered to mean a summary affective response of varying intensity with a time-specific point of determination and limited duration directed toward focal aspects of product acquisition and/or consumption. Affective response refers to the holistic nature of consumer's state of satisfaction, the focus is the object(s) of customer's state, which usually entails comparing performance to some standards (specific or general), and timing is the temporary existence of satisfaction. Standards, according to Mabogunje et al. (1978), could be space standards, technological or performance standards, and threshold and range standards. Moreover, Forsythe (1999) and Giese & Cote (2000) accepted that consumer satisfaction is a post purchase phenomenon, which can be determined at the point the evaluation, occurs. The occupier's state of satisfaction as well as the focus for this study have been defined to mean the various degree/level of satisfaction within the context of elements of building performance which are assessed during occupation.

In all definitions the common aspect is the customers' needs and expectations. Though the product or the service is a result of a production process, the process itself is also a target of improvements. Quality has also been identified as cornerstone of competitive strategies for the facilities management providers who are seeking to widen and secure their client base (Pheng, 1996). The way people define the quality concept as a result of their relation to the product or service that is being delivered. Every user or provider of a service or a product has his own opinion of what quality really is. Quality is not static but a dynamic process to meet the level of quality that fits customers changing needs. Therefore providers have to improve and develop their products, services or processes continuously. Gronroos (1990) identified six criteria of a good perceived service to include:

- (i) Professionalism and skill
- (ii) Attitudes and behaviour
- (iii) Accessibility and flexibility
- (iv) Reliability and trustworthiness
- (v) Recovery
- (vi) Reputation and credibility

Customer expectations are influenced by price and previous experience (Johnston & Clark, 2005), their satisfaction with the service received is therefore a result of comparison between perceived and expected service quality (Kotler, 2003). However, Parasuraman et al. (1985) submits that service quality comprises five dimensions, which are included in the six identified criteria of Gronroos (1990) and Lai (2010). Parasuraman et al. (1998) suggests that customers do not perceive quality in a uni-dimensional way but rather judge quality based on multiple factors relevant to the context. For example quality of automobiles is judged by such factors as reliability, serviceability, prestige, durability, functionality and ease of use, whereas quality of food products might be assessed on other dimensions (flavor, freshness, aroma and so on). Similarly specific dimensions identified through the pioneering research of Parasuraman et al. (1990), thereafter, Zeithaml and Bitner (2003) includes Reliability, Responsiveness, Assurance, Empathy and Tangibles. Service quality measurement answers the question of the worthwhileness of a product/service provision and the how well is the provision (Wei, 2007). Measuring performance has an important role in measuring past achievements and providing the basis for planning and control decisions (Cole, 2000). However, measurement of service delivery/performance is aimed at establishing the satisfaction of clients or users of a product and service. Product performance measurement can be achieved using various methods such as benchmarking, balanced score card, key performance index etc. The comparison of performance against established comparable or set yardstick is referred to as Benchmarking. It is seen as a means of identifying improvement opportunities as well as monitoring the performance of competitors (Young, 1993). Camp (1989) and Horvath and Herter (1992) define benchmarking as "the continuous process of measuring products, services and practices against the toughest competitor or those companies recognized as industry leaders, it is a search for industry best practices that leads to superior performance". In Nigeria, quality of services is measured mostly by the use of benchmarking where yardstick are set against the performance of building facilities and the quality of services are measured. Here, the standard already established by a provider or in an estate is taking as yardstick for any other estate to measure up or surpass.

Customer satisfaction is dependent on the product or provider's performance in relation to the customer's expectation (Utama, 2013). He further defined satisfaction as a person's feelings of pleasure or disappointment resulting from comparing a product's perceived performance (outcome) in relation to his or her expectations. Zeithaml and Bitner (2003) further affirmed

that customer satisfaction is influenced by specific product or service features and by their perception of quality, customers' emotional responses, their attributions and their perceptions of equity. In less technical terms, Zeithaml and Bitner (2003) translates this definition to mean that satisfaction is the customers' evaluation of a product or service in terms of whether that product or service has met their needs and expectation. Failure to meet their needs and expectation is assumed to result in dissatisfaction with the product or service. Satisfaction can be viewed as contentment. Satisfaction may also be associated with feelings of pleasure for services received. It is an indicator of the extent to which customer feels good and is associated with a sense of happiness. For those services that really surprise the consumer in a positive way, satisfaction may mean delight, in some situation where the removal of a negative leads to satisfaction; the consumer may associate a sense of relief with satisfaction.

Customer satisfaction with a product or service is influenced significantly by the customers' evaluation of product or service features. For a service such as a resort hotel, important features might include the pool area, access to golf facilities, restaurants, room comfort and privacy, helpfulness and courtesy of staff, room price and so forth. In conducting satisfaction studies, most firms will determine through some means (often focus groups) what the important features and attributes are for their service and then measure perceptions of those features as well as overall service satisfaction. Zeithaml and Bitner (2003) asserted that research has shown that consumers of services will make trade-offs among different service features (for example, price level versus quality versus friendliness of personnel versus level of customization) depending on the type of service being evaluated and the criticality of the service. Other factors like customer/user emotions (Djebarni & Al-bed, 2000), equity/fairness (Zeithaml & Bitner, 2003) affects customers perception of quality and their satisfaction.

2.1 Building Service Performance

According to Robathan (1996) the goal of building performance is creating and sustaining an environment, which maximizes the efficiency of the buildings while enabling effective management resources at minimum lifetime cost. In other words, Just as consumer satisfaction is a post-purchase phenomenon which can be determined at the point the evaluation occurs (Giese & Cote, 2000), building performance can be determined at the point of evaluation. In operationalising occupier satisfaction or developing valid measures of satisfaction, a measurement standards or quality performance criteria was employed. These standards vary from specific to more general ones. However, it will be limited to the broad areas of physical, environmental, functional, behavioural, economic and timing elements. Elements of building performance are factors that impacts on the effectiveness of a facility (Carpenter & Oloufa, 1995). They are those aspects of facilities that are measured, evaluated and used to improve building (Amaratunga & Baldry, 1998).

- **Physical Elements**, such as fire safety, structural integrity, sanitation, durability, acoustics and lighting
- **Functional Elements** include operational efficiency, productivity, workflow and organization.
- **Behavioural Elements** are privacy, symbolism, social interaction, density and territoriality.
- **Economic Elements**, The performance evaluation of economic elements emphasizes the issue of user satisfaction in relation to operational costs of facilities (Amaratunga & Baldry, 1998). The evaluation also deals with cost-effectiveness of housing facility, which is a qualification of the contribution to productive output of the occupants.
- **Timing Elements** is related to the speed of response and execution by maintenance staff.

While the performance of a building might be appraised by considering the physical condition, functional suitability, space utilization, health and safety, statutory compliance and energy, tenant satisfaction indicators are often resorted to as measures of building performance because they help keep the building to the minimum acceptable standard. Furthermore, the more commonly management services rendered in a building facility which could serve as performance indicators for assessing issues such as service delivery, management efficiency, standards and costs according to Speeding (1994), are: cleaning, security, landscape maintenance, catering, rent and rates reviews, acquisition and disposals, pest control, lift maintenance, mechanical and electrical services as well as building maintenance. Other forms of services to be rendered according to Duncan et al. (2003) are electrical and drainage systems services which involve rectifying defects such as: plugs become unduly hot, scorch marks on socket or plugs, sparks at sockets outlet, repeated blowing of fuses, smells of burning, bulbs blow repeatedly, general loss of power, loss of power at individual socket. While Beck (2005) asserted that basic plumbing systems include repairing toilet sill cocks, dripping faucets, checking the tank, clogged faucet strainer in the bathroom and changing leaky pipes amongst others.

2.2 Measurement of Service Quality

According to Wei (2007), measurement of service quality and/or service delivery provides the basis for answering two fundamental questions:

- (a) *Is what is being done worth doing?*
- (b) *Has it been done well?*

Measuring performance has an important role in measuring past achievements and providing the basis for planning and control decisions (Cole, 2000). Measurement of service delivery/performance is aimed at establishing the satisfaction of clients or users of a product and services. This is done by comparing the actual perception of the service/product against the

expectation of the users. User's expectations are predictions made by consumers about what a good/service could offer while perception is the actual feelings of product/service by consumers; the degree of discrepancy between consumer's perceptions and expectations dictates the service quality and level of satisfaction of consumers/users of the products/services.

The Service Quality (SERVQUAL) model which identifies five gaps that may contribute to unsuccessful service delivery has been widely used as a basis for studying quality issues. Service quality gap between the performance of building services maintenance contractors and the clients (customers) expectation has been investigated by Siu et al. (2001). The service quality (SERVQUAL) model can be adapted for use in measuring the service quality of facilities management services as shown in Figure 1 below.

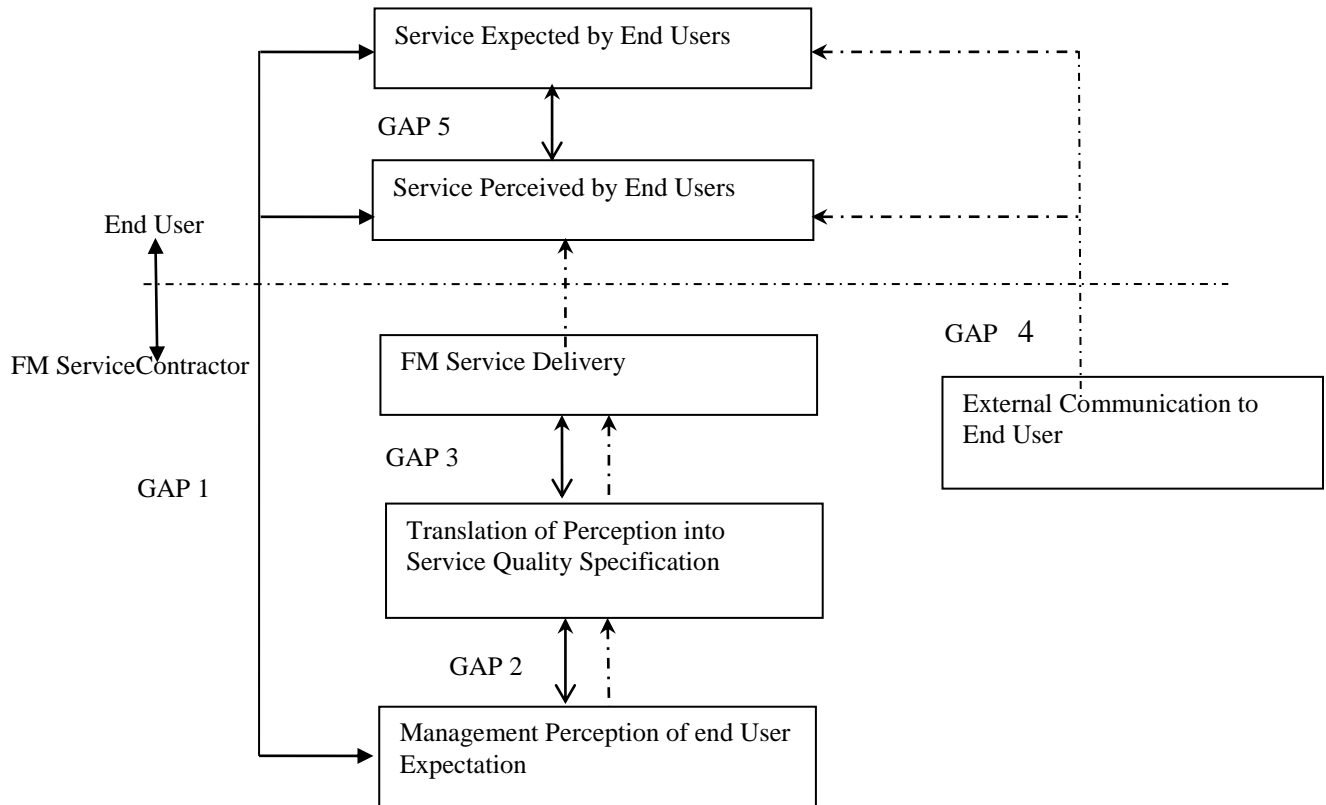


Figure 1: FM Service Quality Gaps – Lai, 2010

In Nigeria, quality of services is measured mostly by the use of Benchmarking where yardstick are set against the performance of facilities and the quality of services are measured. This study adopted the comparison of residents' expectation and perception (SERVQUAL) of the facilities management service delivery in selected high rise residential estates in Lagos, Nigeria. The satisfactory level of different services will be ranked under the Likert scale of ranking as appropriate.

SERVQUAL is a method for measuring satisfaction, a method meant to help companies to get a deeper understanding of their clients' requirements and expectations (Parasuraman et al., 1990). By using SERVQUAL, it is possible to calculate mean scores for each of the five dimensions of service quality: tangibles, reliability, responsiveness, assurance and empathy (Parasuraman et al., 1990). SERVQUAL was developed by Parasuraman et al. (1990) and it estimates the gap between expected and perceived service, from the client's view. SERVQUAL is an empirically derived method that may be used by a service organization to improve service quality. The method involves the development of an understanding of the perceived service needs of target customers. These measured perceptions of service quality for the organization in question, are then compared against an organization that is "excellent". The resulting gap analysis may then be used as a driver for service quality improvement. From a Best Value perspective the measurement of service quality in the service sector should take into account customer expectations of service as well as perceptions of service. SERVQUAL as the most often used approach for measuring service quality has been to compare customers' expectations before a service encounter and their perceptions of the actual service delivered (Wei 2007 quoting Gronroos, 1982; 1990; Parasuraman et al., 1985). The SERVQUAL instrument has been the predominant method used to measure consumers' perceptions of service quality. It has five generic dimensions or factors which are Reliability, Responsiveness, Assurance, Empathy and Tangibles.

The concept of measuring the difference between expectations and perceptions in the form of the SERVQUAL gap score proved very useful for assessing levels of service quality. Parasuraman et al. (1990) argue that, with minor modification, SERVQUAL can be adapted to any service organization. They further argue that information on service quality gaps can help

managers diagnose where performance improvement can best be targeted. The largest negative gap, combined with assessment of where expectations are highest, facilitates prioritization of performance improvement. Equally, if gap scores in some aspects of service do turn out to be positive, implying expectations are actually not just being met but exceeded, then this allows managers to review whether they may be "over-supplying" this particular feature of the service and whether there is potential for re-deployment of resources into features which are underperforming.

2.3 Customer Satisfaction Indices

Because of the importance of customer satisfaction to firms and overall quality of life, Zeithaml and Bitner (2003) asserted that many countries now have a national index that measures and tracks customers' satisfaction at a macro level. Many public policy makers believe that these measures could and should be used as tools for evaluating the health of the nation's economy along with the traditional measures of productivity and price. Customer satisfaction focuses on the quality of economic output, whereas more traditional economic indicators tend to focus only on quality. The first such measure was the Swedish Customer Satisfaction Barometer introduced in 1989. Throughout the 1990s similar indices were introduced in Germany (Deutsche Kunden Barometer, or DIC, in 1992), the United States American Customer Satisfaction Index, ACSI, in 1994 and Switzerland (Swiss Index of Customer Satisfaction, SWICS, in 1998). However, Nigeria is yet to come up with an index to measure customer/user perception on satisfaction of a product or services. The ACSI, developed by researchers at the National Quality Research Centre at the University of Michigan, USA is a measure of quality of goods and services as experienced by customers. The measure tracks customers' perception of quality service, value, satisfaction, expectations, complaints and future loyalty which is then ranked to access the level of satisfaction.

3.0 METHODOLOGY

There are three objectives to achieve the main aim of this study. There are (1) assessment of the occupants' perception against their expectation of quality service in their residential towers, (2) to find the variance between mean expectation and perception and (3) to determine the satisfaction of the occupants of the case studies residential towers. The study adopted questionnaire survey and quantitative analysis techniques. Structured questionnaire was designed to seek the opinion of the respondents on their level of satisfaction/dissatisfaction on the 52 listed quality performance indicators on a 1 – 5 Likert – type scale using **1** for very dissatisfied, **2** for dissatisfied, **3** for indifferent and considered fairly satisfied, **4** for satisfied, **5** for very satisfied. The survey instrument, (questionnaire) was designed to elicit information concerning expectation and perceived quality performance of the facility from the respondents, apart from demographic and socio-economic characteristics. The method of service quality assessment adopted for objective one (1) is the measurement of customers perception against customer expectations of services rendered. Thus: **Service Quality Score = Mean value of expectations – Mean value of perceptions**. Analysis of Variance (ANOVA) was adopted for the objective (2) which seek for the significance differences between perception and expectation of services provided in the four residential high rise buildings (case studies) and the significances or otherwise determines satisfaction in relation to objective 3. The questionnaire was administered to the tenants /occupiers of the selected properties in the study area. A total of 207 housing units were sampled through questionnaires from the population (sample frame) out of which 106 were returned representing 51.2%. The distribution and response rate of the questionnaire is presented in Table 1 below.

Table 1: Questionnaire distribution and response rate

Properties	Developer	Manager	Total Dwelling Units	Response	Response rate (%)
Adeola Odeku, Victoria Island	Public – LSDPC	Epega & Co	125	61	48.8
2B, Cooper Road, Ikoyi	Public – LSDPC	Epega & Co	32	16	50
Louis Solomon, Victoria Island	Private – Subomi Balogun	FM Facilities	24	13	54.2
10B, Cooper Road, Ikoyi	Private – Subomi Balogun	FM Facilities	26	16	61.5
Total			207	106	51.2

The properties at Adeola Odekun Street, Victoria Island and 2B, Cooper Road, Ikoyi were developed by public developer, Lagos state development and property corporation (LSDPC), a property development company of the Lagos state government, the property is being managed by a firm of estate surveyor and valuer – Epega and Co. The properties at Louis Solomon, Victoria Island and 10B, Cooper Road, Ikoyi were developed by a private individual, Otunba Subomi Balogun and managed by FM Facilities Services. All the tenants are yearly tenants paying service charge in addition to the annual rents.

The data sought through the survey instrument relates to occupiers' satisfaction of services relative to the quality of finishing used (both internally and externally) which include finishing's of floors, wall, ceiling, roof also questions that bothers on service quality which was divided into design aspect, services, maintenance, management and cost aspect with reliability of

services provided, service management and cost of service charge in relation to service delivery. The study also interviewed the facility manager in charge of the privately developed buildings for validation of the survey, his opinion however reflects his position on the properties he serviced. Comparative analysis of occupier's satisfaction among the selected residential buildings was also performed. The set hypothesis therefore is:

Hypothesis H₀: There is no significant difference between occupier's expected service quality and perceived service quality in the four residential buildings

Hypothesis H₁: There is significant difference between occupier's expected service quality and perceived service quality in the four residential buildings

In the analysis of data, the average (mean) value of the level of satisfaction with respect to each indicator of service quality and performance is calculated; the mean was divided by the highest level of satisfaction (5) to arrive at Mean Item Score (MIS) which was converted to percentages to arrive at Importance Index. Thereafter, using the importance index (%), the levels of importance were ranked in order of highest percentage representing highest level of importance, such was ranked number one (1) factor of property performance indicating the tenant/occupiers expectation with respect to each indicator of user satisfaction and property performance. The ranking in each table represents overall ranking of all indicators in the six (6) tables as listed under each subheading. The Analysis of Variance (ANOVA) was performed with respect to each indicator to test the level of significance of each indicator with respect to the difference in customer expectation and perception as stated in the statement of hypothesis. The findings are presented in the following section.

Note:

$$\text{Mean} = \frac{\sum((\text{very satisfied}(5)*\text{frequency}) + (\text{satisfied}(4)*\text{frequency}) + (\text{indifferent}(3)*\text{frequency}) + (\text{dissatisfied}(2)*\text{frequency}) + (\text{very dissatisfied}(1)*\text{frequency}))}{\text{Total respondents}}$$

$$\text{MIS} = \frac{\text{Mean}}{\text{Highest level of satisfaction (5)}}$$

$$\text{Importance Index} = \text{MIS} * 100$$

4.0 ANALYSIS AND RESULT

The findings of the study are presented in two folds. First is the analysis of the satisfaction level derived by the tenants/occupiers of the selected buildings with respect to service quality and performance indicators measured with the differences in mean values of occupants' expectation and perception of service quality and second is the Analysis of Variance (ANOVA) for the significant differences in Expectation and perception of tenants/occupiers in respect of the quality service indicators for the assessment of occupants satisfaction level. Table 2 presents the mean, MIS, Importance Index and ranking of the service quality and building performance indicators under six (6) main service quality indicators and fifty two (52) performance indicators. Table 3 presented the results of the ANOVA to arrive at significant level of the differences in tenants/occupiers expectation and perception also under the same six (6) main quality indicators and 52 performance indicators.

Table 2: Satisfaction and Importance Index of quality service/performance indicators

Quality Indicators	Performance Indicators	Mean	MIS	Importance Index	Ranking
Building Design	External Wall	3.65	0.730	73.019	20
	External Floor	3.68	0.736	73.585	12
	Roof	3.64	0.728	72.762	22
	Internal Wall	3.64	0.728	72.830	22
	Internal Floor	3.69	0.738	73.774	12
	Ceiling	3.71	0.742	74.151	10
	Room size	3.69	0.738	73.774	12
	Kitchen size	3.69	0.738	73.774	12
	Sitting room size	3.69	0.738	73.774	12
	Noise control	3.49	0.698	69.811	45
Environmental	Ventilation	3.94	0.789	78.868	1
	Lighting	3.94	0.789	78.868	1
	Acoustics	3.93	0.787	78.679	3
	Temperature	3.92	0.783	78.302	4
	External appearance of building	3.72	0.744	74.423	9
	Indoor Air quality	3.92	0.785	78.476	4

Table 2: Satisfaction and Importance Index of quality service/performance indicators contd

Quality Indicators	Performance Indicators	Mean	MIS	Importance Index	Ranking
Building Services	Generating set	3.57	0.713	71.321	33
	Fire safety equipment	3.58	0.717	71.698	30
	Parking	3.71	0.742	74.151	10
	Elevator safety	3.62	0.724	72.381	27
	Security against theft	3.90	0.779	77.925	6
	Security against intruders	3.86	0.772	77.170	7
	Janitors	3.82	0.764	76.415	8
	Cleanliness common areas	3.65	0.730	72.952	20
	Swimming pool quality	3.63	0.725	72.500	25
	Gym room and equipment	3.38	0.675	67.500	46
	Telecommunication (intercom)	2.59	0.518	51.545	51
Building Maintenance	Emergency maintenance	3.55	0.710	70.962	35
	Prompt attention to fault	3.54	0.708	70.769	37
	Refuse disposal	3.66	0.733	73.269	17
	Clearing of drains	3.64	0.729	72.885	22
	Security light	3.58	0.715	71.538	30
	Lift (Elevator)	3.62	0.723	72.308	27
	Landscaping	3.63	0.727	72.692	25
	Swimming pool	3.66	0.733	73.269	17
	Water quality	2.80	0.560	56.038	50
	Waiting time for elevators	3.32	0.665	66.476	48
	Lift lobby	3.35	0.670	67.048	47
	Fumigation	3.60	0.719	71.923	29
Cost – Building service charge	Cost of service charge (service delivery)	2.60	0.521	52.075	52
	Cost of service charge (provision)	2.60	0.521	52.075	52
Building management	Speed of efficiency of services	3.53	0.706	70.577	40
	Safety precaution of technical staff	3.53	0.707	70.667	40
	Pro-activity	2.95	0.590	59.038	49
	Frequency of maintenance/cleaning	3.54	0.709	70.857	37
	Speed and maintenance of technical fault	3.51	0.702	70.192	43
	Standard of service rendered	3.53	0.706	70.577	40
	Communication between managements and occupiers	3.51	0.703	70.286	43
	Courtesy of technical and management staff	3.56	0.712	71.154	34
	Reliability of services	3.54	0.709	70.857	37
	Mechanical and Electrical services	3.55	0.710	71.048	35
	Quality of maintenance work done by staff	3.58	0.716	71.619	30

Source: Authors' Fieldwork (2010)

The tenants/occupiers of the four buildings under study in this research are not very satisfied with any of the service quality and building performance indicators. Nevertheless, the study find that out of 52 indicators of service quality and building performance indicator listed in the survey questionnaire as presented in the above Table 2, five environmental indicators of Ventilation, Lighting, Acoustic, Temperature and Indoor Air Quality are accorded highest degree of satisfaction with the mean satisfaction values of 3.94, 3.94, 3.93, 3.92 and 3.92 respectively. This means that the perception of the service quality and building performance with respect to these five indicators is the closest to the expectation of the tenants/occupiers of the high rise residential buildings in the study area. The five least satisfied indicators are cost of service charge, Intercom Telecommunication system, Water Quality, and proactivity with satisfaction mean values of 2.6, 2.6, 2.6, 2.8 and 2.95 which is less than 3 for fairly satisfied (indifferent). This means, that the perception of the quality of services and performance in respect of these indicators are far from the tenants expectation. For other indicators, the mean satisfaction value ranges between 3.32 and 3.78 which is just above fairly satisfaction level and not up to satisfaction level of 4 (about 22% away from

satisfaction point). Therefore, the tenant/occupiers can be adjudged to have a mere satisfaction which portend that the service quality and building performance of such indicators are not at optimum level.

4.1 One way Analysis of Variance (ANOVA)

Analysis of variance (ANOVA) is used when comparing more than two sample means. To ascertain the level of residential satisfaction among the four residential high-rise buildings, analysis of variance (ANOVA) was used to determine the level of satisfaction and variances among the four buildings as seen in Table 3. The analysis of variance (ANOVA) was performed to reflect the level of significance between tenant/occupiers expectation and perception of service quality and performance in order to answer the hypothesis question of this study “*There is no significant difference between occupiers’ expected service quality and perceived service quality in the four selected residential buildings*”. To achieve this, the confidence level of 95%, error margin of 5% at two degree of freedom 3 (N-1, between groups) and 102 (N-2, within groups – 104 responses analysed). The software SPSS was used to do the analysis and F-values were calculated with the value of significant as shown in Tables 3. The F – Value in the statistical table at alpha level of 0.05, 95% confidence level and degrees of freedom 3, 102 is 2.68. This implies that for any indicator that have calculated F-value greater than the F – value in the statistical table (i.e 2.68), the hypothesis that there is no significant difference between expectation and perception of service quality will be rejected. Therefore, there is significant difference between the occupiers’ expectation and perception of service quality as may be relevant in the case of each indicator.

Table 3: Summary of the Analysis of Variance (ANOVA) in expectation and perception of service quality

Quality Indicators	Performance Indicators	Between Groups			Within Groups			F-Value	Sig.
		Sum of square	Df	Mean square	Sum of square	df	Mean square		
Design	External Wall	9.6525	3	3.2175	60.4324	102	0.5925	5.43	0.00
	External Floor	8.1702	3	2.7234	52.9242	102	0.5189	5.25	0.00
	Roof	7.7268	3	2.5756	58.5208	101	0.5794	4.45	0.01
	Internal Wall	9.6325	3	3.2108	58.7449	102	0.5759	5.58	0.00
	Internal Floor	8.0789	3	2.6930	52.6475	102	0.5162	5.22	0.00
	Ceiling	8.5333	3	2.8444	55.4006	102	0.5431	5.24	0.00
	Room size	6.8258	3	2.2753	61.9006	102	0.6069	3.75	0.01
	Kitchen size	7.7039	3	2.5680	55.0225	102	0.5394	4.76	0.00
	Sitting room size	5.0430	3	1.6810	61.6834	102	0.6047	2.78	0.04
	Noise control	18.8522	3	6.2841	67.6383	102	0.6631	9.48	0.00
Environmental	Ventilation	0.9596	3	0.3199	18.7008	102	0.1833	1.74	0.16
	Lighting	0.5262	3	0.1754	11.1342	102	0.1092	1.61	0.19
	Acoustics	0.7888	3	0.2629	13.7489	102	0.1348	1.95	0.13
	Temperature	0.3885	3	0.1295	19.8473	102	0.1946	0.67	0.58
	External appearance	9.2968	3	3.0989	47.6167	100	0.4762	6.51	0.00
	Indoor Air	1.1590	3	0.3863	20.2315	101	0.2003	1.93	0.13
Building Services	Generating set	13.7081	3	4.5694	76.3296	102	0.7483	6.11	0.00
	Fire and safety equipment	12.1098	3	4.0366	67.6260	102	0.6630	6.09	0.00
	Parking	6.0150	3	2.0050	63.9190	102	0.6267	3.20	0.03
	Elevator safety	13.2783	3	4.4261	65.4836	101	0.6484	6.83	0.00
	Swimming pool quality	12.3351	3	4.1117	71.4384	102	0.7004	5.87	0.00
	Security against theft	1.8680	3	0.6227	39.9905	102	0.3921	1.59	0.20
	Security against intruders	2.5805	3	0.8602	42.2968	102	0.4147	2.07	0.11
	Janitors	1.9683	3	0.6561	33.6260	102	0.3297	1.99	0.12
	Cleanliness building common area	11.0911	3	3.6970	62.8708	101	0.6225	5.94	0.00
	Water Quality	64.4368	3	21.479	48.1670	102	0.4722	45.48	0.00
	Gym room and equipment	19.4544	3	6.4848	84.9206	100	0.8492	7.64	0.00
Telecommunication (intercom)	84.5160	3	28.172	20.3578	99	0.2056	137.00	0.00	
Building Maintenance	Emergency maintenance	21.4450	3	7.1483	68.3146	100	0.6831	10.46	0.00
	Promptness	22.2434	3	7.4145	71.6028	100	0.7160	10.36	0.00
	Refuse disposal	10.2498	3	3.4166	52.9714	100	0.5297	6.45	0.00
	Clearing of drains	8.8651	3	2.9550	54.9714	100	0.5497	5.38	0.00
	Security light	11.5329	3	3.8443	59.8517	100	0.5985	6.42	0.00
	Lift (Elevator)	9.3400	3	3.1133	59.2754	100	0.5928	5.25	0.00
	Landscaping	13.3590	3	4.4530	54.7564	100	0.5476	8.13	0.00

	Swimming pool	13.9915	3	4.6638	66.3835	100	0.6638	7.03	0.00
	Reception	31.5905	3	10.530	75.4000	101	0.7465	14.11	0.00
	Lift lobby	23.6744	3	7.8915	80.2875	101	0.7949	9.93	0.00
	Fumigation	10.4071	3	3.4690	72.6314	100	0.7263	4.78	0.00
Cost – Building Service Charge	Cost of service charge (delivery)	78.0685	3	26.023	25.2900	102	0.2479	104.96	0.00
	Cost of service charge (provision)	78.0685	3	26.023	25.2900	102	0.2479	104.96	0.00
Building Management	Speed and efficiency of services	14.6041	3	4.8680	73.3093	100	0.7331	6.64	0.00
	Safety precaution of technical staff	14.2000	3	4.7333	69.9333	101	0.6924	6.84	0.00
	Pro-activity	43.3111	3	14.437	71.4485	100	0.7145	20.21	0.00
	Frequency of maintenance/cleaning	16.4571	3	5.4857	63.6000	101	0.6297	8.71	0.00
	Speedy maintenance of technical fault	19.0751	3	6.3584	64.9153	100	0.6492	9.79	0.00
	Standard of service rendered	18.6468	3	6.2156	63.2667	100	0.6327	9.82	0.00
	Communication (mgt and occupiers)	18.7036	3	6.2345	69.5250	101	0.6884	9.06	0.00
	Courtesy of staff	14.2884	3	4.7628	63.3655	100	0.6337	7.52	0.00
	Service Reliability	13.5738	3	4.5246	68.4833	101	0.6781	6.67	0.00
	Mechanical and Electrical services	12.9619	3	4.3206	59.0000	101	0.5842	7.40	0.00
	Quality of work done	11.2119	3	3.7373	56.3500	101	0.5579	6.70	0.00

Source: Authors' Fieldwork (2010)

From the ANOVA Tables 3 above, there is no significant difference between occupiers' expectation and perception of service quality with only eight (8) out of 52 indicators of service quality. The respective significant values of these indicators are greater than 0.05 (alpha) and the calculated F-values are less than 2.68 (F-value on statistical table). The eight indicators are Ventilation (0.16, 1.74); Lighting (0.19, 1.61); Acoustics (0.13, 1.95); Temperature (0.58, 0.67); Indoor Air Quality (0.13, 1.93); Security against Theft (0.20, 1.59); Security against Intruders (0.11, 2.07) and Janitorial Services (0.12, 1.99). For these eight (8) indicators we accept the null hypothesis (H_0). For all the remaining 44 indicators of service quality, the alpha values are lower than 0.05 and calculated F-values are greater than 2.68 (F-value on statistical table). Therefore there is significant difference between the expectation and perception of service quality by occupiers of high rise residential buildings, we reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1). The implication is that residences of high rise residential apartments in Lagos, Nigeria have their expectation met in the areas of environmental quality and security services though with room for improvement. With respect to all other indicators there is a lot to be done by property managers and service providers to meet up with the occupiers' expectation of quality of service and performance.

Table 4: Multiple comparisons of mean difference: SERVICE QUALITY (Dependent variable)

(I) Location	(J) Location	Mean Difference (I-J)	Standard Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Adeola Odeku	Louis Solomon	-.75674*	.1615	.000	-1.18	-.34
	2B Cooper Rd	-.47190*	.1485	.010	-.86	-.08
	10B Cooper Rd	-.77116*	.1485	.000	-1.16	-.38
Louis Solomon	2B Cooper Rd	-.2848	.1974	.476	-.23	.80
	10B Cooper Rd	-.0144	.1974	1.000	-.53	.50
2B Cooper Rd	10B Cooper Rd	-.2993	.1869	.383	-.79	.19

Source: Authors' Fieldwork (2010)

The significant mean differences are indicated by an asterisk (*) the mean difference of 0.756 between Adeola Odeku and Louis Solomon shows that these two high-rise building differ in their population means and satisfaction level at 95% confidence interval. Similarly, the mean difference between Adeola Odeku and 2B, Cooper Road (0.472) and Adeola Odeku and 10B, Cooper Road (0.77). This also indicates that occupiers' in the 4 high-rise residential buildings differ in their level of service quality expectations and perceptions which may be attributed to difference in service quality provisions and cost of service charge in the selected buildings as shown by the relative performance criteria. Subsequently, occupiers/tenants in Louis Solomon Street, Victoria Island and 10B Cooper Road, Ikoyi expressed a relatively high level of satisfaction being privately managed buildings.

5.0 DISCUSSION OF FINDINGS

The study has assessed the occupant satisfaction of building quality and performance satisfaction in respect of high rise residential buildings in Nigeria. It was found that the mean item score (MIS) is highest (above 3 but less than 4) for 5 item of

the environmental indicators (Ventilation, Lighting, Acoustic, Temperature and Indoor Air) suggesting the highest satisfying services or quality. Five others were least satisfied with (the two indicators of cost, Intercom Telecommunication system, Water Quality, and proactivity) having the mean item score less than 3. In all, eight (8) of the 52 quality/performance indicators show no significant difference between expectation and perception, this suggest that the occupants are fully satisfied with the 8 service indicators. However, the occupants are not satisfied with 44 indicators, it can be said that the occupants are less satisfied in the aggregate. The opinions of the housing occupiers in the residential high rise buildings under study are central to satisfactory quality service delivery. The study affirms the significance of the complex relationship of occupants of a building with the built environment in support of the importance of customer satisfaction. It is obvious that several measures are required to improve service quality in a high rise building to meet occupier's satisfaction. The study found that occupiers' perception toward service quality depends on improved service quality, reliability and promptness of the services. The satisfaction of building performance was adjudged by the extent to which it meets the user's expectation. The study reveals that respondents are highly dissatisfied with most of the indicators considered in this study including external appearance of building, ceiling, floor internal, floor external, refuse disposal, wall external, cleanliness of common area of the building, courtesy of technical and management staff, mechanical and electrical services, emergency maintenance, frequency of maintenance/cleaning, reliability of service, prompt attention to faults, safety precaution of technical staff, speed of efficiency of services, standard of service rendered and communication gap between the management and occupiers, these indicators had a wider gap between customer expectation and perception. The result suggest that the occupants are less satisfied as the quality and performance did not meet their expectation, this confirmed the position of Zeithaml and Bitner (2003). Sullivan (2003) further asserted that housing is an investment and Utama (2003) stated that building performance satisfaction to occupants increases user retention and value of the property (rental and capital), therefore, a well maintained residential tower which also satisfies user expectations is deemed to appreciate in value and yield more rental income and higher return to the developer/owner, this could not be established as occupiers are less satisfied. Adequate interaction between the property managers and occupiers of residential towers is an inevitable service delivery strategy. The managers should be willing to ask occupiers of their expectation in terms of service delivery and be ready to address the needs promptly. Ineffective communication or misunderstanding of occupiers' expectation could lead to bad decision and sup-optimal resource allocation that will result in poor service quality perception by the users.

The study reflects high service charge in comparison to the quality of service delivery. The focus of Property and Facilities Managers should not always be on cutting cost but efficient service delivery that will meet occupiers' expectation at all time, to meet customer expected satisfaction level and to achieve a customer driven service quality delivery. The Manager should endeavor to define occupiers' service standards through formal process (filling of form, survey etc) and continuously attend to occupiers complaint promptly and courteously. The indicators of quality design and materials both of internal and external, portray a necessary feedback to the construction industries. Therefore in creating new residential buildings, especially of high rise nature, efforts should be more on adequate environmental quality which includes amongst others cross ventilation, acoustic control and natural lighting; life-safety system integrity, this covers the adequacy of fire protection systems, heating systems as well as the compliance with building codes and standards and the quality of materials for building fabrics should also be improved upon. The implication of these findings is that there are still lot to do in terms of adherence to quality standards in terms of building codes and safety rules and building materials specifications in order to meet end users required quality standard and satisfaction of building services and performance. This is necessary for the Nigeria developers when contemplating high rise projects as the housing needs of Nigerians and foreigners alike is far from being met.

6.0 CONCLUSION

High quality performance is not always a certainty; therefore standards must be backed by appropriate resources (people, system and technology) and also must be enforced to be effective. In this study, relative satisfaction level of occupiers were identified, analyzed and discussed. The performance criteria identified by occupiers' as source of satisfaction and dissatisfaction were also identified. Evidence from the study showed that occupiers' in all the selected buildings were most satisfied with environmental quality of their buildings than with any of the other features. The major aspects include ventilation, lighting, acoustics, and temperature. Others are security against theft and intruders, janitorial services, parking lot, kitchen size, sitting room size, room size and swimming pool. They are least satisfied with communication, service management and economic elements i.e. cost in relation to service delivery and provision as it has a low mean of (2.6) compared to environmental quality and other performance indices which occupiers' are satisfied with, at mean of (3.94) and ranked between 1st -3rd. It is therefore imperative that Estate Surveyors and Valuers who are the property managers and facilities manager in most cases, should co-opt the techniques of Serve-Qual to improve on the service quality of facilities and close the gap between the expected and perceived service quality in building assets. Based on this, the following assertions were made for effective property management practice:

- * As part of service delivery strategies, management should interact directly with customers, be willing to ask about their expectations or be ready to address them promptly because when management do not fully understand customers/service expectations they may trigger a chain of bad decisions and sub-optimal resource allocations that results in perceptions of poor service quality.
- * Property Managers should focus on occupiers' relative satisfaction/relationship rather than cost.

- * Management should endeavor to define occupiers' service standards through formal process (filling of form), the occupiers' requirements and expectation on service quality of the building.

In conclusion, the occupants of high rise residential buildings have moderate level of satisfaction and yearn for improve quality, service and performance. However, the lack of study and literature into the occupant's satisfaction of building performance in the African context prompted the usage of more literatures on studies of building service performance, quality and building services outside the Africa shores. This could constitute limitation to the findings.

7.0 REFERENCES

- Amaratunga, D., & Baldry, D. (1998). *Appraising the total performance of higher educational buildings: A participatory approach towards a knowledge-based system*. RICS Research COBRA. Retrieved April 20, 2009 from, <http://www.rics-foundation.org>
- Auchterlounie, T., & Hinks, J (2001). *The measurement of customer satisfaction in the private house building sector*. Paper presented at the RICS COBRA 2001 Conference. Retrieved June 22, 2009 from, <http://www.rics-foundation.org>
- Barlow, J., & Gann, D. (1999). *Searching for customer – Focus in UK house-building*. Paper Delivered at CIB W55 and W65 Joint Triennial Symposium on Customer Satisfaction: A Focus for Research and Practice. Cape Town South Africa: 5-10, September.
- Beck, J. (2005). *The ultimate home and property maintenance*. New York: McGraw –Hill.
- Berkman, N. W., Lindquist, J.D., & Sirgy, M. J. (1996). *Consumer behaviour*. Illinois, U.S.A.: NTC Publishing Group.
- Camp, R. C. (1989). *Benchmarking - The search for industry best practices that lead to superior performance*. Milwaukee, WI: ASQS Quality Press.
- Carpenter, C.L. & Oloufa, A.A. (1995). Post-occupancy evaluation of buildings and development of facility performance criteria. *Journal of Architectural Engineering*, 1(2), 77-81.
- Cole, R. J. (2000). Building environmental assessment methods: Assessing construction practices. *Construction Management and Economics*, 18, 949-957.
- Djebarni, R., & Al-bed, A. (2000). Satisfaction level with neighbourhoods in low-income public housing in Yemen. *Property Management Journal*, 18(4), pp 230-242.
- Duncan, M., Derek, W., & Roger, H. (2003). *Understanding housing defects* (1st ed.). Great Britain: Glasgow Estates Gazette.
- Fatoye, E. O. (2005). *An assessment of occupiers' satisfaction on quality performance of public residential estates* (Unpublished MSc. Dissertation). Department of Urban and Regional Planning, University of Ibadan, Ibadan, Nigeria.
- Forsythe, P. (1999). *Assessing trade quality in construction – Objectivism versus subjectivism*. Paper presented at the CIB W55 and W65 Joint Triennial Symposium on Customer Satisfaction: A Focus for Research and Practice, Cape Town, South Africa. 5- 10 September.
- Gronroos, C. (1982). Strategic management and marketing in the service sector. Swedish School of Economics and Business Administration. Sweden; Helsingfors.
- Gronroos C. (1990). *Service management and marketing*. Lexington, MA. Lexington Books.
- Giese, J.L., & Cote, J.A. (2000). Defining customer satisfaction. *Academy of Marketing Science Review*, 4(2), 1-23. Retrieved from, <http://www.ams-web.org/associations/213/files/amsreview/articles.htm>
- Horvath, P., & Herter, N. R. (1992). Benchmarking: Comparison with the best of the best. *Controlling*, 4(1), 4-11.
- Ireland, L. R. (1992). Customer satisfaction: The project manager's role. *International Journal of Project Management* 10(2), 123-127.
- Johnston, R., & Clark, G. (2005). *Service operations management: Improving service delivery*. Harlow, England: Prentice Hall.
- Kotler, P. (2003). *Marketing management*. New Jersey, USA: Prentice Hall.
- Lai, J.H.K. (2010). Investigating the quality of FM services in residential buildings. Facilities management and maintenance. Paper from the special track of the CIB World Building Congress at Salford, UK.
- Mabogunje, A.L., Hardoy, J.E., & Misra, R.P. (1978). *Shelter provision in developing countries*. New York: John Wiley & Sons Ltd.
- Noorsidi Aizuddin, M. N., & Noor Faizah, A. M. (2009). *SERVQUAL GAP 5 Circumstances on Malaysia high rise building*. A paper presented at the 9th AFRES Conference held in October 20th – October 24th, Lagos Nigeria.
- Oliveira, M.C.G., & Heineck, L.F.M. (1999). *An investigation into the determinants of built environmental customer satisfaction*. Paper delivered at CIB W55 and W65 Joint Triennial Symposium on Customer Satisfaction: A focus for Research and Practice. Cape Town South Africa: 5-10, September.
- Parasuraman, A., Zeithaml, V.A. & Berry, L.L. (1993). Research note: More on improving service quality measurement. *Journal of Retailing*, 69(1), 140-147.
- Parasuraman, Zeithaml, Z. A., & Berry, L. L. (1998). SERVQUAL: A multiple – item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64, 12-40.
- Parasuraman, A., Zeithaml, V.A., & Berry, L.L. (1985). A conceptual model of service quality and its implication. *Journal of Marketing*, 49, 41-50.

- Parasuraman, A., Zeithaml, V.A., & Berry, L.L. (1990). *Delivering quality service: Balancing customer perceptions and expectations*. The Free Press, New York.
- Pheng, L.S. (1996). Total quality facilities management: A framework for implementation. *Facilities*, 14(5/6), 5-13.
- Robathan, P. (1996). Intelligent building performance. In K. Alexander (Ed.), *Facilities management: Theory and practice* (pp 98-109). New York: Taylor & Francis.
- Siu, G.K.M., Bridge, A., & Skitmore, M. (2001). Assessing the service quality of building maintenance providers; Mechanical and engineering services. *Construction Management and Economics*, 19, 719-726
- Spedding, A. (1994). *CIOB handbook of facilities management*. England, Harlow: Longman.
- Sullivan, O. A. (2003). *Urban economics* (5th eds.). New York: Mc-Graw-Hill/Irwin.
- Torbica, Z. M., & Stroh, R. C. (1999). *An assessment model for quality performance control in residential construction*. Associated School of Construction (ASC). Proceedings of the 35th Annual Conference. California Polytechnic State University. San Luis Obispo, California, April 7-10, pp 363- 370.
- Utama A., (2003). *Building customer satisfaction value and retention*. Retrieved 8th August, 2013 from, https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&uact=8&ved=0CDcQFjACahUKEwjktme353HAhUMjo4KHbzpDR8&url=http%3A%2F%2Fstaff.uny.ac.id%2Fsites%2Fdefault%2Ffiles%2FBUILDING%2520CUSTOMER%2520SATISFACTION%2C%2520VALUE%2C%2520AND%2520RETENTION.ppt&ei=ZzHIVaTnEYycugS807f4AQ&usg=AFQjCNGZCp3uOOK4eE2htTadHjHBuN0s1A&sig2=sOehc-ZcDQG_f8afq6DTzA&bvm=bv.99804247,d.c2E
- Wei Z. (2007). *Service quality by a facilities management company in Dragon Lake residential community*. A M.Sc. degree in facilities management project submitted to the Faculty of Geo-information Science and Engineering, Universiti Teknologi, Malaysia.
- Young, S. (1993). Checking performance with competitive benchmarking. *Professional Engineering*, 14-15.
- Zeithaml, V. A., & Bitner, M. J. (2003). *Services marketing: Integrating customer focus across the firm* (3rd eds). New York: McGraw – Hill.