CHAPTER THREE

RESEARCH METHODOLOGY

3.1   Introduction

This Chapter describes the methodological approach and procedures including the kinds of data required, methods involved in gathering these data, presentation techniques, processing and analysis employed in the course of the study. The essence was to lay bare, the appropriate methods adopted in carrying out the research in order to obtain the desired results, taking into cognizance the research problem, on the one hand, and the research goal and objectives, on the other. A brief description of the context and setting of the study areas and the research approach was also explained in detail. This was subsequently followed by a description of the sampling method and the data collection instruments adopted. The total study population and the sample sizes were indicated specifying the different items to be sampled. Lastly, the different objectives were analyzed indicating how and which of the discussed instrument were employed to effectively achieve each of them.

3.2   Methodological Approach

This section deals with the methodological approach and strategies to be used to achieve the objectives of this study. Research methodology is a tool that provides scaffolding structures for the validation, proper analysis and interpretation of data towards guiding a researcher for the realization of the set goal and objectives. It is simply the various processes, procedures, methods and instrumentalities, by which data are secured, specified, collated, processed and analyzed (Fasakin, 2000).

The cross-sectional survey method of research was adopted for the purpose of this research because it has advantages that, can generate sufficient data in a short time and at a reasonably low-cost. Also, it can easily produce relevant data which can be generalized to a wider population and it also makes it possible for the researcher to reach an appropriate conclusion on issues concerning physical characteristics and socio- economic state of a population.

First and foremost a preliminary field survey method was initially used to purposively choose the two Estates amongst a number of public housing Estates in Lagos

State that would have been suitable for a research of this kind. Because the main focus of this study was the low-cost housing, this afforded one the opportunity to ease out quite a number of Housing Estates scattered within Lagos State. Attention was further narrowed to the two chosen Estates due to their purposefulness in meeting the housing needs of the target group. Moreover, the chosen Estates are old and as a result, have a long period of use and possible diverse transformations and indeed these suspicions can be confirmed through observations.

The general approach to this study was exploratory and descriptive based on both qualitative and quantitative research techniques. This is because the qualitative enquiries will help to explore the diversities in a situation or phenomenon while the extent or magnitude is determined through the quantitative means. These were applied through a field study to extensively cover the materials characterized by observations structured at a conceptual level. Such a combined approach was thought to minimize limitations that could originate from research techniques and contribute positively towards testing and increasing the validity and reliability of the data.

3.3 The Study Location

The study was carried out in two Low-Income housing Estates located in two different Local Government Council Areas in Lagos State. These Estates were the Federal Government Low-Income Housing Estate and the Low-Income Re-housing Estate in Alimosho Local Government Council Area and Surulere Local Government Council Area respectively. The adoption of these Estates for this study was because they harbour similar characteristics in many perspectives including the fact that both Estates were built purposely to provide housing for the Low-Income group in the society. Moreover, these Estates have been observed to exhibit preponderance cases of transformation and as a result, would allow for comparative analysis. The two Estates were built at different times by separate governing bodies but for the same target group.

3.4 A Focus on Lagos State as the Study Area.

Lagos State, is a mega-city in south-west Nigeria. It is Nigeria's largest and most populated city, endowed with several ports and economic and cultural centres. Important districts include the old city, now the commercial district, on western Lagos Island, Ikoyi Island, situated just east of Lagos Island, Apapa, the chief port district, on the mainland, low-lying Victoria Island; industrialized Iddo Island and a group of mainland suburbs, Ebute Metta, Yaba, Surulere, Mushin, and Ikeja. Places like Alimosho, Abule-Egba, Alagbado have further enlarged the residential, commercial and administrative landmass of Lagos State.

Lagos, with a very diverse and fast-growing population of 13,427,000 (2000 estimate). This is as a result of ongoing migration from the rest of Nigeria and neighbouring countries is characterized by rapid, mostly unregulated growth, coupled with the challenges of its fragmented geography that often results in chronically congested traffic conditions on the city roads. Metropolitan Lagos has since become the pre-eminent city in Nigerian system, functioning as the political and administrative capital of Nigeria following the amalgamation of Northern and Southern provinces of Nigeria in 1914 through political independence in 1960, and until the Federal Capital moved to Abuja in 1991.

Apart from being the former administrative capital of Nigeria and her economic seat, Lagos is delineated to be in coastal zone for the purpose of Architectural design (Ogunsote and Ogunsote, 2000). These amongst others make the entity to possess an economic potential which makes it a centre of attraction to investors, tourists and those who wish to make it a home. Lagos state took off as an administrative entity on April, 1966, with Lagos Island serving the dual role of being the State and Federal capital. However, with the creation of the Federal Capital Territory of Abuja in 1976, Lagos island ceased to be the capital of the State, which was moved to Ikeja. This status drew people from different parts of Nigeria. Rural-urban migration resulted in an unprecedented population growth. Metropolitan Lagos is the fastest growing urban area in Nigeria. About 50% of the industries, business and other economic activities and about 60% of employment in the modern sector are located in the city (Smith, 1980).

These qualities of Lagos State and the fact that it has the largest share of public housing Estates provided both by the State Government and the Federal Government make it a natural choice for the study of housing transformation in public housing Estates.

Plate 3.1: Map of Lagos state showing the 20 L.G.As and the location of case studies.

3.5   The New Lagos Re—Housing Estate Surulere (Phase 1)

The New Lagos Re-housing Estate Surulere (phase l) located between Barracks(Area C) and National Stadium was founded about 54 years ago by the British Colonial masters to serve as a resettlement scheme for the original inhabitants of central Lagos district who were predominantly Low-Income earners. These groups of people were predominantly artisans like bricklayers (masons), plumbers, mechanics, carpenters, petty traders e.t.c as well as workers in the lower cadre of the civil service who find it extremely difficult to access housing either through outright purchase, rental or owner occupier basis at that time (between 1954 and 1958). This was precisely when Lagos central was declared a 'Slum area' due to the massive concentration of Low-Income earners and the alarming extent of unplanned development in the area at that time. The Colonial Government at that particular time decided to embark on a massive

rehabilitation and upgrade of the Central Lagos district through the provision of ultra modern infrastructural facilities like multiple lane roads e.g Broad street, in and outer Marina, Nnamdi Azikwe Road through Tinubu square to mention but a few, the provision of bridges and fly-overs as well as the re-allocation of land to multinational organization for the construction of recreation parks and massive departmental stores/malls such as Kingsway stores, Leventis, Bata, G.B.O, etc. as a result, there was then a need to relocate the entire residents to the outskirt as Surulere was, at that time. Majority of the inhabitants of these hitherto unplanned areas were generally of the Low-Income class who did not have anywhere else to move to other than the one provided by the government.

The then government through the public works department under the auspices of LEDB headed by Mr. A. J. Andersen built these houses in Surulere which at that time was a thick forest characterized by wild animals and fairy tales as explained by one of the earliest residents. The initial settlers who were reluctant to relocate to the estate due to the distance from their original abodes as well as the risk associated with living in such an area surrounded at that time by thick forest found the place quite elaborate and generous in terms of interiors spaces such that multiple household in some cases were allocated a single housing unit for fear of living alone.

The Surulere Low-Cost Housing popularly called 'New-Lagos' as earlier stated was a planned residential estate created purposely to re-house Low-Income earners who were displaced from the slum area of central Lagos. But it could now be seen that over the years, the original plan had been gradually defaced by unplanned modifications and additions being done to their housing by the residents. The new estate at inception was initially allocated to beneficiaries on rent paying basis and would be sold out rightly to households who wish to remain permanently afterwards. The New Lagos Re-housing Estate (Phase 1) is   made up of four housing typologies in rows of four- 172 single bed-sitter, 636 Units of one-bedroom units, 380 Units of two-Bedroom units and 168 Units of three- bedroom bungalows making up a total of 1,356 housing units.

Table 3.1: Distribution of houses by Street and Type (Surulere Re-Housing Estate Phase 1)

S/No	Street Name	I- Bedroom & Parlour	2-Bedroom & Parlour	3- Bedroom & Parlour	Single-bed-sitter	Total
1	Aralile	-	128	168		296
2	Ajogbe	64	-	-	24	88
3	Asopo	64	-	-	-	64
4	Onitolo	84	-	-	28	112
5	Oyerokun	-	168	-	-	168
6	Iyun	-	84	-	24	108
7	Ilelogo	72	-	-	-	72
8	Iletunmi	96	-	-	-	96
9	Idera	-	-	-	96	96
10	Ibukun	128	-	-	-	128
11	Ayeleto	128	-	-	-	128
Sub total		636	380	168	172	1356

Table 3.2: Schedule Of Accommodation in terms of the sizes of the different interior spaces provided

Space/ description	I- Bedroom & parlour	2-Bedroom & parlour	3- Bedroom & parlour	Single-bed-sitter
	Dim.(m)/Area (m2)	Dim.(m)/Area (m2)	Dim.(m)/Area (m2)	Dim.(m)/Area (m^2)
Living room	$3.0 \times 3.6 = 10.8 \ m^2$	$3.0 \times 3.6 = 10.8 \ m^2$	$3.3 \times 4.2 = 13.9 \ m^2$	--
Dining	--	$2.4 \times 2.7 = 6.5 \ m^2$	$2.4 \times 2.7 = 6.5 \ m^2$	--
Bedroom 1	$3.0 \times 3.0 = 9.0 \ m^2$	$3.0 \times 3.0 = 9.0 \ m^2$	$3.0 \times 3.0 = 9.0 \ m^2$	$3.6 \times 4.2 = 15.1 \ m^2$
Bedroom 2	--	$2.7 \times 3.0 = 8.1 \ m^2$	$2.7 \times 3.0 = 8.1 \ m^2$	--
Bedroom 3	--	--	$3.0 \times 3.0 = 9.0 \ m^2$	--
Kitchen	$1.8 \times 2.0 = 3.6 \ m^2$	$2.0 \times 2.4 = 4.8 \ m^2$	$2.0 \times 2.4 = 4.8 \ m^2$	$0.9 \times 1.8 = 1.6 \ m^2$
Toi./bathroom	$1.0 \times 1.5 = 1.5 \ m^2$	$1.2 \times 1.8 = 2.2 \ m^2$	$1.2 \times 1.8 = 2.2 \ m^2$	$0.9 \times 1.5 = 1.35 \ m^2$ $0.9 \times 1.5 = sqm$

3.6   Federal Low-Income Housing Estate, Ipaja Alimosho

The Federal Low-Income Housing initiative birthed by the Federal Government during the second republic led by Alhaji Shehu Shagari between 1979 and 1983 was meant to accommodate the Low-Income earners who were predominantly artisans, craftsmen, petty traders and junior civil servants amongst others. The construction works for this particular estate started in 1980 and was allocated to the target group through ballot system between 1982 and 1983. As part of the original concept behind the development of this estate which was to make the beneficiaries home owners in the nearest future, the entire housing units have been transferred completely to the initial allottees as full owners.

The Estate is located at Ipaja in Alimosho Local Government area which was then in the outskirt of the city. The Estate, due to the peculiar nature of Lagos State, had the highest number of the Federal Low-Income Housing units constructed to accommodate a large chunk of the Low-Income population within the State.

The Estate is made up of a total number of 1514 (One Thousand Five Hundred and Fourteen) housing units spread across four different zones (A-D), comprising 1284 units of (One Thousand Two Hundred and Eighty Four) One-bedroom in rows of two in semi- detached bungalows, and 230 units of (Two Hundred and Thirty) three- bedroom in rows of two in semi detached bungalows. The total number of households that were allocated to the Estate at completion was 1514 (One Thousand Five Hundred and Fourteen).
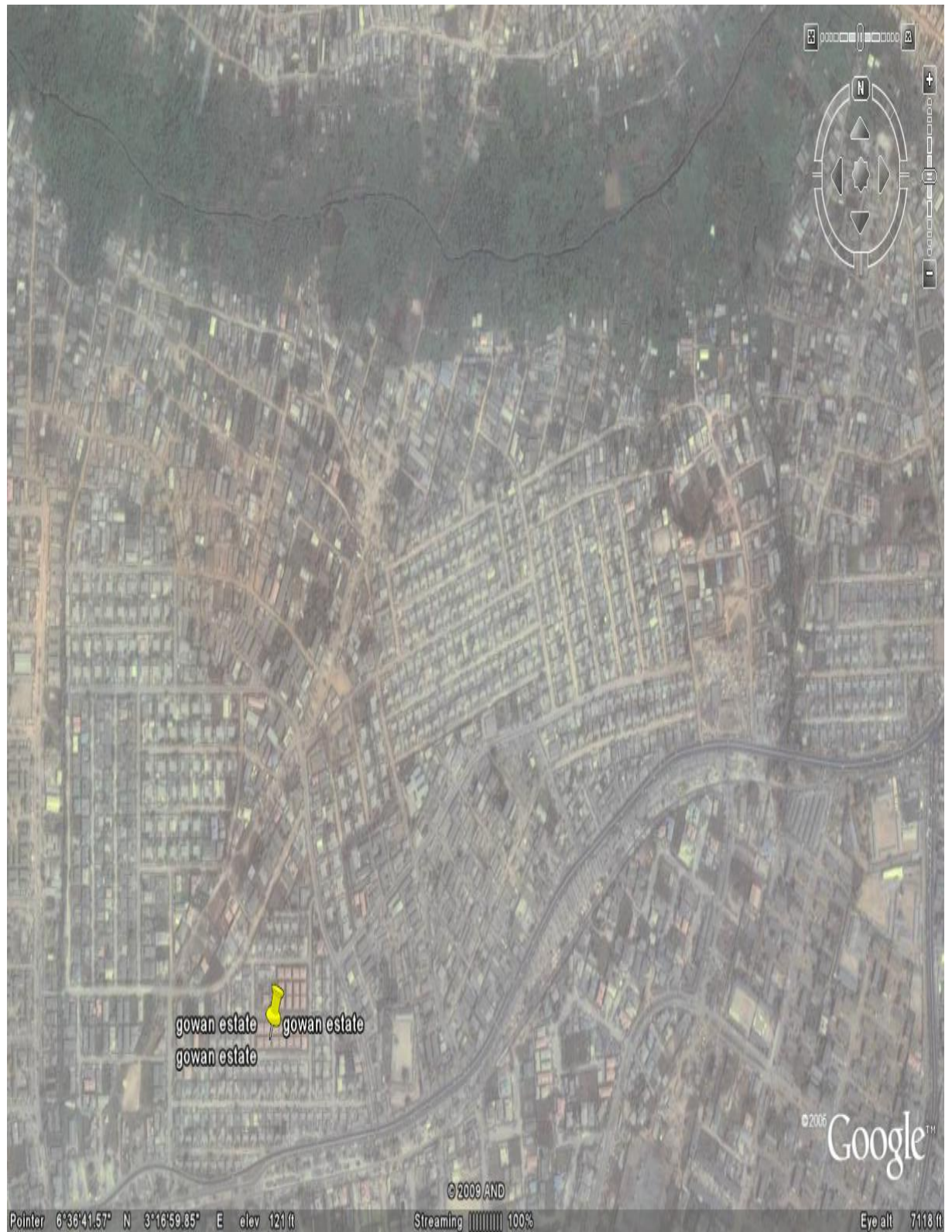
Plate 3.2: Bird's eye view of the Estate (Google Earth Accessed on 15 Sept.. 2009)

3.7 Population of Study

Population of study for this research consists of all the housing units within the two chosen Low-Income Housing Estates namely Federal Low-Income Housing Estate in Ipaja Alimosho and the New Lagos Low-Income Re-housing Estate (Phase 1) Surulere. The housing units were considered along with their respective immediate outdoor spaces because housing, which used to be regarded as mere a 'shelter' is now much more than that. Housing in today's parlance, is the totality of the house and the environment in which it is situated including all the infrastructural facilities which makes living in them convenient and safe (Ajanlekoko, 2001). Also included in the population bracket are the households occupying them at the time of this study.

The Estates chosen for the purpose of this study are self serving and suitable because they exhibit a preponderance of transformation phenomenon in form of physical, spatial and façade changes, extension and addition of extra units, change of use and function. The study population for one of the Estates is 1,514 (One thousand five hundred and fourteen) housing units and the other is 1,356 (One thousand three hundred and fifty six) housing units which makes a total of 2,870 housing units. A sample size of 626 (Six hundred and twenty six) was chosen through statistical calculations to adequately provide a picture of the actual situation prevalent in the total population.

The total housing units in the two Low-Income Housing Estates under survey is therefore 2870 (Two thousand eight hundred and seventy) and they come in number and location as stated below. See Tables 3.3 and 3.4.

Table 3.3: Distribution by Zone, Number and Type in the different zones (Shagari Estate)

S/No	Zone	I Bedroom	3 Bedroom	Total	
1	A	192	-	192	
2	B	688	46	734	
3	C	278	-	278	
4	D	126	184	310	
Sub-Total		1284	230	1514	

Source: FMHU Devt., URP Div. Ipaja

Table 3.4: Distribution by Street, Number and Type in the different zones (Shagari Estate)

Table 3.4a.

A   ZONE

S/No	Street	No. of unit	Type of unit	
1	A	36	1 Bedroom	
2	AA	44	1 Bedroom	
3	AB	60	1 Bedroom	
4	AC	52	1 Bedroom	
Sub-Total		192		

Source: FMHU Devt., URP Div. Ipaja

Table 3.4b

B   ZONE

S/No	Street	No of unit	Type of unit
1	B	28	1 Bedroom
2	BA	38	1 Bedroom
3	BB	44	1 Bedroom
4	BC	44	1 Bedroom
5	BD	44	1 Bedroom
6	BE	34	1 Bedroom
7	BF	8	1 Bedroom
8	BG	8	1 Bedroom
9	BH	68	1 Bedroom
10	BI	24	3 Bedroom
11	BJ	53	1 Bedroom
12	BK	37	1 Bedroom
13	BL	76	1 Bedroom
14	BM	44	1 Bedroom
15	BN	43	1 Bedroom
16	BO	10	1 Bedroom
17	BP	22	3 Bedroom
18	BQ	18	1 Bedroom
19	BR	08	1 Bedroom
20	BS	18	1 Bedroom
21	BT	64	1 Bedroom
Sub-Total	-	734	-

Source: FMHU Devt., URP Div. Ipaja

Table 3.4c

C   ZONE

S/No	Street	No of unit	Type of unit
1	C	46	1 Bedroom
2	CA	84	ditto
3	CB	8	1 Bedroom
4	CC	36	ditto
5	CD	12	ditto
6	CE	18	1 Bedroom
7	CF	18	ditto
8	CG	18	ditto
9	CH	18	1 Bedroom
10	CI	16	ditto
11		12	ditto
Sub-Total		278	

Source: FMHU Devt., URP Div. Ipaja

Table 3.4d

D   ZONE

S/No	Street	No of unit	Type of unit
1	D	46	1 Bedroom
2	DA	64	1 Bedroom
3	DB	30	1 Bedroom
4	DC	16	3 Bedroom Flat
5	DD	34	ditto
6	DE	28	""
7	DF	36	""
8	DG	34	""
9	DH	22	""
Sub-Total		310	

Source: FMHU Devt., URP Div. Ipaja

Table 3.5 : Distribution by Street and Type across the entire estate (Surulere Re-Housing Estate Phase 1)

S/ No	Street	I- Bedroom & parlour	2-Bedroom & parlour	3- Bedroom & parlour	Single-bed-sitter	Total
1	Aralile	-	128	168		296
2	Ajogbe	64	-	-	24	88
3	Asopo	64	-	-	-	64
4	Onitolo	84	-	-	28	112
5	Oyerokun	-	168	-	-	168
6	Iyun	-	84	-	24	108
7	Ilelogo	72	-	-	-	72
8	Iletunmi	96	-	-	-	96
9	Idera	-	-	-	96	96
10	Ibukun	128	-	-	-	128
11	Ayeleto	128	-	-	-	128
Sub total		636	380	168	172	1356

Source: FMHU Devt., URP Div. Ipaja

The study looked into transformation in two public Low-Income Estates namely, the Federal Low-Income Housing Estate popularly referred to as Shagari Estate in Mosan-Abesan area of Alimosho Local Government Council Area and Lagos State Low-Income Re-housing in Surulere. The former was initiated and built by the Federal Government between 1980 and 1983 while the latter by the Colonial Administration and later taken over by Lagos State Government after independence primarily to manage and ameliorate the increasing housing challenges being faced by the teeming population of Lagos residents. Presently, these Estates are actively relevant in the provision of accommodation for a large proportion of Lagos Low-Income residents and activities as they are presently strategically located within the main frame of the original residential zones of Lagos State.

3.8   Sampling Method

Sampling is the process of selecting a few numbers from a bigger group which will be used as a basis for estimating or predicting the prevalence of an unknown piece of information, situation, or outcome regarding the bigger group (Ranjit kumar 2005). A sample therefore is a representative sub group of the population one is interested in.

A combination of three sampling methods were considered appropriate for this research because it synchronizes the advantages of each one of them to present a more formidable representative analysis. These three sampling methods are the purposive which involved choosing two Estates that would specifically address the objectives of this study from amongst so many other Low-Income housing around and even within Lagos, the stratified which entails listing out all the different housing typologies by their streets within each of the Estates and finally sampling randomly according to each of the typologies. There are a number of Low-Income housing Estates in most parts of the country and Lagos in particular. Some of these Estates were built and managed by the Lagos State Government while some by the Federal Government but not all of them fit into this kind of study so for that reasons only the two selected Estates were purposively chosen. There are sixteen (16) Low-Income Housing Estates within Lagos State. One (1) built by the Colonial Administrators in the mid fifties is located in Surulere. This housing estate was built in phases and is known to have the largest land mass. Fourteen (14) Low-Income Housing Estates built by Lagos State Government during the leadership of Alhaji Lateef Jakande, One Federal Government Low-Income Housing Estate located in Ipaja Area Alimosho.

3.9   Sample Size

Sample size in a research is the total number of items from which the required information is extracted. Sample size is critical to ensuring the validity of a research because if properly determined a number of influencing factors like, the purpose of study, the population size etc justifies collected data to help make meaningful inferences.

The sample size in this research was determined by ensuring that it does not fall below the representative size obtained from some statistical estimation theory which is based on the degree of confidence it carries. The number of houses/households for this

study as determined by the researcher was given as (n_1), assuming a confidence level of 97%, probable error was given as not more than 0.03%. adopting the following mode of determination as given by Frank-Nachimias et al (1992)

A more appropriate equation for this study is given as:

$$n_{1=} \frac{n}{1+\frac{n}{N}} \qquad …(1)$$

Where: n = desired sample size when population is more than 10,000

N_f=desired sample when population is less than 10,000

N = Size of population (sample frame)

(Frankfort-Nachimias and Nachimias, 1992)

N (The total size of population/ sample frame) =2780 houses and their households in the two selected Estates.

Adopting a confidence level of 97%, then, Z = 1.96 (see table of confidence coefficients for confidence levels in Spiegel, 1961, p.157). The estimated proportion of success (of accepting the various null hypotheses) = 50%. For a 97% confidence level (which means that there is only a 3% chance of one's sample results differing from the true population average), a good estimate of the margin of error (or confidence interval) is given by $1/\sqrt{N}$, where N is the number of participants or sample size (Niles, 2006), d is thus 0.03.

$$n_o = \frac{N}{1+N(e)^2} \quad ----- (2)$$

Where:

$n_o =$ the sample size,

N = the population size,= 2870 and

E= the level of precision. When this formula is applied to the above sample, we get This gives

$$n_o = \frac{2870}{1+(2870(0.03)^2}$$

$$\frac{2870}{1+2.583}$$

$$\frac{2870}{3.583} = 801$$

$$n = \frac{n_o}{1+ \dfrac{(n_o-1)}{N}} \quad \text{--- (3)}$$

$$= \frac{801}{1+ \dfrac{(801-1)}{2870}}$$

$$= \frac{801}{1+0.2788}$$

$n =$ 626 houses to be sampled

The sample sizes for each of the typologies in the two Estates were further selected proportionately using the formula given in Kumar (1999) as follows:

Proportion (p) = $\dfrac{\text{No of element in each estate (x)}}{\text{Total population size (N)}}$ ------ (4)

Number of elements selected in each estate(n) = sample size x (p) ---- (5)
 Where:

     sample size (total) = 626

    x = Number of each of the typologies in each estate or on a street

    N = Total population (2870)

e.g. sample size of 1-bedroom in zone 'B' of Shagari Estate is calculated as

$$\frac{688}{2870} \times \frac{626}{1} = 150$$

 The tables below show a breakdown of the sample sizes of each typology as calculated using the formula derived above.

Table 3.6: Calculated sample sizes in each zone in Shagari Estate

S/No	Zone	I Bedroom	Sample size	3 Bedroom	Sample size	Total sample size
1	A	192	42	-		42
2	B	688	150	46	10	160
3	C	278	61	-		61
4	D	126	28	184	40	68
Sub-TOTAL			281		51	330

Table 3.7: Calculated sample sizes in each zone in (Surulere Re-Housing Estate Phase 1)

S/No	Street	I- Bdrm & parlor	Sample size	2-Bdrm & parlor	Sample size	3- Bdrm & parlor	Sample size	Single-bed-sitter	Sample size	Tot.
1	Aralile	-	-	128	28	168	37	-	-	65
2	Ajogbe	64	14	-	-	-		24	5	19
3	Asopo	64	14	-	-	-		-	-	14
4	Onitolo	84	18	-	-	-		28	6	24
5	Oyerokun	-		168	37	-		-	-	37
6	Iyun	-		84	18	-		24	5	23
7	Ilelogo	72	16	-	-	-		-		16
8	Iletunmi	96	21	-	-	-		-		21
9	Idera	-		-	-	-		96	21	21
10	Ibukun	128	28	-	-	-		-		28
11	Ayeleto	128	28	-	-	-		-		28
Sub total			139		83		37		37	296

Hence the total sample size taken from the two estates is 330+296 =626

3.10   Data Gathering Instruments

A good research design should have amongst other features, the ability to generate data that is capable of establishing facts, refuting or validating a prior expectation or hypothesis if any. For this reason, the types of data required for the pursuit of the research are in two categories viz:

i. Primary data

ii. Secondary data

The Primary data were sourced through primary sources with the use of instruments which include the following;

3.10.1   Comprehensive and Detailed Observations and Documentation:

This instrument was used to gather data on space characteristics of the Estates since they consist of various housing typologies ranging from 1 bedroom, 2 bedroom to 3 bedroom family units. For the purpose of this study, each of the Estates was defined spatially in alignment with their homogeneity of the neighborhoods' and the physical characteristics of the buildings and their conditions (empowered by photographs and sketches).This instrument was developed to ensure that indicators such as attributes that define territoriality, surveillance image, etc. that ascertain the defensible space characteristics of the housing units can be used. This is to highlight the present condition of the Estates such as the housing units that exhibit obvious physical transformation and those that still remain in their original states.

3.10.2   In-depth interviews

This instrument was used on total of fifteen (15) households particularly their heads, five (5) officials of the residents' association and two (2) officials of the respective over seeing government agencies. (Federal Ministry of Housing and Urban Development, Lagos State Development and Property Corporation.). The interview sessions were guided by a detailed interview schedule targeted at capturing issues that could not be exhaustively examined through the questionnaire. These interviews as scheduled took place between 4.00 pm and 6.00pm on week days and Saturdays between 8.00am and 10.00am. This strategic timing helped to ensure that the expected respondents would have

enough time to spare and furnish the researcher with sufficient information that will aid the extraction of data such as:

a. The meanings people in the study areas give to their housing.

b. The meaning households attach to what they do as a daily routine.

c. Which households are parts of the original allottees, tenants to the original allottees, new owners as a result of sales and change of ownership. The instrument used to source this data guaranteed an opportunity to explain even the silent issues to respondents except that it was painstaking, time consuming and expensive.

d. What the respective associations are doing to address the issue of transformation in the Estates concerned.

3.10.3 Structured Questionnaire.

This instrument was a list of structured questions which formed a basis for the extraction of information from respondents on age brackets, household sizes, socioeconomic class, level of education and career, etc of the residents. These questions were as much as possible self explanatory and interactive to encourage maximum corporation from the respondents. The questionnaire was administered to household heads or their representatives to obtain relevant information to fulfill the objectives of this study, and it was divided into three sections. Section A deals with the personal profile, socio-economic and cultural characteristics of the residents, section B analyzes the process of transformation of the houses, physical transformation that has taken place in the spatial organization and design of the buildings while section C deals with issues bothering on the impact of transformation on land use, demographic, aesthetic and environmental changes in the neighbourhood as well as examining the reasons for transforming houses and the attitude of residents to transformation in the selected housing estate. The questionnaire was administered in two ways:

i.   Self-administered.

This method was considered vital because its combination with other instruments of data collection is most appropriate for a research of this sort as the advantages

derivable from appropriate multiple approach includes high response rate, opportunity for clarification request if any and a detailed investigation of the physical structures on ground. Moreover, the same techniques were adopted by researchers like Nebel and Ghei (2002), Okoro, Jones and Hozor (2003), and Amaratunga (2000) while carrying out similar researches.

ii.   Collective Administration:

This was done through the assistance of officials of the estate residents association. A target audience was achieved during their monthly residents' meeting, where various issues are addressed. This helped to ensure a quick and high response rate. Several trips were made to and fro the study areas in the course of this research.

The secondary data used were sourced from secondary sources including the following;

3.10.4 Documentary/Historical Materials (From Archives).

A visit to the overseeing authorities (Federal Housing and Urban Development FMHD and Lagos State Development and Property Corporation LSDPC) to obtain secondary data such as land-use plan, details of the different typologies and their architectural drawings, master plan and allocation schedules and total number of approved households amongst others in each of the Estates. These extracted information were used to identify the individual building by their numberings and their locations on the master plan which served as a guide to the sampling method adopted for the study. Statistical data and information were collected from public and private institutions at local and national levels.

The above named instruments were used and controlled by a comprehensive survey conducted in the study areas. Because one of the major objectives of this study was to compare and show the differences between the transformers and non-transformers in terms of housing typologies and their specific location on the overall landscape, special effort was made to produce and reach quantitative findings, namely, statistical correlation coefficients.

Furthermore, for this purpose, a detailed and all inclusive field study survey design was developed using the sampling design strategy which was based on the random sampling procedure. This form of sampling strategy was intended to enable one arrive at

adequate information sufficient to create a true generalized picture of the total sample population from the sample frame.

Land-use survey of each of the estate was also conducted. This enabled the researcher to study the existing land-uses in each neighbourhood and document the various observations in order to analyze the degree of transformation which has occurred and possibly still in progress. Photographs of some useful features for the study was taken, brief question and answer sessions were conducted to elicit information on the origin and modalities of initial allocation at the onset and possibly find out first-hand the attitudes and feelings of the residents on the seemingly prevalent practice.

3.11 Units of Data Collection

The primary items being sampled were the buildings, the open spaces, and their households represented by the household heads in relation to the buildings where necessary while the sampling strategy was the stratified random sampling design. A careful random selection of buildings was thought vital to the success of this research for this reason, samples were carefully selected such that they adequately represent variation and diversity in terms of characteristics, socio-economic and cultural relationship as exemplified in urban low-cost housing contextual features such as living standards, income index, social exposure and other household attributes.

To begin with, the total number of dwellings in each estate was identified and a list drawn up. The houses numbered and stratified according to their typologies in each of the two Estates. The sample size was divided proportionally into different typologies for each estate, and the sample selection was done by ramdomly picking from each of the stratum to obtain a total of 626 (Six hundred and twenty six) houses.

Descriptive and analytical statistical tools were used to analyze the data so obtained.

3.12 Detailed Methodology by Objective

This section gives detail of the specific methodology employed to achieve the objectives of the study.

Objective 1: To examine the socio-economic and cultural characteristic of the residents in the chosen Estates.

Data used:

The information on the socio-economic and cultural characteristic of the residents was obtained by studying the demographic pattern of residents, socio-economic characteristics; sex, age, religion, ethnic group, marital status, level of education, estimated monthly income, occupation, tenure status and length of stay, household size and composition(initially and now) etc.

Source of data

The data for these tasks were supplied by the household heads or their representatives who as expected had a detailed history of the house and the household members.

Data instrument

Structured questionnaires coupled with interviews in form of interpretation especially with old people and new residents who cold not read. These are apparently those who claim not to have had any form of education at all. Scheduled visits to the study areas were made twice in a week to either distribute or collect the questionnaire from residents. Relevant questions directed at the vital issues encouraged respondents to supply necessary information.

Data treatment:

The data was subjected to thorough analysis through descriptive statistics (univariate analysis), like means, frequencies, and percentages presented in different formats like tables and charts. A comparison between the relevant information drawn from the two Estates was carried out to know the relationship in terms of similarities and differences that exist between them. This analysis was however done through cross tabulation and chi-square tests.

Objective 2: To analyze the physical transformations in the spatial organization and use of the buildings.

Data used:

To achieve this objective, data such as layout plans, Architectural designs, sketches of present designs and forms indicating the extent of transformation through measurements, photographs of some observation, types of transformation, activities being carried out in the transformed spaces. Specific location and orientation of the building were noted to understand how these have affected the type of transformation carried out.

Source of data:

These data were obtained during repeated visits to the estate locations, overseeing agencies, resident association offices and from personal sketches and photographs taken, Google earth search machine.

Data instrument:

Data was obtained from layout plans, Architectural designs, and sketches of present designs and forms indicating the extent of transformation, and photographs.

questionnaire was also used to obtain vital information on certain aspects of interest to the study

Data treatment:

A comparison between the original plans and the present was carried out to ascertain the extent of transformation in terms of the percentages, types, forms, and locations, that have so far taken place. The quantitative data were analyzed using descriptive statistics and the results presented in tables. The differences between those that have transformed and those that have not were analyzed through cross tabulation, chi-square test and other relevant statistical tests.

Objective 3: To analyze the process of transformation of the houses.

Data used:

Data such as the original plans, the new additions as observed if any, the present uses/functions of the spaces, stage by stage manifestation of transformation, the cost and financing system employed, the construction techniques and process adopted. Other data

needed to achieve this set objective included the duration of the exercise, which of them came first amongst a chain of transformations.

Source of data:

The data required to achieve this objective was domiciled in the households, on the sites and archival materials obtained from the agencies in charge of the Estates.

Data instrument:

These were obtained through personal observation of the building and Estates layouts, responses from the households to open-ended questions, in-depth interviews, photographs, measured sketches, and archival materials. Visits to the study areas and their administrative offices were carried to obtain information on the land use plans and original floor and master plans. Sketches of on the ground observations showing the various transformation forms were done.

Data treatment:

The difference between the old and new plans were analyzed schematically. The systematic stages of the entire transformation exercise was observed taking note of the activities that took place along the line. Descriptive analysis as well as content and thematic analysis were used to analyze the qualitative data obtained during the interview sessions while other relevant statistical methods were adopted for the treatment of the quantitative data.

Objective 4: To examine the reasons and households' attitude towards transformation of houses in the selected housing Estates.

Data used:

To achieve this objective, it was needful to know why residents transformed their houses. From the knowledge of the original building type, Original number of bedrooms available, level of education and satisfaction with the different aspects of the housing, income group and also personal benefits/gains derived from transformation it was possible to examine the reasons behind their actions. Above all, a measured appreciation of the residents' personal reaction to transformation activities in the neighbourhood was carried out to gain understanding on the perception and attitudes of the resident on the developments around them.

Source of data:

The data required to achieve this objective was domiciled in the households, on the sites and archival materials obtained in the agencies in charge of the Estates. As a result, most of the data were sourced from the respondents.

Data instrument:

Direct questions in the questionnaire were the most relevant instrument employed to gather the required data to achieve this objective. Sketchy interviews were also conducted to help capture the exact data used to address issues bordering on personal preferences needed to carry out a qualitative analysis.

Data treatment:

Descriptive statistics were adopted to analyze the qualitative data obtained. Tables and charts were used as the presentation technique for the data while the data obtained from the sketchy interviews were analyzed using content and thematic analysis. The main attitude of the residents to transformation was capture using factor analysis to extract the variables that were mostly responsible for their attitudinal expressions.

Objective 5: To analyze the impact of transformation on land use, demographic, aesthetic and environmental changes in the neighbourhood.

Data used:

In order to successfully analyze the impact of the transformation on the neighbourhood, data required would include: master plan of the Estates, building design, how the residents feel about the present setting, housing attributes like occupancy ratio, demographic characteristics, security level and activities that take place within and around the study areas. Pictures of observations on sites, effect on some basic infrastructures etc. There was also a need to highlight the environmental and sanitation implication on refuge management, drainages systems, level of pollution etc. which may have significant impact on fabrics of the neighbourhood.

Source of data:

This information was obtained from the residents on site through interviews, relevant government agencies.

Data instrument:

Direct questions in the questionnaire were the most relevant instrument employed to gather the required data to achieve this objective. Sketchy interviews were also conducted to help capture the exact data used to address issues bordering on personal preferences needed to carry out a qualitative analysis,.

Data treatment:

Descriptive statistics were adopted to analyze the qualitative data obtained. Tables and charts were used as the presentation techniques for the results while the data obtained from the sketchy interviews were analyzed using content and thematic analysis.

3.13 Preliminary Survey and Data Collection Details

Data for this study was collected between the months of February and May, 2009. Before this period, several visits were made to the study locations in order to get adequately acquainted with the terrain. The data collection exercise was undertaken personally with the aid of five well informed research assistance who were in primarily involved in the distribution and collection of the questionnaires. The entire data was subsequently analyzed between June, 2009 and September, 2009 by means of statistical package for social scientists (SPSS version 17)

A total of 614 (Six hundred and fourteen) out of 626 (Six hundred and twenty six) copies of the questionnaires were returned and duly completed. The high response level was as a result of the cooperation received from the respondents. Most of them found this study quite timely and as an opportunity to express their feelings and this was quite appreciated.

3.14   Chapter Summary

The Chapter gave a detail description of the methodology adopted in this study. It defined the study population with particular reference to the study locations. It explained how the survey approached was undertaken and how an appropriate sample size 626 (Six hundred and twenty six) was calculated out of a total population of 2,870.

Analysis of the different data collected using data collection instruments like questionnaires, interview, photographs etc was carried out using a variety of statistical tests which included Frequencies, percentages, proportions means, cross tabulation, the chi -square tests, content analysis etc. All these provided a platform on which this study was propelled.