

Assessment of Client's Needs and Satisfaction at Various Stages of Building Projects Delivery Process in Lagos State

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ABSTRACT

Clients' needs and satisfaction represent a very vital issue that needs to be adequately addressed in building project delivery. Despite the available researches directed towards addressing this issue, clients' needs and satisfaction are increasingly not being met. In view of this, the research discussed the clients' needs and satisfaction based on the attached level of importance and the perceived level of satisfaction from the local building contractors. To achieve this goal, two main objectives were itemized: to identify the clients' needs and satisfaction during the building project delivery process and to assess the performance levels at each stage of the building project delivery process by the contractor. A structured questionnaire was used for the study. A total number of 86 questionnaires were administered directly on professionals in built environment that were involved in managing or supervising building projects not less than two years' experience and must have worked in clients' firm. The obtained data were statistically analysed to find out mean importance indices and mean satisfaction indices, the mean indices differences and the significance of the differences using t-test. The results revealed gap differences in the attached importance and the level of satisfaction for the identified factors. On the average, attitude disposition top the least performed area, followed by construction processes, and the third was quality of construction and workmanship while performance level were slightly below expectation on adherence to schedule, variations, drawings and handling over, followed by safety measures and standards in ascending order, which shows that there are lots of needs for improvement by the contractors. Conclusively, various suggestions were made on each grouped factors on how to effectively close the gap between satisfaction and expectations.

Keywords: Clients' Needs Building Processes, Expectations, Performance, and Satisfaction.

INTRODUCTION

Lagos is the most populated city in Nigeria; over 20 million people reside in Lagos according to Nigerian Census projections and also the administrative division of Nigeria, located in the south-western part of the country. The smallest in area of Nigerian states, it is 3,577 km² in area. One of the most striving industries in the state is the building industry and it generates incomes for both individuals and the government. Almost on daily bases new building projects spring up within the states.

Building project is a sub-group of construction industry among others in the family but it is the most vital to human existence. Building provides shelters and accommodations for various activities (Kumar, 2010). Perhaps this explains why building projects are given priority among other construction projects. Clients are the major initiator of any project and every project initiator or promoter is expected to have her goals for embarking on a construction project (Dada, 2007). The aim of this work is to identify the client' needs and expectations at various phases during the course of building delivery and also to measure the level of achievements at each phase of building project delivery process.

In other hand, an expectation is a belief or anticipation of what will happen as a result of an action during the course of service delivery known as building delivery process. A client makes a decision to select a particular contractor to provide construction services, in making that selection decision; the

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client formulates expectation as to what will happen as a result of that decision based on various criteria. The satisfaction levels are the measures of differences between the expectations and level of performances. Therefore, for a client to be satisfied, the contractors’ performance must surpass or at least meet up with the set expectations. Client willingness to invest in building industry contributes immensely to the GDP of developing country like Nigeria. But it seems Client derives less value in return from his investments in the hand of service provider (Consultants, Suppliers, and contractors). Ijaola (2010) affirmed that over the years, projects handled by indigenous construction firms in Nigeria have been characterised by various short-falls such as time over-run, low quality of works and lots of dispute between clients and contractors.

This work looks at various issues; to identify the needs, expectations and level of achievement so as to provide information for future researchers to address the menace. The client in the long run will continue to be satisfied with the services of the contractors, receive worthy returns for their investment and be delighted to invest more into building projects. The service providers will also be guided in the area to intensify effort in order to meet their client needs and expectations. There will be harmony in clients –contractor’s relationship. The society at large will benefit because clients will be ready to invest more into the building projects.

LITERATURE REVIEW

Clients’ Expectations

An expectation is a belief or anticipation of what will happen as an outcome of an action in the progression of service delivery known as building delivery process (Malony, 2002 as cited in Al-Shorafa, 2008). The client makes a decision to select a particular contractor to provide construction services, in making that selection decision; the client formulates expectations of what will happen based on three criteria: words of mouth from regular patronisers, corporate needs of the organisation and past experience on previous dealings. Satisfaction causes the customer to perceive that the contractor provides superior service quality or otherwise (Nbaku and Nkado 2006).

Establishing Client Expectations

The top managers of firms discussed one-on-one discussions with the owner as the most effective method to establish client expectations. In addition, they regularly use preconstruction meetings prior to the start of a project to help establish expectations, determine their needs, and define team interaction. Insight provided by the architect/engineer and the contract documents are seen as the least effective method to establish expectations. The design team and contractor may be good sources to establish contract requirements, but are not viewed as effective tools to identify expectations facilitating client satisfaction.

Clients’ Needs Assessment

Clients’ needs and requirements in the development process could be categorized broadly into design (architectural and engineering), management (construction project and cost) and construction services, in line with Bennett’s (1985) four major areas of responsibility in construction project development. A framework for client needs assessment in the development process as proposed in this study focuses on the identification and ranking of client expectations from pre-construction stage through construction to the handing over in line with Al-Shorafa (2008).

Measurement of Satisfaction

Kotler (1997) defined satisfaction as ‘a person’s feeling of pleasure or disappointment resulting from comparing a product’s perceived performance or outcome in relation to his or her expectations’ Many researchers consider satisfaction as an overall summary measure, an overview while others feel that satisfaction is measured best by a combination of facets or attributes, cells building.

For instance, Day (1977) saw no difficulty in measuring an individual’s satisfaction or dissatisfaction with the overall outcome. Consumer satisfaction can be thought of as a single overall evaluative response that represents a summary of subjective responses to many different facets. Handy and Ptiff (1975), however, disagreed with overall satisfaction measurement, arguing that response to an overall satisfaction measure only crudely measures overall satisfaction. However, measurement of satisfaction on the basis of a single observation was also explored to provide an alternative index measure for comparative analyses.

Conceptual Framework

The building projects delivery processes that was examined started from (A) pre-construction stage(B) construction stage(C) principal measures: (I)Adherence to schedule,(II) Adherence to budget and (III) quality of construction and workmanship (IV)Safety measure and standards’(D) Resources Management(E) Site personnel, (F) Variations drawings and handling over,(G) Quality of service, (H) Attitude. These are the service stages that contribute to job satisfaction. The expectation is service needs and performance which yields satisfaction as shown in figure 1.

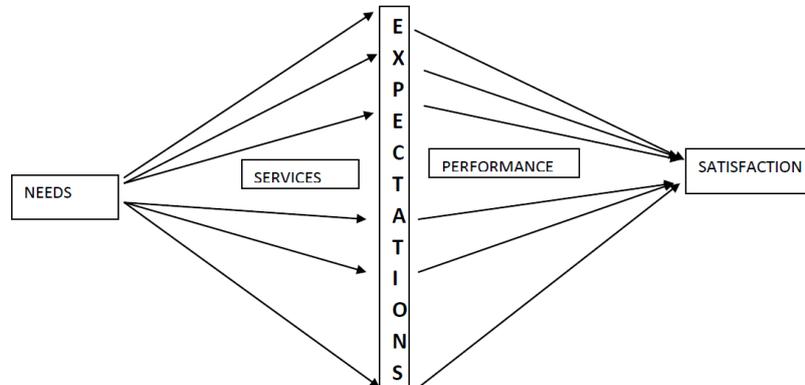


Figure1. Relationship between Needs and Satisfactions (Author)

METHODOLOGY

The main aim of this research is to evaluate the needs, expectations and satisfaction level of building clients in the services receive from different contractors during the course of building project delivery in Lagos State. To accomplish this aim a survey research design approach was selected .A survey of clients from different sectors in the housing provision were selected for their opinions and experiences in the hands of contractors. A structured questionnaire was prepared and factors responsible for perceived satisfaction were grouped into seven .The adopted approach in filling the questionnaire was to consider each factor within its group without relating each factor to the other in the other groups.

This research targeted the public clients and professionals in order to obtain well guided information as a result of their understanding in the built environment.The consultants and staff working within local ministries, corporate bodies, governmentparastatals and consulting offices were served the questionnaires. The total number of questionnaires served was 86 directly to the professionals who were involved in managing and supervising the contractors’ work of not less than two years and commissioned at least a project. Purposive sampling technique was adopted but the total number adequately utilised was 70.All responses were checked to ensure completeness and readability before proceeding with the statistical analysis of the data through statistical package for Social sciences (SPSS)

Secondly, by applying various statistical techniques such as descriptive analysis, compare means and correlationcoefficient, and ranking the objectives of this research were realised.The analysis of importance-performance approach similar in Martilla and James(1977) and that of Al-Shorafa (2008) using average satisfaction scores and priority ranking was adopted.

RESULTS AND DISCUSSIONS

The results from the descriptive and inferential analyses of the data gathered for this study are presented and discussed as follows.

Gap between Importance and Satisfaction Indices of Satisfaction Factors

The study compares the differences between importance indices and satisfaction indices for each of the factor to establish the gap between them as illustrated in Tables 1to Table 10. These differences were ranked and subjected to t-test for significance at $\alpha=0.05$ for each of the factors.

Gap between Importance and Satisfaction Indices, Pre-Construction

Table 1 shows the greatest gap exists between the importance indices and satisfaction indices from the factors ranked first to the fifth:Ability and willingness to help develop client brief of the project

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(0.85), First interview and presentation of the implementation approach (0.81), Completely explain administration policies, procedures and coordination requirement before commencement (0.59), The price offered by the contractor's firm compared to the client estimate (0.54), Plan of work and method statement (0.48) and their p-values are zeros. These means they are very significant. Contractors need to act on the ways to improve on the satisfaction levels for the clients to have confidence in them.

There were moderate gaps for the factors ranked from the sixth to tenth: Providing a reasonable estimate of work and defining milestones, when request for starting work are issued (0.46), Understanding of contract and specifications(0.41), Warranty conditions of the contractor firm offers(0.34), past experience/ performance (0.30) and Third party reference/ recommendation (0.22). They were also significant with p-values below 0.05. The only insignificant factor was “Contribution to design and durability of project” with even over satisfaction (-0.07) and it was ranked the eleventh. The average gap difference was 0.45 which shows that there is need for the contractors to step up the game.

Table1. Gap between importance and satisfaction indices, Pre-construction

Factors / Variables	Importance index	Satisfaction index	Index difference	Rank	t-value	P-values
A. Pre-construction stage:(After Awarding)						
Ability and willingness to help develop client brief of the project	4.45	3.60	0.85	1	6.555*	0.000
First interview and presentation of the implementation approach	4.05	3.24	0.81	2	4.928*	0.000
Completely explain administration policies, procedures and coordination requirement before commencement.	4.16	3.57	0.59	3	5.030*	0.000
The price offered by the contractor's firm compared to the client estimate	4.09	3.55	0.54	4	5.987*	0.000
Plan of work and method statement	3.98	3.50	0.48	5	4.073*	0.000
Providing a reasonable estimate of work and defining milestones, when request for starting work are issued.	4.27	3.81	0.46	6	2.963*	0.005
Understanding of contract and specifications	4.27	3.86	0.41	7	3.591*	0.001
Warranty conditions of the contractor firm offers.	4.20	3.86	0.34	8	2.819*	0.007
Past experience/ performance	4.20	3.90	0.30	9	2.949*	0.005
Third party reference/ recommendation	3.17	2.95	0.22	10	4.272*	0.000
Contribution to design and durability of project	4.14	4.21	-0.07	11	-0.464	0.645
Total average	4.09	3.64	0.45		3.88	0.060

Gap between Importance and Satisfaction Indices, Construction

Table 2 shows the greatest gap that exists between the importance indices and satisfaction indices from the factors ranked first to the seventh: Site organization, tidiness and cleanliness (0.89), Proposed construction method (0.87), Explaining what was done to solve a particular problem (0.77), Ability to plan and programme properly (0.69), Project control, monitoring process and cost control (0.68), Compliance to local national regulations guidelines (0.56) and providing updates on work as it progresses & providing periodic listing of all work orders & their status (0.52).

The eighth in the rank was “Site supervision and control through supporting personnel level” with (0.37) and also significant. The other two factors have negative gap values which was indication that the satisfactions surpass the importance: Managing the site through top management level (-0.01) and Contractors' work load (-0.19) but the later was significant. This means the contractor was wasting effort in this area. The average gap difference was 0.52 for the group.

Table2. Gap between importance and satisfaction index, Construction

Factors / Variables	Importance index	Satisfaction index	Index difference	Rank	t-value	P-values
B. Construction						
Site organization, tidiness and cleanliness.	4.39	3.50	0.89	1	10.174*	0.000
Proposed construction method.	4.16	3.29	0.87	2	8.452*	0.000

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Explaining what was done to solve a particular problem.	3.91	3.14	0.77	3	4.470*	0.000
Ability to plan and programme properly	4.50	3.81	0.69	4	3.654*	0.001
Project control, monitoring process and cost control.	4.11	3.43	0.68	5	4.089*	0.000
Compliance to local national regulations guidelines	4.18	3.62	0.56	6	5.758*	0.000
Providing updates on work as it progresses & providing periodic listing of all work orders & their status	4.07	3.55	0.52	7	3.563*	0.001
Site supervision and control through supporting personnel level	4.23	3.86	0.37	8	2.284*	0.028
Managing the site through top management level	3.59	3.60	-0.01	9	-0.119	0.906
Contractors' work load	4.02	4.21	-0.19	10	-2.149*	0.038
Total average	4.12	3.60	0.52		4.02	0.10

Gap between Importance and Satisfaction Index, Time Performance

Table 3 shows the significant gap that exists between the importance indices and satisfaction indices from the factors ranked first to the fourth: Providing notifications and explanations for work delays,(0.62), Once a job is started it is completed quickly (0.32), Responding immediately to work status inquiries (0.28) and Maintaining sense of Urgency (0.12). The not significant difference occurred among ranks fifth to the seventh: Plan and schedule jobs quickly (0.09), Give small jobs high priority (0.05) and a negative value of (-0.04) for Finishing the project on time. The average gap difference was 0.21.

Table3. Gap between importance and satisfaction index, time performance

Factors / Variables	Importance index	Satisfaction index	Index difference	Rank	t-value	P-values
C. Principal measures						
Adherence to Schedule (time performance)						
Providing notifications and explanations for work delays	3.38	2.76	0.62	1	3.279*	0.002
Once a job is started it is completed quickly	3.84	3.52	0.32	2	2.555*	0.014
Responding immediately to work status inquiries	4.18	3.90	0.28	3	2.300*	0.027
Maintaining sense of Urgency.	3.59	3.47	0.12	4	3.232*	0.003
Plan and schedule jobs quickly	4.11	4.02	0.09	5	0.644	0.523
Give small jobs high priority	3.12	3.07	0.05	6	0.495	0.623
Finishing the project on time.	3.98	4.02	-0.04	7	-0.361	0.720
Total average	3.74	3.54	0.21		1.73	0.27

Gap between Importance and Satisfaction Index, Cost Performance

Table 4 shows the significant gap that exists between the importance indices and satisfaction indices from the factors ranked first to third: Conducting value engineering to reduce cost optimizing the available feasible alternatives (0.73), Reducing wastes to a minimum (0.5), having adequate financing arrangements (0.4) and Finishing the project within project (0.4), all these were significant. The last in the group, ranked fourth has non-significant difference of zero Employing adequate cost control measures to stay within budget (0). The average gap difference was (0.41)

Table4. Gap between importance and satisfaction index, cost performance

Factors / Variables	Importance index	Satisfaction index	Index difference	Rank	t-value	P-values
C. Principal measures						
Adherence to Budget (cost performance)						

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Conducting value engineering to reduce cost optimizing the available feasible alternatives	3.88	3.15	0.73	1	4.774*	0.000
Reducing wastes to a minimum	4.33	3.83	0.5	2	5.547*	0.000
Having adequate financing arrangements.	4.23	3.83	0.4	3	2.513*	0.016
Finishing the project within project.	4.40	4.00	0.4	3	2.334*	0.026
Employing adequate cost control measures to stay within budget	4.00	4.00	0	4	0.000	1.000
Total average	4.17	3.76	0.41		3.03	0.21

Gap between Importance and Satisfaction Indices, Quality of Construction and Workmanship

Table 5 shows the significant differences that exist between the importance indices and satisfaction indices from the factors ranked first to the seventh except the sixth: Making efforts by the contractor to meet or exceed all specifications or conformance requirements (Outstanding care about details) (0.71), Giving importance to aesthetics, such as how the output feels, sounds and looks (0.70), Giving equal performance to the secondary characteristics of features of the facility (0.68), Giving top priority to the performance (operational) characteristics of the facility (0.36), Applying quality assurance procedures (0.33), Perceiving quality as an essential dimension of overall client satisfaction (0.28) not significant, and Ensuring the durability of the completed facility as an integral part of contractor functions (Innovation through new ideas or technologies) (0.22). The average gap difference for the group was 0.46.

Table5. Gap between importance and satisfaction index, Quality of construction and workmanship

Factors / Variables	Importance index	Satisfaction index	Index difference	Rank	t-value	P-values
C. Principal measures						
Quality of construction and workmanship.						
Making efforts by the contractor to meet or exceed all specifications or conformance requirements. (Outstanding care about details)	4.29	3.58	0.71	1	6.754*	0.000
Giving importance to aesthetics, such as how the output feels, sounds and looks.	4.28	3.58	0.7	2	5.456*	0.000
Giving equal performance to the secondary characteristics of features of the facility	4.18	3.50	0.68	3	5.195*	0.000
Giving top priority to the performance (operational) characteristics of the facility.	3.86	3.50	0.36	4	3.163*	0.003
Applying quality assurance procedures.	3.81	3.48	0.33	5	2.066*	0.045
Perceiving quality as an essential dimension of overall client satisfaction.	4.18	3.90	0.28	6	1.556	0.128
Ensuring the durability of the completed facility as an integral part of contractor functions (Innovation through new ideas or technologies)	4.10	3.88	0.22	7	2.157*	0.037
Total average	4.10	3.63	0.46		3.76	0.03

Gap between Importance and Satisfaction Indices, Safety Measures and Standards

Table 6 shows the significant differences that exist between the importance indices and satisfaction indices from the factors ranked first to the fifth: Availability of first aid supplies (0.71), Personal protection equipment (0.67), and Regular meetings with the site personnel to insure safety awareness within the staff (0.57), Availability of safety training for the job site personnel (0.51) and Compliance with local safety regulations (0.43). The other factors ranges from the sixth to the ninth were the gaps not significant: Accidents' investigation and documentation in the site (0.22), Commitment of the top management with the safety policies and regulations (0.09), Availability of safety director (0), and the over satisfied factor, Availability of safety plan (-0.08). The average gap difference was 0.35

Table6. Gap between importance and satisfaction index, Safety measures and standards

Factors / Variables	Importance index	Satisfaction index	Index difference	Rank	t-value	P-values
C. Principal measures						

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Safety measures and standards.						
Availability of first aid supplies.	4.69	3.98	0.71	1	5.387*	0.000
Personal protection equipment.	4.50	3.83	0.67	2	2.787*	0.008
Regular meetings with the site personnel to insure safety awareness within the staff.	4.57	4.00	0.57	3	3.664*	0.001
Availability of safety training for the job site personnel.	4.76	4.25	0.51	4	4.511*	0.000
Compliance with local safety regulations.	4.21	3.78	0.43	5	3.365*	0.002
Accidents' investigation and documentation in the site.	4.12	3.90	0.22	6	1.097	0.279
Commitment of the top management with the safety policies and regulations.	4.12	4.03	0.09	7	0.771	0.446
Availability of safety director.	3.50	3.50	0	8	0.086	0.932
Availability of safety plan.	4.10	4.18	-0.08	9	-0.141	0.889
Total average	4.29	3.94	0.35		2.39	0.28

Gap between Importance and Satisfaction Index, Resources Management

Table 7 shows the gap differences that exist between the importance indices and satisfaction indices from the factors ranked first to the eighth they were significant except the seventh: Concern/awareness for environmental issues (0.80), Maximum resources and financial capabilities (0.65), Type of plant and equipment available and suitability of the equipment (0.56), Management and co-ordination of subcontractors and suppliers (0.52), Manpower management (quality and quantity of craft operatives) (0.38), Payment to subcontractors and suppliers (on time) (0.33), Strength of contractor site team(i.e quantity) (0.32) not significant and Contractor's familiarity with local suppliers, labours etc. (0.23). The other factors ranked ninth and tenth were not significant: Material management (0.16) and Equipment and plant management (0.14). The average of the gap differences were 0.41.

Table7. Gap between importance and satisfaction index, Resources Management

Factors / Variables	Importance index	Satisfaction index	Index difference	Rank	t-value	P-values
D Resources Management						
Concern/awareness for environmental issues.	3.95	3.15	0.80	1	6.701*	0.000
Maximum resources and financial capabilities.	3.88	3.23	0.65	2	5.842*	0.000
Type of plant and equipment available and suitability of the equipment.	3.76	3.20	0.56	3	5.353*	0.000
Management and co-ordination of subcontractors and suppliers	4.23	3.70	0.52	4	5.547*	0.000
Manpower management (quality and quantity of craft operatives).	4.21	3.83	0.38	5	2.511*	0.016
Payment to subcontractors and suppliers (on time).	4.21	3.88	0.33	6	3.163*	0.003
Strength of contractor site team(i.e quantity)	4.00	3.68	0.32	7	1.861	0.070
Contractor's familiarity with local suppliers, labours etc.	3.81	3.58	0.23	8	2.157*	0.037
Material management	4.21	4.05	0.16	9	1.022	0.313
Equipment and plant management.	4.14	4.00	0.14	10	0.644	0.523
Total average	4.04	3.63	0.41		3.48	0.10

Gap between Importance and Satisfaction Indices, Site Personnel

Table 8 shows the gap differences that exist between the importance indices and satisfaction indices from the factors ranked first to the seventh: Skills of the contractor's workers (0.95), Availability of highly qualified managerial staff in the contractor firm (0.65), Capacity of contractor's workers for cooperation (0.53), co-operation with client(i.e. client representative) (0.51), Commitment of the contractor's subcontractor (0.51), Commitment of the contractor's employee to set goals (0.44) and Skills of the contractor's work supervisors (0.40) accordingly.

The rests that were not significant: Individuals' performance and abilities (0.15), Availability of highly qualified technical staff in the contractor's firm (0.09), Site manner (i.e no loud noises and swearing) (-0.02) and Project manager performance and adequacy of authority (-0.08). These were

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ranked from eighth to eleventh but the last two factors were over satisfied. The average gap differences were 0.36 for the group.

Table8. Gap between importance and satisfaction index, Site personnel

Factors / Variables	Importance index	Satisfaction index	Index difference	Rank	t-value	P-values
E. Site personnel						
Skills of the contractor's workers.	4.18	3.23	0.95	1	8.018*	0.000
Availability of highly qualified managerial staff in the contractor firm.	4.35	3.70	0.65	2	5.977*	0.000
Capacity of contractor's workers for cooperation.	4.18	3.65	0.53	3	5.547*	0.000
co-operation with client(i.e client representative)	4.21	3.70	0.51	4	5.547*	0.000
Commitment of the contractor's subcontractor.	3.84	3.40	0.44	5	3.273*	0.002
Commitment of the contractor's employee to set goals.	4.43	4.03	0.40	6	3.569*	0.001
Skills of the contractor's work supervisors.	4.40	4.08	0.32	7	2.726*	0.010
Individuals' performance and abilities.	4.00	3.85	0.15	8	1.749	0.088
Availability of highly qualified technical staff in the contractor's firm.	4.17	4.08	0.09	9	0.845	0.403
Site manner (i.e no loud noises and swearing).	3.71	3.73	-0.02	10	0.167	0.868
Project manager performance and adequacy of authority.	4.12	4.20	-0.08	11	-0.131	0.897
Total average	4.14	3.79	0.36		3.39	0.21

Gap between Importance and Satisfaction Indices, Variations, Drawings and Handing Over

Table 9 shows the gap differences that exist between the importance indices and satisfaction indices from the factors ranked first to the fifth: Completion of defects (speed and quality) (0.85), Processing variations (e.g. speed, flexibility) (0.43), Quality of hand-over documentation (O&M manual, H&S) (0.35), Contribution to development of designs drawings (0.32) and Agreement about changes and processing variations with speed and flexibility (0.25) significant. The second in the fifth ranked: Preparation of shop drawings and as-built drawings (0.25) was not significant.

The rests in the group not significant in differences were: Completion stage, finishing and ease of handing over and settlement of final account (0.18) sixth in the rank and Smoothness of operation and handover (-0.21) the seventh in the rank. The average gap differences were 0.30 for the group.

Table9. Gap between importance and satisfaction index, Variations, drawings and handing over

Factors / Variables	Importance index	Satisfaction index	Index difference	Rank	t-value	P-values
F. Variations, drawings and handing over						
Completion of defects. (speed and quality)	4.25	3.40	0.85	1	5.114*	0.000
Processing variations (e.g. speed, flexibility)	3.68	3.25	0.43	2	5.369*	0.000
Quality of hand-over documentation(O&M manual, H&S)	4.25	3.90	0.35	3	4.583*	0.000
Contribution to development of designs drawings.	4.00	3.68	0.32	4	2.314*	0.026
Agreement about changes and processing variations with speed and flexibility.	3.35	3.10	0.25	5	2.236*	0.031
Preparation of shop drawings and as-built drawings.	4.08	3.83	0.25	5	1.376	0.177
Completion stage, finishing and ease of handing over and settlement of final account.	4.28	4.10	0.18	6	1.156	0.255
Smoothness of operation and handover.	4.13	4.33	-0.21	7	-1.599	0.118
Total average	4.00	3.70	0.30		2.57	0.08

Gap between Importance and Satisfaction Indices, Quality of Service

Table 10 shows the gap (significant) differences that exist between the importance indices and satisfaction indices from the factors ranked first to the ninth: Handling of Complaints (effectiveness) (1.10), Information flow in the site (1.08), Repairing of defects and deficiency noticed during handover inspection (0.63) Ability to make rapid decision (0.58), Commitment of key persons (active and continuous) (0.54), Speed and reliabilities of service (0.52), Administration (0.47), Providing assistance and direction for completing paper work (0.40) and Deep involvement in the problems and treating them as important request (0.39). The rest that were not significant ranked from tenth to the thirteenth: Responsiveness to client (0.30), Access of contractor's employee (0.08), Corporate hospitality and generosity in dealing with the client and his representatives (-0.04) and Telephone inquiries and correspondence (-0.18)

The average gap differences were 0.45 for the group, despite that the last two were on negative side (over satisfaction).

Table10. Gap between importance and satisfaction index, Quality of Service

Factors / Variables	Importance index	Satisfaction index	Index difference	Rank	t-value	P-values
G. Quality of Service						
Handling of Complaints(effectiveness)	3.63	2.53	1.10	1	4.696*	0.000
Information flow in the site.	4.31	3.23	1.08	2	6.426*	0.000
Repairing of defects and deficiency noticed during handover inspection.	4.31	3.68	0.63	3	5.099*	0.000
Ability to make rapid decision.	4.21	3.63	0.58	4	6.021*	0.000
Commitment of key persons(active and continuous)	4.19	3.65	0.54	5	7.093*	0.000
Speed and reliabilities of service	4.12	3.60	0.52	6	4.718*	0.000
Administration.	4.17	3.70	0.47	7	6.021*	0.000
Providing assistance and direction for completing paper work.	3.93	3.53	0.40	8	5.099*	0.000
Deep involvement in the problems and treating them as important request.	3.74	3.35	0.39	9	2.731*	0.009
Responsiveness to client.	3.83	3.53	0.30	10	1.964	0.057
Access of contractor's employee.	3.60	3.52	0.08	11	-0.892	0.379
Corporate hospitality and generosity in dealing with the client and his representatives.	3.64	3.68	-0.04	12	-0.260	0.797
Telephone inquiries and correspondence	3.58	3.75	-0.18	13	-1.156	0.255
Total average	3.94	3.49	0.45		3.66	0.12

Gap between Importance and Satisfaction Indices, Attitude

Table 11 shows the gap (significant) differences that exist between the importance indices and satisfaction indices from the factors ranked first to the twelfth: Avoidance of claims (not claims consciousness) (1.12), Responsibility for their decision (1.03)

Communication (to coalition member and site personnel (0.95), Collaborative/spirit of co-operation/architect (0.89), Offering personal attentions to complaints (0.88),

Display a courteous, nice, friendly and helpful attitude in dealing with the client and representatives (0.75), Offering reasonable explanation for complaints (0.70), Keep the client informed/sharing information with architect (0.69), Simplifying procedures to either avoid or overcome complaints (0.65), Proactive attitude towards problems (0.58), Customer focus/proactive to understand client/architect (0.50) and Treating complaints on completed jobs as priorities (0.45). The rests in the group have not significant gap differences from: Working in harmony with consultant firm (0.30) thirteenth ranked, Honesty and integrity (0.24) fourteenth ranked and Responding quickly to legitimate complaints (0.18) the fifteenth ranked. The average gap differences for the group were 0.66

Table11. Gap between importance and satisfaction index, Attitude

Factors / Variables	Importance index	Satisfaction index	Index difference	Rank	t-value	P-values
H. Attitude						
Avoidance of claims (not claims consciousness)	4.20	3.08	1.12	1	7.809*	0.000
Responsibility for their decision.	4.48	3.45	1.03	2	7.050*	0.000
Communication (to coalition member and site personnel)	4.38	3.43	0.95	3	6.919*	0.000
Collaborative/spirit of co-operation/architect	4.29	3.40	0.89	4	6.862*	0.000
Offering personal attentions to complaints.	3.98	3.10	0.88	5	7.306*	0.000
Display a courteous, nice, friendly and helpful attitude in dealing with the client and representatives.	4.10	3.35	0.75	6	7.524*	0.000
Offering reasonable explanation for complaints.	3.98	3.28	0.70	7	0.695*	0.000
Keep the client informed/sharing information with architect	4.17	3.48	0.69	8	5.381*	0.000
Simplifying procedures to either avoid or overcome complaints.	3.83	3.18	0.65	9	5.874*	0.000
Proactive attitude towards problems.	4.37	3.79	0.58	10	4.894*	0.000
Customer focus/proactive to understand client/architect	3.98	3.48	0.50	11	3.732*	0.001
Treating complaints on completed jobs as priorities.	4.05	3.60	0.45	12	4.767*	0.000
Working in harmony with consultant firm.	4.33	4.03	0.30	13	1.275	0.210
Honesty and integrity	4.02	3.78	0.24	14	1.068	0.292
Responding quickly to legitimate complaints.	3.98	3.80	0.18	15	1.125	0.268
Total average	4.14	3.48	0.66		5.11	0.05

SUMMARY OF DISCUSSIONS

Table 12 shows the average of each group in summary form, the first group in the lists according to average indices orders, “Attitude” was ranked the first with Index Difference ID=0.66. The index difference was even critical (significant) as $p=0.05$. It means that there are lots of efforts to be put together by the contractors to drastically improve in this area, the most significant factors in the group such as: ”Avoidance of claims (not claims consciousness)”

Table12. Summary, Average mean indices.

Groups	Importance index	Satisfaction index	Index difference	Rank	t-value	P-values
H. Attitude	4.14	3.48	0.66	1	*5.11	0.05
B. Construction	4.12	3.60	0.52	2	4.02	0.10
C. Principal measures Quality of construction and workmanship.	4.10	3.63	0.46	3	*3.76	0.03
A. Pre-construction stage:(After Awarding)	4.09	3.64	0.45	4	3.88	0.060
G. Quality of Service	3.94	3.49	0.45	4	3.66	0.12
C. Principal measures Adherence to Budget (cost performance)	4.17	3.76	0.41	5	3.03	0.21
D. Resources Management	4.04	3.63	0.41	5	3.48	0.10
E. Site personnel	4.14	3.79	0.36	6	3.39	0.21
C. Principal measures Safety measures and standards.	4.29	3.94	0.35	7	2.39	0.28
F. Variations, drawings and handing over	4.00	3.70	0.30	8	2.57	0.08
C. Principal measures Adherence to Schedule (time performance)	3.74	3.54	0.21	9	1.73	0.27
Overall average	4.11	3.67	0.45		3.47	0.131
Project Objectives	4.25	3.61	0.64		3.95	0.095

Responsibility for their decision” and “Communication (to coalition member and site personnel” are to be examined so as to bring the group to average.

The second ranked group was “construction”, with ID=1.03. Although the average p-values were above $\alpha=0.05$, it does not mean there were no critical factors in the group such as: “Site organization,

tidiness and cleanliness”, “Proposed construction method” and “Explaining what was done to solve a particular problem”. This shows that our sites are not free from being rough, a source of accident. There are problems as regards to construction methods in use and problems emanated during constructions are not mutually resolved.

The “Principal measures-Quality of construction and workmanship” group was ranked the third with ID= 0.46 and it was significant in difference. The top three significant factors in the group were: “Making efforts by the contractors to meet or exceed all specifications or conformance requirements. (Outstanding care about details)”, “Giving importance to aesthetics, such as how the output feels, sounds and looks” and “Giving equal performance to the secondary characteristics of features of the facility”.

The overall average of indices differences AID were calculate as shown in Table 4.29: comparing the groups AIDs (0.45) with the project objectives ADIs (0.64), the difference was 42%. The clients rated project objectives (4.25) higher than the satisfaction factors (4.11). But the satisfactions perceived for the satisfaction factors (3.67) were higher than that perceived in the project objectives (3.61).

CONCLUSIONS AND RECOMMENDATIONS

The study set out to assess the clients’ needs and satisfactions through the measurement of gap differences between importance and satisfaction indices. In the pre-construction stage, contractors lack the ability and willingness to help develop client brief of the project. This may be due to Design-bid-build procurement method generally in use; contractors were not allowed to participate in the design stage. But if they were eventually seduce to participate perhaps, through partnership or other procurement methods, contractors’ contributions to design and durability of project are far beyond expectations as result of participative contract arrangement. Also, there is great discrepancy between clients’ expectation and contractors’ performance in the area of site organisation, tidiness and cleanliness but the contractors’ work load was not a problem. Contractors should ensure that site managers keep a tidy site with well site lay-out.

Furthermore, contractors don’t provide prompt notification and satisfactory explanation for work delays but said to finish project on time. There was no any cost control measure; low performance in conducting value engineering therefore contractors should improve on cost management. Another area contractors need to improve is Quality management: making efforts to meet or exceed specifications among others. There was availability of safety plan but lack of execution even to the point that mere first-aid box could not be found on site.

Contractors lacked skills in resource management: there is great need to be concerned about environmental issues up to improving equipment and plant management skills. Site personnel should be sent on regular training to improve their skills and make highly qualified managerial staff available. Contractors were reluctant to completion of defect works but rather eager to do ceremonial handling over. Contractors should be eager to take up the responsibility of making good defective works on time. Also, contractors are to improve in the way complaints are handled to the way information flow on site, not over conscious on putting claims forward and be always ready to take responsibility for their decision. On the average, attitude disposition top the least performed area, which shows that there are lots of needs for improvement in that area.

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