AN EVALUATION OF END USERS' SATISFACTION IN SELECTED HOUSING ESTATES, DUTSE, JIGAWA STATE

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BY

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A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, AHMADU BELLO UNIVERSITY, ZARIA
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DECLARATION

I declare that the work in the Dissertation "An Evaluation of End Users' Satisfaction in Selected Housing Estates, Dutse, Jigawa State" has been performed by me in the Department of Building under the supervision of Prof. M. M. Garba and Dr. D. Kado. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this dissertation was previously presented for another degree or diploma at this or any other Institution.

Emmanuel Gado Adamu	……..	……..
(Student)	Signature	Date

CERTIFICATION

This Dissertation entitled "**AN EVALUATION OF END USERS' SATISFACTION IN SELECTED HOUSING ESTATES, DUTSE, JIGAWA STATE**", by EMMANUEL GADO ADAMU, meets the regulations governing the award of the Master degree of Science (M. Sc Construction Management) of the Ahmadu Bello University, and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This Dissertation is dedicated to God Almighty who gave me the strength and the zeal to complete the work, also to my late parent Mr. and Mrs. Adamu Barnabas Gado.

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First, I give God almighty the glory for His abundant grace and mercy throughout the rigour of this course work. Special Appreciation to my Supervisor, Professor M.M. Garba who worked tirelessly to ensure that the research was compiled and that it meets the Postgraduate guidelines. A lot of thanks to Dr. D. Kado for his constructive criticism that gives me illumination and focus in the research. My thanks to the Postgraduate coordinator, Dr. S Mohammed, my mentor, Professor Mbamali, Dr. Mshelgeru, Dr.A. M. Stanley, Dr. D. Abdulsalam and the entire staff of Building Department, Ahmadu Bello University Zaria for providing guidance, assistance and for instilling in me the spirit of hard work and dedication.

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ABSTRACT

Construction industry is a major factor in the social integration of a society using various avenues such as housing. The current and future prospects in the housing sector depend on the extent to which users, as stakeholders, are satisfied with the built facilities – a project is only successful to the extent that it satisfies the needs of it intended user. Therefore, the aim of the dissertation is to determine users' level of satisfaction with public housing estates in Dutse, Jigawa State. The research design adopted both quantitative and qualitative methods. Data on the Housing Estates was obtained from the records of the Dutse Capital Development Authority (DCDA), while a structured questionnaire was used to collect data from households in the estates. The questionnaire addressed issues relating houses acquisition, users' satisfaction levels with respect to general neighbourhood, functionality and health and safety performance of the houses. Simple percentage, weighted average and Relative Importance Index were used to analyse data. The results indicated that 80.4% of the users acquired their houses through mortgage institutions among the options available. Overall assessment of factors having to do with neighbourhood of the housing estates was adjudged by the users to be generally satisfactory. In particular, the users ranked 'Security' first with RII and mean values of 0.72 and 3.59, respectively. There was a significant and fairly significant level of satisfaction with functionality factors except with Dining Areas, as reflected by RII and mean values of 0.43 and 2.17, respectively. Regarding health and safety provisions, the users assessed all the factors therein as significant in terms of satisfaction. The research concludes that; users preferred mortgage arrangement among other options; and that users were generally satisfied with the housing estates. However, none of the factors were assessed to be at very significant level of satisfaction, therefore the study recommends

that efforts should be put in place towards improvement of the houses with respect to the assessed factors. This is important because buildings deteriorate with age and rate of usage and this will, in the future, affect the established levels of satisfaction.

TABLE OF CONTENTS

Title Page. i

Declaration. ii

Certification. iii

Dedication. iv

Acknowledgements. v

Abstract. vi

Table of contents viii

List of figures xi

List of Tables xii

List of Plates xiii

Abbreviation xiv

List of Appendices. xv

CHAPTER ONE

1.0 INTRODUCTION 1

1.1 Background. 1

1.2 Statement of Research Problem. 3

1.3 Justification of the Study. 4

1.4 Aim and Objectives of the Study. 5

1.5 Scope and Limitation. 5

CHAPTER TWO

2.0 LITERATURE REVIEW 7

2.1 Construction Planning Process 7

2.2 Project Success 8

2.2.1 Successful project implementation 8

2.2.2 Factors affecting the success of construction projects . . 11

2.3 Functional Requirements of Built Facilities . . . 17

2.4 Health and Safety in Housing 18

2.5 Housing in Nigeria 19

2.6 Housing Development in Dutse, Jigawa State . . . 21

2.7 Users' Satisfaction 22

CHAPTER THREE

3.0 RESEARCH METHODOLOGY 23

3.1 **Research Design 23**

3.2 Population of the Study 23

3.3 Sampling 23

3.3.1 Sample Frame 23

3.3.2 Sample Size 24

3.3.3. Sampling Techniques 24

3.4 Data Collection 24

3.4.1 Personal Interview 25

3.4.2 Questionnaire 25

3.4.3 Photographs 26

3.5 Data Presentation 27

3.6 Method of Data Analysis 27

3.6.1 Descriptive Analysis 27

3.6.2 Percentage 27

3.6.3 Weighted Mean 28

3.6.4 Relative Importance Index (RII) 28

CHAPTER FOUR

4.0 DATA PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

4.1 Housing Estates in Dutse 30

4.2 Analysis of Administered Questionnaires 32

4.3 Respondents Profile 33

4.3.1 Age of Respondents 33

4.3.2 Academic Qualifications of Respondents 34

4.3.3 Period of Occupancy 35

4.3.4 Family size of the respondent 35

4.3.5 Types of accommodation 36

4.3.4 Nature of occupancy 37

4.4 Users Acquisition of Building 38

4.5 Assessment of Neighbourhood 38

4.4 Assessment of Functionality 40

4.5 Assessment of Health and safety performance . . . 41

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS . 43

5.1 Summary of Findings 43

5.2 Conclusion 44

5.3 Recommendations 45

5.5 Contributions to Knowledge 45

LIST OF FIGURES

Figure 2.1:	Key Performance Indicators of project success . . .	17
Figure 4.1	Age Categories of Respondents.	33
Figure 4.2	Academic Qualifications of Respondents	34
Figure 4.3	Period of Occupancy	35
Figure 4.4	Occupant Families Size	36
Figure 4.5	Type of Accommodation	37
Figure 4.6	Nature of Occupancy	37

LIST OF TABLES

Table 4.1	Housing Estate in Dutse	30
Table 4.2	Users Acquisition of Properties (Houses) . . .	38
Table 4.3	Users' Satisfaction level with General Neighbourhood. .	39
Table 4.4	Users' Satisfaction level with Functionality of Houses. .	40
Table 4.5	Users' Satisfaction level with Health and Safety . .	42

LIST OF PLATES

Plate I	3-Bedroom Bungalow at Mallam Inuwa Dutse Housing Estate	31
Plate II	4-Bedroom Bungalow at Justice Dahiru Mustapha Housing Estate	31
Pate III	5-Bedroom Duplex at the House of Assembly Quarters	32
Plate IV	4-Bedroom Duplex at Mohammadu Abubakar Rimi Housing Estate	32

LIST OF APPENDICES

Appendix I	Users Survey Questionnaire	50
Appendix II	Letter of Approval from DCDA to Conduct Survey	55
Appendix III	Table of Sample size determination	56

ABBREVIATION

ANOVA	Analysis of Variance
BMPIU	Budget Monitoring and Price Intelligence Unit
BRAS	Building Research Advisory Services
BRE	Building Regulation Establishment
BS	British Standard
CAD	Computer Aided Design
CSF	Critical Success Factor
CSFs	Critical Success Factors
DCDA	Dutse Capital Development Authority
HSSE	Health, Safety. Security and Environment
KPI	Key Performance Indicator
KPIs	Key Performance Indicators
n.d	not dated
NHF	National Housing Fund
NHP	Nigeria National Housing Policy
NPV	Net Present Value
PEST	Political, Economics, Socio-culture and Technology
PMBOK	Project Management Body of Knowledge
PPs	Potential Pitfalls
ROI	Return in Investment
S	Satisfactory
US	Unsatisfactory

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Construction industry is one of the most important sectors in the development of any nation, particularly in developing countries such as Nigeria. Takim and Akintoye (2002) noted that in many ways, the pace of the economic growth of any nation can be measured by the development of physical infrastructures, such as buildings, roads and bridges. According to Roy (2005) "it is evidenced that noticeable development and the aesthetic transformation of the environment is bound up with, and predicated on the construction industry". Construction industry is a major factor in the social integration of a society (Nwachukwu, 2008). Housing provision is one of such factors of social integration. According to Administrator (2012), housing development has been one of the best investment vehicles in the world due to the fact that shelter is one of the basic needs of man.

The construction industry is dynamic in nature, the concept of project success has remain ambiguously define in the construction industry.According to Atkinson *etal* (1997), successful construction project performance is achieved, when stakeholders meet certainrequirements, individually and collectively.However, in order to meet these requirements and continual participation, it is important for the stakeholders to address and distinguish the three orientation criteria that exist in the life of a project: 'procurement, process and result' orientation.

Olomolaye (1994) opined that a successful project means that the project has accomplished technical performance and are maintained. Project success means different things to different people. Therefore, successful project delivery should be viewed from the different perspective of individual, owner, developer, contractor, general public etc. Often the client and contractor would generally consider a project to be successful as long as project objectives are achieved, particularly the financial ones. Paradoxically, when assessing projects, stakeholders often define success, as lack of failure. If failure possibility is eliminated, the only possible outcome is success. While some authors consider time, cost and quality as the paramount targets, others suggest that success is something more complex (Chan, 2001).Thus, project success is normally thought of as achievement of some predetermined project goals, which commonly include multiple parameters such as time, cost, performance, quality, safety and client satisfaction (which extends to occupation of the finished product).This agrees with Gary (2001), who stated that what happens after the project is more important than the project "managing project with full life cycle perspective".

The initiation phase of project where major decisions are madehasgreat influence on the project's success. At this stage, it is very important to identify parameters for benchmarking projects in order to achieve good performances.The identification of key performance indicators (KPIs) helps in benchmarking for measuring the performance of the construction project which if measured will reflect the success factors (Egan 1998). This is necessary because according to Cooke (2002), performance predicts success and success factors affect performance and in order to identify the 'real' success factors of construction projects, relevance ofstakeholders must be recognized.

Hendrickson (1998), noted that, "quality of work and performance are critically important to the success of a project since it is the client (or user) who will have to live with the results". Hence the need to measure the level of performance at all stages of the project, from the cradle to grave which may entails the life cycle costing and benefit from initial planning through operation and disposal of the facility.

1.2 Statement of Research Problem

Aliyu (2014) posited that adequate housing provides the foundation for stable communities and social inclusion. However, Ola (2010) reported that planning for housing and setting standards for the regulation of building construction is a task that seems to overwhelm the relevant government authorities in Nigeria and other parts of the developing world. This may be as a result of the impact of rapid population growth on housing development in a developing economy which is usually a consequence of the push of the rural areas and the pull of the town.

On the other hand, success in housing delivery itself may be prone to improper planning and objective setting where end users' requirement may not be given due attention as echoed by Jiboye (2011) that "often the design of residential development has been patterned along designer's idea and perspective." Aiyetan (2007) also mentioned that the inability of the end users to have a comprehensive overview of the construction process from inception to completion poses a problem thus leading to extra cost of re-modification and alteration to achieved desire quality. Therefore, the assessment of users' requirements is imperative.

1.3 Justification of the Study

Tade (2013) remarked that the involvement of Government agencies in the provision of mass housing and other housing matters are fast increasing and in the bid to curb insecurity, health, safety and environmental issues the participation of users in the design and planning phase of housing projects is important. On this premise, this research sought to evaluate the level of satisfaction of users of Housing Estates in Dutse, the Jigawa State Capital which could help in success of future housing developmental efforts in the state and Nigeria as a whole.

For effective success of housing development and other construction projects, Pinto and Slevan (1994) postulated that a project is only successful to the extent that it satisfies the needs of it intended user based on the element of efficiency measure of success. The effectiveness measure refers to user satisfaction and the use of the project. Similarly, 'Efficiency of the project execution, Clients' satisfaction and Participants' satisfaction' was one among the nine criteria that influence project success identified by Bala (2007).

Given that every facility occupies a unique place in meeting the set design aspirations, completed residential buildings should not only be fit for the purpose of the users, but also be able to perform their functions in such ways as to ensure relative residents' satisfaction (Liu, 1999). The current and future prospects in the housing sector depend on the extent to which users are satisfied with the built facilities; user's satisfaction is not only a matter related to the hand-out of a freshly completed building, but a life-cycle issue which has to be taken into account right from the initial investment phase. It thus becomes imperative that developers understand and establish what the consumers' want in terms of their real and perceived needs, and only then could such expectations be met

1.4 Aim and Objectives

1.4.1 Aim

The aim of the research work is to determineusers'level of satisfaction with selected HousingEstatesinDutse, Jigawa State with a view forimprovement.

1.4.2 Objective

The objectives set out to achieve the stated aim of this research work are:

i. To identify methods of property acquisition by usersof the houses.

ii. To assess users' satisfaction relating to general neighbourhood of the houses.

iii. To assess users' satisfaction in relation to the functionality of the residential houses.

iv. To assess users' satisfaction in relation to Health and Safety performance of the houses.

1.5 Scope and Limitations

1.5.1 Scope

Thestudywas concerned with the evaluation of level of end users' satisfaction in some selected Housing Estates in Dutse, the Jigawa State Capital, Nigeria.Malam Inuwa Dutse Housing Estate (Danmasara), Justice Dahiru Mustapha Housing Estate (Fatara II), Jigawa State House of Assembly Quarters and Muhammadu Abubakar Rimi Housing Estate.The research focused on the evaluation of level of users' satisfaction with respect to methods or options of houses acquisition, general neighbourhood, functionality and health safety issues relating to the houses. Occupants of the Housing Estates were targeted as the respondents of the research.

1.5.2 Limitations

Effort to get access into the houses in the Estates aimed at conducting follow-up on the issues addressed in the questionnaire, especially issue having to do with the functionality and health and safety of the houses, proved abortive. This was largely due to the culture of the occupants.

CHAPTER TWO

LITERATURE REVIEW

2.1 Construction Planning Process

According to Abubakar (2000), the quality of a project has two distinct but interrelated features, namely quality of design and quality of conformance. Ramson (1998) noted that the design of every project is very important and crucial, but most often, designs are hurriedly done, sometimes too ambiguous, unbuildable and very expensive due to selection of poor materials. Sometimes designs are made without reference to the site and on site investigation details do not take note of agents of deterioration of the project and often left in the hand of draughtsman.

Ransom (1998) pointed out that (by BRE reports), 55% of project failure are linked to design, 41% to site operations and only 8% to other causes, while Building Research Advisory Services (BRAS) published that 58% of failures are traceable to faulty design which include all cases where the failures could reasonably be attributed to failure to follow established design criteria. Such design faults often lead to high maintenance costs and sometimes complete failure are being witnessed in some cases here in Nigeria.

In order to avoid design faults, Chudley and Greeno (2001) advocated for site visits by the designers to collect, systematically record all the necessary data which will be needed or help in the design and construction process of the project. Designers should be conversant with effects of environmental elements and consider initial cost against running cost in the choice of materials and projects must be designed for case of construction making maximum use of standard components and process.

Moreoveer, Falauni (2001) and Obiegbu (2014) also suggests that there is the need for formal checking of the design to confirm its adequacy to meet the client's needs, to identify problems and develop solutions where necessary and the implications of changes carefully weighed, and endorsed.This suggested that design of buildings can no longer be the total responsibility of one person. Dwellers' preference must be considered to avoid harbouring "deign dangers" as warned by Obiegbu (2004).

2.2 Project Success

2.2.1 Successful project implementation

According to Parfitt and Sanvido, (1993) and Chan *et al*. (2002) project success incorporates four basic facets; time criterion; monetary criterion; effectiveness criterion; and client's satisfaction criterion. A project is generally considered to be successfully implemented if it comes in on-schedule (time criterion), on budget (monetary criterion), achieves basically all the goals originally set for it (effectiveness criterion) and accepted and used by the clients for whom the project is intended (Client's satisfaction criterion).

Sharnas-ur-Rehman and Ogunlana (2009) studied critical success factors in large scale construction projects in Thailand. Their study emphasized that success factors vary across various projects. Their findings identified project planning and control, project personnel and involvement of client as critical factors influencing project success. Ann *et al.* (2006) in their study on Critical Success Factors (CSF) in construction project briefing concluded that briefing process is prerequisite to achieving success in project performance.

Lim and Mohamed (1999) identified various parties involved in a project. They are; client or user, designers (consultants) and contractors. Each one of them has different perspectives about project success. However, there are instances were some success criteria are common among them.

i. Client/User

Client's or user's criteria for measuring success are projects delivered on scheduled; on budget; function for intended use; end result as envisioned; quality (workmanship, products); aesthetically pleasing; return on investment; marketability (image and financial); stable neighbourhood, suitable location that are accessible to public transport, services, good school, worship centers and were crime rate are lower'

ii. Designers (Consultants)

A designer aspires to have a satisfied client (this provides for future job); quality of architectural product; meeting design fee and profit goal; professional staff fulfillment (gaining experience and learning new skills); meeting project budget and schedule; marketable product; minimum construction problems; no 'ghosts,' liability and claims; socially accepted (community response); client pays (reliability); and well defined scope of work (contract scope and compensation match).

iii. **Contractor**

Meeting project schedule (preconstruction, construction, design) is one of the focus of a contractor as per project success. Other issues include; profit; executing project within budget; meeting or exceeding specified quality; absence of claims; safety; client satisfaction; good subcontracting relationship; good and direct communication; and minimal or no unexpected occurrences during the project.

While many criteria items or viewpoints are similar among the three groups, however there are several issues that relate directly to the parties involved and the type of business services they provide. For example, a priority item and one that appears in all three lists (designer, owner, and contractor) in some form is e financial reality of doing business. The owner wants the project completed on time and on budget, and the designer and contractor both expect to meet certain profit or fee goals. All recognize the absence of any legal claims or proceedings on a project as a desirable outcome. In other words, this is a major criterion for measuring success. Another common feature among the three groups involves meeting an appropriate schedule as a way of measuring or determining if a project was successful.

It is evident that there are some unique factors associated with each of the three groups. The designer for instance is looking for a project that will increase the level of professional development and professional satisfaction among his employees. Safety is a high-priority issue for the contractor that would not normally be an issue with the other

two groups, because their employees are at much less risk during the design or operations of a building than the contractor's workers are during the construction of a building.

An owner is extremely interested in knowing that the building project functions properly for the intended use and is free from long-term defects or lingering maintenance problems.

The factors of importance range from meeting internal budgets to professional satisfaction and on to producing a job that will help the firm obtain repeat business or serve as a marketing tool for sin1ar projects with different clients. For example, two designers working on the same project may view success differently. An experienced designer serving as a project engineer may be concerned about meeting internal budget criteria as well as meeting the client's needs. On the other hand, a less-experienced designer working at a lower level of responsibility may consider the opportunity to gain valuable design experience as a success criterion and be less concerned about meeting the internal budget.

2.2.2 Factors Affecting the Success of Construction Projects

Pariff & Sanvido (1993) identified several variables influencing the success of project implementation. These variables can be grouped under seven main categories. These include:

i. Project Management Factors;

ii. Procurement-related Factors;

iii. Client-related Factors;

iv. Design team-related Factors;

v. Contractor-related factors;

vi. Project Manager-related Factors; and

vii. Business and Work Environment-related Factors.

i. Project management factors

Project management action is a key for project success (Hubbard, 1990). Jaseiskis and Ashley, (1991) suggested that by using the management tools, the project managers would be able to plan and execute their construction projects to maximize the project's chances of success. Then, the variables in project management include adequate communication, control mechanisms, feedback capabilities, troubleshooting, coordination effectiveness, decision making effectiveness, monitoring, project organization structure, plan and schedule followed, and related previous management experience (Belout, 1998; Chua et al, 1999; Walker and Vines 2000). A number of attributes will affect this factor, including the communication system, control mechanism, feedback capabilities, planning effort, organization structure, safety and quality assurance program, control of subcontractors' works, and finally the overall managerial actions.

ii. Procurement-related factors

A number of researchers identified the importance of procurement factors (Pocock et al. 1997a, 1997b; Walker 1997; Kumaraswarny and Chan 1999; Walker and Vines 2000). Dissanayaka and Kurnaraswamy (1999) defined the

scope of procurement as the framework within which construction is brought about, acquired or obtained. Therefore, two attributes are used to measure this factor; they are procurement method (selection of the organization for the design and construction of the project) and tendering method (procedures adopted for the selection of the project team and in particular the main contractor).

iii. Client-related factors

Chua et al. (1999) defined project participants as the key players, including project manager, client, contractor, consultants, subcontractor, supplier, and manufacturers. Walker (1995) considered influence of client and client's representative as a significant factor on construction time performance. The client related factors concerned with client characteristics, client type and experience, knowledge of construction project organization, project financing, client confidence in the construction team, owner's construction sophistication, well-defined scope, owner's risk aversion, client project management (Chan and Kumaraswamy, 1997; Songer and Molenaar 1997; Dissaanayaka and Kumaraswamy, 1999).

iv. Design team-related factors

Designers play a vital role as their work involves from inception to completion on a project. Chan and Kumaraswamy (1997) considered that design team-related

factors consist of design team experience, project design complexity, and mistakes/delays in producing design documents.

v. Contractor-related factors

The main contractor and subcontractors start their main duties when the project reaches the construction stage. The variables include contractor experience, site management, supervision and involvement of subcontracting, contractor's cash flow, effectiveness of cost control system, and speed of information flow (Chan and Kumaraswarny 1997; Dissanayaka and Kumaraswamy 1999).

vi. Project manager-related factors

The project manager is another key stakeholder in a construction project and his competence is a critical factor affecting project planning, scheduling, and communication (Belassi and Tukel 1996). Variables under this factor consist of the skills and characteristics of project managers, their commitment, competence, experience, and authority (Chua et al. 1999). A construction project requires team spirit; therefore team building is important among different parties.

Team effort by all parties to a contract—owner, architect, construction manager, contractor, and subcontractors—is a crucial ingredient for the successful completion of a project (Hassan 1995).

vii. Business and work environment-related actors

Various researchers support "environment" as a factor affecting the project success (Akinsola *et al*. 1997; Kaming et al. 1997; Songer and Molenaar 1997; Chua et al. 1999; Walker and Vines 2000). Akinsola et al. (1997) further described "environment" as all external influences on the construction process, including social, political, and technical systems. The attributes used to measure this factor are economic environment, social 'environment, political environment, physical environment, industrialrelation environment, and level of technology advanced.

viii. Key Performance Indicators (KPIs) in Project Delivery

Performance indicators or key performance indicators (KPIs) are also referred to as performance metrics, business indicators, and performance ratios used in performance measurement (Wang, 1994) KPIs help to get insight in a business performance – 'what gets measured, get managed.' KPIs are commonly used by organizations to evaluate their success or the success of a particular activity in which they are engaged. Indicators selected must reflect the organization's goals and they must be relevant to its success, and their division, departments and employees. Accordingly KPIs are most commonly defined in a way that is understandable, meaningful and measurable.

According to Baker (1995) KPIs represent a set of measures focusing on the aspect of organizational performance that are most critical for the current and

future success of the organization. These performance variables are especially critical in achieving a desired set of outcomes. KPIs are normally link to core product and service and associated customer expectation (Harbour 1997). The focus of KPI, therefore is either on the aspects of organizational performance that require improvement or on the aspects that must be kept within a specified level to ensure the success of the organization, or in particular users assessment of success in building construction project delivery. Although the term KPI is widely used, it should be noted that different concepts such as critical success measures or 'performance metrics' or 'performance measures' are used to mean the same thing. KPI, are considered a special type of metrics, in this case performance metrics. Performance measures or sometimes called performance indicators are one of the multiple types of measures that exist.

According to Baker (1995), "the major contribution of KPI at the team level is that they generate ownership of the improvement process. The purpose of the Key Performance Indicators (KPIs) is to enable measurement of project and organizational performance throughout the construction industry (KPI Working Group, 2000).

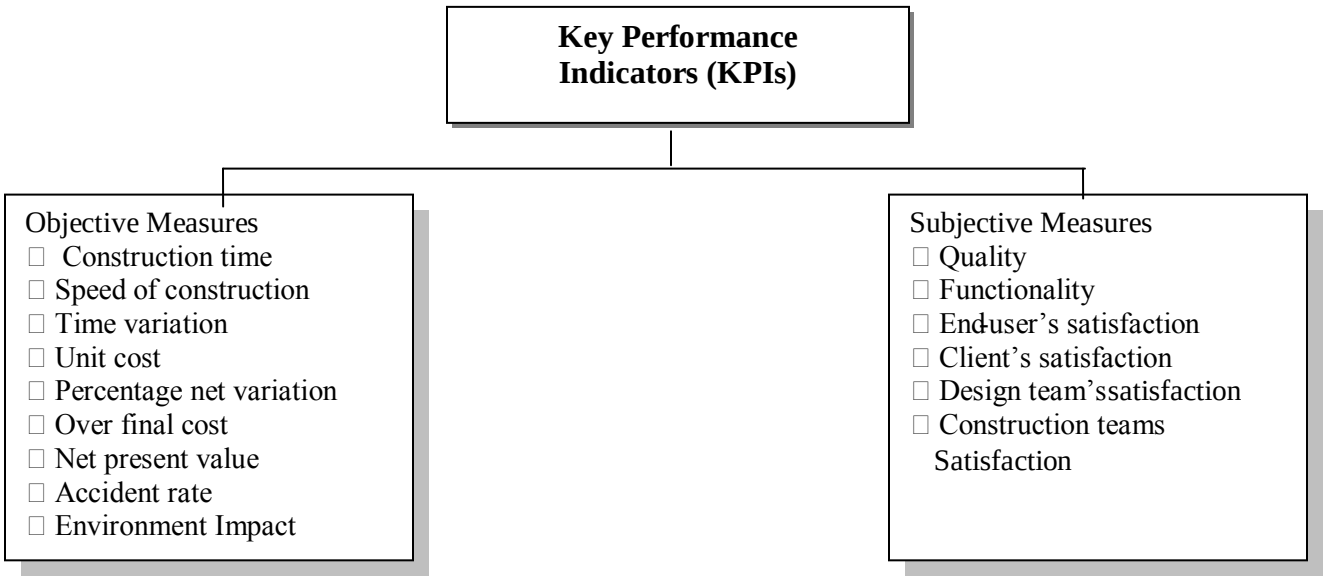


Figure 2.1: Key Performance Indicators of project success (Albert 2001)

Albert (2001) identified two classifications of Key Performance Indicators in figure 2.1; the objective Measures and the Subjective Measures. The objective measures are business performance in an organization that can be measured hence easy to manage e.g construction time,speed of construction, down to environment impact. In the other hand subjective measures are the business performances that are rate base on individual perception e.g quality, functionalitydown to construction teams' satisfaction.

2.3 Functional Requirements of Built Facilities

Kometa *et al* (1995) opines that there would be no point in undertaking a project if it does not fulfill its intended function at the end of the day. This indicator correlates with expectations of project participants. Quality, technical performance and functionality are closely related and are considered important to the owner, designer and contractor. Yen, (2004) opined that "satisfaction (with system or facility) revolves around the

functionality that is fulfilling the needs of the users." The functionality of residential buildings largely depends on the facilities provided and their effective performance. Such facilities include drainages systems, landscape, packing areas, ventilation systems and adequacy of internal spaces such as bedrooms, living areas, kitchen and dining areas to mention but a few.

2.4 Health and Safety in Housing

Government are becoming increasingly interested in housing matters also because of the realization that poor housing is an important cause of ill health and crime. Poor housing also help to nurture poverty. The quality of housing has a direct relationship with the mental and physical health of the people reflecting particularly children (Tade, 2013).

Diseases, disability and health deterioration is the resultant condition of overcrowding, deficient nutrition and sanitation, in adequate housing, in adequate or non- existent basic services and infrastructure.

Abdulhamed and Apochi (2009) noted that a successful construction industry is essential to all. To have benefit from high quality housing hospitals or transport infrastructure that are constructed efficiently. There is no doubt that substantial improvement in the process; quality and efficiency are required in this economic meld-down if the industry is to emerge as one of the world leaders.

Egan (1998) state that in formulating proposals, one must rethink the construction process which is continuous and sustained improvement in the value of the project that

will be delivered to clients and also challenge the current waste and poor quality arising from existing structure and working practice

2.5 Housing in Nigeria

Nigeria National Housing Policy (NHP, 2006) defines Housing as the process of providing functional shelter in a proper setting in a neighbourhood supported by sustainable maintenance of the built environment for the day to day living and activities of individual and families within the communities. Housing is recognized worldwide as one of the basic necessities of life and a pre-requisite to survival of man (Anibokun, 1983; Salau, 1990; United Nation, 1992). Housing policy goal is to adequately house everybody in a given country in a good house located in a good environment and at an affordable cost. Housing policy is to achieve a housing goal which is realizable through housing programmme.

Olutuah(2010)highlights that there is monumental deficiency in housing in Nigeria's urban centers as a result of population explosion, which is consequential of the rapid rate of urbanization occurring in the country.Nigerian government has been making concerted efforts in housing delivery intervention through various policies and programmes either as a provider or facilitators (Abiodun 1985). Despite this effort Olutuah (2010) noted that many buildings are inadequate qualitatively and are located in insanitary environments.Abiodun (1985) identified areas that required adequate attention for attaining an acceptable standard in housing delivery to include the need for public participation and consultation in housing policy formation in order to accommodate issues of cultural and overall housing norms as it relate to Nigeria's demographic system.

Housing in Nigeria stated since during the colonial era. Oni (1989), Arbigbola (2000), Omenge and Udegbe, (2000) revealed that in 1928 through 1979 housing policies in Nigeria were aimed at addressing housing problem at the National scale. However, the policieswere focusedon providing housing for expatriates and some selected indigenous staff in railways, marine, police and armed forces. National Housing Programme was designed in 1980 through 1989 to provide houses for medium and high income housing units in each of the nineteen states popularly known as ShagariLow-cost.

An ambiguous housing policy was launched by the military government in 1991 through 1999with a slogan 'Housing for All by the year 2000A.D,' this was inresponse to United Nation advocacy which called for housing for all by the year 2000A.D. (Ogunrayewa and Madaki,1999).

The establishment of National Housing Fund (NHF) in 1994was a product of 1992 Housing Policy of the Federal Government of Nigeria that mandated individuals and government to pool resources into National Housing Fund. The objective was to ensure provision of housing units of realistic standard which the targeted population can afford. The objective also gave priority to housing programmes designed to benefit the low income group and encourage every household to own house through the provision of more credit facilities. These policies sought for participation of all tiers of government.

Furthermore, the Government established the Federal Ministry of Housing and Urban Development and proposed a housing reform from 2000. The policies focused on private sectors to serve as the main catalyst for housing delivery.

2.6 Housing Development in Dutse, Jigawa State

When Jigawa state was created in August 1991 by the then Military regimethe state had experienced shortage of accommodation especially in the state capital, Dutse. Previous administrations in the state have done their best in providing accommodation to the teeming population of civil servants, aimed at curtailing daily shuttling from Kano to Jigawa of which as a result, many lives were lost (Aliyu, 2014). Jigawa State Housing Authority was created on March 29, 1995 under edict No. 1 of 1995 which took off in 1996 with the specific functions of providing affordable houses to civil servants and members of the public. Dutse Capital Development Authority (DCDA) was established and saddled with the responsibility of providing infrastructural developments as well as to supervise projects within the state capital up to 15km radius. It is also the custodian of Dutse master plan. Mohammed (2014) further revealed that DCDA was established to provide enough housing for the teeming civil servants. Since thenhouses built by the State Housing Authority have benefited a lot of state civil servants through owner-occupier through outright purchase or mortgage arrangements which really made impact in the lives of populace throughout the state. Amount realized from the owner-occupier scheme are being revolved in the construction of additional houses such as the Takur Commercial Housing Scheme to enable more people benefit from scheme as buttressed by Kado (2000) that "housing estates and similar buildings should be sold to their present occupants or other interested parties, this will relieve the Government of the responsibility of taking care of such houses and will enable development of more estates by ploughing-back the funds into housing schemes."

As a result of this approach, the scheme was expanded to major towns across the state such as Kazaure, Birnin-Kudu, Hadejia, Gumel among others.Olaifa (2014) pointed out that such developmental projects were evenly distributed across the 27 Local Government Areas.

2.7 Users' Satisfaction

Those who actually live or occupied the final product are the users, they spend most time in the facilities. It is very important that the completed project meets the user's expectation and satisfaction. Liu and Walker (1998) consider satisfaction an attribute of success. Torbica and Stroh (2001) believe that if end-users are satisfied, the project can be considered successfully completed in the long run.

Users are special group of external customer, they are like latent stakeholders, and most cases they don't realized that they are stakeholders because they are unaware of the project. The project managers usually act as a surrogate stakeholder by asking the question about users like and dislike preference and choice and so forth. Users are those who actually work or live in the final products, they are the ones who spend most of time in the constructed facilities.

What make users a stakeholder is that users stand to gain or loss when the project succeed or fail, users are affected by the output and outcome of the project. Project managers are challenge to rethink and redesign the idea of the triple constraint to measure projects success based on their experience at their organizations. The criteria were to help project managers focus and balance the right things that lead to project success. The following are three project criterion perspectives.

CHAPTER THREE

RESEARCH METHODOLOGY

3.2 Research Design

The research design adopted both quantitative and qualitative methods.The quantitative method was used in establishing methods of property acquisition by users of the residential houses in the estates; particularly in ascertaining the respective percentages of each method.On the other hand, the qualitative method was employed to assess users' level ofsatisfaction relating to general neighbourhood of the buildings, their functionality and Health and Safety performance of the buildings.

3.2 Population of the Study

The subjects of the study were the households of the residential buildings in Jigawa StateHousing Estates located in Dutse, the state capital.Records with Dutse Capital Development Authority (DCDA) indicated that there are a total of 500 houses within four housing estates in the state capital. Therefore, the total population of the study is 500 respondents representing each housing unit.

3.5 Sampling

3.5.1 Sample Frame

For the purpose of this research, actual owners of the houses were targeted. This is because occupants of houses based on rental arrangement may not be in the position to provide information on methods of properties acquisitions.

3.3.2 Sample Size

In order to determine sample size for the study, out of the 500 households occupying the estates, a table developed by Bartlertt *et al* (2001) was used.The copy of the table is presented as Appendix II.

Column two of the table was employed because the population number is categorical. A margin of error of 5% was used. From the table, for a population of 500 occupants of the estate, the required sample size was 218. Hence 218 questionnaires were administered among respondents (occupants).

3.3.3. Sampling Techniques

The idea of sampling technique is to identify the method to beemployed in selecting members of the sample of a population. For the sake of this research,purposive sampling technique was adopted. This became necessary in order to ascertain method of property acquisition; information which could only be provided by the actual owners of the houses doubling as occupants.

3.6 Data Collection

The research obtained data from two sources. Data was obtained from DCDA and from the occupants (users) of the housing estates. Personal interview was used in obtaining data from DCDA while structured questionnaire was used to obtain information from the users.

3.4.1 Personal Interview

Personal Interview was conducted with Director of Works of DCDA. Data obtained was pertaining to number of housing estates in the state capital (Dutse), the respective number of houses in each estate and the methods or options available to the users in acquiring the houses. Pilot survey carried on earlier indicated that the director was the custodian of the records relating to the housing estate.

3.4.2 Questionnaire

The questionnaire used to obtain data from users is divided into five sections. Section A was used to generate data about the respondents' profiles. These included gender of respondent, educational qualification, age, number of years spent in the house, family size, type of accommodation and nature of occupancy.

Section B of the questionnaire was used to identify the respondents' methods or options in acquiring their houses. Options obtained from the DCDA were used for that purpose. These included; Outright Purchase, Normal Bank Loan, Through Mortgage Institution, Monthly Contribution and Family/Personal Savings. Respondents were asked to indicate the options they used in acquiring the houses.

Section C was aimed at assessing users' satisfaction regarding the general neighbourhood. From the literature, eight factors were identified. These; Security, Compatibility with Neighbourhood, Environmental Hazard, Accessibility, Remoteness from Workplace, Remoteness from Social Place, Remoteness from Worship Centers, Environmental Performance. Five-Points Likert Scale was used to obtain respondents' judgments in relation to their satisfaction with their houses with respect to the identified factors. The respondents were asked to rate the factors as follows.

i. Very Un-Satisfactory 1

ii. Un-satisfactory 2

iii. Neutral 3

iv. Satisfactory 4

v. Very Satisfactory. 5.

Section D was used to assess the functionality of the houses. Ten factors were identified. These are; Drainage Systems, Soak Away/Septic Tank/Inspection Chambers, Landscape, Packing Area, Ventilation, Kitchen, Dinning, Sitting Area, Internal finishes, Water Supply. Similarly, Five-Points Likert Scale was used in obtaining respondents' judgments.

Finally, Section E was used to assess the respondents' satisfaction regarding health, safety and environmental issues relating to the houses. Escape Route, Share Wall Building, Security Lighting, Parks & Gardens, Security Post, Road Network were factors identified to be relevant to health, safety and environmental issues. Likert Scale was also used.

3.4.3 Photographs

Photographs of some of the buildings in the housing estates were taken during field survey (questionnaire administration). This was to be able to give illustrations of the physical outlooks of the houses. Pictures of these buildings were presented as plates.

3.5 Data Presentation

Data collected from the field survey was presented usingTables, Bar Charts and Plates. Tables were used to presentdata on the breakdown of numbers of houses in the housing estates studied, administered questionnaires, methods of properties acquisition and assessments of the users' satisfaction in relations to neighbourhood, functionality and health and safety performance of the properties. Respondent profiles were generally presented using Bar Charts. Plates were used to illustrates images of some of the houses located in the estates.

3.6 Method of Data Analysis

Data collected from DCDA and respondents was analyzed using the following methods of data analysis.

3.6.5 Descriptive Analysis

Descriptive analysis was employed in the analysis of data pertaining to respondents' profiles. Similarly, the descriptive analysis was adopted to complement data analysis relating to other parts of both the questionnaire and the interview. This was essential in order to draw inferences from the analysis conducted.

3.6.6 Percentage

Simple percentage was used in the analysis of administered questionnaires and respondent's profile. It was also used in establishing the respective percentages of respondents according to the identified methods or options available for property

acquisition by the users. Percentage is a number or ratio that represents a fraction of 100. It is often denoted by the symbol "%"or simply as "percent"

3.6.7 Weighted Mean

The assessment of the users' level of satisfaction in relation to neighbourhood, functionality and health and safety performance of the houses was conducted using weighted average method (mean).Weighted average formula (presented as equation (3.1) according to Stephanie G.(2014)was used to calculate the weighted mean values.

$$\overline{X} = \frac{\sum fx}{\sum f} \quad \text{.....3.1}$$

Where $\overline{X}$ = mean

x = Points on the Likert's scale (1, 2, 3, 4 and 5)

f = frequency of respondents' choice of each point on the scale.

Mean is the most popular well known measure of central tendency to describe the sample with single value that represent the centre of the data.

Both the mean and Relative Importance Index (RII) was used in ranking the factors under the neighbourhood, functionality and health and safety matters.

3.6.8 Relative Importance Index (RII)

Similarly, further assessment of the users' level of satisfaction in relation to neighbourhood, functionality and health and safety performance of the houses was

conducted using Relative Important Index (RII). Ranking of the items under consideration was based on their RII values.

RII values were calculated and interpreted using equation 3.2 according to Vanduhe (2012).

Relative Importance Index (RII) = $\frac{\sum fx}{\sum f} \text{X} \frac{1}{k}$ ……..3.2

Where $\sum fx$ = total weight given to each level of satisfaction by the respondents

$\sum f$ = total number of respondents.

k = maximum point on the Likert's scale (in this case, k = 5).

The interpretation of the results was carried out using the following criteria.

Level of significance of satisfaction	**Rating**
Very significant	0.76
Significant	0.67-0.75
Fairly significant	0.45-0.66
Not significant	0.44 below

CHAPTER FOUR

4.0 DATA PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

4.1 Housing Estates in Dutse

Records obtained from DCDA indicated that there are four housing estates in Dutse, the capital of Jigawa State. These are Malam Inuwa Dutse Housing Estate (Danmasara) located at the southern part of the city near the State Secretariat along Birnin-kudu, Justice Dahiru Mustapha Housing Estate (Fatara II) located at the northern part of the city along Shuwari Road, Jigawa State House of Assembly Quarters located within the central part of the city and Muhammadu Abubakar Rimi Housing Estate located also at the northern part of city. The breakdown of the number of houses in each estate is presented in table 4.1.

Table 4.1 Housing Estates in Dutse

Housing Estate	**Number of Houses**
Malam InuwaHousing Estate (Danmasara)	230
Justice Mustapha Housing Estate (Fatara)	200
Jigawa State House of Assembly Quarters	30
Muhammadu Abubakar Rimi Housing Estate	40
Total	**500**

Source: Dutse Capital Development Authority (DCDA) (2014).

Plates I, II, III and IV present the pictures of samples of houses located in Malam Inuwa Dutse Housing Estate (Danmasara), Justice Mustapha Housing Estate (Fatara), Jigawa State House of Assembly Quarters and Muhammadu Abubakar Rimi Housing Estate, respectively.



Plate I: 3-Bedroom Bungalow at Malam Inuwa Housing Estate.
(Source: Field Survey, 2014).



Plate II: 4-Bedroom Bungalow at Justice Dahiru Mustapha Housing Estate.
(Source: Field Survey, 2014)



Plate III: 5-Bedroom Duplex at the House of Assembly Quarters
(Source: Field Survey, 2014)



Plate IV: 4-Bedroom Duplex at Muhammadu Abubakar Rimi Housing Estate.
(Source: Field Survey, 2014).

4.2 Analysis of Administered Questionnaires

For the purpose of field survey, 218questionnaires were administered to the occupants of the housing estates purposively selected. However, 194 questionnaires were passably

completed and returned amounting to 89% rate of returned which is adequate for analysis.

4.3 Respondents Profile

Section A of the questionnaire considered the profiles of the respondents in terms of their biometric data; age, educational background,period of occupancy, family size, Type of accommodation, and nature of occupancy. These were considered relevant for the research because they help the research work to properly ascertain the authenticity of the research.

4.3.1 Age of Respondents

Figure 4.1 present the distribution of the respondents' ages. Six categories of ages were used for that purpose. They are; 'under 18', '19 – 29', '30 – 39', '40 – 49', '50 – 59' and '60 and above'. This was to ensure the reliability of the responses pertaining to the respondents' ages.

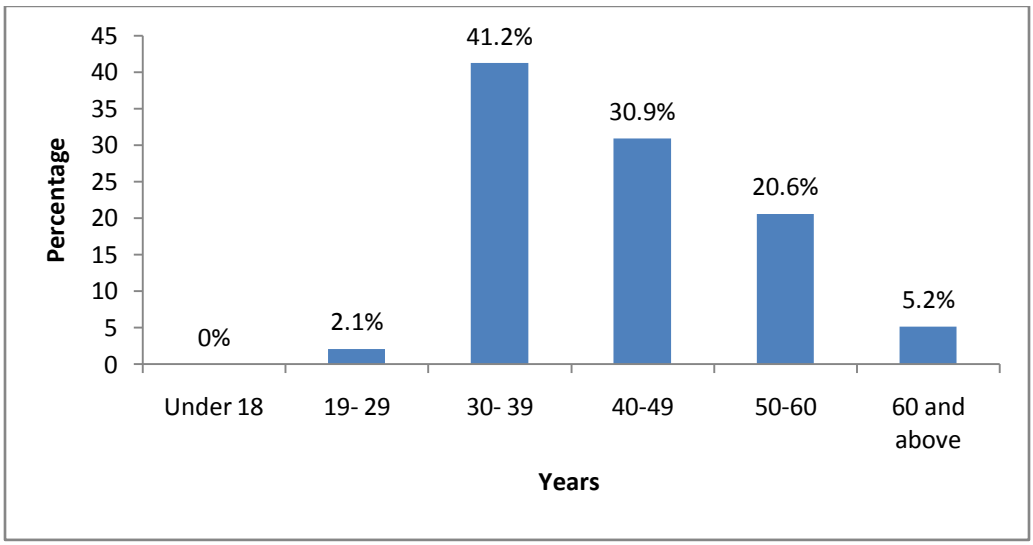


Figure 4.1: Age Categories of Respondents.

It can be observed from figure 4.1that no responses from 'Under 18' age category and majority of the respondents are above 30 years of age.

4.3.2 Academic Qualifications of Respondents

The breakdown of the educational background of the respondents is presented in figure 4.2.

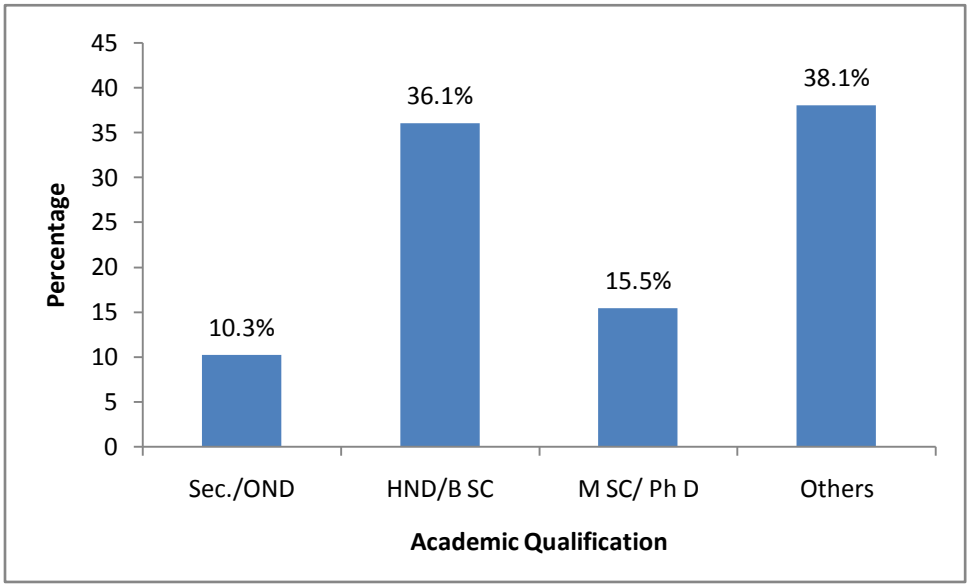


Figure 4.2Academic Qualifications of Respondents

From figure 4.2, it can be seen that all the respondents are having certain level of academic qualification. That made response to the questions in the questionnaire to be easier.

4.3.3 Period of Occupancy

Figure 4.3 shows how long the occupants have been staying in their respective houses. From the figure, it can be observed that majority of the respondents (81.4%) have been residing in the estate for over 3years. This availed the respondents the opportunity to appreciate their neighbourhoods, the functionality of the buildings and issues relating to health and safety.

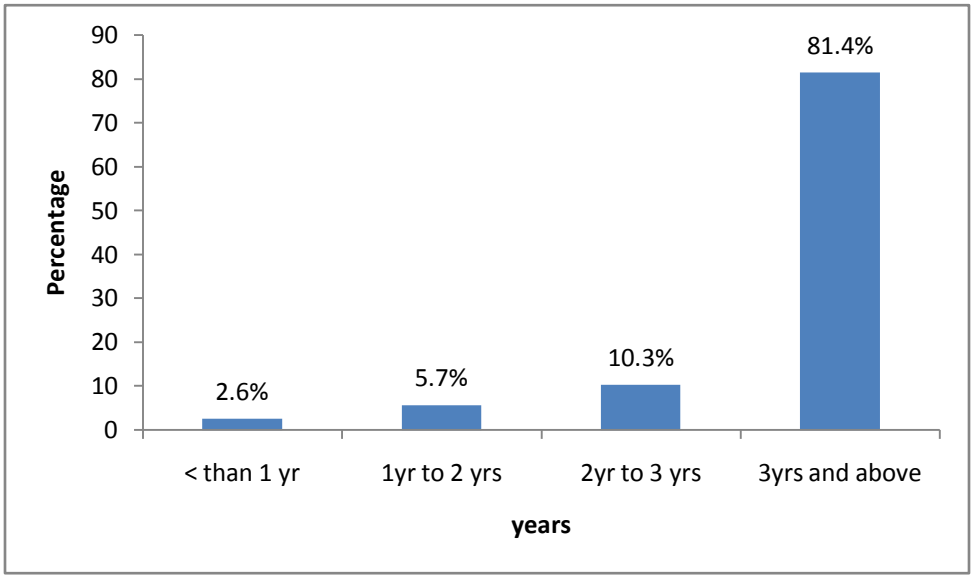


Figure 4.3Period of Occupancy

4.3.4 Family size of the respondent

Table 4.4 illustrates various family sizes of respondents. More than half of the families (56.7%) were composed of six to ten members.

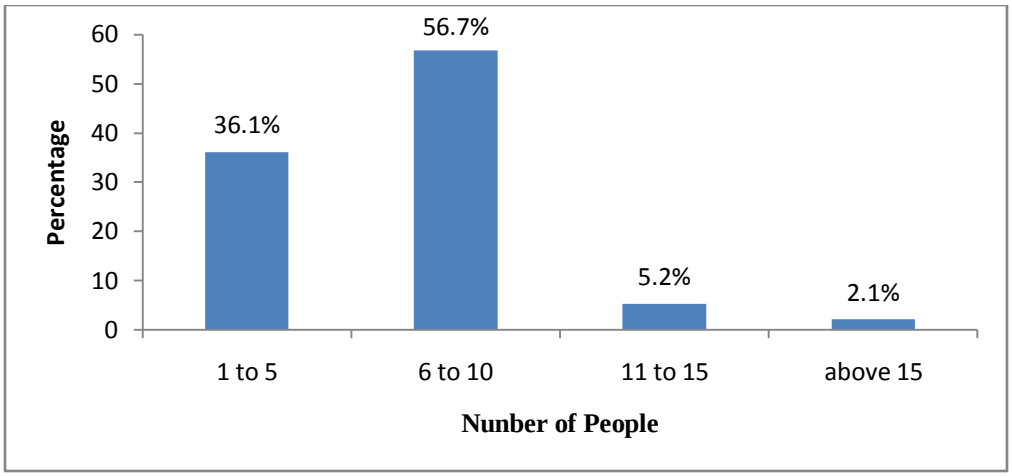


Figure 4.4 Occupants'Family Sizes

4.3.5 Types of accommodation

Figure 4.5 represents the types of accommodations occupied by the occupants in terms of number of bedrooms and whether bungalows or duplexes. 33% of the respondents were occupying 3-Bedroom bungalows followed by 30.9% who were occupying 2-Bedroom bungalows while only 1% was occupying 5-Bedroom duplexes with Boys Quarters.

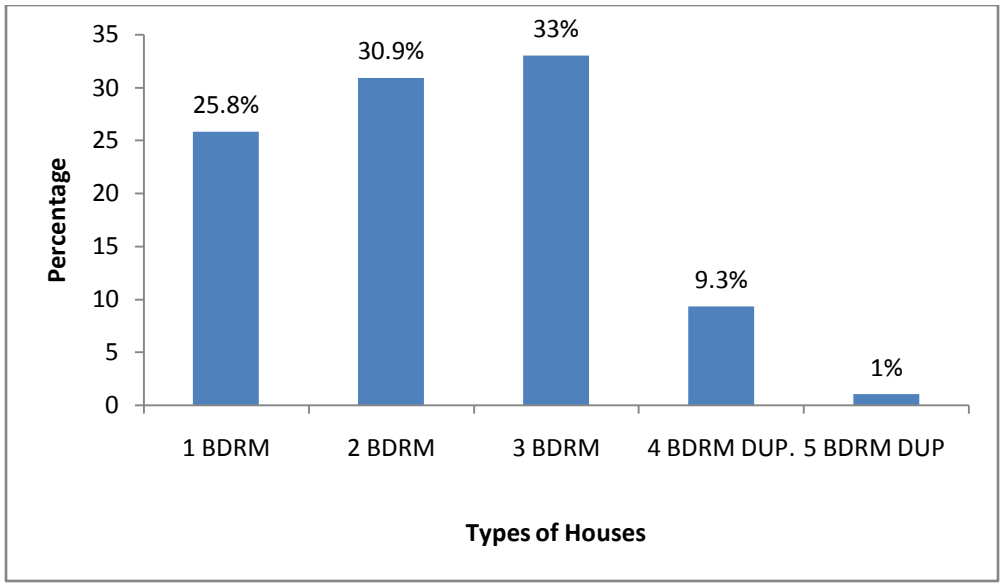


Figure 4.5 Types of Accommodations

4.3.6 Nature of occupancy

Figure 4.6 showed that 75% of the respondents were actual owner and occupiers of the accommodation in the housing estates. This enabled ascertaining the methods or options of acquiring the houses.

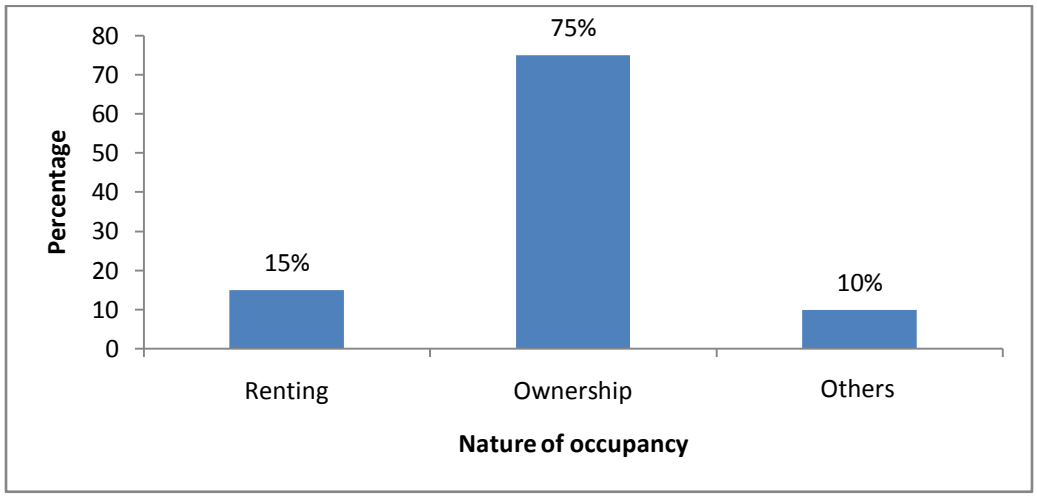


Figure 4.6 Nature of Occupancy

4.4 Users Acquisition of Building

The results of the assessment of the choices of methods or options of acquiring houses within the housing estate by users is presented in table 4.2

Table 4.2 Users acquisition of properties (houses)

Method/Option of	Frequency	Percentage
Outright purchase	2	1.0
Normal Bank Loan	8	4.1
Through mortgage institution	156	80.4
Normal monthly contribution	24	12.4
Family (personal) Savings	4	2.1
Total	**194**	**100**

Source: Field Survey (2014)

From table 4.2 the results show that most users acquired their houses through mortgage institutions as reflected by a high percentage of 80.4% amongst the various options available. This indicates that purchase of houses through mortgage arrangement provides better leverage than the other available options.

4.5 Assessment of Neighbourhood

Table 4.3 presents the assessment of the eight identified factors associated with the general neighbourhood of the housing estates.

Table 4.3Users' SatisfactionLevels with General Neighbourhood

S/No	Neighbourhood Factors	Rating								
		1	2	3	4	5	Total score	Mean score	RII	Ranking
1	Security	7	16	60	72	38	697	3.59	0.72	1st
2	Compatibility to neighbor hood	12	26	54	68	34	668	3.44	0.69	3rd
3	Environmental Hazard	35	40	33	53	33	591	3.05	0.61	7th
4	Accessibility	14	17	63	70	30	667	3.44	0.69	3rd
5	Remoteness from workplaces	25	30	50	59	30	621	3.20	0.64	6th
6	Remoteness from social places	26	20	66	33	49	641	3.30	0.66	5th
7	Remoteness from worship centers	66	22	10	63	33	557	2.87	0.57	8th
8	Environmental performance	0	26	53	72	36	679	3.50	0.70	2n

Source: Field Survey(2014)

From table 4.3 above, it can be seen that 'Security,' 'Environmental Performance,' Compatibility with Neighbourhood' and 'Accessibility' were having RII and mean values of 0.72 (3.59 mean value), 0.70 (3.5), 0.69 (3.44) and 0.69 (3.44), respectively. These values generally fall within a range of 0.67 to 0.75 which indicated that the users were significantly satisfied with the corresponding factors.

On the other hand, 'Remoteness from Social Places,' 'Remoteness from Workplaces,' 'Environmental Hazard' and 'Remoteness from Worship Centers' were having RII and

mean values of 0.66 (3.30 mean value),0.64 (3.2), 0.61 (3.05) and 0.57 (2.87), respectively. All the values fall within 0.45 to 0.66 which indicated that the users' satisfaction with these factors was fairly significant. Thus, the general assessment indicated that the level of satisfaction with the neighbourhood factors was generally satisfactory.

4.4 Assessment of Functionality

Table 4.4 presents the assessment of the ten identified factors associated with the functionalityissues of individual houses.

Table 4.4 Users' Satisfaction Levels with Functionality of Houses

S/no		Rating								
		1	2	3	4	5	Total score	Mean score	RII	Ranking
1	Drainages	26	22	46	60	40	648	3.34	0.67	4th
2	Soak Away/Septic Tank/Ic	7	28	66	53	40	673	3.47	0.69	2nd
3	Landscape	33	66	33	37	25	537	2.77	0.55	9th
4	Packing Area	33	20	63	25	53	627	3.23	0.65	7th
5	Ventilation	24	30	56	36	48	636	3.28	0.66	5th
6	Kitchen	28	25	70	33	38	610	3.14	0.63	8th
7	Dinning	77	54	36	7	20	421	2.17	0.43	10th
8	Sitting Area	13	30	59	68	24	642	3.31	0.66	5th
9	Bedrooms	20	24	38	59	53	683	3.52	0.70	1st
10	Services	24	16	58	38	58	672	3.46	0.69	2nd

Source: Field Survey(2014).

It can be observed from table 4.4 that there was a significant level of satisfaction with adequacy of 'Bedrooms', 'Services', 'Soak Away/Septic Tank/Inspection Chambers' and 'Drainages' as reflected by RII and mean values of 0.7 (3.52 mean value), 0.69 (3.46), 0.69 (3.46), and 0.67 (3.34), respectively.

The users viewedVentilation', 'Sitting Area', 'Packing Area', 'Kitchen' and 'Landscape' as fairly significant in terms of satisfaction. This was revealed by corresponding RII and mean values of 0.66 (3.28), 0.66 (3.28), 0.65 (3.23), 0.63 (3.14) and 0.55 (2.77).

However the responses indicated that the users were not satisfied with the adequacy of Dining Areasprovided in their respective houses. This was suggested by the computed RII and mean value of 0.43 and 2.17, respectively. This substantiated the fact that 63.9% of the householdswere having family sizes of more 6 members per house.

4.5 Assessment of Health and safety performance

Six factors associated with Health and Safety performance of individual houses were assessed based on the responses obtained. The results are presented in table 4.4.

Table 4.5 Users' Satisfaction Levels withHealth and Safety

S/no		Rating								
		1	2	3	4	5	Total score	Mean score	RII	Ranking
1	Escape route	5	7	58	64	60	749	3.86	0.77	4th
2	Fire Fighting	60	42	38	20	34	508	2.62	0.52	6th
3	Share wall building	26	40	38	40	50	630	3.25	0.65	5th
4	Security lighting	2	1	5	40	146	909	4.69	0.94	2nd
5	Parks & Gardens	8	12	30	84	60	758	3.91	0.78	3rd
6	Road network	0	2	2	40	150	920	4.74	0.95	1st

Source: Field Survey(2014)

From table 4.4it can be seen thatthere was a significant level of satisfaction with 'Road network', 'Security lighting' 'Parks and Gardens' and 'Escape Route' with RII and mean values of 0.95 (4.7), 0.94 (4.69), 0.78 (3.91), and 0.77 (3.89) respectively.

The users viewed 'Share Wall Building' and 'Fire Fighting' as fairly significant in terms of satisfaction. This was revealed by corresponding RII and mean values of 0.65 (3.25) and 0.52 (2.62).Therefore, from the results, it could be inferred that users were generally satisfied with the health and safety provisions in their housing estates.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

Based on the analysis conducted and the results obtained, the following major findings were discovered:

1. The research established that there were five methods or options available for acquiring houses in the Housing Estates in Dutse; Jigawa State Capital. These were 'Outright Purchase', 'Normal Bank Loan', 'Through Mortgage Institution', 'Monthly Contribution' and 'Family/Personal Savings'. The results indicated that 80.4% of the users acquired their houses through mortgage institutions.

2. Overall assessment of factors having to do with general neighbourhood of the housing estates was adjudged by the users to be generally satisfactory. In particular, the usersranked 'Security' first with RII and mean values of 0.72 and 3.59, respectively.

3. Results indicated that there was a significant level of satisfaction with adequacy of 'Bedrooms', 'Services', 'Soak Away/Septic Tank/Inspection Chambers' and 'Drainages' as reflected by RII and mean values of 0.7 (3.52 mean value), 0.69 (3.46), 0.69 (3.46), and 0.67 (3.34), respectively. 'Ventilation', 'Sitting Area', 'Packing Area', 'Kitchen' and 'Landscape'were assessed to be fairly significant in terms of satisfaction as revealed by corresponding RII and mean values of 0.66 (3.28), 0.66 (3.28), 0.65 (3.23), 0.63 (3.14) and 0.55 (2.77).However results indicated that Dining Areas were not adequate for the users as reflected by RII and mean value of 0.43 and 2.17, respectively.

4. Regarding health and safety provisions, the users assessed 'Road Network', 'Security Lighting,' 'Parks and Gardens' and 'Escape Route' with RII and mean values of 0.95 (4.7), 0.94 (4.69), 0.78 (3.91), and 0.77 (3.89), respectively indicating significant level of satisfaction. 'Share Wall Building' and 'Fire Fighting' were assessed fairly significant in terms of satisfaction with corresponding RII and mean values of 0.65 (3.25) and 0.52 (2.62).

5.2 Conclusion

Based on the results of the research findings, the following conclusions were drawn.

1. Findings indicated a great majority of the users acquired their houses through mortgage institutions. This indicated that the users preferred mortgage arrangement better than the other available options.
2. The level of satisfaction with general neighbourhood of the housing estates was generally satisfactory.
3. Results pertaining to functionality of houses as assessed by the users fall within significant and fairly significant levels of satisfaction. However, Dining Areas were revealed to be inadequate for the users; an assessment which reflected their family sizes.
4. Factors having to do with health and safety provisions were assessed to be having either significant or fairly significant levels of satisfaction.
5. From the general findings, it can further be concluded that none of the factors under general neighbourhood, functionality and health and safety provisions were assessed to be of very significant level of satisfaction.

5.3 Recommendations

Based on the findings of the research work and conclusions drawn, the study recommendsthat due to the fact that no factor was assessed to be of very significant level, attention should be paid toward improvement of the houses with respect to general neighbourhood, functionality and health and safety issues. This is important because buildings deteriorate with age and rate of usage and this will affect the established level of satisfaction if improvement is not carried out

5.5 Contributions to Knowledge

1. The research established that mortgage arrangement in acquiring houses through public housing scheme is most preferred methods by most users (80.4%).
2. The researchestablished that security was the most important factor considered by users in the choice of neighbourhood for residency and its function as indicated by RII value of 0.70 and 0.94 for security and security lighting, respectively.
3. The research established that the relevance of road network in relation to access to the estates during emergency situations as reflected by RII value of 0.95 should not be overlook.

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APPENDICES

APPENDIX I USERS SURVEY QUESTIONAIRE

Dear Respondent,

AN EVALUATION OF END USER'S SATISFACTION IN SELECTED HOUSING ESTATES, DUTSE,JIGAWA STATE, NIGERIA

In order for dissertation fulfillment as one of the condition of senate ABU Zaria, here I would like to collect data and information about.**A**n Evaluation of End User's Satisfaction in Selected Housing Estates, Dutse, Jigawa State, Nigeria

The information obtained will be use purely for this research work and shall be treated confidentially,

I will really appreciate for your participation to fill in this questionnaire, so that this research can achieve good credibility, if there is any question, don't hesitate to contact me. I will inform you for any major findings to your email

Thank you for your kind response.

Yours faithfully,

Adamu Emmanuel Gado

NB Please rest assures that the identity of the project, given by you will not be reflected in finished work neither will the identity of the respondent's be disclosed.

Thank you

(Emmanuel)

USERS SURVEY QUESTIONAIRE

SECTION A

1. Name of respondent

   (Optional)……...

2. Gender: (a) Male ☐ (b) Female ☐

3. Organization / Department (optional):……...

4. Post / Designation:…….

5. Education Background; Please tick

   (a) HND / B Sc ☐ (b) M. Sc / Ph. D ☐ (c) Others (Specify) ☐

6. How old are you?

   (a) Under 18 years ☐ (b) 18 to 29 years ☐ (C) 30 to 39 years ☐

   (c) 40 to 49 year ☐ (d) 50 to 60 years ☐ (e) 60 and above ☐

7. How long have you leaved in this estate?

   (a) Less than 1 year ☐ (b) 1 year to 2 years ☐ (c) 2 year to 3 years ☐

   (d) 3 years and above ☐

8. What is your family size?

   (a) 1-5 ☐ (b) 6-10 ☐ (c) 11-15 ☐ (d) Above 15 ☐

9. What type of accommodation do you occupy

   (a) 1 Bed room ☐ (b) 2 Bed room ☐ (c) 3 Bed room ☐ (d) 4 Bed room duplex ☐

   (e) 5 Bed room Duplex+ BQ ☐

10. What is the nature of your occupancy?

    (a) Renting ☐ (b) Ownership ☐ (c) Others (specified) ☐

SECTION B: Methods of Acquisition of Property (Building)

How did you acquire your property? (Please indicate by ticking).

a. Outright purchase ▭

b. Normal bank loan ▭

c. Through mortgage institution ▭

d. Normal monthly contribution ▭

e. Family/Personal) saving ▭

Could you please state briefly why you made your choice above? ……

…….

SECTION C:

Kindly rate satisfaction of the project in relation to neighbourhood.

1;Very Un-Satisfactory (VUN), 2: Un-satisfactory (US), 3: Neutral (N), 4: Satisfactory (S) 5: Very Satisfactory (VS)

	Variables	**Respondent**				
		1	2	3	4	5
I	Security					
iii	Compatibility to neighbor hood					
iii	Environmental Hazard					
iv	Accessibility					
v	Remoteness from work place					
vi	Remoteness from social place					
vii	Remoteness from worship centers					
Viii	Environmental performance					

SECTION D

Kindly rate satisfaction of the project in relation to its functionality.

1;Very Un-Satisfactory (VUN), 2: Un-satisfactory (US), 3: Neutral (N), 4: Satisfactory (S) 5: Very Satisfactory (VS)

	FUNCTIONALITY	**Respondent**				
		1	2	3	4	5
I	Drainages					
iii	Soak Away/Septic Tank/Ic					
iii	Landscape					
iv	Packing Area					
v	Ventilation					
vi	Kitchen					
Vii	Dinning					
viii	Sitting Area					
ix	Internal finishes					
x	Water supply					

Ix **SECTION E**

x Kindly rate satisfaction of the proje

1: Very Un-Satisfactory (VUN), 2: Un-satisfactory (US), 3: Neutral (N), 4: Satisfactory (S) 5: Very Satisfactory (VS)

	HEALTH AND SAFETY PERFORMANCES
I	Escape route
Ii	Fire Fighting
iii	Share wall building
iv	Security lighting
v	Parks & Gardens
vi	Road network

APPENDIX II

DUTSE CAPITAL DEVELOPMENT AUTHORITY

Jigawa State of Nigeria

TEL: 064-721476
721323

In case of reply please quote reference No

Block 13 & 18 Old Secretariat
P.M.B. 7096
Dutse, Jigawa State

Date:_____

TO WHOM IT MAY CONCERN

I write to introduce Mr. Emmanuel Adamu Gado, who is a post graduate student of Ahmadu Bello University, undertaking research work with specific interest on Dutse developmental projects. The student is looking for your assistance with regard to providing him with educational materials, written or verbal, if you have no objection, please.

It is hoped that you provide him with all the necessary assistance he may require.

Yours Faithfully,

Adamu Bala Bakouri,
(Director of Works).
For Executive Chairman.

APPENDIX III

categorical data. Researchers may use this table if the margin of error shown is appropriate for their study; however, the appropriate sample size must be calculated if these error rates are not appropriate.

Other Sample Size Determination Considerations

Regression Analysis. Situations exist where the procedures described in the previous paragraphs will not satisfy the needs of a study and two examples will be addressed here. One situation is when the researcher wishes to use multiple regression analysis in a study. To use multiple regression analysis, the ratio of observations to independent variables should not fall below five. If this minimum is not followed, there is a risk for overfitting; ". . . making the results too specific to the sample, thus lacking generalizability" (Hair, Anderson, Tatham, & Black, 1995, p. 105). A more conservative ratio, of ten observations for each independent variable was reported optimal by Miller and Kunce (1973) and Hallinski and Feldt (1970).

These ratios are especially critical in using regression analyses with continuous data because sample sizes for continuous data are typically much smaller than sample sizes for categorical data. Therefore, there is a possibility that the random sample will not be sufficient if multiple variables are used in the regression analysis. For example, in the continuous data illustration, a population of 1,679 was utilized and it was determined that a minimum returned sample size of 111 was required. The sample size for a population of 1,679 in the categorical data example was 313. Table 2, developed based on the recommendations cited in the previous paragraph, uses both the five to one and ten to one ratios.

Table 1: Table for Determining Minimum Returned Sample Size for a Given Population Size for Continuous and Categorical Data

	Sample size					
	Continuous data (margin of error=.03)			Categorical data (margin of error=.05)		
Population size	alpha=.10 (=1.65	alpha=.05 (=1.96	alpha=.01 (=2.58	p=.50 (=1.65	p=.50 (=1.96	p=.50 (=2.58
100	46	55	68	74	80	87
200	59	75	102	116	132	154
300	65	85	123	143	169	207
400	69	92	137	162	196	250
500	72	96	147	176	218	286
600	73	100	155	187	235	316
700	75	102	161	196	249	341
800	76	104	166	203	260	363
900	76	105	170	209	270	382
1,000	77	106	173	213	278	399
1,500	79	110	183	230	306	461
2,000	83	112	189	239	323	499
4,000	83	119	198	254	351	570
6,000	83	119	209	259	362	598
8,000	83	119	209	262	367	613
10,000	83	119	209	264	370	623

NOTE: The margins of error used in the table were .03 for continuous data and .05 for categorical data. Researchers may use this table if the margin of error shown is appropriate for their study; however, the appropriate sample size must be calculated if these error rates are not appropriate. Table developed by Bartlett, Kotrlik, & Higgins.

DEPARTMENT OF BUILDING
FACULTY OF ENVIRONMENTAL DESIGN
AHMADU BELLO UNIVERSITY, ZARIA

POSTGRADUATE SEMINAR

DATE: 10/02/16

POSGRAMME: M SC EXTERNAL/ORAL EXAMINATION

CANDIDATE DETAILS: EMMANUEL GADO AD AMUP13EVBD8145

S/NO	Observations and Corrections	Executed Corrections
1	Adhere, to current pg guidelines	Every page of this Dissertation was adjusted to complied with PG guideline
2	Grammatical errors Pronouns	Every page of this Dissertation was check and corrected for grammatical errors Pronouns avoided in page 3,5,6,27,37,40
3	Rephrase first sentence of Abstract the aim and objectives, methodology etc. Recast the Abstract	Aim now rephrase on page 5 objective rephrase on page 5 methodology now in chapter three page 23
4	Remove generic Abbreviation in glossary of terms	Generic abbreviation was removed in glossary of terms on page (xv)
5	Statement of research problem not clearly stated	Statement of research problem now clearly stated on page 3
6	Justification not clearly stated	Justification of the study now clearly stated on page 4
7	Change the title of the study users are not involved in the project delivery	Title of the study now An Evaluation of End users Satisfaction in Selected Housing Estates, Dutse Jigawa State
8	Expunge maintenance from the home	Maintenance Expunged
9	Citation of references not captured	Citation of references now capture

DEPARTMENT OF BUILDING
FACULTY OF ENVIRONMENTAL DESIGN
AHMADU BELLO UNIVERSITY, ZARIA

POSTGRADUATE SEMINAR

Date 10/02/16

PROGRAMME: PhD/MSc EXTERNAL/ORAL EXAMINATION

CANDIDATE DETAILS Emmanuel Gado Adamu P13EVBD8145

TITLE: User's Assessment of Success in Mass Housing Projects Jigawa State, Nigeria.

1) Ensure that the current PG guidelines are strictly adhered to.
2) Grammatical errors.
3) Rephrase first sentence of Abstract. The aim and objectives, methodology etc. Recast the Abstract.
4) Remove generic abbreviations in Glossary & Terms.
5) Statement of research problem not clearly stated.
6) Justification not clearly stated.
7) Change the title of the study. Users are not involved in the project delivery.
8) Citation of references not well captured.
9)

Secretary (Sign/Date) 10/02/16

Supervisor (Sign/Date) _____